

The Coordination Mechanisms of Self-Managing Organizations

An Explorative Case-Study of Three Pioneers

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Abstract

After many years of limited activity in the field of coordination research, new organizing forms with the aim to abandon managerial hierarchies have caused a renaissance in the research of new solutions to this universal organizing problem. An emerging stream of research about Self-Managing Organizations (SMOs) which eliminates formal hierarchies and managers completely, have left researchers wondering about SMOs new coordination solution as antecedent organizing forms have their coordination solution strongly dependent on managers. The aim of this thesis was to explore and identify the mechanisms that SMOs utilize to coordinate work output, how these mechanisms are configured and how they correspond to the settings of SMOs. Due to the nascent state of knowledge development within this field, the aim was operationalized with the help of coordination conceptualizations and theory from nearby fields. A multiple case-study was conducted, using deep, semi structured interviews, triangulated with internal documentation, external documentation and archival records. The study identified the mechanisms Planning based on 'sense and respond', Competence driven and partially fluent roles, the merged category of Familiarity peer-trust and transparency, Digital infrastructure, Cultural content and finally, Content of repeated procedures. Through a self-composed analytical approach, the study revealed that traditionally mechanistic coordination mechanisms were of less importance to SMOs and had an added organic and group-dependent dimension to their configurations, compared to similar mechanisms in hierarchies. Furthermore, the findings suggested that Digital infrastructure, Cultural content and Content of repeated procedures were configured in a way, particularly useful and important to SMOs. The reason was that the three mechanisms constituted a mechanistic but editable framing, which both aligned and encouraged organic efforts in a certain direction. They also corresponded well to SMOs settings as they could be exercised and edited by anyone, they facilitated coordination cross-teams without managers and they were scalable in theory.

Keywords: Self-Managing Organizations, post-bureaucratic organizations, boss less firms, radical decentralization, coordination mechanisms, coordination in post-bureaucratic organizations, coordination mechanisms in team-based organizations, horizontal and vertical organizations

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1 Introduction

The first chapter of this thesis begins with a brief introduction to the societal context from which the topic should be understood. Thereafter, a problem background presents the core concepts of this thesis: coordination mechanisms and Self-Managing Organizations. Lastly a discussion regarding the relevance of the research topic is presented, followed by the aim of the thesis, its delimitations and the disposition for the subsequent chapters

The development of modern society continually changes the premises for what business can be and how it is organized. In a global marketplace, continuously changing due to rapid technological development, the business environment has become more volatile, uncertain, complex and ambiguous (Steiber & Alänge, 2016). Researchers have recognized the importance of adopting innovative management models to maintain their competitiveness in increasingly dynamic business environments (Chesbrough, 2007; Ganter & Hecker, 2014; Hamel, 2006; Steiber & Alänge, 2015).

In the ongoing change, several streams of research in the management field illuminate shortcomings and limitations of managerial hierarchy in the new context (Hammer & Champy, 1993; Zenger, 2002). The structural design of hierarchies was created in a societal context of geographical isolation and limited competition far from the complexity of today's society. Used as a metaphor to a 'machine', hierarchies were made to be effective in stable and predictable conditions, but not necessarily adaptable to change. (Burton, et al., 2017; Laloux, 2015). Naturally, the deficiencies of traditional hierarchy started emerging when challenged by dynamic conditions of modern societies that demand innovation and change (Burns & Stalker, 1961; Zenger, 2002).

In addition, globalization, political reforms and the availability of information through new technology has expanded consumer choice and demands (Carpenter, 2013). When customer needs and business environments change frequently, organizations may need to respond faster than managerial reporting relationships in hierarchies can allow (Lee & Edmondson, 2017). Technology and globalization have also increased information-flows and the opportunities to acquire knowledge from sources that were previously unavailable (Carpenter, 2013). The knowledge-based work has gained more importance since ideas and expertise comprise the

primary sources of value creation in the so-called knowledge economy, where the competitive advantage of firms relies on knowledge rather than scale (Lee & Edmondson, 2017). In summary, the described environmental trend has created a volatile context, an increased frequency of innovation among firms, as well as an increased competition between them. In turn, this demands a responsive, flexible, nonhierarchical organizational structure that increasingly depend on peoples' engagement to generate new ideas.

1.1 Problem Background

Decentralization in different areas of business activity has been a pervading trend and an organizational response to the new context. Decentralization has even been considered one of the structural parameters that predefine organizational performance (Beckstrom & Brafman, 2006; Boissier, et al., 2016). An organization can focus its decentralization efforts in different areas of its business. However, it is mainly the decentralization of authority, meaning the empowerment of organizational actors that makes organizations increase their flexibility, responsiveness and innovative ability (Beckstrom & Brafman, 2006). This often comes with the implementation of team structures and the elimination of middle management layers, that causes bottlenecks and slow productivity (Laloux, 2014; Silverman, 2012).

1.1.1 Decentralization & Coordination

The emerging trend of horizontal forms of organizing have been referred to as the new post-bureaucratic paradigm (Hodgson, 2004). When shifting to a new paradigm in the ways of organizing work, the premises for solving universal problems of organizing change as well (Puranam, et al., 2014a). Coordination is one such universal organizing problem to which a suitable solution is inevitable to any form of work based organizing (Marsden, et al., 1994; Puranam, et al., 2014a). The solution to the coordination problem is a complex matter that involves several coordination mechanisms. The coordination mechanisms may consist of tools, technologies, interactions or other arrangements that allow individuals to realize a collective performance, and thereby obtain coordination (Okhuysen & Bechky, 2009). Coordination on the other hand can be defined as the achievement of concerted action (Kotlarsky, et al., 2008) caused by these mechanisms.

The diverse range of previous research about coordination have stressed the necessity to include the context into any perspective regarding the subject (Okhuysen & Bechky, 2009) as the environment and organizational setup determine the coordination mechanisms. The

contingency theory suggests that successful organizations adopt structures that are an appropriate response to a number of variables, or contingencies (Marsden, et al., 1994). However, coordination mechanisms must correspond, not only to the decentralized setup and other contingencies present in post-bureaucratic organizations, but also to their solutions to the remaining three universal problems of organizing: *task division*, *task allocation* and *reward provision* because all four solutions to the organizing problems are highly interlinked and hence, affect the way in which coordination is solved (Puranam, et al., 2014a).

The decentralized structure, the solutions to the universal problems of organizing and other contingencies affecting coordination (which will be presented in later chapters), will jointly be referred to as the organizational *settings* in this thesis.

1.1.2 Self-Managing Organizations & Coordination

In the recent years, some post-bureaucratic organizations have responded to the emergent and fast changing operations (Kellogg, et al., 2006) more radically and taken the decentralization trend to another level. Organizations like GitHub, Morningstar, Valvé and Zappos are perhaps the most known and debated examples of *Self-Managing Organizations* (SMOs). SMOs are just like other post-bureaucrat organizations a counter reaction to the bureaucratic way of managing organizations, characterized by flat structures with high emphasis on horizontal influence, speed, adaptability and employee satisfaction (Lončar, 2005). Hence, these features are useful in global changing societies where pure managerial hierarchies do not add up (Lee & Edmondson, 2017; Lončar, 2005; Silverman, 2012). However, while other post-bureaucratic organizations decentralize authority, SMOs decentralize authority *radically* and eliminate traditional manager roles completely (Lee & Edmondson, 2017). Most published material about SMOs refer to them as Teal or Holacracy organizations, which are two branches of Self-Managing concepts, mainly intended for practitioners. It was not until 2017 that a uniting definition of SMOs was developed by Lee and Edmondson (2017), consisting of three criteria. First, the Self-Managing organization must utilize radical decentralization of authority, meaning that employees have full authority over their own work-execution. Second, decentralization of authority must occur throughout the organization, meaning no traditional managers except for the CEO exists. Lastly, all SMOs use a formal system (to some extent) that codifies how authority should be decentralized within the organization as no managers are there to do it (Lee & Edmondson, 2017).

Even though attempts at mapping characteristics and common traits of the phenomenon have been carried out previously (Laloux, 2014), the overall knowledge about SMOs is at a nascent stage of knowledge development (Lee & Edmondson, 2017; Puranam, et al., 2014a). To return to the discussion about coordination in post-bureaucratic organizations, SMOs obviously constitute a branch within the post-bureaucratic paradigm, that is completely unexplored with regards to coordination (Lee & Edmondson, 2017). Unlike other post-bureaucratic organizations, SMOs do not have any managers to rely upon to help obtaining it, which in turn may affect the nature of their coordination efforts considerably. When traditional managerial hierarchy was widely adopted from the middle of the 20th century, it was partly due to the conviction that the managerial hierarchy could clarify roles and accountabilities in a way that allowed employees to coordinate tasks even at scale, and thereby generate both predictable and efficient results (Williamson, 1981). The manager would provide a way to ensure that work would be accomplished, through reporting and by having the role of an integrator between the roles of employees (Mintzberg, 1973), something that is unthinkable in SMOs. In addition, the managerial authority would be useful in establishing goals, delegate tasks and interfere whenever needed, in case of conflicts or so (Williamson, 1981; Nickerson & Zenger, 2004). Manager tasks related to coordination furthermore included evaluation of individuals and the overall performance, followed up by decisions about further governance and responding strategies. Conclusively, the palette of managerial activity related to coordination are profound (Lee & Edmondson, 2017).

This equation leaves questions about how SMOs could possibly do without managers when trying to obtain coordination. The topic of coordination mechanisms in SMOs is at a nascent stage of knowledge development (Lee & Edmondson, 2017; Puranam, 2014b). Hence, the nature of the subject would require an explorative investigation as no mechanism-constructs can possibly be known in advance (Edmondson & Mcmanus, 2007). This is therefore reflected in the way in which the aim of this thesis is presented in the following sections.

1.2 Problem Discussion

As mentioned, obtaining coordination is crucial to the work-organization's functioning and is one of the universal problems of organizing (Puranam, et al., 2014a). After many years of limited activity in the field of coordination, new organizing forms have caused a renaissance in the research of this important subject (Okhuysen & Bechky, 2009). The ways in which organizations perform the function of coordination vary (Marsden, et al., 1994). In SMOs, we

know the solution must vary significantly as the division in to subunits, the hierarchic levels and the top down directives to coordinate work, are vanished. Without mechanisms that help organizations to facilitate coordination, the organization will fail to function, which makes knowledge about how to obtain coordination in SMOs highly relevant to start with.

As previously mentioned, there have been reasons to question SMO's ability to obtain coordination. The absence of organizational divisions, hierarchic levels and bosses leaves room for autonomy of teams or individuals who must perform coordination within and between teams by themselves, which eventually may lead to disorder. Some highlight the risk for slow consensus-building and duplication of work as potential coordination problems in SMOs (Puranam & Håkonsson, 2015). Others mean that human actors in organizations have different opinions and different perceptions about reality and as the number of agents grow, so do the number of viewpoints in the system, hence the possibility of disagreements or non-shared views increases quadratically and disturb coordination (Burton, et al., 2017). This consequence of size is one of the reasons why most startups begin as Self-Managing, but usually implement a more stable and hierarchic solution as they scale (ibid.). The common reaction to crisis and conflict caused by lack of coordination or control is often a return to such formal and centralized structures (Birkinshaw, 2015; Lee & Edmondson, 2017; Puranam & Håkonsson, 2015). This reaction to coordination problems have been suspected even at GitHub, an SMO that recently abandoned their Self-Managing setup for a more hierarchic structure (Burton, et al., 2017). Even other SMOs like Valvé were found firing employees when reaching a certain size (Puranam, 2014b). The suspected scale problem to SMOs has a part in the recent viewpoint of scholars who stress that SMOs substitutional coordination mechanisms to the hierarchic solution, need further examination (Lee & Edmondson, 2017; Puranam, et al., 2014a).

What is interesting is that despite every theoretical contradiction to coordination success in SMOs, some organizations which comprise over a hundred people yet manage to utilize the Self-Managing approach and run seemingly successful businesses. It is in the light of all this, that one cannot help but wonder how these SMOs substitute for the hierarchical coordination mechanisms in environments where operations are emergent and fast changing, where organizations have no divisions or hierarchical levels, where accountability is uncertain and above all, where there are no managers present.

1.3 Aim

The aim of this thesis is to explore and identify the mechanisms that SMOs utilize to coordinate work output, how these mechanisms are configured and how they correspond to the settings of SMOs.

1.4 Delimitations

The mechanisms of focus in this study are the cross-team or cross-member mechanisms (organizational level) as well as the inter-team mechanisms used to coherently perform work that results in team output: products or services. This means that coordination within any business area with loose connection to output efforts e.g. the areas of administrative or economic work, will not be considered. Furthermore, this study excludes coordination mechanisms that do not directly focus on how collective work *within* SMOs are accomplished. Thus, coordination mechanisms between organizations, with customers or likewise will not be considered. Furthermore, the definition of coordination is attempted to be as distinguished from ambiguity as possible, thus, tangent concepts like collaboration and cooperation will be left out, or explicitly pronounced when addressed.

1.5 Disposition

This thesis consists of six chapters of which the first was presented above. In the following, the *theoretical framework* of this study will be declared representing the instrumental development of this thesis. The theoretical concepts used throughout different stages of the research process will be presented and will later guide the operationalization of the aim. Thereafter, a *methodological chapter* is presented consisting of the research design, data collection approach and the analytical tools with the overall purpose to motivate and explain the procedures used to conduct this study. In the *empirical chapter*, a narrative approach is used to describe the organizational settings in the chosen cases as well as to present the raw data concerning their coordination mechanisms. Chapter five begins with a single-case analysis, where the raw data is interpreted with the help of a self-composed model for analyzing the coordination mechanisms. In the second part of the *analytical chapter*, the findings from the single-case analysis are compared cross-cases to identify overall patterns, the common mechanism constructs and overall configurations. In the final *concluding chapter*, the findings with regards to the purpose is presented, followed by additional theoretical, practical and methodological contributions which was not necessarily directly connected to the aim. The concluding chapter

ends with methodological criticism, adjacent to proposals for further research and a wider discussion regarding the subject.

2 Theoretical Framework

The following chapter begins with a review of coordination literature from organizational theory. Secondly, a review of the scarce body of SMO literature will be presented including the theory of spontaneous order. Dealing with nascent knowledge development, the sections thereafter will be dedicated to contemporary research of coordination mechanisms in other post-bureaucratic organizations that are not SMOs, employing the most tangent research fields available. Lastly, the contingency theory and its relevant concepts are presented

2.1 Literature Review

The current state of knowledge about different forms of Self-Managing Organizations has been allocated over the last two decades, clearly it is a young field with its main contributions coming from the last few years. Literature of coordination on the contrary, has a history that goes back to the early 20th century. The two constitutes the core concepts of this study but have barely been put together in previous research. For this reason, the two fields will first be presented individually, thereafter, previous research about coordination in adjacent fields to SMOs will be discussed as a guiding framework for this study.

2.1.1 Coordination in Organization Theory

Coordination as a research field is multifaceted and connected to several theoretical areas including basic organizational theory as well as disciplines related to team-based structures, computer science and sociology of work (Okhuysen & Bechky, 2009). Coordination are long recognized as an essential part of organizational functioning, thus, its underlying mechanisms help integrate goal-directed efforts among multiple agents in an organization (Marsden, et al., 1994). This way, coordination has an important relationship to both goal achievement (Mintzberg, 1989) and the overall organizational performance (Faraj & Xiao, 2006).

2.1.1.1 Definitions & The Classical Management Schools

Regarding the definition of coordination, there are several to choose from. What mainly distinguishes the options is whether coordination is viewed as a process through which the organization realize a collective performance (Faraj & Xiao, 2006), or the other way around, that coordination is a state achieved through a process or a set of mechanisms. The point of departure for this study is the latter. More precisely, coordination is here shortly defined as the achievement of concerted action, following Kotlarsky, et al., (2008). Consequently,

coordination is the state obtained by this ‘concerted action’, which is obtained by a set of coordination mechanisms. Choosing a simple but inclusive definition seemed appropriate as this study aims at investigating mechanisms broadly at the organizational level. Additionally, coordination *mechanisms* are defined as ‘...the organizational arrangements that allow individuals to realize a collective performance’ (Okhuysen & Bechky, 2009, p. 472). Coordination mechanisms include both formal and other emergent elements, that often involve tools, technologies or interactions (ibid.).

The story of coordination had its start already in the work of the classical management schools, which have been directed largely into two areas. The first one originated from Frederick Winslow Taylor and the Scientific Management (Taylor, 1913). The philosophy was based on the principal that tasks as well as the coordination should be based on true science, not rule of thumb. Taylor made a clear distinction between the managerial work and the workers’ tasks, where the manager represented the ‘brain’ who were to handle division and allocation of tasks and develop prescribed operating procedures to help setting forth guidelines for effectiveness in the organization (Taylor, 1913; Puranam, et al., 2014a). The other prominent management classic was the Administrative Management school that stressed that organizations should be centralized and have a clear hierarchy of decision making. Henry Fayol and other advocates, focused on concerns about the most effective way to organize tasks in direction towards organizational goals. Ideas such as how to decompose tasks in to jobs, jobs into appropriate administrative departments (building silo structures), and departments into larger units (Tosi, 2008) were basics to coordinate work. Max Weber’s Bureaucratic Management, shared the hierarchic nature of administrative management but focus even more at formal rules and standardized solutions for every activity, which enabled coordinating work even at scale.

March and Simon (1958) criticized the classical management schools for not bringing enough attention to the human factor. In response to this, March and Simon (1958) developed a framework for coordination adapted to two different contexts. In the first context, conditions were stable, standardized and repetitive – as taken for granted in the classical views. These conditions allowed preprogramed action and were therefore suitable to be *coordinated by plan*. If circumstances on the other hand required rather new information or knowledge, *coordination by feedback* would have a better fit, meaning coordination obtained by direct communication between employees (ibid.). This view is associated with the information processing theory that

states that higher task demands must be matched to structures capable of higher information processing (Faraj & Xiao, 2006).

2.1.1.2 Long Lived Coordination Concepts

The work by March and Simon (1958) has been frequently cited, without exception for important work by Thompson (1967) and Van De Ven and Delbecq (1976), who both built their work on that of March and Simon. Thompsons (1967) developed further ideas about contingencies which affected the choice of mechanisms used to obtain coordination. He focused on *task interdependence* as a determinant for what coordination mechanisms to use. If tasks were characterized by (1) *pooled interdependence*, meaning that they were decomposable so that different units of the organization could perform their part without interacting with others, coordination by standardization had the best fit. If tasks instead were characterized by (2) *sequential interdependence*, meaning that one task depended on the one before to be created (such as in the assembly line), tasks should be coordinated through planning. Finally, if tasks had (3) *reciprocal interdependence*, where units were mutually dependent and work flowed in both directions, they should be coordinated by mutual adjustment. This last coordination type is closely connected to March and Simons (1958), coordination by feedback.

Furthermore, Van De Ven and Delbecq (1976) developed the idea that high *task uncertainty* should be matched to a more informal mode of coordination and vice versa. They presented three *modes* of coordination as well as three determinants of these modes. The first mode of coordination was called the *impersonal mode* of coordination. The impersonal mode collects all the coordination types that typically links to hierarchies, such as rules, plans or other sorts of programming. Once implemented, the use of impersonal coordination mechanisms requires minimal verbal communication between task performers. In contrast the modes called *group* and *personal modes* consists of the opposite coordination types: The personal mode gives team members the freedom to modify tasks in response to situational demands and is suitable when adjustments in the working methods are required. The group mode is more social and is characterized by high levels of mutual adjustment based on feedback, high professional discretion, and autonomy of work. (Van De Ven & Delbecq, 1976)

Regarding the three determinates for these modes, the first can be recognized from previous work, *task interdependence*. The other two were, *task uncertainty* and *unit size*. Van De Ven and Delbecq's (1976) study revealed that increased task interdependence would increase the

need for coordination from all three modes (impersonal, group and personal). Furthermore, task uncertainty created need for horizontal mutual adjustment in group and personal modes, and finally, unit size had a positive relationship to impersonal modes of coordination, particularly planning. Van De Ven and Delbecq (1976) suggested that each of the specific mechanisms for coordination in the three modes could be used in various combinations in organizations to achieve integration in collective tasks. The modes, types and contingencies, deriving from these classical coordination categorizations, are still used as conceptual tools, even in more contemporary work of coordination (Chang, et al., 2017; Espinosa, et al., 2010; Okhuysen & Bechky, 2009; Scheerer, et al., 2014).

2.1.1.3 Early Coordination Mechanisms

In work by Mintzberg (1980) he synthesized research about organization design and pinpointed five important mechanisms of coordination suggested in literature before his. Namely, (1) *mutual adjustment*, which is obtained by informal communication between individuals. (2) *Direct supervision*, which is the coordination provided by the specific orders of a manager or another superior. (3) *The standardization of work processes*, is as the name indicates, coordination by imposition of standards, like rules, work orders or regulations. (4) *Standardization of outputs*, represents mechanisms who coordinate through the imposition of performance standards or output specifications. Finally, (5) *standardization of skills*, is the coordination obtained by the training of individuals (usually before they begin to do the work), so that their knowledge or skills addresses their tasks. Additionally, Mintzberg (1980) was early in pointing out that organizational structure regarding coordination in organizations also depend on the location of decision making, which could either be centralized or decentralized.

Up to this point in literature coordination were oftentimes categorized as either *mechanistic* or *organic*. Mechanistic coordination designate coordination by program, which refers to the use of, for example, plans, project schedules, procedure manuals interface specifications and workflow automation tools. Mechanistic coordination is useful for task activities that are more routine and certain. To the contrary, organic coordination refers to coordination by mutual adjustment, feedback and communication. Organic coordination is useful in changing condition where activities are non-routine and characterized by uncertainty. (March & Simon, 1958; Thompson, 1967; Van De Ven & Delbecq, 1976). However organic coordination can at times be formal and planned but otherwise informal and spontaneous (Espinosa, et al., 2010). In addition, it can be either interpersonal or group-based (Van De Ven & Delbecq, 1976).

2.1.2 The Context of Self-Managing Organizations' Development

The last three decades have seen fundamental transformations in the nature of work in developed economies (Hodgson, 2004). Contemporary scholars acknowledge a trend where organizations are shifting away from traditional bureaucratic ways of organizing to meet new demands of uncertainty, flexibility and speed (Kellogg, et al., 2006). The changes constitute no less than a paradigm shift to the nature of 21st-century organizations, commonly referred to as the post-bureaucratic paradigm (Hodgson, 2004). Scholars have previously provided different explanations to the shift towards post-bureaucracy. Some argue that post-bureaucracy has emerged as the 'established bureaucratic controls have been found insufficiently responsive and adaptable to intensifying competitive pressures' (Alvesson & Willmott, 2002, p. 620). Others rely upon the contemporary dogma suggesting the usual suspects of new technology, globalization, competition and the increasing speed of change (Grey & Garsten, 2001). Either way, scholars generally tend to refer to post-bureaucratic-organizations without defining what they mean, often it is instead defined by what it is not. However, Grey and Garsten (2001) provided a definition to the concept of post-bureaucracy as a 'trend encompassing a range of organizational changes which have as their espoused aim the erosion or dismantling of bureaucracy' (Grey & Garsten, 2001, p. 230).

Self-Managing Organizations are to be considered as a part of the post bureaucratic paradigm, however, all post-bureaucratic organizations are not Self-Managing (Lee & Edmondson, 2017). Post-bureaucratic organizations include a broader set of organizations than SMOs, such as: open source collaborations, virtual organizations like IT or social media startups, network organizations and two-sided platforms (Hodgson, 2004; Lee & Edmondson, 2017). Table 2.1 is a compilation of four authors' views on organizations in the two paradigms and summarize the main differences between them. The exploration of Self-Managing Organizations constitutes a new stream of research within the post-bureaucratic era, where the framework of table 2.1 can be considered as SMOs point of departure regarding characteristic organizational features. Hence, SMOs share most traits described in Table 2.1, although the decentralization of authority is more radical in SMOs.

Table 2:1 Distinguishing Features of Hierarchical & Post-Bureaucratic Organizations

Organizational Dimension	Managerial Hierarchy	Post-Bureaucracy	Sources
Organizing form	Permanent, formal hierarchies	Temporary work teams, informal network structures	Kellogg et al. (2006); Lee and Edmondson (2017)
Boundaries	Definite Clearly specified, persistent	Fuzzy and permeable	Hodgson (2004); Kellogg et al. (2006)
Environmental fit	Expectation of constancy	Expectation of change	Hodgson (2004)
Benefits	Stability, scalability	Speed, adaptability, innovative	Kellogg et al. (2006); Lee and Edmondson (2017)
Decision authority & Influence	Centralized Vertical authority	Decentralized Horizontal influence, through persuasion & personal qualities	Kellogg et al. (2006) Hodgson (2004); Kellogg et al. (2006)
Relations	Vertical, dependent	Horizontal interdependent, need for internal trust	Hodgson (2004); Kellogg et al. (2006)
Division of labor and roles	Stable, specialized	Dynamic, blurred	Kellogg et al. (2006)
Work process	Routinized, standardized, rule-based	Improvised, flexible participative	Kellogg et al. (2006)
Motivation	Control & pay	Autonomy, intrinsic rewards	Puranam et al. (2014)
Culture	Control	learning and experimentation	Lee and Edmondson (2017)
Performance criteria Consensus building	Established, singular Through acquiescence to authority	Emergent, multiple Through institutionalized dialogue	Kellogg et al. (2006) Hodgson (2004)
Control	Hierarchical appraisal, by managers, rules for conduct	Open & visible peer review processes, focus on principles guiding action.	Hodgson (2004)

The table illustrates some main features of post-bureaucratic organizations and compare them with traditional managerial hierarchies. The framework is intended to facilitate the understanding of the origin of SMOs by describing their most tangent concept, and contrast it with traditional hierarchies (which they aim to depart from)

Unlike Self-Managing teams common to most post-bureaucratic organizations, decentralization in a Self-Managing Organization is not limited to a single team, or a set of teams, nor to front line employees. The radically decentralized authority applies for everyone in the organization, from front line employees to mid - and senior-level employees (Lee & Edmondson, 2017). This is what distinguish the SMO research stream from other research objects in the post-bureaucratic paradigm. However, that authority is being decentralized throughout the organization does not mean that SMOs are free from managerial work, only the nature of management is changing (Foss & Dobrajaska, 2015).

2.1.3 Research about Self-Managing Forms of Organizing

2.1.3.1 Theory of Spontaneous Order

Hierarchical organizations have existed for thousands of years ever since the rise of the Roman Army and the Roman Catholic Church (Laloux, 2015). Such forms of hierarchical organizational solutions are long lived and present until this day. On the contrary, we have not (yet) seen many examples of long lived non-hierarchical organizations. However, proponents to Self-Management like Laloux (2015) claim that Self-Managing forms of organizing came first as he draws parallels to examples in nature with a viewpoint starting off in the theory of spontaneous order (Leeson, 2008). Laloux (2015) argues that organizations based on Self-Management, or Teal-organizations as he calls them, actually formalize the way people would naturally try to do things if they were not constrained by formal hierarchies. Likewise, the authors to the book *Freedom Inc*, Isaac Getz and Brian Carney (2012) about 'liberated' organizations describe a business philosophy that the Self-Managing ideas of today originates from. This philosophy emphasized that workplaces based on respect and freedom are more natural environments than those based on mistrust and control. The theory of spontaneous order rests on the idea that spontaneously ordered institutional arrangements are limited by at least two factors: the potential of violence and social heterogeneity (Tullock, 2005). The first, violence, refers to the problem of asymmetry in the strength of participants in institutional arrangements which may cause some individuals to hold informal powers over others resulting in problems in self-enforced cooperation. The other, social heterogeneity, refers to the difficulties to obtain coordination from mutual understanding when individuals do not share common norms, beliefs and practices (ibid.). A number of conditions must be satisfied for the cooperation, and in turn coordination to work without command: '(1) sufficiently patient individuals, (2) low information-sharing costs, (3) equally strong agents and (4) shared ideas about 'defection' and how it should be punished' (Leeson, 2008, p. 70). Leeson (2008) furthermore draws parallels to the spontaneous order of the marketplace and argues that it can only be effective in the context of government-enforced property rights to frame the actions.

2.1.3.2 Various Conceptualizations of Self-Managing

Even though it took humanity several centuries to (re-)introduce structures that allow for Self-Managed work, the contextual conditions had to be just right in terms of enabling technological development (Beckstrom & Brafman, 2006) and the maturity of human consciousness in general (Laloux, 2014). The approaches to Self-Management has taken many different shapes

which has made the field not only fraught, but also fragmented. Already in 1958, the company W.L. Gore and Associates started operating in something they called a 'lattice' management structure. The idea of the concept was to substitute bosses and chains of command with the reliance of team-management (Silverman, 2012). Another early example of an organization with a Self-Managing approach was the tomato paste factory Morning Star (Puranam, 2014b), as well as Semco and Oticon (Birkinshaw, 2015).

In the early 2000s, the entrepreneur Brian Robertson and his two colleges launched Ternary Software Inc., a successful startup and provider of outsourced software development (Laloux, 2014). Ternary Software started off as advocates of lean processes but later developed a Self-Managing approach that was soon to become the full-fledged concept of Holacracy that have continued to spread ever since (Laloux, 2014). Research of Holacratic organizations have had an important role in describing what a Self-Managing concept can be, since case-studies of companies like Zappos (which implemented Holacracy) has its main contribution in just that, describing the key concepts and components of this approach. Furthermore, such papers have gotten wide spread in the research community and are often quoted, why Holacracy now constitutes a fully documented operating model.

The same applies to the concept of Teal organizations, coined by Frederic Laloux (2014) in his book *Reinventing Organizations*, which got widespread among both practitioners and scholars around the world. The well described and concrete concept of Teal was created through Laloux's multiple case study of twelve organizations, although the method was never reported in the book or found elsewhere. The most significant contribution of Laloux's work to this thesis is his description of how peer-advice can contribute to coordination within teams as well as how improved motivation due to Self-Management might reduce the need for control in the work execution.

Another stream of research about Self-Management, refers to the phenomenon as boss-less organizations. Silverman (2012) is one of the authors who tries to wrap her head around the trend that has begun to show itself through new practices in different companies. Silverman refers to these organizations as 'boss-less' and discuss organizations such as Valve, GitHub and W. L. Gore and Associates. She concludes that these organizations have flat hierarchy, that pay is often determined by peers and that workdays are directed by employees themselves. Silverman further discusses the mixed results in research that explores the value of flat

organizations. She exemplified this by referring to a study about factory working teams who supervised themselves. The teams collectively took over most management functions themselves and outperformed hierarchies by working with mutual encouragement, support and personal coordination responsibilities. In contrast Silverman (2012) explains, other studies have showed that hierarchies can sometimes boost group effectiveness and that the clearly defined roles of hierarchies sometimes benefits efficiency. Silverman further emphasized that the trust and freedom of boss-less firms seemed to have a motivating effect, that catching poor performers may take longer and that hiring highly motivated people is vital for these organizations to work.

One of the first authors to make a serious attempt to critically sort out what organizing problems boss-less firms might needed to solve in order to function, rather than just providing a description of traits, was Phanish Puranam (2014b). The first step in doing this was mapping and explaining the hierarchical solution to the four basic problems of organizing. The reason why hierarchic organization are branched (e.g. superiors have multiple subordinates), Puranam explained, is due to two important mechanisms: decomposing the goal into smaller defined tasks, and the limitation to the manager's maximum range of control (which generates the layers in hierarchies). This is how hierarchies solves division and allocation of tasks. When Puranam exemplified how boss-less firms work, taking the valve case as an example, his question marks about Self-Management begins to arise. Puranam speculates about what problems might arrive when division and allocation of work are performed by employees instead of managers as in the Valve case. He concludes that self-allocation may lead to over and under provision of work, where popular project may lead to over provision and vice versa. He also emphasizes that spontaneous order as well as decision making based on consensus may be very hard to scale and that the emerge of such issues would be connected to lack of coordination and control.

A year after Puranam (2014b) published the article, he added another one together with Dorthe Døjbak Håkonsson (Puranam & Håkonsson, 2015) that did not add much of value to the last one, other than some further discriptions of the formal rulesystem and team-output rewards of Valvé. The same year Julian Birkinshaw (2015) brought about his notes on the Valve case, using Puranam and Håkonsson (2015) as his only reference which sais something about the limited scope of this research field. Birkinshaw (2015) however pointed out that the gaming industry and the internet era that Valve was created in, might have had a role in its ability to apply such a radical Self-Management approach. In addition, Birkinshaw explained that the

limits of how many participants that can be coordinated in a bottom-up way, probably has changed over the past twenty years. If the limits were around 100 employees before, he proposes it might be the double now.

2.1.3.3 Common Features to Self-Managing Approaches

As illustrated above, different forms of Self-Managing Organizations have been around for the last few decades. Regardless of name: Teal organizations, Holacracies or boss-less firms, most studies until 2015 had primarily tried to figure out the characteristics of such organizations and the way in which they work. Adding to the traits of post-bureaucratic organizations (Table 2:2), what was found specifically about SMO traits in the articles presented above, was that:

Teams are the common structure in these organizations and largely govern themselves, teams are also usually self-selected based on topic of interest. No employees are called bosses or managers and titles are secondary. There are usually no top down communication channels, individual employees sometimes have free work allocation and always free work execution (Lee & Edmondson, 2017). Leadership is usually contextual and distributed among roles rather than individuals, the responsibilities change as the work changes (Bernstein, et al., 2016 b) and informal hierarchies do occur. SMOs have a people centered approach resulting in comprehensive employment processes. Pay vary significantly between different organizations and bonuses are often provided for top performing teams or individuals (Puranam & Håkansson, 2015; Silverman, 2012), but in some cases there are peer-reviewed performance systems. Organizations have formal rules, often in the form of a handbook or likewise, as a boss-less way to control by creating uniformity and standardization (Lee & Edmondson, 2017). Coordination functions are sometimes provided by formal rules, peer advising systems through mutual adjustments and information technology systems (Burton, et al., 2017; Laloux, 2014).

2.1.3.4 Notes and Criticism to the Field of SMOs

Having come this far, the above presented review has made it more clear that the literature in the Self-Management field, is rather scarce. Until 2015, many articles found on the theme were mainly theoretical and lacked primary data. Some articles had the character of news articles with few sources, published in journals like the 'Workforce Solutions Review', 'Wall Street Journal' or 'Harvard Business Review'. The limitations could be a consequence of a still to be, low sample size of SMOs, fraught comparisons and other methodological problems that

exist within this field (Laloux, 2015). Furthermore, the literature of Holacracy and Teal are typically popular science and hence a bit problematic from an academic perspective. Such literature oftentimes seem overly excited about their particular Self-Managing approach, claiming more or less universal implications for their concepts and therefore do not seem pragmatic enough.

Additionally, Teal and Holacracy as concepts are normative and appear to be made primarily for practitioners who intend adopting them. Therefore, the concepts have been described so specifically that several Self-Managing Organizations with small deviations from Teal or Holacracy do not qualify. In a research context, concepts that describes reality at large are more usable. Self-Managing Organizations share main features to Teal and Holacracy but have a more demarked definition where more organizations qualify. Some streams of research, such as that of Holacracy continues to create new work represented in literature (Laloux, 2015; Bernstein, et al., 2016 b), while other authors have begun to dedicate less attention to individual cases and concepts, and instead tries to see what unites them. It was not until 2017 that Michael Lee and Amy Edmondson (2017) defined the concept of Self-Managing Organizations. In their comprehensive study, Lee and Edmondson succeeded in distinguishing what concepts such as Teal, Holacracy, boss-less firms and other unnamed concepts had in common. Lee and Edmondson's (2017) definition holds three main criteria that were used to select the participating Self-Managing Organizations for this empirical study.

2.1.3.5 Lee and Edmondson's Definition

Criteria One: Radical Decentralization of Authority

Radical decentralization of authority refers to the new status SMOs hold for employees and leaders. Not only do employees have full authority over their own work execution, they also escape traditional reporting relationships between manager and subordinate which is non-existent in SMOs. Since the organizations have no formal managers that would perform traditional managerial activities, like allocating work, monitoring performance, or firing employees, the managerial activity will be open to various solutions in these organization. Managerial work in other forms (rather than obtained by a manager) remain an important question. Authority in SMOs are formally distributed to individuals temporarily, often bounded to certain projects but without entailing hierarchical rank. Instead the allocation of a temporary leadership is most of the time determined by suitability and competence. The different possible solutions to fill the gap of a managers may be a causing factor to the heterogeneity found among

SMOs, why control for contingencies when studying them as phenomenon's may play an important role.

Criteria Two: Formal System for Decentralization

The second element of Lee and Edmondson (2017) definition is that SMOs utilize a formal system that codifies how authority is to be decentralized in the organization. The formal system could take the form of an employee handbook that describes rules or principles for how authority should be distributed in these new systems. Either way, the principles or rules are made explicit in some way even though the medium as well as the degree of formalization do vary greatly between cases. Lee and Edmondson (2017) argues that the formal system for decentralization should be important in substituting for the dominant and highly institutionalized hierarchic form of organizing, they state that hierarchies cannot easily be altered by simply declaring their absent. They mean that radical departures from the hierarchic form are unlikely to be long lasting unless there are other formal alternatives, and that formal system of rules and processes are required to reinforce and help institutionalize new ways of working. To substantiate their claims, they use two well-known examples of SMOs that both use such explicit principles.

Criteria Three: Organization-Wide

The final component in the SMO definition by Lee and Edmondson (2017), is that radically decentralized authority and the formal rules, applies for everyone throughout the organization, from senior level employees to mid - and frontline employees. However, the decentralized authority does not imply an equalized authority. Firstly, some employees may have roles with more authority and formal accountability than others. Secondly, informal hierarchies may occur. According to Lee and Edmondson (2017), examples of informal hierarchies could be found in organizations that switch from hierarchic structures to Self-Management. In such cases, people who previously held manager roles may retain informal influence over a domain, even after conversion to Self-Management, despite lacking formal authority over that domain. What they claim is universally true for SMOs however, is that variations in authority do not constitute relationships where one individual hold power over the Self-Management of others.

2.1.3.6 Errors of SMOs & Final Points

Looking back in time at the implementation of innovative management-models in general, experience tells us that with the adoption of new solutions, some problems are solved, while other unpredictable problems arise that needs to be dealt with (Birkinshaw, 2015). SMOs have

encountered problems in recent years. When Tony Hsieh decided to implement Holacracy at Zappos, employees started resigning themselves, possibly for economic reasons, or due to the lack of concert with the Holacratic structure (Bernstein, et al., 2016 b). At the SMO W.L. Gore and Associates, divisions were split when they reach 300 employees (Puranam, 2014b). Even Valve had problems and fired people as the number of employees grew larger (ibid.). Not all SMOs manage to stay Self-Managing. A former Self-Managing Organization, the software developer GitHub, apparently changed their horizontal structure to the reverse in 2014. The company started its business in 2007 with a Self-Managing structure and as it grew larger, irregularities began to arise that resulted in the introductions of rules and processes for improved communication and eventually a full transformation to a traditional hierarchic structure. The abandonment of its former unorthodox structure in favor of hierarchy was the response to undeniable coordination problems. (Burton, et al., 2017). Even SMO that were initially a candidate for this study, Björn Lundén AB had to be canceled due to their recent introduction of department managers and a more hierarchical structure. These inability to maintain a Self-Managing structure, have given rise to questions and doubts about the sustainability of SMOs and have generated titles such as ‘Top-down solutions like Holacracy won’t fix bureaucracy’ (Hamel & Zanini, 2016), and ‘Beyond the Holacracy Hype’ (Bernstein, et al., 2016 a). Some of the consequences to insufficient coordination and control are thought to be that informal hierarchies could take over and interfere with the decentralization system, that consensus-building in decision making take too long, that people start focusing on the wrong projects with bad fit to the overall strategy, possibly because the risky/low profit/uninteresting projects do not attract talent. Furthermore, some stress that conflicts may remain unsolved and that work gets duplicated without people knowing of it. (Alonso, et al., 2008; Birkinshaw, 2015; Burton, et al., 2017; Puranam & Håkonsson, 2015)

Some contingencies seem to determine the emerge of these problems more than others, size is the most prominent one. Size is important for three reasons. Firstly, size increase the number of opinions and agendas among agents, so that the number of possible disagreements increase as size do. Secondly, with size the product complexity tends to increase, and lastly, size sometimes compound with task interdependency that calls for extended coordination efforts. (Burton, et al., 2017). When these three components increase, so do the need for information processing to coordinate actions. Lastly, based on the preceding literature, the author of this study came to insight that the phenomenon of SMOs is largely unexplored. All of this, together with Lee and Edmondson (2017) research agenda with the topic of investigating coordination

mechanisms, ranked as number one, gives an undeniable justification to explore the coordination mechanisms of SMOs in this study. As no existing research of SMOs can provide archetypes or models to operationalize this aim, the author of this thesis has turned to related research areas to find guiding role models and concepts.

2.1.4 Prior Work of Coordination in Other Post-Bureaucratic Organizations

The coordination research described earlier in this chapter had its departure from organizations and structural arrangements (Mintzberg, 1980; Puranam, et al., 2014a; Thompson, 1967), while the upcoming sections undertake the topic of coordination with regards to inter – and cross-team coordination (Chang, et al., 2017; Espinosa, et al., 2010). The knowledge based work in post-bureaucratic organizations mostly take place in work groups or teams, therefore some argues that coordination has become less dependent on structural arrangements and more on knowledge integration within and between teams (Faraj & Xiao, 2006). However, both research of teams and organizations are interesting to this thesis. On the one hand, teams are the main building blocks of the research objects, SMOs, on the other hand, structures seem important as the coordination efforts traditional performed by managerial authority needs to be substituted by a new form in SMOs (Foss & Dobrjaska, 2015). Studies of various team-based organizations as well as agile multi-team system's approach to coordination will be discussed in the following for two purposes. The first is to get an idea about how coordination mechanisms and conceptualizations may look like in more contemporary and similar structures to those of SMOs. The second is to know what mechanisms to look for in this study and thus facilitate the operationalization of the aim.

2.1.4.1 Coordination & Team-Based Organizations

More contemporary work, by Okhuysen and Bechky (2009) focus on the mechanisms facilitating coordination in a modern context where mechanisms associated with team-based work are included. This of course, is useful in this thesis that focus explicitly on mechanisms in the modern settings of Self-Managing Organization. The mechanism described by Okhuysen and Bechky (2009) were (1) *plans and rules*, (2) *objects and representation*, (3) *roles*, (4) *routines* and (5) *proximity*. The categorization of the mechanisms was done with more emphasis on organic ways to obtain coordination rather than mechanistic, compared to Mintzbergs (1980) mechanisms: *direct supervision*, *standardization of work processes*, *standardization of outputs*, *standardization of skills* and lastly *mutual adjustment*. Okhuysen and Bechky (2009) further

contributes by providing a framework that explains *how* the coordination mechanisms impact the work of organizations so that a coordinated state is obtained. They conclude that the mechanisms can do this in three ways: through creating *accountability*, *predictability* and *common understanding*.

In Espinosa, Armour and Boh's (2010) study, a framework of coordination was developed in which they propose the *mechanistic* (based on programming and planning), and *organic* coordination (based on feedback and mutual adjustment) from earlier work (March & Simon, 1958; Thompson, 1967; Van De Ven & Delbecq, 1976). Moreover, they added a third coordination dimension which they named *cognitive (or implicit) coordination*. The cognitive mechanisms are called implicit because they are available to the team in the form of shared cognition. Hence, teams coordinate their actions without consciously trying to coordinate. This form of coordination can be accomplished through knowledge sharing, so that peers know about each other's tasks which in turn give them an overall competence that help them coordinate unconsciously. Various mechanisms can cause cognitive (or implicit) coordination, as there is an interplay between mechanistic and organic coordination, and the cognitive. The peer review (Hamel, 2011) and peer coaching used at the SMO Morningstar (Laloux, 2014) could be an example of a *routine* (Okhuysen & Bechky, 2009) that help peers develop knowledge about each other, which in turn can result in (implicit) *cognitive coordination*. Cognitive coordination is further viewed as a key enhancer of mechanistic and organic coordination (Okhuysen & Bechky, 2009).

Chang et al. (2017) provided a multidimensional scale for measuring team coordination. The authors put together and developed the model of *cognitive, implicit* coordination by Espinosa et. al (2010) and the five mechanisms by Okhuysen and Bechky (2009). Chang et al., (2017) stated that *explicit* coordination behavior as an opposite to the *implicit*, needs support from acknowledged resources (e.g. managers/ superiors). This coordination is obtained through planning and, objective establishment and the relationship formation between roles. To the contrary, *implicit* coordination is performed through voluntary behavior where team members synchronize activities with peers without verbal communication, but by assuming other team members' working habits. As the authors merged the previously explained models, they categorized Okhuysen and Bechkys (2009) coordination mechanisms *plans and rules, objects and representations* and *roles*, as *explicit* coordination mechanisms, while *routines* and *proximity* as *implicit* coordination mechanisms. Some authors further associate coordination

with transparency (Dabbish, et al., 2014) and it seem reasonable to assume that it plays a part in the implicit coordination that do not use verbal communication. Visibility in further connected to this discussion and enhance coordination because it enables easy updating on task progress (Metiu, 2006).

Possible Impersonal Mechanisms

Further mechanisms for coordinating manager free work could also be the market which is an impersonal mechanism which can facilitate coordination and have characteristically been infused in team-based organizations (Zenger, 2002). Work is here coordinated dynamically through autonomous individual action (Lee & Edmondson, 2017). The reason why this happens is because markets encourage employees to focus on outputs as outputs are rewarded through the payment of prices (Zenger, 2002). Here, high team-output performance is greatly rewarded and the output value is estimated by its market-worth. Naturally, rewards connected to performance leave workers with incentives to coordinate their work to perform well, while the 'how' of performance is less important. Coming down to Self-Managing Organizations, the use of team-like structures are profound (Bernstein, et al., 2016 b), and it has been demonstrated in examples like Valve that successful team-projects have been systematically rewarded (Foss & Dobrajaska, 2015; Puranam & Håkonsson, 2015), which indicates an infusion of the market mechanism that may be present even in other SMOs.

Trust is an additional impersonal mechanism facilitating coordination which have been acknowledged in economic and sociological theory. Trust have proven to be effective for the coordination of knowledge intensive activities, both within and between organizations (Adler, 2001). Trust and social bonds creates good conditions for exchange of knowledge and thereby contribute to a coordinated state (Adler, 2001).

Given the role that information technologies have played in enabling coordination across distances (Sole & Edmondson, 2002), it may as well enhance coordination at scale in Self-Managing Organizations. IT have been used in various ways to support coordination. Even SMOs have given examples of the utilization of information technology to monitor and coordinate action. At the SMO GittHub, a sophisticated set of online chat rooms and chat bots was used to helped coordinate activity (Burton, et al., 2017). Furthermore, IT often provides the means for creating common understanding between people across different locations. This is done through electronic communication channels that provide cross-visibility of actions and

visualization of joint tasks (Zammuto, et al., 2007). There have also been examples in post-bureaucratic organizations where IT-systems have been used to automate, and lower the cost of communication (Steiber & Alänge, 2016).

Coordination as a Problem of Organizing

Puranam, et al. (2014a) described two universal problems of any work based organizing. They claim that all forms of work based organizations need to solve the problems about *division of labor* and the *integration of effort* (Mintzberg, 1980; Puranam, et al., 2014a). Puranam et al., (2014) further divide the *division of labor* into two subcategories, *task division*, *task allocation* which are problems traditionally solved by a manager, although SMOs and other contemporary organizing forms may take on a different approach. Furthermore, Puranam, et al., (2014) divide the *integration of effort* problem into the sub categories *reward provision*, and *information provision*, that requires the resolution of both cooperation and coordination problems. The way in which organizations solve these problems can vary considerably which is clear in the comparison of traditional hierarchies and Self-Managing Organizations. In addition, the problems are interdependent, hence, the way in which one of the problems are solved further affect the solvation of the others. Consequently, if employees have free work allocation, meaning they can choose what projects to work on (as in some SMOs), that will also set new requirements for the solvation of the information provision problem. Finally, Puranam, et al., (2014) compared post-bureaucratic and more traditional organizations' ways to solve the universal problems, and found (among other things) that information transfer in organizations similar to SMOs is mainly facilitated by IT and performed through virtual support functions and tools.

2.1.4.2 Coordination in Agile Software Companies with Multi Team Systems

Agile software companies share traits to SMOs, they operate in similar contexts, they often use multi team structures, and teams consists of more or less autonomous experts. Multi Team Systems (MTS) consists of two or more teams that interface interdependently towards the accomplishment of collective goals. MTSs are larger than one team but smaller than the organization. Because MTS share traits to SMOs their ways to coordinate may share characteristics with SMOs. Moreover, MTS research is more concerned with cross-team coordination than research presented in previous section and is thus of value for the cross-team perspective which is included in this study.

In a case study, Moe et al. (2014) investigated how the introduction of a new role, responsible of firm technology supported the knowledge networks between teams. Furthermore, this role was found to be central for cross team coordination by acting as a boundary spanner between teams. Some SMOs utilize roles with certain responsibilities although they tend to be careful with titles. Leaders as catalysts for coordination perhaps should not be underestimated in SMOs even though scratching the surface might be needed to find them. Likewise, Asencio et al. (2012) emphasize the importance of leadership to create coordination. Furthermore, they propose multi team charters to develop efficient communication networks across teams, and as means for creating leadership structures. Charters would be placed in the *routine* mechanism for coordination (Okhuysen & Bechky, 2009), and it is probably no coincidence that such charters or formal principles for actions, are one of the criteria for the SMO definition provided by Lee and Edmondson (2017). Asencio et al. (2012) finally suggested that communication, norms and boundary spanners across teams are important to multi team system collaboration. While Asencio et al. (2012) focus mostly on cross team issues, Scheerer et al. (2014) concentrate on different conceptual coordination strategy types for inter-team coordination in large-scale agile product development settings. Scheerer et al. (2014) use the coordination framework of *mechanistic*, *organic* and *cognitive* coordination provided by Espinosa et al. (2010) wherein the types for inter team coordination is determined by the existing amount of mechanistic, organic and cognitive coordination in the teams.

Summarizing the Implications for Coordination Literature

As mentioned in the beginning of section 2.1.4, the literature has either focused on team-based or organizational coordination. Consequently, there are concepts and stated mechanisms in post-bureaucratic organizations and there are concepts which help interpreting the general coordination in organizations. In this study, the two perspectives are merged, using the contemporary, (suspected) mechanisms found above to guide the investigation, and the proven conceptualizations from the organizational level research to interpret the *configurations* of identified mechanisms.

Contemporary research by Chang, et al. (2017), Espinosa et al. (2010) and Okhuysen & Bechky (2009), suggests that post-bureaucratic organizations have higher emphasis on organic and cognitive coordination, which is probably also true for SMOs. Thus, these played a key role guiding this investigation. However, in these studies, the research objects still had managerial authority to rely upon whenever needed. An interesting issue in this investigation is how the

gaps of the mechanistic mechanisms which depend on managers, are being filled by SMOs that do not have managers. It could be that SMOs increasingly utilize mechanistic mechanisms that are not reliant upon managers, such as procedure manuals or routines to be constructed by the CEO or even the employees themselves. Or, it could be that SMOs compensate and bridge the gap through completely different mechanisms. To interpret the meaning of identified mechanisms in this study, the mechanism *configurations* will be analyzed using the more proven conceptualizations as stated above. The *types* (mechanistic, organic and cognitive/implicit), and the *modes*: (impersonal, personal and group) together with the *integrating conditions* (accountability, predictability and common understanding) will together represent the overall *configuration* of the found mechanisms.

To understand identified mechanisms even better, it may also be helpful to view coordination in the light of the other three universal problems of organizing as all four solutions affect each other (Puranam, et al., 2014a). It is evident that SMOs have taken the solutions to the problems of *task division*, *task allocation* and *reward provision* a step further than other post-bureaucratic organizations (as some SMOs utilize free task division and task allocation). Hence, the premises for *information provision* and coordination have certainly changed as well, which could have led to an altered coordination configuration in SMOs. This may help us to understand SMOs (possibly) new ways to coordinate, and will be considered in the subsequent analysis. The solutions to the problems of organizing as well as other contingencies - as important *settings* affecting coordination, will be discussed more in the following section.

2.2 Contingency Theory

An obvious precondition to achieve a coordinated state, is that information-processing needs of work-units in organizations, match the information-processing capabilities inherent in the structure (Gupta, et al., 1994). The diverse range of previous research about coordination have stressed the necessity to include the context into any perspective regarding the subject (Okhuysen & Bechky, 2009). The contingency theory suggests that successful organizations adopt structures that are an appropriate response to a number of variables, or contingencies, hence, the effectiveness of a given structure or strategy is dependent on the presence or absence of other factors. A common appreciation among advocates of the theory is that differences found in organizations' structures, largely attributes the level of uncertainty and complexity in their surroundings. Organizations that utilize mechanic structures such as bureaucracies with

many departments and centralized authority would be found in stable and predictable conditions, while organic organizations with few rules and high decentralization would be found in environments involving innovation, characterized by uncertainty and change. (Marsden, et al., 1994). What is right and what is wrong in terms of structure, can only be defined relative to the circumstances (Burns & Stalker, 1994). Contingencies influence both the needs of organizations and how they work (Burns & Stalker, 1994; Lawrence & Lorsch, 1967a).

2.2.1 Contingency factors

As stated in the end of section 2.1.4.2, the solutions to the universal problems of organizing are highly interlinked. Of the four problems, information provision is the one closest connected to coordination. The two concepts overlap and are sometimes even used synonymously (Puranam, et al., 2014a). The ways in which organizations provide information to its' members and obtain coordination will therefore be affected by the solutions of *task division*, *task allocation* and *reward provision*, why they will be considered contingencies for coordination in this thesis and part of the organizational *settings* which will be investigated in the cases.

Size is a long recognized contingency of coordination (Mintzberg, 1980; Van De Ven & Delbecq, 1976), and there are several reasons for that. First, smaller organizations are easier to survey. Through co-presence, organization members see what others working on a task are doing, this way they get immediate evidence of the progress of the work and can adjust their own work accordingly. That kind of visibility is harder to reach in larger organizations (Metiu, 2006). The question of proximity is also the reason why *the number of locations* is a considered contingency in this study, several locations means lower proximity and thus increased coordination requirements. Secondly, as size increases, so do the number of people and opinions, which higher the risk of ambiguities and conflicts. Even other coordination defaults may occur as size increase in SMOs such as slow consensus-building or duplication of work (Puranam & Håkonsson, 2015). As a response to the lack of proximity, unanimity or conflict, people may attempt to make the work visible by communicating the status of the work through other means, utilizing new mechanisms for coordination (Metiu, 2006). Thirdly as size increase, *product or service complexity* may increase as well (Burton, et al., 2017). The product or service complexity is also a contingency affecting coordination principles by itself. High product or service complexity require more coordinated action in general (Burton, et al., 2017). Van De Ven and Delbreccq (1976) highlighted the influence of *task interdependence* as a contingency for coordination. They even presented three types of task interdependence described in section

2.1.1.1, as determinants for what coordination mechanisms to use, suggesting coordination by standardization, planning or mutual adjustment, depending on the level of task interdependence. Finally, Lawrence and Lorsch (1967b) as well as Van De Ven and Delbecq (1976) referred to the degree of *task uncertainty* as an important factor in business context. Task uncertainty could be linked to issues like competition, product evolution, reliance on material availability and predictability of customer demands. Low task uncertainty would theoretically allow more structured or bureaucratic coordination, while work units facing high task uncertainty tend to use more loose and collegial coordination to be adaptable (ibid.).

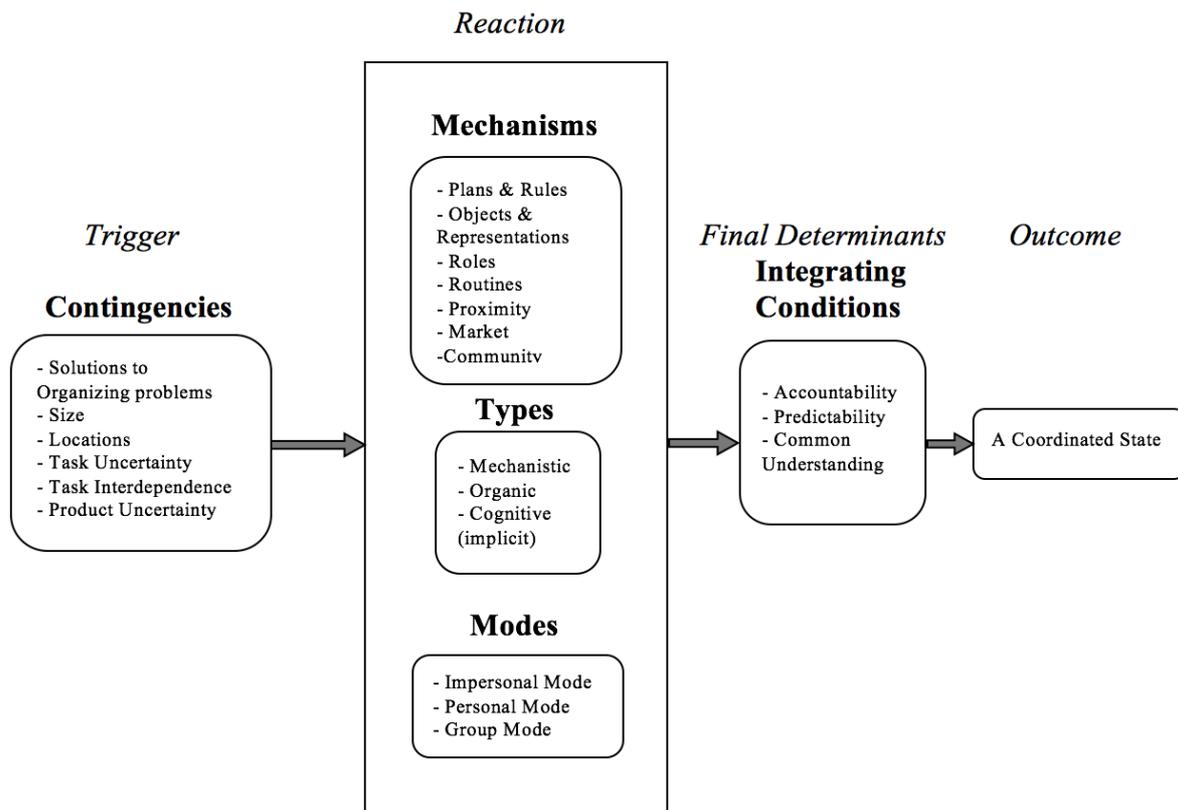
The contingencies in italics are those who are believed to influence the mechanism configuration the most, hence, they are considered the most influential contextual factors. They will therefore be considered further on in the data collection of the study.

2.3 Theoretical Synthesis for Operationalization

To the best of the author's knowledge, there were no previous work exploring the coordination mechanisms of SMOs. Hence, no complete archetype to help operationalize the aim could be extracted from previous research. Neither did any research found for this thesis explore the overall coordination mechanisms in a new organizing form, where a highly important coordination function, - the manager, had been removed. Consequently, a customized synthesis had to be constructed to help fulfilling the specific purpose of this thesis.

Combining different theoretical ideas and concepts which were proven viable in nearby fields, the synthesis both represents the author's interpretation of the coordination process, and, the theoretical tools used to operationalize the aim of this thesis.

Figure 2:1 Integrating the Coordination Concepts: A Synthesis for Operationalization



The figure illustrates the mutual arrangements between key concepts from previous coordination literature and illustrates how the coordination process is interpreted in this thesis. The presented concepts guided the data collection, as well as the interpretation of data in later stages of the investigation. Source: own elaboration of concepts by: Espinosa et al. (2010), Okhuysen and Bechky (2009), Puranam et al. (2014a), Thompson (1967), Van De Ven and Delbecq (1976) and Zenger (2002)

How do the Concepts in Figure 2:1 Relate to One Another?

As explained previously, a precondition to achieve a coordinated state is that information-processing needs in organizations, match the information-processing capabilities inherent in the structure (Gupta, et al., 1994). Consequently, the capabilities embodied in organizational structures, must adapt to enable the required coordination. The first arrow from the left in Figure 2.1 illustrates the *triggering* effects that contingencies and the solutions to the organizing problems have on the way in which coordination is performed. The mechanisms (Okhuysen & Bechky, 2009), types (Espinosa, et al., 2010; Van De Ven & Delbecq, 1976) and modes (Van De Ven & Delbecq, 1976) in the next section of the figure, represents different concepts for describing the organizational *reaction*, - the coordination response to these triggers. The reaction is the *mechanisms* used to obtain coordination (Okhuysen & Bechky, 2009). The Coordination *types* could be viewed as a scale that describes the overall character of coordination mechanisms, and is directly connected to the organizational structure, either

predominantly mechanistic - as in bureaucracies, or organic, as often in post-bureaucratic organizations. Both extremes however can be facilitated by the implicit cognitive coordination.

The impersonal, personal and group *modes* (Van De Ven & Delbecq, 1976), says more about who is coordinating or where the initiative is coming from in the organizations (Van De Ven & Delbecq, 1976). In organizations with no managers, the impersonal modes of coordination (rules, plans or other sorts of programming) cannot possibly come from a manager, although it could be pre-programmed by the CEO or the workers. The maintenance of impersonal modes will be given special attention in the empirical investigation.

Whatever the composition of mechanisms, coordination types, or modes may be, they will not create a satisfying coordinated state, unless they manage to create accountability and predictability in the organizational operations, together with common understanding amongst the workforce (Okhuysen & Bechky, 2009). This is what coordination mechanisms are aimed to do. The *integrating conditions* are the *final determinants* of the coordinated state, as presented in the square second to the far right in in Figure 2.1. If they succeed, a coordinated state is obtained, if not, the organization must change its structure and its ways to coordinate.

How do the Concepts in Figure 2:1 Facilitate the Operationalization of the Aim?

The solutions to the organizing problems and the contingencies were partly used as criteria in the sampling process and guided the data collection process regarding the organizational *settings*, as the settings of the cases needed to be understood in order to understand the *corresponding* coordination *mechanisms*. The most important theoretical tool to guide the data collection however, was the mechanisms illustrated in the figure 2.1, but even the integration conditions of these mechanisms, as well as the mechanism types and modes were helpful in this stage. However, the major contribution of the coordination types, modes and integrating conditions occurred when using them as tools to interpret the overall *configuration* of each identified coordination mechanism.

The literature regarding SMOs, the literature about coordination in post-bureaucratic organizations and the theory of spontaneous order, which was not a part of figure 2:1, was instead used to help interpreting the findings presented in the analytical chapter.

3 Methodology

The following chapter motivates and explains the procedures used to conduct this study. The chapter begins with a statement of the research design, containing the instrumental development, data collection approach and the sampling approach. The section thereafter presents the procedures associated with the collection of data, followed by the used analytical tools and lastly, the validity, reliability and ethical considerations regarding the investigation

3.1 Research Design

3.1.1 Instrumental Development

The research conducted in this thesis was structured along two stages. The first could be referred to as the instrumental development process which was developed through the content of the theoretical chapter. The second stage consisted of a multiple case study and all its related parts. The first stage started out in a literature review, divided into five sections. The first section constituted a historical conceptualization of coordination and outlined notions within the field that would be used further on. In the second section, an up-to-date review of SMO literature in different forms (whether called boss-less, Teal or Holacracy) was presented as well as the common definition of SMOs that united them. Third, a review of coordination in organizations similar to SMOs was presented to get an idea about the properties of contemporary coordination mechanisms, as well as to develop the conceptual knowledge that guided the investigation. Fourth, the contingency theory and all its relevant components were presented. Finally, a synthesis was developed and used as a frame when exploring the coordination mechanisms of SMOs. Some contingencies were used as criteria in the sampling process. The mechanisms by Okhuysen and Bechky, (2009) and Zenger (2002), as well as contingencies were used as structuring-tools in the interview guide when searching for content in the data collection process. Furthermore, the mechanisms were used in the initial stage of structuring of empirics. The types, modes as well as the integrating conditions were mainly used as tools to understand the mechanism configurations in the subsequent analysis of each case.

3.1.2 Data Collection Approach

Research within the anthropological research tradition and social science, provide many optional designs to conduct research, including experimental design, longitudinal design, case study design and comparative design (Bhattacharjee, 2012). However, not all designs would suit all kinds of scientific research, instead the research method and overall design must be

chosen carefully with particular regards to two things, (1) asking the right question and picking the best suited method to answer that particular question, and (2) choosing a method based on the state of knowledge-development in the chosen research area (Edmondson & Mcmanus, 2007). As stated in the theoretical chapter, the first definition of the Self-Managing Organization was developed just recently by the same authors who suggested further investigations of the coordination mechanisms of SMOs (Lee & Edmondson, 2017). Organizations classified as Holacracies or Teal which also go under the category of SMOs, have not been investigated with specific regards to coordination either. Conclusively, the prior knowledge about coordination in SMOs should be considered very nascent. Consequently, the investigation gained an explorative character posing questions of *how*, reflecting the scarcity of the field. However, it was assumed that coordination mechanisms would be found in the cases at all as the knowledge development about organization theory and coordination constitute a mature research field, aware of all organizations' need to utilize coordination mechanisms being universal to organizing (Puranam, et al., 2014a).

A multiple case study design was chosen to examine the aim. The case study design was inevitable to investigate properties of Self-Managing organizations since that ultimately required looking in to at least one SMO case. Moreover, coordination mechanisms in any organization are highly affected by the organizational setting (Okhuysen & Bechky, 2009), hence a holistic case approach was required. Bhattacharjee (2012) and Yin (2012) emphasized that the case research method is particularly appropriate when investigating unexplored questions of *how*, as in this case. Moreover, when combined with a profound qualitative strategy and complemented by source triangulation, the case study design is better suited than any other method to provide rich, contextualized and authentic interpretation of complex phenomenon, that may not be known in advance (Bhattacharjee, 2012; Yin, 2014). Investigating *multiple* cases helped developing a more nuanced interpretation of coordination mechanisms in SMOs than a single case would allow. Moreover, investigating and comparing the results of several cases, enabled the discovery of common trends in the utilized mechanisms throughout the cases. In turn, this resulted in a slightly increased generalizability of the findings, as well as a deeper and broader understanding of the nature of coordination mechanisms in various SMO-settings.

3.1.2.1 Research Strategy

Regarding the research strategy, there are two general orientations to choose from, the qualitative and the quantitative. The former was a natural choice for this study since management research within nascent states of prior knowledge are preferably conducted through qualitative approaches (Edmondson & Mcmanus, 2007). This is because qualitative strategies enable answering unexplored research questions through rich, descriptive and explanatory responses (Geertz, 1973; Hussey, et al., 1997). A quantitative approach would usually only provide narrow and thin analysis about small phenomenon, where questions needs to be asked with high precision (Geertz, 1973). This would be quite inappropriate for phenomenon without strong theoretical support (Starrin & Svensson, 1994). The quantitative strategy may have the benefit of generalizable results (Geertz, 1973), however the phenomenon of coordination in SMOs is at a too nascent stage of theorization (Lee & Edmondson, 2017) and with such preconditions, generalizable results are rarely expected anyway (Edmondson & Mcmanus, 2007).

Inductive or Deductive Approach?

The qualitative strategy is often associated with the inductive approach and interpretive designs, where self-collected data is point of departure for the development of theory, or where new hypothesis about reality can be created (Bhattacharjee, 2012). The deductive approach on the other hand is based on existing theories, and tests them against reality (Boolsen, 2007). In the case of this thesis, there were no previous examples to follow in operationalizing the aim and explore the coordination mechanisms of SMOs. Therefore, a purely deductive approach that would merely test the existing theory, was not possible. However, plenty of research about the coordination of work in related organizational forms was available and enabled an alternately deductive approach in this study. The themes found in the previous literature was used preliminary for guidance in the initial stage of data-collection as described, and at a later stage in the interpretation of data. In addition, the data collection process embraced inductive elements in being exploratory which for instance was reflected in the interviews that were semi-structured with predominantly open questions. In sum, a combination of a deductive and an inductive approach, sometimes referred to as analytical induction were used, because it allowed weaving back and forth between data and theory (Boolsen, 2007).

In case study research as well as research in nascent fields generally, researchers should preferably triangulate or validate data by collecting it from multiple sources (Bhattacharjee,

2012; Edmondson & Mcmanus, 2007). This way, data conducted through interviews can either be supplemented, or corroborated by other means (Bhattacharjee, 2012). Following Kellogg et al. (2006) as well as the common suggestions for case studies, as well as other management studies without strong theoretical base (Edmondson & Mcmanus, 2007), the data collection was extended to further include reviews of complementary documents such as internal documents, archival data, news articles and websites.

Table 3:1 Research Design Structured in Two Phases: A Summary

Instrumental Development	Multiple Case Study
<ul style="list-style-type: none"> • Review of coordination literature 	<ul style="list-style-type: none"> • Finding SMOs through keyword search approach & review of news articles
<ul style="list-style-type: none"> • Review of SMO literature 	<ul style="list-style-type: none"> • Pre-Study 1: Ensuring case compliance with SMO criteria followed by final Sampling
<ul style="list-style-type: none"> • Review of literature in neighboring fields 	<ul style="list-style-type: none"> • Pre-Study 2: Testing interview guide
<ul style="list-style-type: none"> • Construction of theoretical synthesis 	<ul style="list-style-type: none"> • Data collection: Interviews, internal documents, archival data, news articles & websites

The table summarizes the research design used for this study structured in its two phases. The execution of the second phase, presented to the right will be explained in the upcoming sections in this chapter. Source: own elaboration

3.1.3 Sampling Process

The sampling was undertaken in a qualitative non-probability manner. A purposive sampling strategy was chosen as the technique is based on choosing a sample that support a specific purpose, in this case, exploring coordination mechanisms in SMOs, rather than seeking a sample with representativeness for a broader population as in quantitative studies (Teddlie & Yu, 2007). Such attempts would have a bad fit to the nascent stage of knowledge development within the field. Qualitative studies usually employ purposive samples strategies as the aim is to find a small number of research objects that is particularly suitable for answering the research question through narrative data (Onwuegbuzie & Collins, 2007; Teddlie & Yu, 2007).

As this study looked to investigate organizations with a radically decentralized authority, which is a rather uncommon phenomenon (Laloux, 2015), the investigation had to deal with low sample size and subsequent fraught comparisons. To handle these issues and yet extract the best possible purposive sample, a combination of three purposive techniques was undertaken. The first was a *Chain sampling* technique (Teddlie & Yu, 2007) which was undertaken when finding the sample frame of the unusual research objects, SMOs. The second technique was sampling

of *Special or unique cases* (Teddlie & Yu, 2007; Yin, 2014), where the compliance with the SMO definition was the most obvious criterion. Lastly a technique called *Theoretical sampling* was undertaken, where potential cases were evaluated based on their theoretical relevance for the study (Teddlie & Yu, 2007). The practical implementation of these techniques is described in the following section.

3.1.3.1 Case Selection Process

Finding SMOs as cases for an empirical study was a challenge in itself. Self-Managing Organizations do not belong to the commonalities, why suitable and available organizations were hard to find. According to the author’s knowledge and efforts to find sources for the case selection, no database or similar would include this organizational categorization and provide a sampling frame for the study. However, it was known to the author that previously acknowledged SMOs had the tendency to draw attention (Birkinshaw, 2015) so chances were that they had been written about before. Consequently, the search began via random selection of keywords typed at google’s search engine. The keywords, ‘*chefslös organisation*’, ‘*självstyrda organisationer*’, ‘*holakrati*’, ‘*autonoma företag*’, ‘*inga chefer*’, ‘*företag utan chefer*’ ‘*utan hierarki*’, ‘*Teal organisationer*’ and ‘*självstyrande team*’ were used. Most SMOs were, as expected, detected in various news articles. The search process continued by looking further into previous theses with similar teams which occasionally confirmed the suspected Self-Management of already found cases. Lastly, community networks such as the Teal for Teal Network (Teal for Teal Sverige, 2018) would provide some last suggestions of SMOs.

Table 3:2 Sample Frame of Suspected SMOs & the Number of Employees

0-25	26-50	51-100	101-200	200+
- Apelöga AB (8)	- Crisp (40)	- Meridium AB (65)	- Centiro Solutions AB (127+)	- Centigo AB (250+)
- Capture Innovation AB (11)		- Björn Lundén Information AB (85+)	- Qamcom Research & Technology AB (129)	- Netlight Consulting AB (800)
- Hotel Freys AB (15)				
- Delsbo Candle AB (25)				

The found SMO-cases and their size in number of employees. Source: own elaboration

As stated in the theoretical framework, SMOs should theoretically be harder to coordinate as they grow larger, hence, Hamel and Zanini (2016, p. 3) stated, that there is a reason why 'bureaucracy is the managerial operating system of virtually every medium - and large-scale organization on the planet.' Most small start-ups utilize a Self-Managing approach but normally become more centralized as they grow (Puranam, et al., 2014a). Hence, Self-Managing Organizations consisting of for instance 10 members are neither unique, nor interesting from a coordination point of view. Consequently, size was an important theory-based criterion of the sample of this thesis. Out of the found organizations, the six largest in Table 3.2 were contacted and went through pre-study 1 which aimed at ensuring the organizations' cohesion with the chosen SMO criteria: (1) radical decentralization of authority, with (2) some formal system for decentralization, and (3) an organization-wide decentralization (Lee & Edmondson, 2017). Out of the six largest organizations, four had a satisfactory coherence with the SMO criteria, namely Meridium AB, Netlight Consulting AB, Centigo AB and Qamcom Research & Technology AB. Björn Lundén Information AB on the other hand recently implemented department managers, and explained that they were no longer Self-Managing. The consulted staff at Centiro Solutions AB also reported aspects of their approach to Self-Management that deviated a little too much from the chosen criteria. Lastly, Netlight Consulting AB rejected participation in the study.

Ideally, large SMOs, with high task interdependency and product complexity would have been preferable because such contingencies place particularly high demands on the coordination efforts in organizations (Burton, et al., 2017). In addition, organizations within the same industry with similar goals would have increased comparability. However, all desirable conditions to create a sample with optimal fit were not assessable due to the unusualness of SMOs (Laloux, 2015). Moreover, SMOs are commonly heterogenic, both in their organizational characteristics and their approach to Self-Management (Lee & Edmondson, 2017) making sampling harder. Even Lee & Edmondson's comparison of the decentralized authority of Zappos, Morningstar and Valve's, revealed three very different SMOs. However, the cases chosen for this study, Meridium, Centigo and Qamcom which can be learned more about in chapter four, constituted three out of the four largest SMOs found. All cases had *reciprocal* task interdependence within joint projects, which is strongest form of interdependence. The product complexity was estimated to be medium to high (which will be explained in the case descriptions in chapter four). All firms included consultancy activity to some extent, cases were comparable in terms of age and they had a stable annual growth,

indicating functioning organizations. In summary, the cases were the best available to answer the research questions.

3.1.3.2 Respondent Sampling

A purposive sampling strategy was undertaken even in the sampling of participating interviewees, but this time mixing *expert sampling* (Bhattacharjee, 2012) with a *stratified sampling* technique (Robinson, 2014). Expert sampling is a purposive-manner technique where respondents are chosen based on their expertise on the phenomenon being studied (Bhattacharjee, 2012). The stratification selected for this study was made from two self-created variables related to expertise: Holistic Organizational Expertise and Operative Experience, representing two very important angles of expertise in SMOs. Holistic Organizational Expertise represented the angle of founders, and in these cases the architects of the organizations. Operative Experience represented knowledgeable and established persons from the operational team work. As SMOs have flat structures, these two viewpoints are the main angles represented. One participant from each stratum was purposely included from each organization, adding up to six participants totally. Every individual in the sample furthermore had previous experience from working in hierarchical organizations which contributed to their ability to identify contrasts in the hierarchic verses the Self-Managing way of obtaining coordination.

3.1.3.3 Participants from Centigo AB

Interviewee 1. As Centigo had no CEO, one of the most influential founders and architects of Centigo's organization was chosen. Interviewee 1 had worked at Centigo since 2002 and was also an associate of the company as well as one of the member of the board in the corporate group in which Centigo AB was a subsidiary. The participant had a long previous working experience and a very important role in the continuous development of Centigo's organization.

Interviewee 2 had been active in Centigo's team-work for four years. Before Centigo, the participant had long working experience with in the same industry in organizations with very hierarchic structure. The participant held particular insights to coordination both within and between teams, due to the person's multiple boundary-spanning roles (coach, consultant, coordinator) within the firm.

3.1.3.4 Participants from Qamcom Research & Technology AB

Interviewee 3 became the CEO of Qamcom in 2010 when the organization was moved from one company to another within the same corporate group. The participant had a key role as the main architect for the way in which Qamcom had been organized up until the time for the interviews. Hence, interviewee 3 was the best expert available to provide information about the topic of this study and had plenty of experience from working in hierarchic setups previously.

Interviewee 4 had worked as a software developer and a consultant at Qamcom the last three years within various team-set ups. The participant was active in a larger commercial team-project at the time for the interview. Interviewee 4 had been active within the same industry but in hierarchical settings, during the last twenty years before Qamcom, and held valuable knowledge of the contrasting working methods.

3.1.3.5 Participants from Meridium AB

Interviewee 5 held the position of the Managing Director (MD) at Meridium. The respondent had been active in the company since the founding in 2002 and had an important role in the incremental transformation of the company in to a SMO. The MD role of Interviewee 5 was not performed in a traditional manner. Instead the interviewee worked with a few HR-issues, customer relations and coached the employees.

Interviewee 6 had been working in the organization since 2005 and held extensive knowledge about work within and cross teams. The participant had been operating, mainly as a developer in one of the teams for the last four years, and in a different team-constellation before that time. The participant was also a partner in the company. Interviewee 6, like many employees, had participated actively in several changes in the firm's way to organize connected to coordination.

3.2 Data Collection

3.2.1 Pre-Study 1: Ensuring SMO Criteria

As Self-Managing Organizations constitute the central objects of this study, the main criteria in the sampling was that all cases qualified as Self-Managing Organizations, according to the definition by Lee and Edmondson (2017). To test cases consistency with this definition, a short survey was sent to the enterprises' Managing Directors (MDs), or other well established persons involved in the structural development of the organization. The questionnaire contained three

questions regarding the definition, where respondents were asked to describe the way in which their organization would, or would not relate to these criteria. The responding e-mails had satisfactorily developed answers comprising approximately 2-500 words. In one of the cases, questions were asked over the telephone instead, and were later transcribed. Two organizations, Centiro AB and Björn Lundén AB, had to be turned down due to unsatisfactory fulfillment of Self-Management criteria. Moreover, the answers revealed interesting information about the individual Self-Management approaches to the firms as well as hints about their coordination. Consequently, this information was used to slightly adapt the interview guide to each individual case.

Before interviews were conducted, participants received information about the study by e-mail which contained information about the purpose of the interview, its length, how the data would be used as well as an offer to review the data for possible corrections prior to publication, in line with the recommendations regarding qualitative interviews suggested by Hermanns (2004). In addition, information about the interview agenda and its various parts was explained in the information letter to prepare the participants about what information would be relevant to discuss as well as the kind of answers that would be looked for. In a few cases where interviews were decided at short notice, the information described initially in this section, were instead given to the participant in the beginning of the interview.

3.2.2 Interview Guide

The primary data of the thesis was collected through deep, semi-structured interviews which generated the main empirical material. The use of semi structure in the interview questions enabled the collection of in depth-data since improvised follow-up questions would be formulated based on the continuously gained information from the interviewees. This was helpful as the cases were heterogeneous in some respects, hence this required some ongoing adaptability of the interview questions. In this way, the semi-structure also supported the explorative character of the study.

3.2.2.1 Construction of Interview Guide

An important part in the operationalization of the aim of this thesis was designing the interview guide in a way that would ensure that all relevant data would be collected. The composition of the interview questions was mainly based on the first two steps in the theoretical synthesis,

Figure 2:1 from the theoretical chapter. The first step regarded the *triggering* effects of contingencies, the solutions to the universal problems of organizing and the decentralized structure which relates to the organizational *settings*, as written in the aim. The second step in Figure 2:1 referred to the organizational *reaction* to these settings, namely the various coordination mechanisms suggested in the literature that also had a part in guiding the data collection.

Altogether, the interview guide (Table 8.1 in the Appendices), consisted of eight different sections. The first was an introduction where the interviewer presented herself, as well as a summarized version of the same information as in the preparing e-mail letter. The second section consisted of questions about the interviewees backgrounds, roles and duties at the organization to facilitate the description of the respondent sample of this study. The third section aimed at investigating the overall structures in the organization as part of their setting. If they would operate in teams or other constructs and the number of people involved in different parts, this was also a way to clarify the homogeneity/ heterogeneity of the structure. The third section also aimed at finding out the organizational goals, both of visionary and operational character. The goals were relevant to understand the organizations' starting point when dividing tasks, which is one of the universal organizing problems (Puranam, et al., 2014a)).

The aim of the fourth and fifth sections was to further investigate the organizational *settings*. The concept from the aim called 'settings' was operationalized by investigating the solutions to the universal problems of organizing, the contingency statuses and the overall SMO structure. Consequently, in section four, questions about the organizations' solution to three, out of four problems of organizing were asked (Puranam, et al., 2014a). Investigating the *task-division*, *task-allocation* and *reward-provision* of the SMOs was done as they affect the way in which organizations provide information to its' members and obtain coordination (Puranam, et al., 2014a). In section five, the contingencies known to affect coordination was also investigated. The contingencies: number of locations (Metiu, 2006), task interdependence (Van De Ven & Delbecq, 1976), task uncertainty (Lawrence & Lorsch, 1967b; Van De Ven & Delbecq, 1976) product/service complexity (Burton, et al., 2017), and the used technology (Sole & Edmondson, 2002; Zammuto, et al., 2007) which theoretically play an important part in coordination, was addressed. The information accumulated in section four was used both in describing the cases

as SMOs in the empirical chapter and as analytical tools in the analysis to understand and explain the found coordination mechanisms in each SMO.

The sixth section of the interview guide was used to explore and identify the coordination mechanisms in the organizations and thereby address the purpose main of this thesis. Okhuysen and Bechky's (2009) five coordination mechanisms, which have also previously been used by Chang et al. (2017) were used here as well. The questions about the organizations' utilization of (1) plans and rules, (2) objects and representation, (3) roles, (4) routines and (5) proximity was formulated and complemented by checking for the possible use of the market mechanism to facilitate coordination (Puranam & Håkonsson, 2015; Zenger, 2002) as well as some additional questions related to Self-Managing and use of technology. Section seven had many purposes. It was used to detect issues and strength of the organizations' coordination, as well as to address previous researchers concerns of the Self-Managing approach regarding for example the risk of duplication of work (Puranam & Håkonsson, 2015). To detect issues and strength, the Critical Incident Technique (Butterfield, et al., 2005) was used to eliminate any cognitive bias of interviewees. When applying this technique, participants were asked to retrospectively recall critical events when coordination between teams or individuals had been unsuccessful or successful, and why. By asking participants to describe particular experiences rather than their general view of sensitive issues, any cognitive bias would be reduced (Butterfield, et al., 2005).

The second and most important purpose of the seventh section was to search for additional coordination mechanisms, not addressed in previous literature. This was done by asking participants to compare the mechanisms used in hierarchic organizations (that they previously worked for) to those utilized at their SMO. One of the investigated organizations, Meridium AB were more hierarchic a few years ago. This created an opportunity to ask them about what had been removed in terms of coordination mechanisms, and what had been added instead, (see question twenty-nine). Even other questions in section seven were asked with attempts to understand how the mechanisms would substitute for the coordination mechanisms of managerial hierarchies. Finally, interviewees were asked to summarize the most important mechanisms for the SMOs in their opinion. The eighth and last section consisted of an interview closer where participants were given the opportunity to make any additional comments or to highlight any aspects of their organizations coordination that they perceived as not satisfactorily addressed.

3.2.3 Pre-Study 2

After designing the initial interview guide, a second pre-study was conducted aiming at improving the guide and to help with time management of the interviews. Due to limited resources of the chosen SMO-cases, the pre-study was performed by testing the guide on a MD from a third-party enterprise Iwaco AB, which did not utilize a Self-Managing approach. After testing the interview guide, questions were adjusted and tested once again. A couple of questions were noticed to be difficult to understand and were therefore rephrased so that their meaning and purpose were better addressed. The author acknowledged the urge to explain and define concepts like *coordination* and *task-division* to the interviewees to make sure that their interpretation was corresponding to the intended definition. Definitions were explained occasionally when related questions were being asked. Furthermore, the order of the questions was restructured to create a better flow and to avoid reduplication of content and themes. Lastly, a final section was added, aiming to find out the differences in the coordination solution in SMOs compared to hierarchical organizations in which participants had previously worked.

Furthermore, every interview was slightly adapted, both to the organizations and to interviewees. The information gained through the first pre-study when evaluating the Self-Management criteria was used to make appropriate adaptations. The three companies' answers when describing themselves gave valuable information that was used to adapt the interview guide to each specific case. After the first interview was conducted, the second one could contain additional questions which emerged when conducting the first one. Furthermore, some questions intended for the founders, were sometimes not adequate for team workers and vice versa.

3.2.4 Interviews

The deep semi-structured interviews were conducted individually and in person in meeting rooms at the companies' offices, and in some of the cases, through Skype video calls. The formal interviews lasted from 75-90 minutes in length. All interviews were recorded and transcribed. The recorded interviews lasted totally 8 hours and 41 minutes and the resulting transcriptions comprised over 60 000 words which were used in the subsequent analysis.

3.3 Source-Triangulation

To help ensure the internal validity of the analysis and its attendant claims, interview data was complemented and cross-checked with news articles press releases, internal documentations, and relevant hard data such as reports and archival records as suggested for case studies (Bhattacharjee, 2012; Yin, 2014) as well as for research within fields of nascent knowledge development (Edmondson & Mcmanus, 2007). Empirical sources other than interviews were used in different stages throughout the study.

External documents: The external documentation consisting of *news articles, websites and press releases* were collected and used iteratively from start until the end of the research process. It started already in the sampling process when searching for SMOs consistent with the used definition. External sources were furthermore used as complements in case-descriptions, they were helpful in distinguishing the status of different contingency factors, cultural traits, the organizations' unique approach to Self-Management and some of the coordination aspects. This information was used both prior to interviews to adapt the interview guide to every unique participant, and to help ensuring validity of the mechanisms found in the interviews.

Archival records: The Archival records consisted of the three latest *annual reports*, as well as *financial data* from the databases Orbis and Retraver. This data was used to describe hard facts like the financial situation, ownership and the number of employees in the three cases.

Internal documents: The Internal documents were retrieved from Meridium's MD and Qamcom's CEO. No internal documentation was retrieved from Centigo. However, compared to Meridium and Qamcom, Centigo held a lot more information available online. In addition, Centigo had participated in several previous interviews and reports which were available and used to fill this gap. Internal documentation from Meridium consisted of an *employee manual* (Meridium AB, 2018b), which contained guidelines for decision making processes, how to document and spread information, the peer coaching processes, and more. The other document was an *introductory power point presentation for newly hired employees* (Meridium AB, 2018b), containing extensive information about norms, values, cultural traits as well as employee guidelines and information directly linked to coordination in several ways. Qamcom's internal documentation consisted of three documents from their 'wiki' search-function at the company's intranet. The first document described *how decisions should be made*

by *Self-Managing employees* (Qamcom Research and Technology AB, 2018a). The second described *how to handle information* (Qamcom Research and Technology AB, 2018b), and the final and third document described their *meeting culture* and their high *emphasis on communication* (Qamcom Research and Technology AB, 2018c). The internal documentation provided the strongest evidence to validate interview data regarding the coordination mechanisms.

3.4 Analytical Tools

3.4.1 Source Triangulation: Analysis of Content

Material from triangulating sources were analyzed with the help of basic analysis of the text content (Weber, 1990). This approach is based on the interpretation of the explicit content of texts rather than focusing on its latent meanings (ibid). As described previously, the source triangulation was conducted throughout the research process, hence the analysis of text content regarding complementary sources was done iteratively during this process. The data was processed through careful reading of the texts and by extracting the content (Weber, 1990) relevant for the different stages in the research process. Once the data from the interviews had been gathered, the processing of the texts from triangular sources was solely put in relation to the content of interview data, aiming at either confirming or falsifying interview data. Interview data with clear inconsistencies was eliminated.

3.4.2 Structural Coding of Interview Data

To enhance the quality of the analysis and extract all relevant information, the transcripts were coded. In the first phase of coding, a technique called structural coding was conducted (Saldana, 2009). Structural coding is versatile in its applications but is particularly useful when employing semi-structured data gathering protocols, as well as when performing exploratory investigations that seek to structure data of major themes or categories (Saldana, 2009). Structural coding constituted the first cycle coding method and is presented in the initial empirical exposition through a narrative data presentation (Nylén, 2005) structured by the initial guiding themes. This will be presented in the next chapter. Instead of letting a grounded theory approach guide the data collection and the coding process, the themes in structural coding are set up in advance in the interview guide, which was also done in this study. Regarding themes of the mechanisms, these primarily constituted Okhuysen and Bechky's (2009) five mechanism-categories. What was later searched for was the content of those categories, or, the SMOs' alternative ways to facilitate a coordinated state. In the second phase of the first cycle of coding, themes were

restructured to better address actual patterns and subcategories found in the data of each case, which were presented in Table 5.1.1 - 5.1.3 in the analytical chapter. To do this, a self-composed analytical method was developed (presented in 5.1) which helped extracting trends in the mechanism configurations, their departure from the hierarchic solution and their perceived importance to each SMO respectively.

3.4.3 Cross-Case Analysis: A Pattern Matching Approach

Multi-site case research requires cross-case analysis as the second stage of coding, thus, the main interest of taking on multiple cases is to find consistent patterns regarding the topic of interest (Bhattacharjee, 2012). For this matter, an analytical technique called pattern matching was used (Saldana, 2009; Yin, 2012). When utilizing this technique, patterns observed from individual case studies was compared with the patterns from the others. The identified mechanism configurations were fitted with one another which created a coherent synthesis of the total data-corpus. Some of the initial guiding themes were merged together and some were removed because they deemed to be marginal. The results from the pattern matching became the second part of the analytical chapter. Pattern matching is facilitated when certain patterns are defined prior to data collection (Yin, 2014) this requirement was rectified by the well-structured interview guide with theory -based themes and questions.

3.5 Validity & Reliability

The reliability of a case study with a qualitative approach such as interviews, lies within the thoroughness of its executive description (Bhattacharjee, 2012). Therefore, information about interview questions, the documents examined, organizational positions of interviewees as well as other details regarding the execution has been described as thoroughly as possible. Reliability was also increased as the interview guide would help guide, not only the interviews, but also the collection of data from the triangulating sources.

To ensure a sufficient operational approach to measure the intended concepts and thereby increase the construct validity (Yin, 2014), a few parameters were considered. To ensure that the respondents' answers really concerned coordination as in the chosen definition, coordination was explained and defined in connection to questions that directly addressed that term. Secondly, the data collection was guided by theory, for instance, the part of the interview guide that treated coordination was divided into the different coordination elements, so that

questions could be asked about specific mechanisms, guided by theory. Third, the raw data generated from interviews (gathered in the empirical chapter) were sent back to interviewees for reviews, so that any inconsistencies could be adjusted. Finally, data was collected from multiple sources to validate key concepts in interview data.

To increase the internal validity, meaning increasing the compliance with reality in the collected data (Yin, 2014), a few other parameters were considered. First, interviews were consistently conducted from two organizational angles, enlightening the viewpoint of a founder and the viewpoint of an experienced, operative team-worker, one of each in every organization. Secondly, using Skype video calls when physical meetings were inaccessible helped interpret moods, facial expressions and voice modes (not available conducting telephone calls) which were useful in interpreting the meaning of certain statements and hence, probably decreased the impact of dishonest answers and social desirability bias (Bhattacharjee, 2012). This also helped distinguishing uncomfortable areas regarding the subject, the important areas, problematic areas as well as parts of less importance regarding the coordination mechanisms. Moreover, the two interview transcripts from the same organizations were compared with each other, as well as with the complementing sources. And lastly, pattern matching techniques were performed, which increased both internal validity and the level of generalizability (external validity).

3.6 Ethical Considerations

There are several ethical issues concerning the work of qualitative research. To be careful with sensitive information and to respect the integrity of organizations and participants, as well as considering the overall consequences of the research is necessary (Vetenskapsrådet, 2002). The following considerations were made when this study was conducted.

- All participation was voluntary.
- Participants were informed about the nature and purpose of the study as well as the duration of the participation, prior to the interview.
- Participants were also informed that the gathered information would be used for academic purposes only.
- Participants were kept anonymous but was carefully informed that their role description would be published in the thesis. The latter was done to enable the readers' own assessment of the respondents' suitability. Such descriptions could ultimately uncover participants with unique roles (CEOs/founders), which respondents were informed about. However,

anonymity was mainly intended to protect the team-working respondents from external peer-judgement and in addition, have the effect of more truthful answers.

- Each interview report (the used empirical data) was shared with the participants to gain their approval, as well as to ensure the correctness of the data.
- Finally, the organizations were informed that cases other than themselves would be participating in the study, and consequently, their approach to coordination and Self-Managing would be compared and presented in the light of others.

4 Case Descriptions

The following chapter narratively present data in the form of coherent case descriptions (Nylén, 2005). The purpose of the chapter is to stay close to the voice of the empirics and provide frequent citations, but at the same time create a meaningful foundation for the forthcoming analysis. Cases will be presented one at the time, structured to first give an overall picture of the SMO settings and thereafter the coordination mechanisms, structured by the initial guiding themes

In this chapter, the descriptions of cases are primarily based on interview data with exception for the business activity and financial data presented in the first section of each case description. Any additional references in the text that is not connected to finances, represent various triangulating sources which confirmed the interview data. Accordingly, any information presented in connection sources, was found both in interview data *and* in the specified source, doubling or tripling the angles of the same information.

4.1 Centigo AB

Centigo AB, is the largest Swedish management consultancy with a base on the Swedish market (Centigo, 2018a). The company was founded in 2002 and have since been privately owned by some of its co-workers who currently add up to 250 employees. Centigo offer business-to-business management related services to customers in a wide range of industries, from banking and finance, to construction, real estate, retail, telecom but a considerable part of customers even come from the public sector. The services provided by Centigo span over a wide range of business arias so that organizations can be helped with whatever cross-functional change they may need (Centigo, 2018b). The services include providing organizations with tailored business solutions, business development, change management, IT strategy, IT project management and sustainability. In most customer relations Centigo form a long-term business partner that last from anywhere between two months to five years.

Centigo is one of seven subsidiaries to the Business Wellness Group (BWG). Part from Centigo, the Business Wellness Group include Accigo AB, Decigo AB, Perpello, Sapigo AB, Meetrd AB, and 4FP AB. The Business Wellness Group is in turn owned by the global ultimate owner, Devote Partners AB (Orbis, 2018b). Centigo is fully owned by about 20 of its co-coworkers who hold the ultimate responsibility for the firm, however without exercising authority over

other colleagues. Since the start, Centigo's concept have proven its viability through steadily growing revenues as well as an increasing number of employees, the latest annual report revealed a turnover of just over 375 million SEK. The success has also demonstrated itself through several awards. Centigo was awarded Sweden's best employer in 2011, The Gazelle of the year in 2007, 2008, 2009 and 2010 by the newspaper Dagens Industri, and was appointed 'Superföretag' in 2008, 2009 and 2010, by the newsmagazine Veckans Affärer.

Table 4:1 Centigo's Development

Ratio	2017	2016	2015	2014	2013
Turnover	375	311	267	237	237
Mkr					
Turnover %	20,6	16,5	12,7	0	17,3
Number of Employees	218	184	175	175	173

Sources: Allabolag (2018); Centigo AB (2018)

4.1.1 The Settings at Centigo

4.1.1.1 Centigo as a Self-Managing Organization

As all organizations studied for this thesis, Centigo's approach to Self-Management is unique and involve more than the privilege and responsibility to execute tasks in a self-chosen way. At Centigo, consultants work in close cooperation with each other, but the attitude towards work seem quite similar to individuals running their own business. Individuals are responsible for their own development, for ensuring that they have interesting assignments, for selling their competence at the company's internal market and to care for their personal brands. Being free to make decisions, to start new projects or creating business opportunities for the company, is also associated with an expectation to take responsibility for the possible consequences of such actions (Dagens PS, 2011). Centigo's name for Self-Management is Collective Leadership which is based on the principles mentioned above (Dagens PS, 2011). Centigo has no bosses in a traditional sense, not even a Managing Director (MD), but the levels of responsibility do vary within the organization.

4.1.1.2 Structure

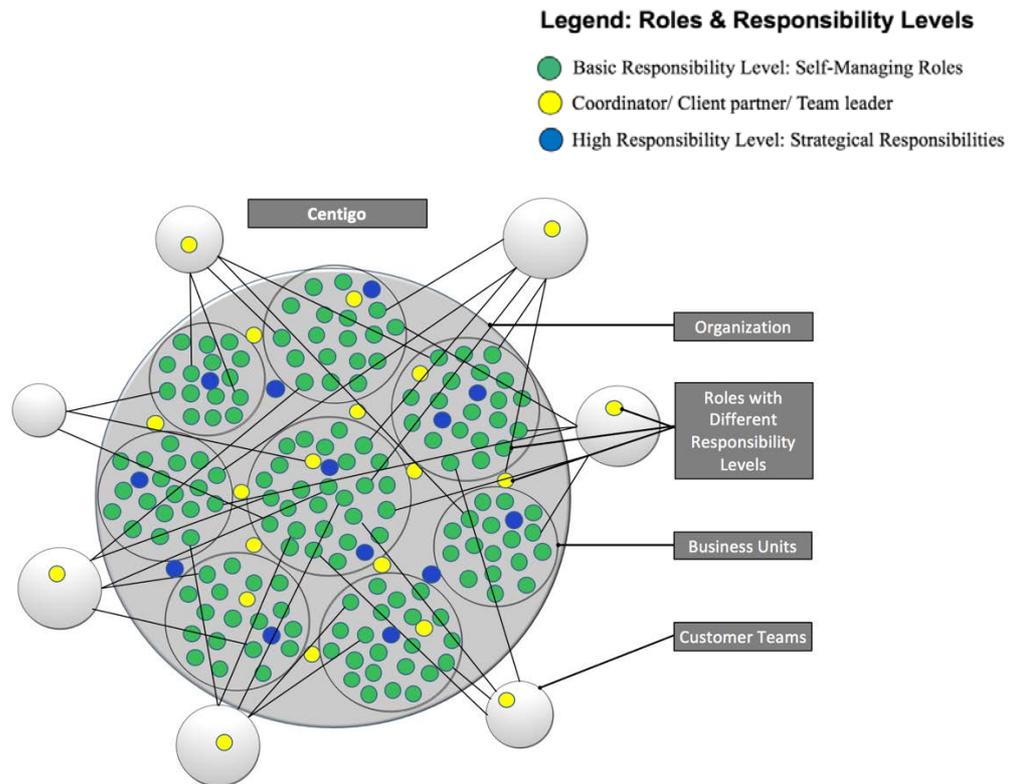
Centigo consists of eight business units which represent different areas of expertise. Each business unit hold various numbers of self-chosen teams, based on individual's area of interest. As Centigo has had a very open business idea and the individuals have been encouraged to

develop business opportunities (Kullberg, 2018), the business units have evolved, disappeared, compounded and changed organically over time, depending on the interests and ambitions of the people. The business units are not however the place where services are performed. For each new customer project, participants are asked to join in from different business units, creating temporal project-teams that match the competence mix needed for each unique customer project outside organizational boundaries.

As no compulsory directives are given to consultants at Centigo, a large coordination issue has been the risk for unintentionally ignored tasks or left out issues. Centigo have solved the issue by creating responsibilities for practically everything, there are even people responsible for the functioning of the office rooms. Creating boundaries through dividing responsibilities this way, has a part in Centigo's formal structure which is more rigid compared to the other two investigated organizations. Although individuals oftentimes have several roles and responsibilities that may shift (Kullberg, 2018), three formal responsibility levels were found. Although such layers may resemble a hierarchic structure, the relations between people in the layers are in many respects reversed. Higher levels of responsibility do not automatically imply a greater determination, instead, individuals with greater responsibility have the primary task to create the best possible conditions to generate fruitful Self-Management of others. This includes coaching, creating the right incentives and collecting information so that strategies represent the wishes of the organization. Different authority levels have been found even in acknowledged SMOs like Valve (Valve, 2012) and is not a deal breaker for Self-Management as long as work execution is free and the hierarchic reporting relationship to 'superiors' is non-existent. However, these SMO criteria turned out to be more complex than expected which revealed a gray zone in the used definition. As consultant teams operate 40 to 80 percent at the client's office during projects, oftentimes together with third party agents, the operating conditions is adapted to the customers' more hierarchical requirements. These often includes traditional reporting conditions and limitations in the work-execution.

Unexpected issues belong to the commonalities in fields with nascent knowledge development (Edmondson & Mcmanus, 2007), and despite the ambiguity regarding the SMO definition, the company was kept in the sample as it's presence were important for the overall contribution of the study.

Figure 4:1 Structure Illustration Centigo



The figure illustrates a simplified overview of Centigo’s structure. Green colored roles represent regular Self-Managing consultants, yellow colored roles are either coordinators, client partners or project leaders in the external customer projects. Finally, blue represent the highest responsibility level involving strategical responsibilities. As illustrated, customer projects are usually performed outside organizational boundaries, collecting a set of roles belonging to various business units for every project. Source: own elaboration

4.1.1.3 People & Culture at Centigo

Customers and employees are the highest valued stakeholders at Centigo where a mantra is that:

The organization is a greenhouse for people and the well-being of people is important for the well-being of the organization. (Interviewee 2).

There are strong cultural forces at Centigo. Entrepreneurial spirit is one out of three foundations of Centigo’s value base and serve as an important cultural trait supporting the Self-Managing behavior.

We often talk about what are successful behaviors here, one is to make yourself a part of the solution to problems [---]. What is not successful here is leaning back and saying ‘someone else should’. You need to roll your sleeves up and get things done! It is a huge part of the culture that you don’t sit around and wait for someone else to bring you the silver tray. [---] Centigo is not for everyone, this culture is not for everyone. (Interviewee 2)

Other cultural traits such as honesty, professionalism and responsibility is highly valued and the latter is also associated with higher wages (Johnson, 2015). Furthermore, individuals are expected to inform each other about what they are doing (Edenhall, 2011). This is a way of spreading information but is also a prerequisite for getting appreciation for work efforts in the unmonitored work that Self-Management entails.

4.1.1.4 Solution to the Universal Problems of Organizing

The first organizing problem, task division, refers to the way in which the organizational mission is decomposed into smaller tasks (Puranam, et al., 2014a). When Centigo started, there were no restrictions regarding their business idea and consultants could sell whatever services they wished. The business idea was later demarcated but have still enabled workers to develop Centigo's business incrementally though adding new business areas and thus new tasks. Consequently, the task division have evolved incrementally and collectively bottom up, through people's ambitions (Kullberg, 2018). Task allocation refers to the way in which divided tasks are provided to individuals or groups (ibid.). At an organizational level, people's allocation of tasks is also a matter of choice based on lust, ambition and competence. At the team project level, consultants could either participate in creating new projects, or choose from projects and tasks distributed to them through a coordinator. However, consultants could always decline an offer (Johnson, 2015; Kullberg, 2018).

Reward provision is the third universal organizing problem (Puranam, et al., 2014a) and is linked to motivational aspects of work. Centigo provide workers with more intrinsic rewards than what would ever be possible in hierarchical organizations. The two above mentioned solutions play a key role in this. As employees hold the organization's trust to influence the organizational direction (task division), to largely choose tasks (task allocation) and to perform these in a way preferred by the individual (Svenskt Näringsliv, 2016), the preconditions for high motivation is catered for (Thuresson, 2017). In addition, the extrinsic rewards of wages encourage individuals to be ambitious and take responsibility as wages increase with responsibility and in proportion to the billing, similar to provisional salary.

Table 4:2 Contingency Factors at Centigo

Centigo AB		
Contingency	Status	Assumed Coordination effect
Task Division	Mainly collective, sprung from peoples' interests and ambitions	
Task Allocation	Free or directed by request	
Reward Provision	Emphasis of both intrinsic & extrinsic rewards, variable salary	
Size ppl.	250	Size theoretically have a positive relationship to impersonal modes of coordination, particularly planning (Van De Ven & Delbecq, 1976)
Number of Locations	Locations are largely determined by the locations of customers	Influencing coordination types, more locations = more towards organic coordination
Task Uncertainty <i>(competition, product evolution, reliance on material availability and predictability of customer demands)</i>	Medium – High <i>Categorization: Requirements of projects exhibited lack of detail. Requirements changed from time to time</i>	High task uncertainty = Loose and collegial coordination, in order to be adaptable (Lawrence & Lorsch, 1967b; Van De Ven & Delbecq, 1976)
Task Interdependence <i>(pooled, sequential, reciprocal)</i>	Mainly Reciprocal in projects but sequential at times	Reciprocal task interdependence = Increased likeliness for mutual adjustment (Thompson, 1967)
Product Complexity <i>(Low, Medium, High)</i>	Medium <i>Categorization: An average technical and business domain knowledge was usually required</i>	The higher the product complexity, the more extended coordination efforts (Burton, et al., 2017)

The table illustrates the solution to the universal problems of organizing as well as other contingency statuses at Centigo AB. Source: own elaboration

4.1.2 Coordination at Centigo

4.1.2.1 Rules & Routines

When interviewees were asked about the restrictions of rules at Centigo, both participants started out with a long pause of silence that ended in the answers: *To have as little rules as possible, that's a rule!* (Interviewee 1) and: *Well, common sense I guess* (Interviewee 2). At Centigo, rules are mainly applied within customer projects, designed by the customer. One important rule however, is that such agreements are always being kept. Instead of plenty of rules, work is restricted by a strong value base and culture as previously described (Edenhall, 2011; Johnson, 2015). Such informal rules largely substitute for formal ones and helps achieving predictability through the effect that peers have on each other, instead of having the monitoring function performed by a boss.

To make sure everyone stay on the same track, there are a few routinized meetings. The monthly conference is one example where all employees participate. This is where culture and norms are reinforced, information is exchanged and the community is strengthened at Centigo. The common understanding about target images created here, is one aspect that contributes to

coordination. Another important routine is the monthly 20-minute coaching session that all employees are entitled (Kullberg, 2018). The coaching method used derives from the sports world and aims at helping individuals to set goals, challenge themselves and overcome personal obstacles with the help of two more experienced supporters from the same business unit (Johnson, 2015). From a coordination point of view, this routinized coaching helps facilitating individual's Self-Management and success, but it also enables the organization to influence every individual to operate in a desired direction which may have a great impact on the overall operative alignment and coordination.

At the team-level, there are some routines and procedures performed in conjunction with client projects which help create the integrating condition of predictability and thus coordination at the team level. There are formalized procedures for choosing business strategies, for conducting target analyzes, and other tasks where previous experiences help forming future procedures in projects. Centigo utilize relatively few procedures that help organize Self-Management, compared to the other two cases.

4.1.2.2 Roles

At Centigo there are consultants and business consultants (which are more experienced). In client projects, a third role emerge, the team leading role, usually required by clients. A few people work with administration and marketing. Furthermore, there are people responsible for clients and sales called Client partners, and those responsible for coordination between client partners and other consultants (Kullberg, 2018). These two roles are usually performed by the same people who occasionally work as business consultants as well as coaches within their business units. Client partners and coordinators thus get a prominent profile within their business units. Some more experienced people working at Centigo can choose to become partners, but usually have additional roles simultaneously as all Centigo's owners work at the firm. Three people in the firm engage specifically in the strategical development of operational activities. This group is called the Strategical Hub and is responsible for that any strategic move is anchored in the organization and the wishes of its members.

The proportion of fixed roles turned out to be more at Centigo compared to the other two cases. Moreover, as some roles are related to seniority, they differ from the documented character of roles in Teal organizations and Holacracies (Laloux, 2014) in this respect and furthermore makes the alleged boss-less structure somewhat ambiguous. Some of Centigo's roles coincide

with traditional bosses as they perform a coordination function. However, these roles also deviate from bosses because they advocate free work execution, decision making and coach others without exercising formal powers over less experienced.

4.1.2.3 Planning

There are four levels of planning at Centigo, organizational level planning, business unit planning, team project planning and individual planning. The organizational planning goes through the Strategical Hub which generally base the planning on forecasts and ambitions rather than of budgets and goals (Thuresson, 2017). Joint initiatives are placed in a backlog representing a forecast of three to five years, which is then paid off by working on a few sprints at a time, using an agile business plan. The Strategical Hub are also responsible for continuously communicating forecasts and ambitions.

As everyone knows about them, everyone is responsible of helping to achieve these goals, and many small decisions are made to make that move.[---] Our biggest threat is an unclear target image. We don't have one person who make all decisions, who decide where we're going. As over 250 people affect the way we work, many people must understand the target image. Otherwise many small decisions will lead back to the usual [Hierarchy]. (Interviewee 1)

Plans in the business units are quite rigid. Each business unit have clear operational plans based on financial ambitions in terms of sales and profitability. Team planning is initially tied to the client partner who, as an agent for the client's interests, communicate project premises to consultants of interest and the coordinator. Because the contracts may be binding for several years, human resource planning is very important and is based on a chain of promises that involves many people. Once the project has started, planning is done following classical Work Breakdown Structure (WBS) where the team's work is organized in to manageable sections arranged in a logical sequence, where deadlines and responsibilities are set (workbreakdownstructure.com, 2018). Finally, the individual level planning is conducted together with coaches that support individuals in setting goals and to design an activity plan that will help the individual to reach personal goals within a specified time frame. Plans coordinate because they explain the actions that individuals must take to perform a task (Okhuysen & Bechky, 2009). At Centigo, planning is a natural part in coordination and is used at all levels.

4.1.2.4 Objects & Representation

Objects representation refers to either items such as prototypes and schemes, or different technologies that facilitate coordination through providing information (Okhuysen & Bechky, 2009). In team project planning, teams utilize Gantt-charts (Bengtsson, 2018) to visualize planning. In addition, when Centigo succeed in changing another organization to the better, documentation from such an operation will be kept as a representation which can be adapted and reused in new projects. Something referred to as *Semi-finished services (Interviewee 1)*. However, that neither objects nor representations are prominent coordination mechanisms at Centigo became clear after several persistent questions. Centigo uses mainly traditional technical aids for representation.

We use phones, mail and Microsoft, I don't think our technology is edgy. There is a great potential in fusing in technology and accelerate our networking ideas, our collaborative thinking and our organizational ideas with digitization, of that I am religiously convinced. That may be what makes 'one' take the next step. But what we're doing here is some sort of liberation movement from hierarchy, and that doesn't go from one to zero. [---] If your organization is distributed to start with and you implement something like that [IT], im convinced it could result a strong leverage effect, but we're not there yet. (Interviewee 1)

4.1.2.5 Proximity

Proximity supports coordination in organizations through the physical closeness between individuals (Okhuysen & Bechky, 2009). As visibility increase interactions and communication it has a positive effect on information sharing. In addition, such frequent interactions create *familiarity* between individuals which is a precondition to generate *trust* which create good conditions for the exchange of knowledge (Adler, 2001). As Centigo do not yet utilize very sophisticated technical solutions, physical proximity is sometimes a precondition to get in contact with other coordination mechanisms such planes in the making, representations such as Gantt-charts and other forms of direct information sharing. This makes the physical proximity even more important to Centigo, and it shows.

Up until not too long ago, Centigo had the rule, that all employees had to know the name of every organizational member. Recently that rule had to change due to the rising number of employees, but another system of similar purpose was maintained, namely the peer-coaching system. The coaching brings along more benefits than those previously described, Centigo call it *The network-based management program (Interviewee 2)* and Adlercreutz (2017). Every employee is connected to two peers called sponsors, and these coaching peers have two

sponsors of their own, who in turn have two sponsors, and so on. This way, the organization consists of a network of communicating people who, three levels away from themselves have access to the entire organization. In this system, all employees are obliged to at least know everyone in their own network zones. Centigo work hard on integrating people, and reinforce Self-Management through a culture that encourage entrepreneurship, communication and collaboration.

It must be a network of trust and a network where people know each other. There must be confidence and there must be visibility and transparency in what we do all the time. No one can hide anywhere here, the one who is alone and not connected in this network will not succeed and should not be here. (Interviewee1)

4.1.2.6 Market Mechanism

Centigo is a live experiment in moving away from hierarchy in a way that helps us achieve a higher effectivity and an increased work satisfaction, which we believe are two correlating factors. (interviewee 1)

On their journey towards this state, setups that provide good conditions for goal achievement as well as incentives that stimulate individuals to act in this direction, are continuously developed and implemented (Svenskt Näringsliv, 2016). One implicit goal at Centigo is that employees create new services (Johnson, 2015). Two examples of factors supporting this is Self-Management, and continuous coaching. Furthermore, incentives stimulating employees to create new services are for instance a strong culture with emphasis on entrepreneurship, and a salary based on the amount of work and reasonability individuals take on (Johnson, 2015). All employees have a fixed but rather modest basic salary. When consultants work in projects, they additionally receive a percentage of their own billing (Svenskt Näringsliv, 2016). Furthermore, salary increase as employees take on greater responsibilities. Using high-powered incentives attached to output measures this way, is a way to infuse the market mechanism to exercise control and to make individuals coordinate autonomously because they are rewarded for it. This kind of impersonal form of control and coordination is valuable when traditional monitoring through bosses are left out.

4.2 Qamcom Research & Technology AB

Qamcom Research and Technology AB is a technical service consultancy and product developer within industrial engineering that was founded in 2001 (Allabolag, 2018). The objective of the company's business is to conduct proficient services and develop products for business-to-business distribution, as well as conducting research and development in signal

processing and telecommunications and thus compatible operations. Hence, Qamcom is only partly a consultancy and the consulting activities are an important source of short-term liquidity that helps to finance commercial development projects as well as well as in conducting long term research projects within wireless communication, antenna technology and functional security (Mynewsdesk, 2017). Employees at Qamcom are highly-skilled, the required profile for all Qamcom's roles is a PhD or at least six years of industry experience. The staff operate in technology-related areas, especially in signal processing, telecommunication, radar and camera systems (ibid.). At the time for the interviews, 130 people worked for Qamcom, divided into five different sights: Stockholm, Gothenburg, Linköping, Wellington and Greensboro.

Qamcom Research and Technology AB is a subsidiary to Qamcom Technology AB which in turn is one out of 13 subsidiaries belonging to JPJ Invest AB (Qamcom Research and Technology AB, 2018). Just like Centigo, Qamcom have had stable finances and growth in both sales and number of employees since they started, and was appointed the Gazelle of the year by the newspaper Dagens Industri in 2015 (mynewsdesk, 2015).

Table 4:3 Qamcom's Development

Ratio	2017	2016	2015	2014	2013	2012
Turnover Mkr		118	104	56	52	34
Turnover %		13,7	89,2	5,1	50,8	28,3
Number of Employees	110	79	62	40	30	22

Source: Qamcom Research and Technology AB (2018d)

4.2.1 The Settings at Qamcom

4.2.1.1 Qamcom as a Self-Managing Organization

Out of the 130 people who worked at Qamcom Research and Technology AB (herefrom refered to as Qamcom) during the study, a hundred operated in Gothenburg. The Gothenburg office was also the location where flat organizing and self management was utilized in a distinctive way, hence, this became the location of intresst for the study. When a developer at Qamcom were asked how Qamcom differ from other companies that he worked on previously with similar activities, he answered:

One thing that you don't have is a fully booked kalender with meetings, you get rid of that completely. Besides, you don't need to report to anyone all the time,

what I mean is, no one takes notes, or, you are trusted to solve the task, and that trust means that nobody needs to check everything you do. (Interviewee 4)

This is the case for the developers, and consultants at Qamcom. The organization of Gothenburg is free from formal managers, part from the company's CEO, and the highly skilled workers get to utilize their competence to the fullest as they are given the trust to freely execute tasks and make decisions without having to report to any superiors. Having said that, workers still need to integrate with others in collaboration, meaning they must receive information and share information to employees regardless of authority which makes the SMO criterion about reporting relationship a bit blurred.

During the interviews, the organization was frequently spoken of as 'flat' and 'boss-less'. In Qamcom's case, this meant in part, no silo-structures or different working units, instead, work would be performed collectively without special department affiliations. One of the main intentions to utilize the structure was obviously to avoid individual's incentives to sub optimize success in different departments instead of ensuring the best interests of the organization. In a conversation about the CEOs experiences of hierarchies he stated:

... this [the implementation of a flat structure] is a reaction to getting the knife in your back from colleagues [in hierarcic organizatons] who have been ruled by optimizing the performance of their silo. (Interviewee 3)

Demolishing the line structure also brought other benefits, staff could make quick decisions, freely allocate the needed resources and realize ideas in ways not possible in hierarchic organization because of the use of time-consuming decision-paths upwards in the hierarchy as explained by interviewee 3 and 4.

4.2.1.2 Structure

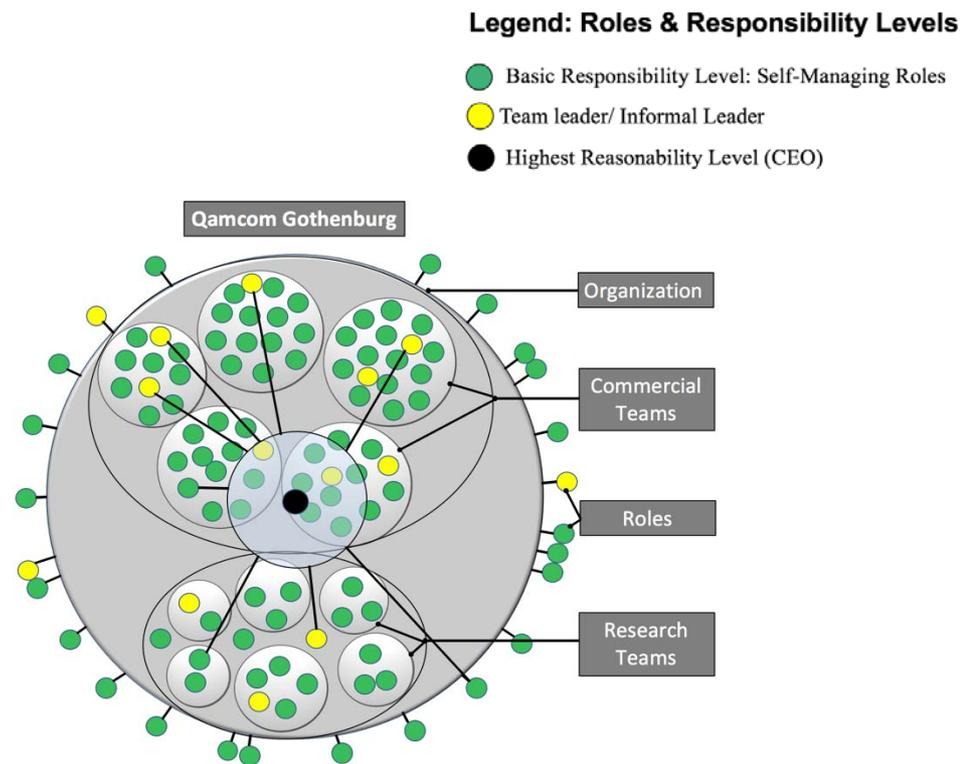
Three types of activities are performed at Qamcom, out of the 100 people in Gothenburg about one third operate as expert consultants at external firms. The 70 remaining individuals operate in temporal team constellations, about two thirds in commercial product development (about 50 people), and one third in research projects. Team size, constellation and durability is mainly determined by the nature of the project and all three parameters may vary during the ongoing project. Some projects hold one to two people, while larger commercial projects hold ten to fifteen people. Product development projects ordered by customers take one to two years to deliver on average, due to the exceptionally high product complexity. Having said SMOs have

no formal bosses, the real bosses in Qamcom's case seem to be the customers. Customers' demands are a control-factor that not even SMOs can escape and to some extent it affects the degree of Self-Management, both in teams and certainly in the work of external consultants.

The structure of teams is highly individual, it depends on the people in it and how the customer likes it, how much management and control they require in different projects, they might want several control functions and demand several project leaders, [---] but when customers trust that we will deliver, we'll have a completely different organization. (Interviewee 4)

The project leaders of larger projects are responsible for the customer contact, for informing team members about the customer and call for meetings. Project leaders hold no formal power over the Self-Management of other members, but the boundaries are not entirely clear since leaders act as the voice and agents of customers. This creates discrepancy with the SMO definition used as the starting point in this study, creating questions about where the boundaries go for what can be called superiors, and what a reporting relationship really is. Qamcom utilize Self-Management that is seemingly valid until a third party, the customer, requires something else. Once they do, the boundaries of Self-Management become blurred. Informal structures also became enlightened during the investigation of Qamcom, there are about ten to twenty self-employed informal leaders, and the CEO have a more prominent and managerial role than the founders in the other two cases.

Figure 4:2 Structure Illustration Qamcom



The figure is a simplified illustration of Qamcom’s structure. Teams operate in either commercial product development or in scientific research. The consultants operate outside organizational boundaries as illustrated. Green roles hold the basic responsibility level: Self-Management. Yellow roles represent team leaders or other informal leaders and the black role represents the CEO, holding a central power in the firm. The figure also illustrates how the CEO together with informal leaders and consultants accounts for the larger strategic decisions and planning. Source: own elaboration

4.2.1.3 People & Culture at Qamcom

When projects lean towards their end, there is no given path for what people are going to do next. This fluent structure and the Self-Management impose certain demands on the people.

You must take initiative, you cannot expect to get any tasks just handled to you, you must simply ask yourself ‘maybe I can do this?’ ‘Maybe I can help with that?’ Then you may start finding areas you’re interested in [---] you cannot expect anyone to serve your job on a plate. [---] Those who wants to be told what to do usually don’t like it here, they think it’s messy. (interviewee 4)

The way work is performed does not suit everyone but it is not necessary to be an entrepreneur, only capable of managing oneself. Employees at Qamcom takes responsibility for their own development, for themselves as resources and their own time management. All of this further requires integrating work with peers, to inquire about relevant work information and new projects. This process seems to be an important mechanism in sharing and spreading knowledge in the organization. The corporate culture is characterized by transparency, meaning open and fluent information, knowledge sharing behaviors such as being helpful to others and

collectively take responsibility for newly employed, share information via internal forums and staying informed and striving to contribute to value-creation of Qamcom, move fast and always put Qamcom first. As much as Qamcom have a people centered approach, the intentions with their rare organizational setup was less a result of ideological endeavors and rather a way to optimize the value creation in the company and to make things happen quickly.

4.2.1.4 Solution to the Universal Problems of Organizing

Task division (Puranam, et al., 2014a) at Qamcom is rather complex and is largely based on currently prioritized projects or new ideas created by employees (Mynewdesk, 2017). The organization has no clear goals, why priorities are based on what is believed to be best for Qamcom from an economic perspective. In smaller projects initiated by few individuals, task division and task allocation often happens simultaneously. In larger projects, clients will first specify nature of the ordered product. Thereafter a group of individuals will brainstorm to create a product-anatomy that describes what will be needed and in what order things should be done. The anatomy is later divided into different packages of work by the group. After task division is made, *task allocation* is done freely by individuals based on their expertise and interest.

Regarding *reward provision* employees receive regular salary based on their efforts to create value for Qamcom. Qamcom do not use bonus systems or special rewards for high team output performance (market mechanism), the main reason is to not create incentives to sub optimize certain projects, but to keep acting in Qamcom's best interest. However, the *reward provision* assigned to employees is mainly intrinsic. It is the trust in the ability and common sense of individuals' and the opportunity to do something self-chosen that motivates and creates the real rewards for employees (Mynewdesk, 2017).

One works in a group of people who want to make a good effort together, it creates a pleasant team feeling, [---] besides the challenges in the technical work are a large motivator. [---] We have lots of freedom, freedom to purchase things for example, if I need some gadgets, then I have the confidence to go and buy the gadgets. [---] It has a great motivating effect It feels like you have confidence, if you have ideas you can realize them and get things done immediately. (interviewee 4)

Very similar explanations of these intrinsic rewards were also provided by the CEO. He also thought that these working conditions was one of Qamcom's main attractions as an employer.

Table 4:4 Contingency Factors at Qamcom

Qamcom Research and Technology AB		
Contingency	Status	Assumed Coordination effect
Task Division	Made by CEO or in projects, by the members of the team	
Task Allocation	Mainly free, based on competence & mutual adjustment	
Reward Provision	Monetary rewards and increased emphasis on intrinsic rewards	
Size ppl	130	Size theoretically have a positive relationship to impersonal modes of coordination, particularly planning (Van De Ven & Delbecq, 1976)
Number of locations	5 Stockholm, Gothenburg, Linköping, Wellington & Greensboro	Influencing coordination types, more locations = more towards organic coordination
Task uncertainty (<i>competition, product evolution, reliance on material availability and predictability of customer demands</i>)	Medium – High <i>Categorization: Requirements of projects exhibited lack of detail. Requirements changed from time to time</i>	High task uncertainty = Loose and collegial coordination, in order to be adaptable (Lawrence & Lorsch, 1967b; Van De Ven & Delbecq, 1976)
Task interdependence (<i>pooled, sequential, reciprocal</i>)	Mainly reciprocal	Reciprocal task interdependence = Increased likeliness for mutual adjustment (Thompson, 1967)
Product complexity (<i>Low, Medium, High</i>)	Very high <i>Categorization: The product exhibited an above average need for specific technical knowledge. Months were needed to even understand the product.</i>	The higher the product complexity, the more extended coordination efforts (Burton, et al., 2017)

The table illustrates the solution to the universal problems of organizing as well as other contingency statuses at Qamcom. Source: own elaboration

4.2.2 Coordination at Qamcom

4.2.2.1 Rules & Routines

To begin with, the rules at Qamcom are quite a few, the idea is to trust people’s own judgment. However, there are some rules not much different from other companies, for instance reporting work hours which are listed in Qamcom’s employee manual, but nothing really stands out. What is important is not the *how*, but the outcome of people’s work. As there is no rule for the kind of decisions individuals can, or cannot make, there is a routinized procedure for all kinds of decision making where three basic questions must be considered: (1) Do I have enough information to make the decision? (2) Who are affected by my decision? - the rule is that the people who get affected by decisions are those who should be involved in making them. (3) Is my decision in Qamcom’s best interest? (Qamcom Research and Technology AB, 2018a). The handbook and the decision-making routine corresponds to Lee and Edmondson’s (2017) second SMO criteria, the formal rule system. However, the informal rules and corporate culture described earlier seem to have a more important role in creating *integrating conditions*

(Okhuysen & Bechky, 2009) like predictability and common understanding than the formal ones.

At the organizational level: cross teams and individuals, the most prominent routine is the meetings once a week or every two weeks, where the CEO and one person from each project, ordinarily the project leaders, gather for a coordination meeting to plan, make prioritizations about current and upcoming projects, and evaluate needed resources for each project (Qamcom Research and Technology AB, 2018c). Team and individual level working processes are far too complex for daily working routines, however there are some surrounding routines. All project begins with a brainstorming meeting to create the product anatomy. Moreover, there are two meetings a week to share information and to potentially revise the anatomy and responsibilities. Information sharing is also routinized in mainly two ways. Firstly, all information about the projects, customers, employees, working processes is frequently written down and shared in the organization's digital support system to which everyone have access (Qamcom Research and Technology AB, 2018b). Secondly, it is routinized tough the culture to consult peers in conjunction with different activities and to mutually adjust in different collaborations (Qamcom Research and Technology AB, 2018a).

4.2.2.2 Roles

People at Qamcom do have different roles, however, roles and responsibilities are oftentimes blurred and may change as projects change, moreover, people often have more than one role (Qamcom Research and Technology AB, 2018b), and these characteristics are common to SMOs (Bernstein, et al., 2016 b). The CEO explained:

Roles could be added in an area that doesn't receive sufficient attention. For example, sometimes things work really well because there are three, four or five people who care about a task, but if there is an area that nobody cares about and nobody wants to do it, then you may have to add a role. (interviewee 3)

As stated before, many roles are performed by several people. The most obvious fixed role however is the CEO. Project leading roles are also often fixed during a project. In addition there are support functions with people responsible for software or hardware development, IT, finance, the office lab, clients and sales, but there are no departments, hence, a developer could for instance also be a salesperson. Roles are often based on competence, and when they are set, temporarily or permanent, roles help create accountability which helps task allocation to fall naturally (Okhuysen & Bechky, 2009). It can also create a sense of common understanding

when knowing what tasks are associated with what role (ibid.). Roles change at Qamcom in contrast to hierarchies, so that the original accountability function of roles is not as present. However, as employees update information about roles in the digital support system and share it, employees are helped to still stay updated on who is doing what, which facilitates coordination.

4.2.2.3 Planning

Organizational planning is highly tied to the CEO, the owners who in part also work in the organization and to some extent the ten to twenty informal leaders working at Qamcom which in some cases are project leaders. Their planning take place at a meeting almost every week in a way described in the section about rules and routines. Project teams on the other hand manage themselves and their own planning which largely is based on the product anatomy. The different parts of the product anatomy become working tasks with a clear agenda and plan. The planning of projects requires the knowledge-excellence of developers and couldn't be done by a single person. Moreover, planning is continuous and ever changing during the projects, all because of the high complexity in creating the products.

One person would never be able to grasp the entire software; it may take about three months to just get a little understanding of what the product does. For my part, it's among the most complex products that I have ever encountered (interviewee 4)

Planning of timelines and content of different parts of projects is in part determined by passed experience of similar processes that can be found compiled in the digital support system. Similarly, details about the product anatomy will be shared in the same forum. As stated before, individuals are responsible managing and planning their own work. Planning is an important mechanism in project groups and for single individuals. It creates accountability through defining responsibilities, and facilitates task allocation, it creates predictability as well as common understanding through developing agreement among individuals and hence contribute to coordination (Faraj & Xiao, 2006; Okhuysen & Bechky, 2009).

4.2.2.4 Objects & Representation

Objects and representation refers to the use of technology, objects and other kinds of representations that in different ways help coordinating work (Okhuysen & Bechky, 2009). The use of prototypes as visual representations occurs occasionally in the product development projects at Qamcom.

In the projects, it sometimes happens that we want to come up with something to get a grip on what we're doing: map drawings, 3D prints or something similar. We use it as some kind of basic design to have something to discuss around and see if we got it right basically. (interviewee)

The product anatomy is also a representation that just like the map drawings or 3D prints helps aligning work by mobilizing discussions and action and thus create coordination in project groups. Something has appeared repeatedly in the description of the mechanisms is the digital support system or the intranet. The intranet consists of two integrated parts called Confluence and Jira. Confluence is a knowledge management collaboration platform (Melin, 2017) in which everybody works on a daily basis. Here, project specifications, project documentation, tenders and similar information is held available to members in the right-hand column. There is a continuously updated flow of current events, like new software releases or news about a project for instance. Confluence has something called a Wiki function where anyone can add and update information as well as take part of information about anything (Qamcom Research and Technology AB, 2018b), from customers and competences to business or projects which is an example of what Okhuysen and Bechky (2009) calls direct information sharing.

Jira is an administration system for errands, for example certain projects (Melin, 2017). Anyone can both share and accumulate information about the state of projects, what is covered and what is left, the product anatomies, different tasks and so on. A similar function could be performed analogously with a whiteboard, but the digital tool enables participation from different geographic locations. Another advantage is that the information gathered here about previous projects are searchable so that common experience and knowledge about something can be used to plan and execute new projects (Qamcom Research and Technology AB, 2018b). In short, Jira is a representation of the state of different errands and it helps with Scaffolding since it makes progress of the task obvious to the project group (Kellogg, et al., 2006) and thus helps individuals to mutually adjust and fill in with needed work and hence obtain coordination.

When searching for 'Intranet', 'Confluence', 'Jira' and 'Wiki' in the interview transcriptions, 'Intranet' were hit twenty-six times, 'Confluence' five times, 'Jira' twenty-six times and 'Wiki' fifteen times, which underpinned their importance for the organization's work and coordination.

4.2.2.5 Proximity

Proximity supports coordination in organizations through the physical closeness of individuals (Okhuysen & Bechky, 2009). The first way this can be done is through increasing visibility. Qamcom operates in five different locations but those are irrelevant for the chosen research due to the use of executives at these locations. The proximity of people working in Gothenburg (which this study focus on) however is quite average, except for consultants on external assignments which lacks proximity. Peers within project groups do collaborate through frequent contact but not necessarily through physical proximity (Qamcom Research and Technology AB, 2018c). Instead oftentimes through e-mail, phone calls and the intranet. Since all devices and tools are manageable from distance and project progress is visible through Jira, work does not require physical proximity. However, there is another side to proximity, proximity also creates the familiarity between individuals that smoothens communication and gives insight to other people's knowledge and hence affect coordination positively. To be successful in managing oneself, employees need to build a net of contacts to efficiently manage their own work and to feel like being involved and partaking, the team feeling described by Interviewee 4 is a sign of familiarity being present in his experience of the team work. Some workers however have had issues with lacking proximity in the organization:

*Me as CEO is quite close to the employees, but still quite far away. I am the closest boss and the only boss, but because I have a hundred people, I'm still quite far away. Some people feel like they're a little bit lonely so to speak, and they want very much direct feedback, and I cannot give that confirmation ... that's a little Akilles heel we do not really catch up on with this Self-Management.
(Interviewee 3)*

Familiarity is a prerequisite for closer relationships and developing trust which is a guiding principle in the Self-Management model. The trust in this model however, does not necessarily come from peers, but is inherent in the organizational setup.

4.3 Meridium AB

Meridium AB is a privately held corporation active in the IT industry and has its core competences in system development, system integration, information technology as well as project management. Meridium's services range from web strategy and needs analysis, to design and development of websites, applications, citizen portals, e-services or intranets to their customers (Meridium AB, 2018c). Customer transactions are mainly business-to-business and largely found within the public sector. Municipalities, government agencies, aid organizations

and trade unions constitute the majority of Meridium’s customers, but also larger, privately held enterprises buy Meridium’s services to improve their own digital user experience (Meridium, 2016a). The organizational purpose is to help people by creating the most appreciated digital services.

Meridium AB, together with Meriworks AB are subsidiaries to the Global Ultimate Owner, Meriworks Holding AB (Orbis, 2018a). Meridium AB was founded in 2002 by its current MD together with five additional owners (Kalmar Science Park, 2013), which later turned in to seven, whom currently hold equal shares of the company. Since the start, the company have just like Centigo and Qamcom had a stable growth in turnover and the number of employees which for the time of the interviews added up to just above 60 people. In 2008 and 2016, the company was appointed Superföretag by Veckans Affärer and was additionally awarded Gasellföretag by the newspaper Dagens Industri in 2008 (Jakobsson, 2010; Meridium, 2016a), much thanks to the stable growth and appreciated working environment.

Table 4:5 Meridium Development

Ratio	2017	2016	2015	2014	2013	2012
Turnover Mkr		61	53	42	30	27
Turnover %		7,91	15,17	14,92	13,31	32,44
Number of Employees	60	47	40	36	31	23

Growth and financial development, Source Meridium AB (2018d)

4.3.1 The Settings at Meridium

4.3.1.1 Meridium as a Self-Managing Organization

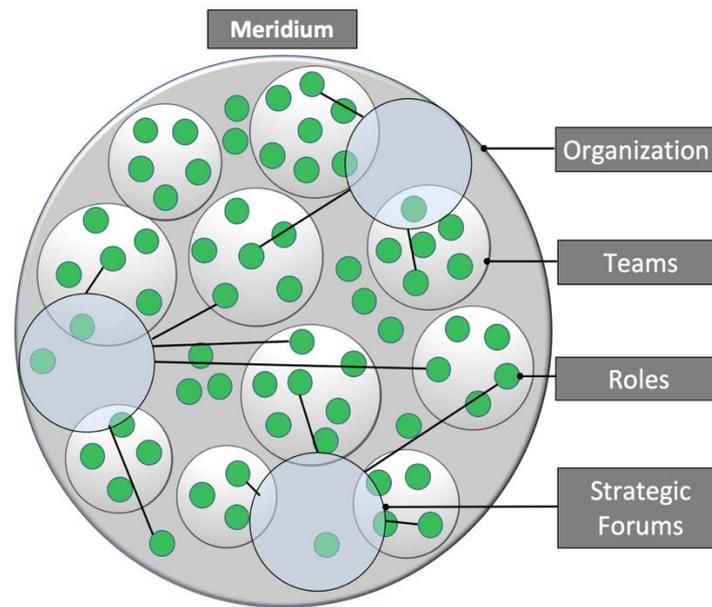
Meridium have implemented the Self-Managing approach in an incremental manner since their start in 2002 and were at the time for the study a full-fledged SMO with several of the characteristics commonly found in organizations utilizing this approach. The last big step in this direction taken by Meridium was the elimination of the top management in 2015. The changes at Meridium have been ongoing and the change-direction have largely been determined by the interests of the people who work there. There are no bosses at Meridium not even team-leaders, and titles are kept out as far as possible. However, as most SMOs, Meridium do have a Managing Director (MD), Interviewee 5, who was internally described as a visionary influencer and a coach to the staff of Meridium (Interviewee 6). Existing roles or temporal

responsibilities do not entail any hierarchical rank in the organization, instead Meridium utilize a leadership that rely on trust, and the people's own initiative capacity, similar to the other two cases. Out of the three cases, Meridium is the one with the least formal structures and is the company where Self-Management have been the most consistent.

4.3.1.2 Structure

Meridium have always worked in fixed team- constellations, in fact, the teams themselves form the main structure at Meridium and are distributed between two cities, Kalmar and Stockholm. The organization consists of about ten teams with four to seven people in each. Team-members usually work together physically at a daily basis. Each team administer four to five long-term customers and autonomously manage every step of that working process. The teams are cross functional, meaning that all the skills needed to deliver a project, to the greatest extent possible, are present and available within the team. In case of a need for external help, every team share costumer knowledge with one additional team which is called their sister team. Moreover, Meridium recently gathered employees with special skills in an external support-function team to use when delivery teams would need to consult expertise competence in some area. The only staff-based support functions outside the delivery teams are the support function team, a HR support function and an external sales team that are also responsible for the customer relations. Teams and individuals within teams have full authority over work execution with equal opportunities and decision rights to influence work, both on team and organizational level (Meridium AB, 2018a).

Figure 4:3 Structure Illustration Meridium



The figure represents a simplified overview of Meridium's structure. Teams of various size represents the main building blocks, operating within organizational boundaries. Any team member can occasionally involve in strategical activities in so called strategic forums, which contributes to the organization's evolutionary development. Individuals influential opportunities and responsibilities are fairly equalized (although their roles may differ), hence, all roles, even the MD share the same color of green. Source: own elaboration

4.3.1.3 People & Culture at Meridium

As often in SMOs, Meridium have a people centered approach. The wellbeing of employees is highly prioritized and employees are perceived as the most important stakeholder to the organization. When employees are doing well, they also believed to do a better job and in turn, increase customer satisfaction, this belief is a highly emphasized part of the corporate philosophy. In addition, employees are encouraged to help each other and share their knowledge as much as possible which constitute two important cultural traits (Meridium AB, 2018a). The organization experiments a lot *to fill in emerging system-gaps (interviewee 5)* and create a functioning setup for Self-Management. At the time for the study, some team-workers were for example developing an incentive model to stimulate knowledge sharing behavior, called *Initiative Mapping (interviewee 6)*. Both interviewees acknowledge that the organizational set up could be demanding for employees in some respects. The Self-Management at Meridium required that employees had high engagement in what they were doing and that they had a willingness to take initiative and actively participate. As the MD described it:

What we are struggling with is not giving people confidence really, we struggle with making people confident enough to dare to use it, dare to make decisions, dare to act and dare to fail. (Interviewee 5)

4.3.1.4 Solution to the Universal Problems of Organizing

The first organizing problem, task division, refers to the way in which goals are decomposed into smaller tasks (Puranam, et al., 2014a). Meridium have several goals. Meridium sets goals about for example customer satisfaction, employee's happy-index and other goals that emerge mainly through employee feedback in the organization. The company uses a forum called Scrum of Scrums where employees address identified issues that need to be resolved, they can also bring about ideas regarding future development at the organizational level. In this forum, issues are raised and voted about through sending at least one member from each team. In the same forum, goals are created, and then divided based on teams' and peoples' topic of interested. (Meridium AB, 2018a). This means that the task division and task allocation take place at the same time, in a free manner. In cases where customer-requests or other assignments are held open and nobody shows interest, they will not be forced upon anyone, meaning they will be left undone. At the team level, task division and allocation is solved in the way that best suits the teams. Through initial group meetings, or through mutual adjustment the same moment that someone acknowledge something that needs to get done.

Meridium's reward provision is complex, multifaceted and very important for a functioning Self-Management. Most decisions and actions performed by employees are based on self-made decisions (Meridium AB, 2018a). When the teams at Meridium were recomposed a few years ago, employees placed themselves in new team-constellations where they felt they could contribute the most, instead of merely emphasizing the competence mix of groups, as previously. As discussed above, most tasks are based on self-selection, even wages are self-selected and transparent at Meridium. Moreover, *how* to execute tasks is free and anyone at Meridium have the right to make any decision as long as the formal processes for decision-making are followed. (Meridium AB, 2018a). Employees at Meridium hold significantly greater power to influence their own working situation and the company's development compared to most employers. Gaining such trust within an environment that care for its people is likely to create a sense of responsibility and willingness to perform. The transparency of wages and information at Meridium is also likely to create a feeling of trust in the organization which could increase the willingness to collaborate without hierarchical control. As discussed previously, the organization work on creating incentives for wished knowledge sharing behavior. One of the purposes with Initiative Mapping was to map who takes initiative in the organization, as well as who helps others with their initiatives and help spreading knowledge. In this case, individuals mapped and acknowledged, would gain attention, reputation and self-

realization, while the organization would benefit through increased information flows, initiatives and knowledge-sharing about for instance who knows what.

Both Interviewees from Meridium explicitly expressed that inspiration from the concepts of Holacracy and Teal is utilized in the organization, but also antecedents like Sociocrati and Lean. Their setup has developed incrementally through several inspirational sources.

Table 4:6 Contingency Factors at Meridium

Meridium AB		
Contingency	Status	Assumed Coordination effect
Task Division	Free, both in teams and at the organizational level	
Task Allocation	Free, team-based	
Reward Provision	Emphasis on intrinsic rewards: Self-choice, visibility within firm, reputation, self-actualization	
Size	65	Size theoretically have a positive relationship to impersonal modes of coordination, particularly planning (Van De Ven & Delbecq, 1976)
Number of locations	2 <i>Kalmar & Stockholm</i>	Influencing coordination types, more locations = more towards organic coordination
Task uncertainty <i>(competition, product evolution, reliance on material availability and predictability of customer demands)</i>	Medium – High <i>Categorization: Requirements of projects exhibited lack of detail. Requirements changed from time to time</i>	High task uncertainty = Loose and collegial coordination, in order to be adaptable (Lawrence & Lorsch, 1967b; Van De Ven & Delbecq, 1976)
Task interdependence <i>(pooled, sequential, reciprocal)</i>	Reciprocal (More frequent between teams than in the other Cases)	Reciprocal task interdependence = Increased likeliness for mutual adjustment (Thompson, 1967)
Product complexity <i>(Low, Medium, High)</i>	Medium <i>Categorization: An average technical and business domain knowledge was usually required</i>	The higher the product complexity, the more extended coordination efforts (Burton, et al., 2017)

The table illustrates the solution to the universal problems of organizing as well as other contingency statuses for Meridium AB. Source: own elaboration

4.3.2 Coordination at Meridium

4.3.2.1 Rules & Routines

Meridium have very few rules, any existing rules are by most part embedded in culture and various proposed procedures for action. Even the employee handbook consists of suggestions of how to do things rather than delegate injunctions by rules (Meridium AB, 2018b). The handbook is truly a way to codify how authority should be decentralized in the organization (Lee & Edmondson, 2017) and share characteristics to the SMO Valve's employee handbook in focusing on procedures and company values (Valve, 2012). *Informal* rules in the form of corporate values and culture are dominating at Meridium. These have high emphasis on

spreading information, fostering happy employees, helping others, dare to fail, being passionate and so forth (Meridium AB, 2018a; Meridium AB, 2018ab).

At the organizational level, cross teams, there are some important routines or procedures that helps facilitating Self-Management. Firstly, teams who discover issues or who come up with ideas that cannot be solved or realized though one team will take initiative to a meeting called Scrum of Scrums which is the strategical forum that substitutes for the previous management group at the company (Meridium AB, 2018b). Here the issue will be discussed with a member from each team based on who is willing to do so.

Instead of having hierarchies, we have circles, or groups of people who interact in larger groups. It is especially people who are interested in solving the issue, so that everyone feels they can raise a question or make a decision about something. (Interviewee 6)

Everybody who wants to participate in a project can raise their hand. Every decision made at a group level is performed through Consent, which is the second routine or procedure coming from Sociocracy and Holacracy. Consent is a voting system for different proposals where thumb up means okay to the decision, thumb to the side means that you are okay with the decision but have some concerns or see risks with it. Thumb down means your blocking it. However, blocking can only be done in combination with giving an alternative solution to the issue or with a coherent explanation. (Meridium AB, 2018a)

At the team level, there are some further procedures. When needing external help, teams turn to sister teams for help. Every team have a retrospective meeting every two weeks where challenges and potential solutions are being discussed. Many teams have daily morning meetings about how to collaborate around the tasks of the day. In this context, the prioritizations of tasks are done with regards to a task-lineup, provided by the customer through the digital support system. All customers' demands must be investigated and time estimated before the work can start. These routines create predictability of the task stability and completion by considering the digital tools, and thus enhance coordination (Okhuysen & Bechky, 2009). The last routine of interest is the Advice Process, which is a routine performed when decisions are made at the individual level (Meridium AB, 2018a; Meridium AB, 2018b) and seem very influenced by the process with the same name in Laloux's (2014) Teal organizations. When making a decision, the affected people and the people with expert knowledge in the matter should be consulted. In addition, decisions should never be made from selfishness. The larger

the decision, the more people must be consulted, but the decision however, is always up to the individual. (Meridium AB, 2018a; Meridium AB, 2018b)

Knowing how decisions are made at different levels create a shared view about how things should be done and how authority is decentralized when no boss can tell employees what to do. The content of these routines play a very important role in reinforcing Self-Management as well as to create coordination between different Self-Managing units, teams or individuals.

4.3.2.2 Roles

As stated earlier, there are more or less fluent roles at Meridium, but at large, no titles. There is one role responsible for each customer because customers require that. There is scrum-masters, developers and designers but the roles are dual and fluent. The fixed roles of hierarchies would have the function to clarify permanent social positions and responsibilities (Okhuysen & Bechky, 2009), this is not really the case at Meridium, and it do not have to be. Firstly, it is not as necessary to know about for instance superior roles at Meridium since everyone has the authority to make any decisions in principle (Meridium AB, 2018b). Secondly, members within teams know each other well enough to know about peers' skills and specialties so that task allocation within teams run smoothly without fixed roles. Lastly, any needed competence could easily be found in the digital support system and does not need to be clarified by roles, although some roles at Meridium are more fixed than others and thus have the function of clarifying responsibilities. The monitoring function of supervisor-roles is not present neither, because this control is less needed due to a completely different reward provision–model and incentives than those used in traditional hierarchies, this will be further discussed in the analysis.

4.3.2.3 Planning

Meridium's planning regarding large strategical decisions goes though the Strategic forum where anyone can suggest an idea and people gather in different groups to treat issues of their own interest (Meridium AB, 2018a; Meridium AB, 2018b). Example of ideas put forward this way are Initiative Mapping described earlier and Meridium 3.0, which is a goal regarding the company's future with a three to five-year span. All organizational planning is visualized in something called the Planning Channel in the digital support system. In the strategic forums, collective agreements are developed using the Consent-procedure (Meridium AB, 2018a) as described above, and thus facilitate coordination.

Teams plan their work independently but involves their sister teams. It usually starts with the sales team communicating an opportunity to leave an offer to a client through the Planning Channel. If a team shows interest in making an offer, the team take part in the planning process from the beginning. As no external party plan the activities of teams, teams put up goals for themselves and plan from scratch, about time, resources, and oftentimes even recruitments.

Every two weeks, teams present two key ratios in a digital dashboard. First, teams are asked to rate how long they are pledged as a team, choosing from four different levels, from ‘six months ahead’, to ‘one day at a time’. The second ratio is about whether the group-competence meets the skills needed to provide for the customer. The dashboard ratio will then signal to the rest of the organization, the level of external support needed in the team as an effective control and communication and thus coordination function. The planning at Meridium is overall ‘*a little bit like Lean*’ as Interviewee 5 express it, as it builds on continuous adjustments of what seems to be needed at the moment. The organization follow up certain factors such as customer satisfaction and happy indexes of employees, but has reduced many of the economic goals. General planning further depends much on the requirements of the customers.

4.3.2.4 Objects & Representation

Meridium use some objects like TV-screens in several rooms at the office as means to provide information and to create common understanding about for instance ‘*Burndowns or changes in projects and even customar satisfaction...*’ (Interviewee 6). There are also analog boards with post-it notes around the office, something that is commonly used in the teams planning as well. These objects enhance coordination both at the organizational level and the team level.

Other types of representations are strongly linked to the organization’s digital support system, as in Qamcom’s case. Slack was a word that came up very frequently during the interviews.

Our main communication goes through Slack, I would say it has a very important part in coordinating our work. (Interviewee 6)

Instead of using e-mail communication or else, teams create their own channels in a digital forum called Slack (Slack, 2018b) and communicate with each other, or other parts of the organization. Slack is where to turn when having questions and team members are not enough. Posted questions can be answered by anyone and historic information will be collected through

an additional tool that enables tagging important questions and answers that become searchable in slack through writing short commands (Meridium AB, 2018b).

... it [Slack] works as a competence bank [---] I would say that what we write in Slack contributes a lot to us sharing information in the firm. (Interviewee 6)

Several third-party tools are integrated with Slack. Guru (Guru, 2018; Slack, 2018a) is a Slack Wiki and a knowledge management bot for teams (Guru, 2018) which is used to share information and illustrate representations of for instance the Advice-process, the Consent model, the employee hand book, the wage model or Initiative mapping.

Guru is also one of the tools that makes coordination work, and the reason why it's so important is because everyone can see what everyone writes, everyone has the opportunity to answer, and its searchable, compared to just using e-mail where only two people get to know that information. (Interviewee 6)

GitHub is an additional tool used by the teams to administer errands like customer projects where the errands are linked to the source code (GitHub, 2018). The software enable customers to take part in the project development which increases transparency and reduces the risk of misunderstandings. GitHub keeps record on everyone's contributions and make visible the states of projects which facilitate coordination.

4.3.2.5 Proximity

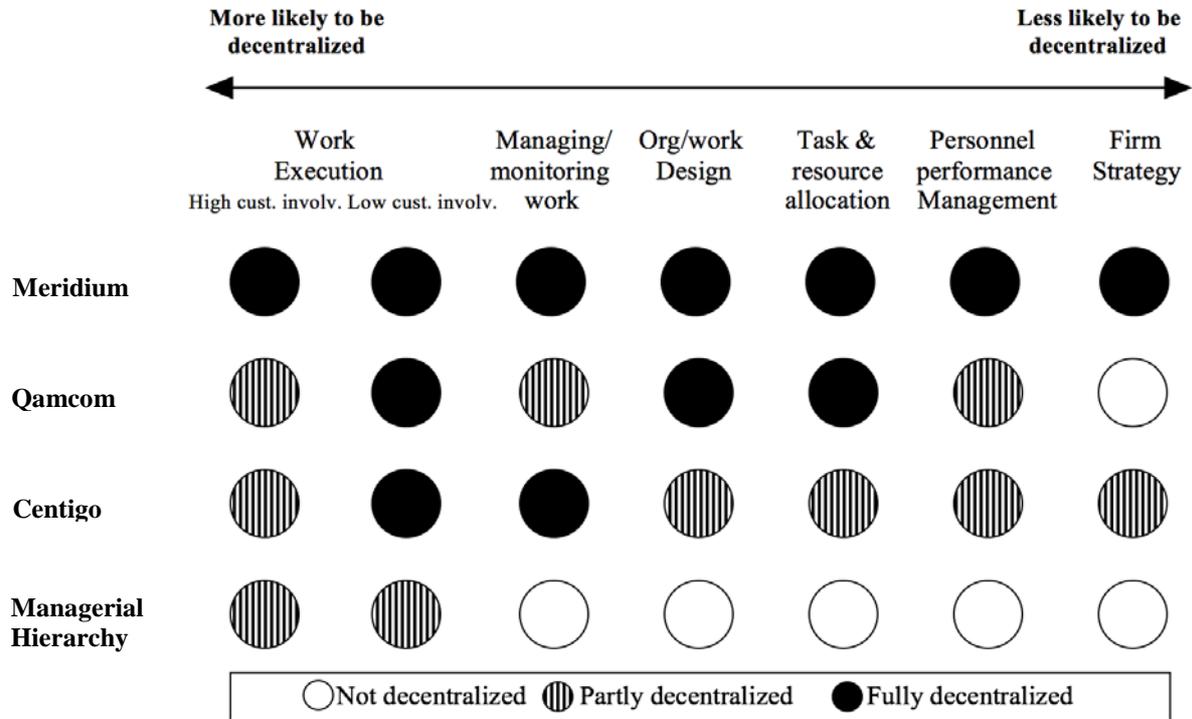
Team proximity seem quite high at Meridium. Customer projects where collaboration with teams from the places (Kalmar or Stockholm) only constitute about ten percent of the projects. Although communication and collaboration through Slack happen more often. There are good opportunities to come close to team members and create familiarity as team constellations are self-chosen and teams work together with physical proximity at a daily basis. Even sister teams work close enough for physical communication. As work is performed through digital tools, the progress of tasks is visible in a digital manner, but can be discussed analogically as well. At the corporate level, cross geographical space, proximity is largely replaced with digital presence through technical infrastructure. Meridium Talks, is a meeting held at Meridium every Wednesday where all members gather in the lunch room to share their experiences from the past week. Even members from Stockholm participate in the Meridium Talks meeting through Skype, which exemplifies one of the efforts to create cohesion and to share information cross physical boundaries. Moreover, Meridium have a helping culture and put a lot of effort in to

creating a friendly social environment, which is also reflected in a low staff turnover and a high Happy-index (Meridium AB, 2018a). In sum, the preconditions to create visibility and familiarity that in turn facilitate coordination seem valued at Meridium.

4.4 Compilation of Self-Management in Different Organizational Areas

In Figure 4.4 below, the three cases' settings regarding their Self-Management is compiled. This aims to clarify what Self-Managing turned out to be and what it looked like in the cases. In addition, this clarification forms an important base for the forthcoming analysis.

Figure 4:4 Patterns of Decentralized Authority at the Cases



The figure illustrates different areas of Self-Managing, (also called decentralization of authority), in the three cases, as well as the level of Self-Managing (decentralization of authority) within each area. Source: own elaboration of self-generated data. The figure design was inspired by Lee and Edmondson (2017) and the bottom line labeled 'Managerial Hierarchy' was taken from the same.

The fact that authority can be decentralized in more areas than work execution, impose that there can be several categories of Self-Managing. Hence, SMOs may be Self-Managing in different areas and thus Self-Managing to varying degrees in each area. As illustrated in Figure 4.4, this was the case in the sample of this study. When investigations of the Self-Management were done in the three consultancies of this study, it became evident that the criteria of 'radically decentralized authority' regarding work-execution and 'eliminated reporting relationship' (Lee & Edmondson, 2017) with colleagues of higher authority - may be a scarcely defined. If any

restriction on the freedom of work execution are present in any respect, or if employees report to individuals of higher authority, the fulfillment of SMO criteria will fail. In this investigation, consultants sometimes worked outside the organization, contracting temporal working conditions on customer terms. The criterions could also be affected by high customer involvement in projects within the firm boundaries. High customer involvement and work outside organizational boundaries, could temporary lead to restrictions in the reporting conditions and the freedom of work execution, something that the companies could not overcome even if they wanted to. In this sense, the customer would restrict and determine the level of Self-Management regarding work execution and the reporting relationship-criteria under special circumstances. Such special conditions are probably more common in consultancies.

What does not show in Figure 4.4 is the issue about the reporting relationship criteria to the SMO definition. Except having this criterion affected when being outside organizational boundaries, the criteria was misleading even inside the organizations. Instead of claiming that the reporting relationship between employees of different authority is completely excluded (Lee & Edmondson, 2017), a more nuanced claim would be that reporting relationships are established between all involved parties within a project, including those of higher authority. For instance, a developer would have to inform his peers about his work, but he also had to inform the person responsible for the customer, despite the higher level of authority of this individual. Managing oneself in a collaboration with others turned out to require more communication to all parties than having a single manager administrating such collaboration.

5 Analysis

The following chapter begins with an analysis of each case in which the categories of the found coordination mechanism have been restructured to enlighten the most significant mechanisms or subcategories of each case, as well as their actual configurations. Secondly, a cross-case analysis is presented consisting of two parts. Firstly, pattern matching was performed based on the findings in the single case analysis. Secondly, the analyzed results regarding coordination is put in relation to the organizations' solutions to the universal problems of organizing

5.1 Single Case Analysis: Exploring & Identifying the Mechanisms, their Configurations and Correspondence to the Settings

What is presented in the following single case analysis represents the second phase of the first cycle of coding. This is where the found mechanisms constructs or configurations are understood and given meaning. The schemes presented for each organization, Table 5.1 - 5.3 below helped with this. The tables consist of six columns. The first at the far left represents the mechanism-themes which guided the data collection initially. The second column provide descriptions of the actually identified mechanisms found in the cases, these mechanisms could be the same as the mechanisms guiding the data collection, they could constitute subcategories to the guiding mechanism, or, they could be a new substituting construct. Each of the three alternatives was assigned a color, black, blue or green, in order to better visualize the properties of the mechanism and to make the subsequent comparisons between cases easier. Whatever the construct, the utilized mechanism presented in column two represented the *correspondence* to the *settings*. The third column represents the way in which the found mechanisms facilitated coordination. The fourth column represents the character of the mechanism, its *type*. In the fifth column, the actor of the coordinative activity is presented, the *mode*. Column two to five (that was just explained), together represents the *configuration* of the mechanism – its overall character. Finally, the sixth column reveals the level of perceived importance of the mechanism for the organization, as explained in the legend beneath Table 5.1. The use of all of these estimated properties enabled an understanding of (1) How the found constructs differed from mechanisms found in previous literature, (2) the coordination effect of the mechanisms, (3) their character, (4) the practitioners of the mechanisms and (5) their importance for the organizing form of SMOs.

5.1.1 Case Study 1: Centigo

Table 5:1 Transformation of Raw Data, Centigo

1.Coordination Mechanism Guiding the Study →	2. Utilized Sub-Category / Substituting Mechanism <i>Activity/ Arrangement/ Tool</i>	3. Integrating Conditions <i>1.Accountability 2.Predictability 3.Common understanding</i>	4.Coordination Type <i>Mechanistic, Organic, Cognitive</i>	5.Coordination Mode <i>Impersonal, Personal, Group</i>	6.Perceived Importance
Plans	Distinct planes based on forecasts and ambitions At the organizational lev., business unit lev., project team lev. & the individual lev.	1, 2 & 3	Mechanistic	Impersonal mode	High
Roles	Defined responsibilities & a specific role for coordination Three main responsibility levels	1, 2 & 3	Predominantly mechanistic	Impersonal	High
Representations	Analogue representations or via traditional digital tools Charts, semi-finished services & representations via Microsoft office	2 & 3	Predominantly mechanistic	Impersonal	Low-medium
Market	Market Mechanism Variable salary based on personal ambition & Output	2	Cognitive	Impersonal mode (not group based on team output as expected)	Medium
Routines	Routines with content to align workforce & facilitate Self-Management, less for standardization of tasks-execution Meetings, routinized coaching & utilizing semi-finished services	From: 1,2 &3 To: 2 & 3	From: mechanistic To: organic (due to focus on routine-content)	Impersonal, personal & group	Medium
Rules	Cultural Content as informal, behavioral rules: Entrepreneurship, information sharing behavior, Helpfulness	From: 1, 2 &3. To: 2 & 3	From: mechanistic To: cognitive	Impersonal mode (coordination by programed behavior) & Group mode	High
Proximity	Physical information sharing & Trust: Facilitated by physical networks, integration & transparency	1, 2, 3	Organic & cognitive	Group & personal mode	Very high

Source: own elaboration

Legends: Color Codes & Perceived Importance of Utilized Mechanism

■	Utilized mechanism does not depart from hierarchy
■	Utilized mechanism is a sub-category to the guiding mechanism
■	Utilized mechanism is restructured or a substituting mechanism to that of hierarchies

Source: own elaborations

Low	Indirectly or directly described as utilized but without specific emphasis
Medium	Clearly present but without strong connection to coordination in SMOs
High	Addressed repeatedly in interviews & was indirectly or directly described as an important mechanism when having decentralized authority
Very high	Addressed frequently in interviews & was indirectly or directly described as a very important mechanism when utilizing decentralized authority

Planning was perceived as an important mechanism at Centigo but its character did not differ much to other organizations, neither did the utilization or the coordination effect of plans, why this line in Table 5.1 was kept in black color. The well-defined areas of responsibility, *roles* for coordination and clear business units, made suspected issues to SMOs such as duplication of work or conflicts (Puranam & Håkansson, 2015) less of a problem at Centigo. This is because boundaries were clarified and the integration and coordination between different roles traditionally performed by a boss (Mintzberg, 1973) was accounted for through a coordinating role. Previous studies of coordination in multi team systems have emphasized that the use of boundary spanning roles may be effective for cross-team coordination and to create networks between teams (Moe, et al., 2014).

Neither planes, roles or *representations* differed significantly from the mechanisms utilized in hierarchic organizations. The mentioned mechanisms utilized at Centigo all represent impersonal modes of coordination with mainly mechanistic character. Such mechanisms often need support from acknowledged resources like managers (Chang, et al., 2017) and are usually associated with hierarchical organizations (Van De Ven & Delbecq, 1976). Centigo's emphasis on impersonal modes is possibly a structural correspondence to Centigo's increasing size of 250 people. In addition, plans which were quite distinct at Centigo have a particularly strong positive relationship to size (Van De Ven & Delbecq, 1976) which amplifies that speculation.

On the other hand, impersonal modes of coordination can be particularly useful for organizations utilizing Self-Management, as such mechanisms require minimal verbal communication (from bosses or others) after implementation (Van De Ven & Delbecq, 1976). Centigo's utilization of the *market mechanism* is one such effective example which has been observed in team-based organizations (Zenger, 2002) and SMOs like Valve before (Puranam

& Håkansson, 2015). Instead of providing high rewards for team-output, Centigo created incentives for Self-Managing individuals to act in a favorable manner. Any self-regulating coordination mechanism is helpful in SMOs as no boss is there to reinforce the mechanisms.

In hierarchic organizations, *routines* are often concerned with standardization of tasks or likewise (Okhuysen & Bechky, 2009). At Centigo, most of the few routines utilized did not contribute to coordination through creating predictability of task output, instead it was the content of the routines that facilitated coordination. The most important was the routinized coaching sessions that helped facilitate Self-Management, and the meetings where information was shared. Such routines were chosen to be called *Routines with content to align workforce and facilitate Self-Management* in Centigo's case, and were perceived to have medium importance.

Instead of using *rules* to aligning the work of employees and make work predictable and accountable (Okhuysen & Bechky, 2009), Centigo substituted the coordination effect of explicit rules with *Cultural content*, as bearer of implicit ones. Changing the coordination from having a mechanistic type and an impersonal mode (March & Simon, 1958; Van De Ven & Delbecq, 1976), to being cognitive (Espinosa, et al., 2010), impersonal and group oriented (Van De Ven & Delbecq, 1976). This means that the pressure of doing what was expected, was coming from the group of peers in a programmed, but unspoken way. The overall configuration of this mechanism suited the boss-less environments perfectly. However, what mattered was not if there was a culture, but whether the cultural traits were programmed to support Self-Management and information sharing. At Centigo, the efforts to program culture to be used as such a tool, were obvious. To program the culture, the cofounders working as 'the strategical hub' had an important role.

Regarding *proximity*, two prominent subcategories emerged: *Physical information sharing and trust*. It became evident in the search for representations, that the technical tools facilitating coordination was limited. Hence, coordination through continuous physical presents (proximity) was indispensable. The utilized peer-coaching, seen also in other SMOs (Laloux, 2014) was highly emphasized. In addition, trust at Centigo did not only facilitate coordination between peers as seen in previous team based coordination research (Adler, 2001), it also emerged in a more novel form - from the organization's basic attitude towards its people, and this kind of trust facilitated personal modes of Self-Management.

5.1.2 Case Study 2: Qamcom

Table 5:2 Transformation of Raw Data, Qamcom

1.Coordination Mechanism Guiding the Study	2.Utilized Sub-Category / Substituting Mechanism <i>Activity/ Arrangement/ Tool</i>	3.Integrating Conditions <i>1.Accountability, 2.Predictability, 3.Common understanding</i>	4.Coordination Type <i>Mechanistic, Organic, Cognitive</i>	5.Coordination Mode <i>Impersonal, Personal, Group</i>	6.Perceived Importance of Utilized Category
Plans	Org. Planning: Made Towards Continuous Priorities Based on Forecasts. Team-level planning: Continuously Set and Revised Generally short term.	1, 2 & 3	Mechanistic	Impersonal mode	Medium
Roles	Competence-Based, Partially Fluent Roles	1, 2 & 3	Mechanistic & organic	Impersonal & group	Medium
Routines	Content of Repeated Actions Aligns workforce & Facilitating Self-Management. Embedded in Meetings & patterns for decision making	From: 1,2 &3 To: 2 & 3	Partly mechanistic but mainly organic (due to focus on routine-content)	Partly impersonal but mainly personal & group	High
Rules	Cultural Content, Informal, Behavioral Rules Holistic thinking not individualism	From: 1, 2 &3. To: 2 & 3	From: Mechanistic To: Cognitive	Impersonal mode (coordination by programed behavior) & group mode	High
Objects	Objects 3D prints etc.	2 & 3	Organic	Group	Medium
Representations	Digital infrastructure Facilitating every other mechanism	1, 2 & 3	Mechanistic, organic & cognitive	Impersonal, personal & group	Very high
Proximity	Familiarity & Peer-Trust (Facilitated by transparency)	1, 2 & 3	Organic & cognitive	Group mode	Medium

Source: own elaboration

Qamcom’s organizational *planning* was based on *ongoing priorities and forecasts* about the future as the organizational direction and goals were unclear. In teams, project plans were *set and revised* continuously, corresponding to a very high product complexity and rather unpredictable events. Mechanistic coordination such as planes are usually emphasized to a lesser extent in environments characterized by such complexity (Marsden, et al., 1994), as product complexity and task uncertainty are contingencies effecting the coordination types towards higher emphasis on organic coordination (Burton, et al., 2017). Environments like Qamcom’s would not allow for as much long term planning or standardization compared to environments with high predictability (March & Simon, 1958; Thompson, 1967; Van De Ven & Delbecq, 1976). The short term-planning in projects however, were highly important to

divide accountabilities, create short term predictability of the product development and for creating common understanding in teams.

Competence-based and somewhat fluent roles at Qamcom increased the coordination in team-projects as it allowed members to mutually adjust their work to the work of others in projects, and thereby make the overall execution more agile and efficient. This added an organic dimension to the coordination effect of roles, which are usually fixed and thereby purely mechanistic (Okhuysen & Bechky, 2009). It also meant that the coordination mode of roles was not only impersonal, but also group based (Van De Ven & Delbecq, 1976) when individuals switched between roles to fill in the work of peers.

The utilization of *routines* to mechanistically standardize work processes as in many hierarchies (Mintzberg, 1980) was not applicable to develop the complex products at Qamcom. This kind of utilization of routines has become less applicable even in other post-bureaucratic organizations that aims at being adaptive to changing environments (Kellogg, et al., 2006). Instead, it was the *Content embedded in the repeated procedures* that was important for Qamcom's coordination. The routinized documentation of work and information sharing at the digital platform was important due to the content of what was produced and not the value of the routine itself. The exchange of information, the establishment of future working paths and the determination of short-term responsibilities embedded in routinized meetings are more examples of this mechanism. Such content was essential for coordinating action in projects as no one was there to tell people how to organize. However, meetings turned out to be quit few, as all meetings that would be associated with decision-making involving authorities were eliminated and substituted with standardized procedures for decentralized decision making. Again, the content of the repeated procedures advocated organic coordination (Van De Ven & Delbecq, 1976) however, the framing of the procedures was still programmed and thus mechanistic in that sense, leaving us with an altered mechanism configuration distinct from hierarchies.

As for Centigo, Qamcom's *rules* were primarily embedded in a completely substituting mechanism: *Content of strong cultures*, probably because such informal rules do not violate the principal of trusting individuals' own judgments which is one of the foundations of the Self-Management philosophy (Lee & Edmondson, 2017). It became evident that cultural content was used as a tool to make individuals behave in a desired way that would facilitate Self-

Management and make people share information and help each other. Aligning the behavior of the workforce this way, would accordingly create the integrating condition of predictability and common understanding among employees (Okhuysen & Bechky, 2009). In addition, having strong cultural norms, generally allow for peers to cognitively judge socially accepted behavior and thereby exercise the social control commonly seen in team-based organizing forms (Hodgson, 2004). Such control is of course also helpful to assure workforce alignment even when bosses are not present. Coordination through culture is both impersonal as it is programmed, and cognitive because people coordinate without thinking about it (Espinosa, et al., 2010).

One of the most important coordination mechanisms at Qamcom was the utilization of different tools based on information technology that created a sophisticated *Digital infrastructure* that helped facilitate every other found coordination mechanism, without dependence on spatial presence. The same kind of online chat rooms and chat bots which were previously found in SMOs like GittHub (Burton, et al., 2017), was also used at Qamcom. In addition, the system enabled direct communication and information sharing, scaffolding and visualization of joint tasks, as observed by other authors investigating the coordination effects of IT (Kellogg, et al., 2006; Zammuto, et al., 2007). Accordingly, this mechanism included all three coordination types as seen in table 5.2, although the framing of action was programmed, temporarily fixed and thus impersonal and mechanistic. Qamcom's Digital infrastructure made the need for physical proximity less urgent for the workers, some individuals would even perform a joint task from different countries. The coordination effect of the *Proximity* between individuals at Qamcom did not differ much from any other organizations coordination effect of that mechanism and hence the mechanism was kept in black color in table 5.2.

5.1.3 Case Study 3: Meridium

Table 5:3 Transformation of Raw Data, Meridium

1.Coordination Mechanism Guiding the Study	2.Utilized Sub-Category / Substituting Mechanism <i>Activity/ Arrangement/ Tool</i>	3.Integrating Conditions <i>1.Accountability, 2.Predictability, 3.Common understanding</i>	4.Coordination Type <i>Mechanistic, Organic, Cognitive</i>	5.Coordination Mode <i>Impersonal, Personal, Group</i>	6.Perceived Importance of Utilized Mechanism
Plans	Planning Based on ‘Sense and Respond’ Both organizational & team-level planning	1, 2 & 3	Mechanistic & organic	Impersonal & group	Medium
Roles	Competence-Based, Partially Fluent Roles	1, 2 & 3	Mechanistic & organic	Impersonal & group	Medium
Routines	Content of Repeated Procedures Facilitating Self-Management and boss less coordination. Routinized patterns for action & meeting	1, 2 & 3	Mechanistic & organic	Impersonal, personal & group	Very high
Rules	Cultural Content: Informal, behavioral rules	From: 1, 2 & 3 To: 2 & 3	Mechanistic & Cognitive	Impersonal mode (coordination by programed behavior) & Group mode	High
Objects	Objects: TV-screens, scrum boards, handbook	2 & 3	Mechanistic	Impersonal	Medium
Representations	Digital infrastructure Facilitating almost every other mechanism	1, 2 & 3	Mechanistic, organic & cognitive	Impersonal, personal & group	Very high
Proximity	Familiarity, Peer-trust & Transparency	1, 2 & 3	Organic & Cognitive	Group mode	Medium-high

Source: own elaboration

As opposed to having long-term *planning* as a task intended for managers, as in hierarchic organizations (Okhuysen & Bechky, 2009), planning at Meridium was largely based on constant sensing what was needed in the organization and thus responding by planning accordingly (Laloux, 2014). Not even the organizational level planning was conducted by the MD or any other centralized power. Any ‘sensing’ of what was needed was addressed through the Strategical forum, by anyone. Regarding team-level planning, the *sense and respond* approach, which is commonly found in SMOs (Laloux, 2014), was utilized, and this organic approach was even more prominent at Meridium compared to Centigo and Qamcom. At Meridium, planning, especially strategic planning and team-planning had largely turned in to a group matter and thus had changed the mechanism from being purely mechanistic and impersonal to adding an organic and group-based (Van De Ven & Delbecq, 1976) dimension to the mechanism.

Some *roles* at Meridium were more fixed than others and thus still had the function of clarifying responsibilities as in hierarchies (Okhuysen & Bechky, 2009). However, in teams, several team members held the competence needed for several tasks so that tasks could be performed collectively in teams through mutual adjustment, weaving between roles instead of execution tasks in a reciprocal manner (Thompson, 1967). This way, fluent roles can enable more effective horizontal team-coordination than fixed roles would allow. As in the case of Qamcom, this adds an organic and group-based dimension to the mechanism. Any external competence needed was easily found mapped in the digital support system and hence did not need to be clarified by fixed roles.

Similar to what was explained in the Qamcom-case, the *content of repeated procedures* had transcended the function and importance of routines that standardize work-processes (Mintzberg, 1980). At Meridium, which decentralized authority to the greatest extent of all the cases, the utilization of such procedures was emphasized the most and was also most frequently used as seen in figure 5.3. The procedures clarified how to put ideas forwards and participate in managing the organization, how to make decisions in groups and how to make well-informed individual decisions using the Advice process, which according to Laloux (2014) is the heart of coordination in Teal-organizations (which classifies as SMOs). Every two weeks, Meridium utilized rating systems via the digital infrastructure, to signal to the rest of the organization the need for external support in teams. The content of these repeated procedures resembles Lee and Edmondson's (2017) second criteria which they call the Formal system for decentralization. This coordination mechanism is an effective correspondence to the Self-Managing way to organize, as it helps coordinating action between individuals and teams directly without intermediaries (bosses). Routinized meetings are also a part of this mechanism category. The framing of this coordination mechanism was rather mechanistic and impersonal as the procedures are programmed and pre-set. However, the framing aimed at promoting activity that was very organic.

As in the previously described cases, *rules* were substituted with *cultural content* or sometimes embedded in the content of repeated actions. As individuals stick to their teams permanently most of the time, the requirement of being highly entrepreneurial was not as prominent at Meridium as in the other cases. However, helping others, sharing information, taking initiative and daring to fail was intrinsically rewarded, for instance by acknowledgements in the Initiative

Mapping forum, spread through digital representation. Culture as a mechanism was implicit and cognitive by most part, meaning the coordination happen without people intending to coordinate (Espinosa, et al., 2010). Peers substitute for the monitoring function of managers so that people behaved in accordance with the culture. Using targeted cultural content have been observed in team-based setups before to align actions of the workforce (Steiber & Alänge, 2016).

Objects were identified as a part in Meridium's coordination, but do not have a decisive role for coordination in SMOs particularly. Objects such as TV-screens or the employee handbook was there as amplifiers of information that could otherwise be found in the digital system.

Meridium had built a *Digital infrastructure* with the framing representing an impersonal mode of coordination and information provision (Van De Ven & Delbecq, 1976). This mechanism was indispensable at Meridium that had no coordination function inherent in a role (not through the MD nor through a coordinator). Principally all information provided cross team-boundaries went through this medium which substituted for having a cross-team coordination function performed by a boss. The various integrated technical tools facilitated coordination in so many ways that the author choose to call them a Digital infrastructure. It enabled direct information sharing and accumulation, as well as storage of knowledge at Meridium. It provided representations in the form of charts, plans, available competences or roles, routinized procedures working processes and more. It also increased the transparency of the firm in general and reduced the need for physical proximity as all information and working tools and people were accessible digitally. To judge from this analysis, foregoing speculation about the contributions of technology to coordination in SMOs (Birkinshaw, 2015; Lee & Edmondson, 2017) have been confirmed significantly. Preconditions for *familiarity and trust* between members were high at Meridium as physical proximity was emphasized. Projects were performed at the office with physical presence of team members in fixed teams. Hence team members knew each other well. Efforts to integrate all organizational members was also undertaken in several ways to utilize this implicit and cognitive mechanism (Chang, et al., 2017).

5.2 Cross-Case Analysis: Exploring & Identifying the Mechanisms, their Configurations and Correspondence to the Settings

After providing an analysis of the identified coordination mechanisms of each case, what follows below is a cross-case analysis conducted by performing pattern-matching (Saldana, 2009; Yin, 2014). As in the single-case analysis, we turn to the impact of the SMO *settings* such as the level of Self-Management, the contingencies and the solutions to the universal problems of organizing – to better understand the *corresponding* mechanisms. The pattern-matching will mainly build on the patterns found due to the application of color codes, the stated levels of importance of each mechanism as well as the mechanism *configurations* that emerged when interpreting Table 5.1 - 5.3 in the single-case analysis.

When studying unexplored phenomenon without strong theoretical base or proven approaches, is it common to discover new and unpredictable conditions along the way (Edmondson & Mcmanus, 2007). This investigation was no exception. Despite pre-studies of the cases' alignment with the SMO definition, and even though several companies were declined due to shortcomings in this regard, it became increasingly clear during the investigation that the three chosen companies had three different levels of Self-Managing. Both the scope of decentralized areas in the organizations and the level of decentralization within the different areas differed, see Figure 4:4. The SMO criterion about *free work execution* and the criterion about being *free from reporting relationships* to superiors (Lee & Edmondson, 2017), could be questioned in two of the cases, Centigo and Qamcom, during special circumstances. The three different levels of Self-Managing nevertheless gave a unique opportunity to compare the degree of Self-Management against the differences in the configurations of the mechanisms of each case and thereby better understand under what circumstances and settings that some mechanisms important for Self-Management, were to appear.

5.2.1 Patterns of the Utilized Coordination Mechanisms

5.2.1.1 Divergences to the Mechanisms of the Three Cases

Centigo which had the least decentralized authority (although their decentralization was significantly higher compared to most organizations in general), exhibited some mechanisms more similar to hierarchies than the other two cases. Although Centigo had no budgets and a fairly responsive planning style which is characteristic for SMOs (Laloux, 2014), planning was

very distinct and accomplished in several organizational areas. Furthermore, Centigo utilized highly defined responsibilities which is characteristic for hierarchies (Williamson, 1981). However, size as a contingency for coordination probably influenced both planning and division of responsibilities on its part (Burton, et al., 2017; Mintzberg, 1980). Although people often had more than one role, the level of responsibility between the roles varied more at Centigo than at Qamcom and particularly compared to Meridium. The mechanisms of planning, roles as well as clear responsibilities are usually considered mechanistic mechanism, particularly associated with more traditional hierarchic structures (Van De Ven & Delbecq, 1976). Similarly, Centigo had slightly higher variations in responsibility and authority levels and a larger proportion of fixed roles compared to Qamcom, but mostly compared to Meridium. These mentioned mechanistic and impersonal mechanisms, decreased throughout the three cases, and was utilized the least at Meridium. This is visually notifiable through the color codes in the tables of the single-case analysis, Table 5.1 - 5.3. Colors of black (meaning weak distinction from hierarchical mechanisms), labeled with 'High' importance, became fewer or of lower 'Perceived importance' as the level of Self-Managing in the cases became higher. Simultaneously, coordination mechanisms of green color, (meaning restructured or substituting mechanisms to those of hierarchies), became more prominent at Qamcom and Meridium, with the highest perceived importance for green colored mechanisms found at Meridium. To be clear, this claim about a connection between the level of Self-Managing and the form for the coordination mechanisms is not based on any statistical relationship between the cases (which is impossible having only three), but was assessed through evaluating and comparing qualitative data as well as the perceived importance of mechanisms of each case, assessed through the tables in the single-case analysis.

Another interesting note was that Throughout the single-case analysis, the configuration of the identified mechanisms became harder and harder to distinguish. This in turn, was because the *types* and *modes* (which constitutes a part of the total configuration) became more difficult to label as the organizations were more Self-Managing. To clarify what is meant by 'more difficult to label', two examples will follow. Firstly, in hierarchies, roles are fixed and static and enhance coordination as they clarify responsibilities and make task allocation and work predictable (Okhuysen & Bechky, 2009; Silverman, 2012; Williamson, 1981). This makes the coordination mechanism mechanistic (Van De Ven & Delbecq, 1976). Furthermore, the fixed roles of hierarchies are determined beforehand by managers and demand no communication to be utilized after implementation which makes them impersonal (Van De Ven & Delbecq, 1976).

To the contrary, roles at Meridium for instance, were more fluent and non-static, as usual in SMOs (Hamel, 2011) which makes them more organic instead of purely mechanistic. Due to the new organic mode, they *did* require communication to establish agreements about when a shift between roles were to take place. Accordingly, the coordination mode was no longer purely impersonal, but also group-based. These fluent roles even facilitated coordination in an added dimension: by enhancing the abilities of mutual adjustment in teams as tasks were no longer locked to one person only. Yet, the fluent roles ha the price of reduced accountabilities. In summary, the mechanism roles changed character and became more organic although some of the impersonal and mechanistic traits were left, hence it got more difficult to label the types and modes of the mechanism and hence its complied configuration.

To clarify, a second example follows. Planning, which is usually mechanistic and impersonal (Van De Ven & Delbecq, 1976), became more oriented towards ‘sense and respond’ when utilized at Qamcom, and even more so when utilized at Meridium. This have also been recognized in other post-bureaucratic organizations, as one of the purposes of such organizational designs is to be agile and responsive in ever changing environments (Kellogg, et al., 2006). However, as plans would change in a responsive manner particularly at Meridium and Qamcom, and, as plans were based on any person’s sense of what was needed, - even this mechanism had become more organic and group-oriented (as appose to strictly mechanistic and impersonal). The mechanism had also gained slightly different implications for coordination. The ‘sense and respond-planning’ could not create the long-term accountabilities and predictability as static pans in more predictable environments, where hierarchy would probably be used (Lawrence & Lorsch, 1967a). Instead, direct communication was increasingly important which in turn make responsive organizations with radically decentralized authority even more dependent on smooth, low cost – communication as they need to share information about edited plans continuously. This important ability was enabled through the Digital infrastructure at Qamcom and Meridium.

Conclusively, the spread and level of decentralized authority affected coordination and made the types and modes harder to define, and the character of more traditional mechanism (Roles, plans and even Routines) became increasingly reliant on mutual adjustment and thus more organic and group-based coordination.

5.2.1.2 Similarities of Coordination Mechanisms Utilizing Self-Managing Approaches

The aforementioned findings were consistent with the theoretical predictions of more loose and collegial coordination when having fairly high task-uncertainty as in all the cases illustrated in Table 5:4 (Lawrence & Lorsch, 1967b; Van De Ven & Delbecq, 1976). Such statements have also been confirmed in late forerunners to SMOs who also utilized decentralized authority (Kellogg, et al., 2006). Furthermore, the cases shared contingency features such as having predominantly reciprocal task interdependence which would increase the likeliness for coordination through mutual adjustment (Van De Ven & Delbecq, 1976), which was evident in the cases. Qamcom's and Meridium's coordination were a bit more challenged regarding the number of locations. The collaboration between individuals and teams from different locations were more frequent here while Centigo's projects were mainly performed through physical presence. Qamcom's and Meridium's collaborations cross geographical boundaries would have been practically impossible without the digital infrastructure, especially as they operated in virtual industries.

Table 5:4 The Compilation of Contingencies Cross Cases

Cross-Case Contingencies			
Contingency	Meridium	Qamcom	Centigo
Size, ppl.	65	130	250
Number of locations	2 Kalmar & Stockholm	5 Stockholm, Gothenburg, Linköping, Wellington & Greensboro	1 Locations based on the locations of customers
Task uncertainty <i>(competition, product evolution, reliance on material availability and predictability of customer demands)</i>	Medium - High	Medium - High	Medium - High
Task interdependence <i>(pooled, sequential, reciprocal)</i>	Reciprocal (More frequent between teams than in the other Cases)	Mainly reciprocal but sequential at times	Mainly Reciprocal in projects but sequential at times
Product complexity <i>(Low, Medium, High)</i>	Medium Technique oriented	Very High Technique oriented	Medium Socially oriented

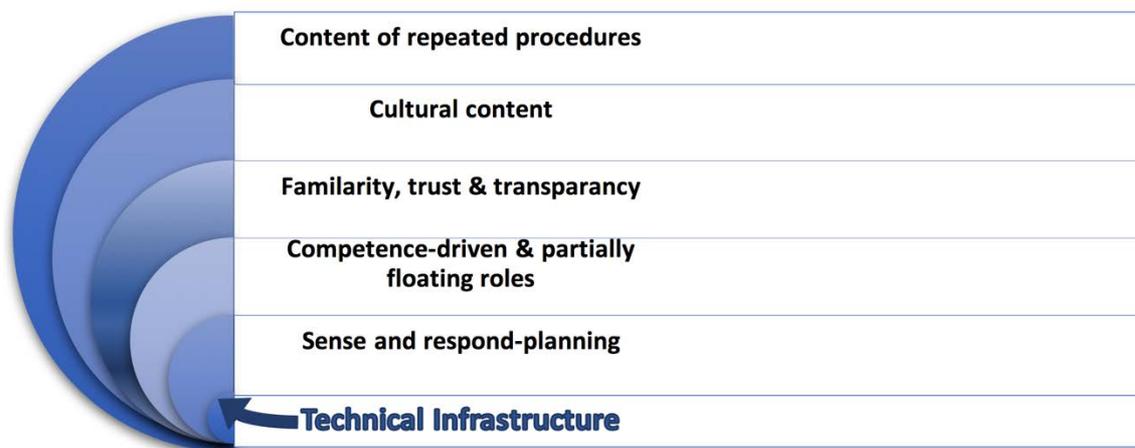
The table illustrates the contingency status found for every case. Source: own elaboration

Apart from the identified mechanisms: Planning based on 'sense and respond', Competence driven and partially fluent roles, and Familiarity trust and transparency, three mechanisms of particular importance for SMOs will be presented in the following, referred to as the Digital Infrastructure, Cultural content and Content of repeated procedures.

1. Digital Infrastructure

Utilizing information technology to lower the costs of communication is nothing unique for SMOs in any way (Steiber & Alänge, 2016). Nevertheless, that did not make this mechanism less important to SMOs, quite the opposite. To obtain coordination cross teams and individuals, the digital infrastructure *was* the substitute for the coordinating function of middle management, at Meridium and Qamcom and it truly enabled the horizontal collaboration cross teams. Coordination could be obtained directly without intermediaries. The mechanism as a substitute was explicitly expressed at Qamcom and explained in several ways at Meridium. Centigo who did not benefit from this mechanism was in need for a coordinating roles cross teams. They also had a lacking ability to provide fast information about temporary conditions, such as temporary liabilities and roles, or the short term ‘sense and respond’ planning, why there was a need to clarify more permanent responsibilities and make slightly more permanent plans. Not the less, being able to overlook a joint task-execution process in teams, cross geographical space was not possible at Centigo. This is one of the reasons why physical proximity became even more important to maintain a Self-Managing approach at Centigo compared to the other two cases.

Figure 5:1 Digital Infrastructure & Affected Mechanisms



The figure illustrates Technical infrastructure as a facilitator for the other utilized coordination mechanisms. Source: own elaboration

In SMOs, conditions are often temporary and things happen organically, task division, task, allocation and planning are just a few examples found here as well as in the literature (Laloux, 2014; Puranam & Håkansson, 2015). The fact that a well-developed Digital infrastructure could facilitate so many other coordination mechanism and make these temporal modes possible, makes the digital infrastructure inevitable to genuine SMOs, especially at scale. The claim that

information technology would have a decisive influence on the utilization of decentralized structures and coordination across distance (Beckstrom & Brafman, 2006; Laloux, 2014; Sole & Edmondson, 2002; Zammuto, et al., 2007) have strong support in these results. Another reason why Digital infrastructure is well suited to coordinate activity between Self-Managing individuals is that its establishment and use is independent of superior parties such as managers, thus, it may be decisive for role-free coordination cross teams. This is another way in which the mechanism corresponds to the needs and special settings of SMOs. The technical tools were continuously developed by anyone at Meridium and Qamcom, according to their continuously emerging needs of information provision. Lastly, the theory of spontaneous order highly emphasizes the importance of low information sharing costs and transparency to make spontaneous institutional arrangements work (Tullock, 2005). This was undoubtedly facilitated by the Digital infrastructure.

2. Cultural Content

Culture with a content aiming at strengthening individuals' ability to be Self-Managing and to coordinate, were strongly emphasized in all three cases. Some of the shared cultural traits were: viewing everyone as trustworthy and capable, embracing action-oriented behavior, utilizing information sharing behaviors and being transparent in most regards. The culture in the three cases did not just appear randomly but was carefully modeled by the continuous implementation of incentives for desired behaviors. Having salaries based on output measures at Centigo was one example that triggered new initiatives and hard work, implementing Initiative Mapping at Meridium was another, which created incentives of a similar kind. Initiative to implement such changes of the settings could come from anyone. Corporate values and culture was also carefully presented to newly employs (documentation of this was handed from Meridium) and reinforced during meetings, conferences and procedures, leaving as little as possible to chance.

Just like digital infrastructure, the mechanism of Cultural content is not exclusive for SMOs in any way. However, Cultural content seemed to be a particularly important correspondence to the settings of SMOs in some respects. First, the cultural content substituted for rules as an alternative way to create Okhuysen and Bechky's (2009) integrating conditions of *common understanding* and *predictability* regarding socially accepted behavior. In Lee and Edmondson's (2017) work, rules to organize Self-Management were claimed to be explicit, to the contrary, the statement here is that rules existed in the cases but in an implicit manner, embedded in the strong cultures and in the content of repeated procedures. Secondly, Cultural

content had a part in substituting for managerial control. The culture would clarify socially accepted behaviors which created a value-base according to which peers could exercise social control over each other. Not only could the Cultural content make people know the behaviors expected of them, they would also be forced by social pressure and peer-review systems to act accordingly. Thirdly, Cultural content could substitute for managerial coordination in the sense that it spread desired coordination behaviors both within, and cross-teams, without needing managerial reinforcement. Asencio et al. (2012) who investigated coordination in Multi Team Systems, acknowledged communication norms as important for cross-team collaboration and coordination. Even work of post-bureaucratic organizations has acknowledged culture as an important boundary spanner for coordination in such communities (Kellogg, et al., 2006). As culture facilitates coordination without people thinking about it, it is an implicit cognitive coordination type (Espinosa, et al., 2010; Scheerer, et al., 2014). Using this mechanism fits the principles of Self-Managing as it can be managed by individuals themselves, people align with principles without managerial control and, culture is scalable when reinforced and integrated well.

The theory of spontaneous order states that it is conflict and social heterogeneity that prevent spontaneous institutional arrangements from working properly (Leeson, 2008). Based on this theoretical assumption, culture as a bearer of the common values and norms becomes even more important to create the common values and homogeneity required for the function of spontaneous institutional arrangements (Tullock, 2005). As there are no roles to help individuals to handle conflicts, it becomes increasingly important to eliminate social friction as far as possible, why shared norms, values and culture seem more important than ever.

3. Content of Repeated Procedures

The mechanism that was chosen to be called Content of repeated action, was a mechanism utilized in all organization, but at three different levels. Meridium had the highest level, Qamcom the second highest and Centigo the lowest. Content of repeated procedures is the mechanism believed to be more or less unique for this form of organizing, it was also one of the three most prominent mechanisms of SMOs, found in this study. Having decentralized authority in several areas, such as work execution, task allocation, resource allocation and even firm strategy, to name some of Meridium's Self-Managing areas (see Figure 4.4), it is easy to understand why it would emerge a need to implement guidelines and principles for people to manage all of these areas by themselves, especially since most individuals are used to having

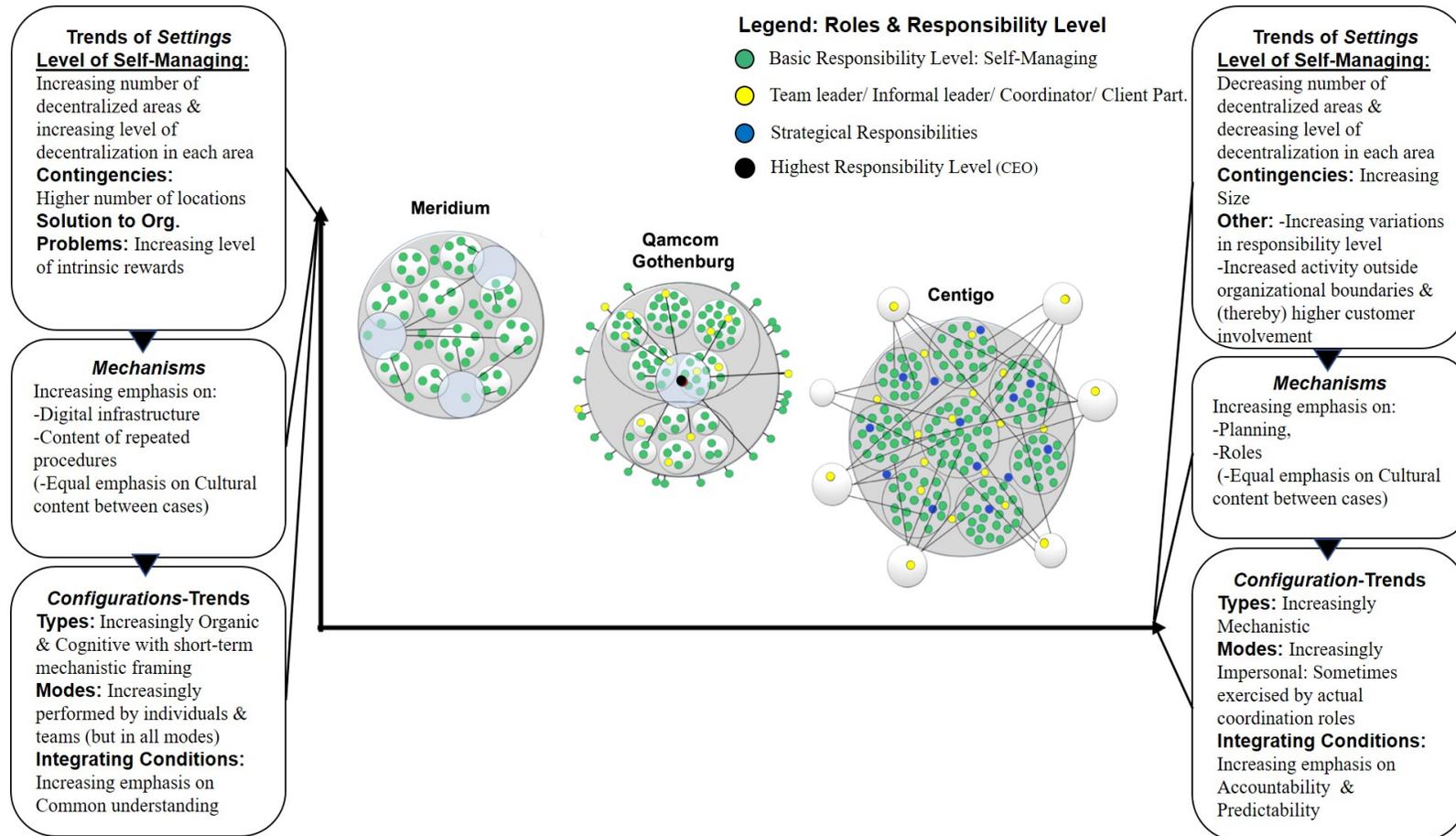
managers for such tasks in previous experiences (Lee & Edmondson, 2017). On the other hand, if authority was decentralized only in a few areas, such as work execution and the monitoring of work, as in Centigo's case, the required procedures to guide this was consequently fewer. At Meridium for example, these repeatedly used procedures would be the answers to questions such as: How do I proceed when making a big decision? How should I go about when I have a great idea that I want to implement in the organization? Or, how will me and my team decide what option to choose? The procedures provided answers and ensured that decisions were anchored in the organization as well as performed the same way by everyone. Without having these guiding procedures, things would possibly run out of hand. The covariance between level of Self-Management and the importance and utilization of Content of repeated action is logical and understood through the organizations explicit emphasis on this mechanism, the amount of procedures that were utilized and how frequently they would be addressed. The different procedures generated integrating conditions (Okhuysen & Bechky, 2009) that would increase coordination as they: (1) created common understanding about who to management oneself among others, (2) created predictability in the same respect. (3) Helped people provide information to others about their current work (Consent, Advice process etc.) and (4) it created alignment in groups of how to proceed. A tangent property of SMOs were discussed by Lee and Edmondson (2017) and was one of the criteria for the SMO definition used in this thesis. They called it a Formal system for decentralization, but while they focused on explicit rules and principals written in a handbook or so, this investigation emphasizes procedures and first and foremost the content of the suggested actions, and in what way the content of these actions affected coordination.

Given that Content of repeated procedures as a mechanism, is not dependent on physical proximity or managerial monitoring to be utilized, this mechanism is as proper for Self-Managing Organizations as it is scalable. This mechanism play a key role in coordination when utilizing Self-Management without coordination roles of any kind.

5.2.1.3 Overall Trends

In Figure 5.2 below, a suggestive model is presented that illustrates how the organizations' three levels of Self-Managing converged with, or diverged from trends of mechanisms and their general configurations as well as other settings such as the level of customer involvement. To clarify, the multiple variables on the two axes are *not* statistically or mathematically consistent relationships but an illustration of trends found when exploring the three cases qualitatively.

Figure 5:2 Trends of the Settings, Mechanisms & Configurations



The figure illustrates how the three different levels of Self-Managing in the cases, converged with, or diverged from other settings, their emphasis on certain mechanisms as well as certain trends in their mechanism-configurations. Source: own elaboration

Towards New Types and Modes

The traditionally mechanistic mechanisms had changed configuration and adjusted coordinating implications when the level of Self-Managing was higher. And the overall emphasis on organic forms of coordination and coordination through mutual adjustment became more apparent with higher levels of Self-Managing.

The three mechanisms which are suggested to be of high importance for SMOs (Digital infrastructure, Cultural content and Content of repeated procedures) share common traits. First and foremost, they can be programmed in advance (impersonal), with no help of managers. However, they are only static for shorter time-sequences compared to hierarchies as they are continuously edited by the employees. Secondly, the static ‘framing’ of the mechanisms, (for example the repeated procedures, or the digital infrastructure) encourage and enable organic content, meaning coordination by communication and mutual adjustment. This way, the two extremes organic or mechanistic mechanisms, are no longer on either side of two opposing poles, but is combined in a way that enhance coordination in SMOs. It allows for fast emergent operations and decentralized management within this frame of common values, procedures, and communication structures, completely independent of managers. What makes them even more suitable to SMOs is that they are scalable in theory. Consequently, the impersonal (pre-programmed) *mode* of coordination is no longer the managers’ privilege, and the *types* in SMOs are not one or the other, but a combination where both are important. The organic type of coordination is inevitable for employees in order to Self-Manage in collaboration with others, while the mechanistic, impersonal framing seem inevitable to align the efforts of the workforce.

5.2.2 SMOs & the Solutions to the Universal Problems of Organizing

In this study, coordination was defined as the achievement of concerted action (Kotlarsky, et al., 2008). Accomplishing this achievement requires resolution of both *information provision* and cooperation (Puranam, et al., 2014a). The latter is accomplished through providing the necessary motivation, which Puranam et al. (2014a) referred to as the *reward provision*-problem. When investigating the settings of the cases, it became clear that the organizations, despite certain variation in the degrees of Self-Managing, had solved the four universal problems of organizing *task division*, *task allocation* and *reward provision*, in a quite novel, but to each other similar way. As task division and task allocation are usually performed by formal managers, new solutions to the universal problems were inevitable in these cases which did not utilize traditional managers. Even the solutions of *information provision* and *reward*

provision were accomplished under new premises, as each individual solution significantly affect the way in which the others can be performed (Puranam, et al., 2014a).

Table 5:5 Case Solutions to the Universal Problems of Organizing

Solutions to the Universal Problems of Organizing			
	Meridium	Qamcom	Centigo
Task Division	Free, both in teams and at the organizational level.	Made by CEO or in projects, by the members of the team	Mainly Collective, sprung from peoples' interests and ambitions
Task Allocation	Free, team-based	Mainly free, based on competence & mutual adjustment	Free or Directed by Request
Reward Provision	Emphasis on intrinsic rewards: Self-choice, visibility within firm, reputation, self-actualization	Monetary rewards and increased emphasis on intrinsic rewards	Emphasis of both Intrinsic & Extrinsic Rewards, variable salary

The table constitute a compilation of the cases' solutions to three of the four universal problems of organizing. Source: own elaboration

A common denominator of the three cases, (and SMOs in general), was that the development and division of different tasks (*task division*) was generated by the initiatives of employees, regardless of their authority level. Employees felt that the organizations had an inherent trust in their judgment to make their own decisions and a confidence in their ability to do a good job. The relations in any post-bureaucratic organization are usually interdependent rather than dependent, which demands internal trust (Hodgson, 2004; Kellogg, et al., 2006). In the three cases, the internal trust was even greater due to the radically decentralized authority. Regarding task allocation, tasks could either be postponed to individuals who could report their interest, or, individuals could be involved in creating their own assignments. In neither one of the cases, individuals would ever be forced to allocate a task of which they had no interest. Accordingly, both task division and task allocation were made in a very decentralized manner, largely based on free choice. Comparing this to managerial hierarchies where task division would be performed centralized in the top of the hierarchy, and where tasks would be handed out by a manager, the opportunities for individual influence and self-realization would be virtually absent, comparatively.

The freeness of task division and task allocation was perceived as rewarding by respondents of this study who also recalled a motivating effect. The motivation effect of trust and freedom has been acknowledged in previous work (Silverman, 2012), even in SMO-settings where increased satisfaction and motivation furthermore were claimed to reduce the need of control (Laloux, 2014; Puranam & Håkonsson, 2015).

Conclusively, not only did the new solutions of task division and allocation increase employees' willingness to collaborate, the solutions made work self-chosen and hence, barely in need for managerial control. Theoretically, a very important reason to why *information provision* (the found coordination mechanisms) could be so loose and collegial, performed by everyone, free from managerial control and seemingly with few free-riders, was due to the new solution to reward provision, and in turn, the solutions to task division and task allocation.

6 Conclusion & Contributions

The final chapter begins with a presentation of the findings from this explorative study that directly addresses the aim. Thereafter, additional contributions generated through the study and its execution will be presented. In the last section, the methodology of this investigation is criticized together with proposals for further research and a discussion.

6.1 Findings in Summary

A mechanism-trend that became increasingly prominent as the Self-Management was more radical, was that the traditionally mechanistic mechanisms of Planning and Roles became less important and changed configurations towards being increasingly organic, temporal and dependent on mutual agreements, although some of their mechanistic effects were left. The changed tenor of these mechanisms corresponded to the SMOs settings as they enabled the organizations to be more agile and responsive, but with the price of lower predictability and more short-term accountabilities. Based on the new configuration of the identified mechanisms, they were given other names: Planning based on ‘sense and respond’ and Competence driven and partially fluent roles. Two additional mechanisms, Rules and Routines, which are also traditionally mechanistic and impersonal, had largely been substituted by Cultural content and Content of repeated procedures with very different configurations that corresponded better to the organizational settings.

The Coordination mechanisms of Objects as well as the merged category of Familiarity peer-trust and transparency, were also identified in the cases but with unchanged coordination effects and configurations to that of hierarchy. However, transparency was underlined in every case to facilitate the information accumulation needed to make Self-Managing decisions. The findings suggested that three of the identified mechanisms were particularly important and useful for SMOs: Digital infrastructure, Cultural content and Content of repeated procedures. Their configurations facilitated coordination and corresponded to the organizational settings in the following ways:

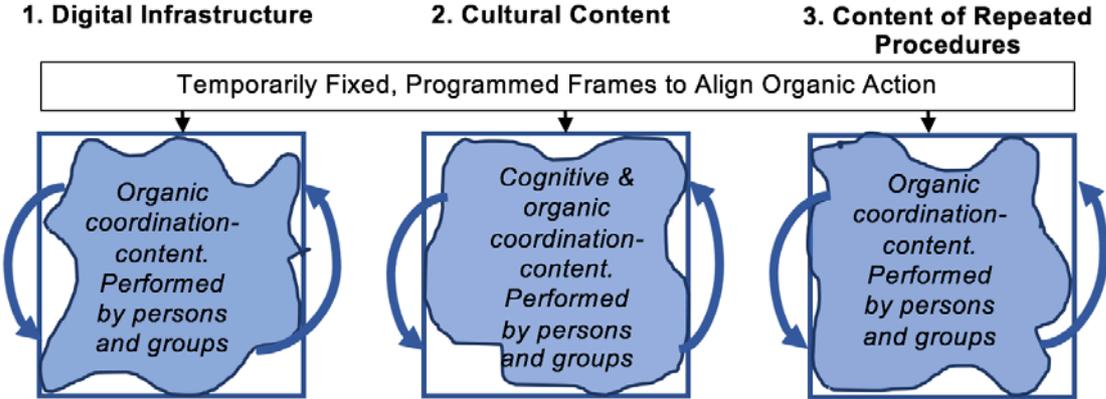
- The *Digital infrastructure* (1) lowered the cost of direct information sharing (without intermediaries), which was very important in allowing the temporal modes (of e.g. roles and plans), which characterize responsive organizing of SMOs. (2) Digital infrastructure was indispensable for effective coordination cross teams, as a substitute for middle

management. Finally, (3) the Digital infrastructure facilitated the effectiveness of most other coordination mechanisms.

- *Cultural content* suggestively facilitated coordination implicitly in four ways: (1) because the *content* of the culture aimed at affecting individuals to share information and Self-Manage in a uniform manner automatically. (2) By substituting for rules and create common understanding and predictability of peoples' behaviors. (3) By providing a framework for social peer-control which indirectly forced individuals to act in accordance with the cultural content that supported coordination without managerial monitoring. And hypothetically, (4) by decreasing the social heterogeneity and conflict that according to Leeson (2008) prevents spontaneous arrangements from working.
- The *Content of repeated procedures* (1) created common understanding about how to manage oneself in collaboration with others. (2) It created predictability and alignment in the way in which people would manage different organizational areas. (3) The content decree of the repeated procedures helped people provide information about their work to others, (through Consent, Advice process etc.), and (4) it created alignment and consensus in groups of how to proceed.

The three mechanisms were also configured in a way that were favorable for SMOs. They were viable and editable by any individual, their coordination-effects were scalable in theory and independent of managers. They created a programmed frame to align the organic proceedings of the workforce. Figure 6:1 below explains the configuration of the three suggestively most important mechanisms to SMOs.

Figure 6:1 The Utilization of the Coordination Mechanisms Important for SMOs



The figure illustrates the configuration and character of the mechanisms important for SMOs. The mechanisms had a temporarily fixed (mechanistic) frame or ‘a code of conduct’ to sculpt the way in which organic coordination within the frame was performed. The arrows represent any person’s or groups’ continuous updating and programming of the frame, to adapt to emerging needs of information provision. Source: own elaboration

6.2 Theoretical Contributions

The main theoretical contribution of this study is the increased understanding of the aforementioned characteristics of coordination mechanisms when utilizing radically decentralized authority. Perhaps the most interesting finding was that behind what seemed to be spontaneously ordered organic coordination, lied a rather mechanistic and impersonal framing for action, which sculpted the direction of the organic efforts. The mechanisms which were perceived as the most important, shared this configuration characteristic. This insight can even open doors to the possibility of developing additional mechanisms with the same configuration characteristic – which could strengthen coordination in SMOs even more and improve the prospects for SMOs of scale.

Increased Understanding of Conditions where the SMO Definition is Restricted

Even though coordination related to customers was excluded in this study, other findings related to Self-Management had a strong connection to this particular stakeholder. If there is any boss left in true SMOs, it is the customer. The investigation revealed clear incapability to meet the SMO criteria in situations where (hierarchically organized) customers were highly involved and demanded something else. This discovery was very unpredictable as no such indications were present in any SMO literature found prior to this study (Birkinshaw, 2015; Laloux, 2014; Laloux, 2015; Lee & Edmondson, 2017; Puranam, 2014b; Puranam & Håkonsson, 2015; Silverman, 2012). An additional hypothesis is that SMOs in consultancy could be particularly affected by this, as work is often performed outside organizational boundaries on customer

terms. However, the condition of high customer involvement, should have the same restricting effect on reporting relationships and freedom of work execution, and thus the SMO-definition, regardless of organizational activity (consultancy or not). Moreover, as a common trait for post-bureaucratic organizations generally is that organizational boundaries are fuzzy and permeable (Hodgson, 2004; Kellogg, et al., 2006), the risk for involvement of external hierarchic parties may be even larger, which may pose an additional threat to Self-Management - caused by other involved stakeholders.

Clarifying the SMO Definition

While the study partly agrees with Lee and Edmondson's (2017) statement, that traditional reporting relationships to superiors, do violate the SMO definition, this thesis argues that this criterion needs editing and clarification. Aligning a workforce where everyone manages their own work, requires extensive communication to obtain effective coordination. In fact, all respondents highlighted the importance for employees to inform each other of their work and to adapt to each other. Reporting to all involved colleagues, regardless of authority level was needed. Consequently, rather than claiming that reporting relationships are excluded in SMOs, this thesis argues that reporting relationships are equalized and established between *all* involved parties. The shortage of the SMO definition was not suspected in advance, but due to the nascent knowledge development in this research field (Lee & Edmondson, 2017; Puranam, 2014b) and considering that the used definition is the first of its kind (Lee & Edmondson, 2017), untested, and less than a year old, any definition deficiencies seem quite reasonable.

Suggestion of a Two-Dimensional Definition of Self-Managing

Investigating SMOs does not only require a proper SMO definition, but also a clear definition to the core concept of this organizing-form, namely Self-Managing. Reality is not as categorical as either Self-Managing or not which became evident in this study, the scale is gradual, even within the scope of SMOs. This knowledge is useful when making a sample selection, especially when trying to understand the conditions of SMOs, that coordination needs to be adapted to. This thesis suggests a conceptualization of Self-Managing that includes both the *scope of areas* managed by the employees in an organization, and the level of influence by employees *within each area*. This is needed in order to isolate the effects on coordination caused by Self-Management, if that is the question of interest.

6.3 Practical Contribution

Special Attention to Three Mechanisms

Although the theoretical understanding of coordination mechanism in SMOs is still in its infancy, this thesis shed light to the suggested usefulness of Digital infrastructure, Cultural content and Content of repeated procedures, for facilitating coordination. To any organization striving towards more radical Self-Managing, or to smaller, but growing SMOs that wants to keep this organizing form, the findings suggest that special efforts and attention should be given to these three mechanisms, or potentially other mechanisms with similar configurations.

6.4 Methodological Contribution

A Methodological Contribution to the Field of Coordination Mechanisms in SMOs

In the analytical approach in the single case analysis, color codes and the estimated level of importance for each mechanism were used in combination with looking at modes, types and integrating conditions for each identified mechanism. This was a way to discover mechanism characteristics, novelties, changes in their contribution to coordination, and to find overall trends. This is an analytical approach formerly never used. It does all this, by giving five different kinds of information about a mechanism: (1) the type (mechanistic, organic, cognitive) which will reveal the *form* for coordination, (2) the mode (impersonal, group and personal) which will reveal *who* is performing the mechanism. And (3) the integrating conditions, which will reveal *the way* in which the mechanism *facilitates coordination*. These three mechanism-traits constitute the total configuration which are then put in relation to (4) an estimated level of *importance for the mechanism in the firm*, and (4), is given a color that *visualize its departure from the hierarchic solution*. This method enables a multidimensional understanding of the coordination mechanisms in an organization, presented transparently in schemes which makes organizations' coordination mechanisms comparable with others.

6.5 Methodological Criticism & Proposals for Further Research

Previous management research that explored phenomenon with nascent theoretical knowledge development oftentimes preform explorative studies through in depth interviews, combined with documentation and triangulation of sources (Edmondson & Mcmanus, 2007), similar to this study. According to Edmondson and Mcmanus (2007), such methods of data collection have also fruitfully included some elements of observation as well as a longer time horizon than what was possible with the resources provided for this study. Such research has collected data

during a few days, to up to a couple of years (Barker, 1993; Gersick, 1988). Adding observations to a future study would generate valuable proof of practice, rather than as in this study, relying on elaborations of spoken and written word. The limits of the utilized approach in this thesis are not believed to be caused by the cognitive bias of respondents (Bhattacharjee, 2012) because the topic of coordination was not perceived as particularly sensitive. Besides, when questions were sensitive, the Critical Incident Technique (Butterfield, et al., 2005) was utilized to eliminate the cognitive bias. In this study, a larger risk may instead have been overestimating respondents' or writers' rational ability to present information consistent with reality. In this sense, it is a weak spot to solely rely on spoken and written word. Consequently, this study suggests further research, building on the one provided here, that includes observations and a longer time-horizon. Furthermore, such analytical approaches have proven its applicability in previous management studies with nascent theoretical base (Barker, 1993; Gersick, 1988; Maznevski & Chudoba, 2000). Performing the investigation with an ideal methodical fit with regards to the knowledge development of this field, could possibly generate insights to additional mechanism-constructs that was not revealed in this investigation. This investigation had to take a short cut, using Okhuysen and Bechky's (2009) five coordination mechanism to guide data collection. This may have limited the author's conception of possible mechanisms in the organizations, although efforts were made to look beyond the themes and search for independent patterns, both in data-collection and in the subsequent coding phases. Being guided by this theoretical framework however, helped to gain an understanding of the coordination mechanisms in SMOs more quickly, as long-term observation studies were not accessible. A longer time-horizon would additionally have allowed a more iterative data collection and analysis, even more exploratory than the one conducted here, which could provide an even more reliable and valid extended version of the suggestive mechanism constructs found in this study. However, few studies of nascent character with case study design, would claim to contribute with anything other than just that, - suggestive models or hypothesis about reality, some more solid than others.

The studied organizations mainly operated within consultancy business. On the one hand, homogeneous samples can contribute to better comparability between cases, on the other hand, this may also have lowered the transferability and generalizability of the results. Consequently, this study suggests further research of the topic in varied, non-consultancy settings. Preferably in even larger organizations, with environments where task interdependence is high, not only

between individuals, but also between teams. The greater the coordination challenge, the more interesting the results.

To the best of the author's knowledge, this study can be regarded as the first investigation of coordination mechanisms in SMOs and has taken on a broad approach to understand overall trends and constructs of the topic, hence, future research could investigate specific areas of this study more deeply. To investigate the cultural content and its relation to cognitive coordination in SMOs, is one suggestion. Investigating increased motivation (due to high freedom and influence), as a mediator for loose and collegial coordination in SMOs, is another.

In any future case-study research regarding coordination mechanisms of SMOs, this study recommends a pre-estimate of both dimensions of Self-Managing. Estimating the scope of Self-Managing areas as well as the levels of Self-Managing in those areas, rather than only estimating the case alignment with the SMO definition. This would provide a necessary understanding of the special circumstances of Self-Managing in each case, which suggestively effects the ways in which coordination must occur (the configuration of the coordination mechanisms).

6.6 Further Insights and Speculations

Viewing SMOs with New Eyes

This thesis argues that the use of the term 'Self-Managing Organizations' may have led to misunderstandings in previous interpretations of this phenomena. To call an organization Self-Managing impose higher claims regarding the freedom of the workforce than the definition actually requires as all activities do not have to be Self-Managed. Moreover, this study revealed that although work execution (and other organizational areas) are Self-Managing in SMOs, the workforce is still only free within the limiting frames of a certain set of required procedures, a strong culture and the availability of certain technical tools. Moreover, work is always bound to the activities related to the business idea and must submit to customer demands. Conclusively, while the freedom of SMOs may be striking compared to managerial hierarchies, the freedom is not absolute by any means. Hence, this organizing form is not about anarchy at all and the risk for disorder and chaos may have been slightly overestimated by previous speculators (Birkinshaw, 2015; Burton, et al., 2017; Puranam, 2014b). None of the organizations showed signs of issues regarding duplication of work, despite a rather free work

allocation. Perhaps duplication of work was avoided because all decisions were communicated to everyone affected by them (content of repeated procedures). In addition, the culture facilitated a communicative behavior and the allocated projects and tasks were made visible through the digital infrastructure. Other suspected issues like slow consensus building (Puranam, 2014b) could theoretically be an actual problem to SMOs, but at Meridium for instance, an easy way to get around this problem was used, skipping consensus and instead using the Consent model for group decisions (see 4.3.2.1 Rules & Routines). If consensus were to be sought however, it is important to consider the slowness of the alternative: having employees asking for permission and waiting for formal decisions up and down the hierarchies - which was actually experienced as significantly slower by interviewee 4, who had long working experiences in managerial hierarchies.

Size & Business Matters

Having brought new light to some myths regarding SMOs, the findings indicate that the applicability of this organizing form may vary. Looking back at the initial sampling frame of this study (Table 3.2), most SMOs were small. Even the chosen cases revealed the highest level of Self-Managing in the smallest organization. These observations *could* be a sign of challenges preserving Self-Management in larger organizations as suspected by several scholars (Burton, et al., 2017; Lee & Edmondson, 2017; Puranam, 2014b). An alternative explanation may however be that the awareness of mechanisms to manage organizations without hierarchy and managers is yet underdeveloped. In this regard, this study has left a modest but noteworthy contribution. The largest organizations in the total sampling frame were active in consultancy dealing mostly with services or virtually creatable products (software et cetera). No larger organization were active in for instance manufacturing, which may need more restrictions regarding their work execution.

Although the applicability of Self-Management may vary, the potential value it could bring to the knowledge economy should not be underestimated. Providing freedom and thus motivation to workers by using (various levels) of Self-Managing may liberate the great power that competent workforces possess. This could potentially lead to a significant competitive advantage to SMOs in societies where knowledge, agility and innovation is important.

7 References

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8 Appendices

8.1 Interview Guide

Table 8:1 Interview Guide

Name of Organization				
Ref.	Questions & Themes	Inter- viewees	Answers	Observ. & Insights
	1. Introduction			
	*Vem är jag *Undersökningens syfte *Hur Intervjumaterialet kommer användas och publiceras *Personers namn publiceras inte, däremot en rollbeskrivning *Möjlighet till förhandsläsning och godkännande *Är det okej att jag spelar in för att underlätta materialbearbetning?			
	2. Background Information			
1	Kan du berätta lite om dig själv, vad är din bakgrund, roll och dina arbetsuppgifter i organisationen?	1 2		
2	Hur länge har du jobbat i organisationen?	1 2		
	3. Goals & Structural Characteristics			
3	Är organisationen uppbyggd av team som huvudsaklig struktur? Om ja: a) Ungefär hur många team brukar vara verksamma samtidigt? b) Vad är det genomsnittliga antalet personer per team / tillfälligt projekt? Om nej: C) Hur ser det ut i stället?	1 2		
4	Kan flera team/(Personer) vara involverade i samma uppdrag/projekt, a) Hur vanligt är det?	1 2		
5	Fungerar teamen/(uppdragsgrupperna) på ett liknande sätt med avseende på a) Problemlösningsprocess? b) Beslutsfattande? c) Samordning? Om inte: d) Vad skiljer dem åt?	1		
6	a) Vad är organisationens övergripande mål och syfte? b) Har organisationen något operativt mål? Vilket?	1 2		
	4. Problems of Organizing			
3	När (det operativa) målet skall delas upp i olika arbetsuppgifter, hur sker det rent praktiskt? a) I organisationen generellt? b) Hur bestäms de uppgifter som skall finnas med i ett team/arbetsgrupp?	1 2		

	Om uppgifter inte kommer till på det sättet -hur sker uppdelningen av uppgifter då istället?			
4	Vem bestämmer vem som skall ha vilka uppgifter/utföra ett visst arbete? a) I organisationen generellt? b) I projekt inom team? c) Har ni bestämda roller eller är de skiftande generellt?	1		
		2		
5	Vad tror du är skälet till att anställda gör det dem ska? Om du försöker vara så objektiv du kan? (är det belöning av olika slag, trycket från kollegor?) a) Vilken roll spelar andra kollegors insyn och åsikter?	1		
		2		
6	Vad på er arbetsplats är det som motiverar dem som jobbar där? (ex: ersättning/frihet/företagssyfte etc.)	1		
		2		
5. Contingencies				
7	<i>Locations</i> Rent geografiskt, var sker anställdas arbete? a) Krävs kommunikation eller sammabete mellan dessa platser för det operativa arbetet? Is hur löser man sådan samordning?	1		
		2		
8	<i>Task Interdependence: Sequential/ Reciprocal/ Pooled</i> a) Är det vanligt att team måste samarbeta för att lösa en uppgift? Isf. hur samordnar dem det mellan varandra, vilka mekanismer är viktiga? b) Är ett team beroende av ett annat teams arbetsutförande för att kunna utföra sin egen uppgift? Om ja: c) Är de ömsesidigt beroende av någon form av samarbete eller är beroendet enkelriktat?	1		
		2		
9	<i>Task Uncertainty</i> Hur pass förutsägbar skulle du säga att er kontext är med avseende på: a) Kundens behov? b) Konkurrens? c) Resursförutsägbarhet?	1		
		2		
10	<i>Product/Service Complexity</i> Hur komplex skulle du säga att tjänsterna/produkterna är att ta fram eller utveckla? a) Krävs samma kunskaper och resurser varje gång? b) Krävs det mycket utvecklingsarbete? c) Hur lång tid tar det att utveckla en tjänst/ta fram en lösning (i snitt/vanligen)?	1		
		2		
11	<i>Technology</i> Vad använder ni för typ av teknik i arbetet med att samordna era aktiviteter? a) För att kommunicera? b) För att samordna?	1		
		2		
6. Coordination Mechanisms				
12	<i>Plans</i> Hur sker planeringen av: a) Längre projekt, uppdrag eller uppgifter b) Framtida projekt c) Är planeringen en viktig del i samordningen, isf. varför?	1		
		2		

13	<i>Routines</i> a) De som jobbar med det operativa arbetet, vad har de för rutiner? b) Finns standardlösningar för andra operativa uppgifter operativt, eller för att lösa problem? c) Hur ser standardlösningarna ut? d) Har ni några formella processer för beslut, hur ser de ut?	1		
		2		
14	<i>Rules</i> a) Vilka regler har anställda att förhålla sig till i sitt arbete? b) Är det formella regelsystem som dominerar eller finns det informella? c) Vad består isf dessa av?	1		
		2		
15	<i>Market Mechanism</i> Vad har ni för typ av belöningsystemen? Belönas lyckad team output, när man exempelvis levererat ngt. bra till kunden eller har ni ngn form av bonussystem? a) När belönas medarbetare?	1		
		2		
16	<i>Proximity</i> Är information om vad andra medarbetare gör eller har för uppgifter för tillfället, synligt på något sätt? Alternativt, är planering eller mål och liknande synliggjorda på något sätt? Hur? a) Finns det andra sätt på vilka sådan information blir synliggjord? b) Hur förhåller man sig till transparens i företaget?	1		
		2		
17	<i>Roles</i> Finns någon tydlig rollfördelning på företaget, är den fixerad eller rörlig? Kan du beskriva hur den ser ut? a) Finns det någon roll med ansvar för samordningen? - Inom team? - Mellan team?	1		
		2		
18	Har organisationen haft en VD och ledningsgrupp tidigare? a) Vilken samordnande roll skulle du säga att dessa hade då?	1		
		2		
19	<i>Objects & Representations</i> Använder ni någon form av prototyp eller objekt som kan hjälpa till att visualisera vad som skall göras? a) Hur används den?	1		
		2		
20	<i>Other</i> a) Vad ställer en chefslös organisation för krav på de enskilda individerna som jobbar där? b) Har personerna en egen roll i samordningen, isf. på vilket sätt?	1		
		2		
21	Var vänder man sig när man behöver ta reda på någon att kontakta när har frågor/problem? a) På vilket sätt sker denna kommunikation (medium)?	1		
		2		
22				

	7. Effectiveness, SMO-Problems & Search for Mechanism Substitutes			
	Hur tas större beslut i organisationen? a) Vem/ vilka är involverade i detta? b) Hur blir organisationen varse vad som behöver göras? (dvs hur transporteras denna info till beslutsfattarna och vilka är dem?)			
22	a) Hur vet man att det som skulle blivit gjort, har blivit gjort? Ifall arbetsallokeringen är fri: b) Hur ser man till att det inte blir dubbelarbete? c) Hur hanteras uppgifter som behöver göras men som ingen vill utföra?	1		
		2		
23	Vem ordnar en ersättare om någon blir sjuk?	1		
		2		
24	Tänk dig en situation där du samarbetade med ett annat team och samordningen mellan teamen var ineffektiv. a) Kan du ge en detaljerad beskrivning? b) Vad saknades samordningsmässigt?	1		
		2		
28	Tänk dig en situation för samma sammanhang, där samordning mellan teamen istället var väldigt effektiv. a) Kan du ge en detaljerad beskrivning? b) Varför var den effektiv?	1		
		2		
29	Har ni alltid varit självstyrande? Om inte: a) När blev ni självstyrande? b) Vad har varit den stora förändringen? c) Vilken samordnande funktion togs bort och vad har lagts till istället? Vad är den ersättande mekanismen här?			
30	Har du jobbat i en hierarkisk organisation? Om ja: a) Om du skulle jämföra ert företag med en hierarkisk organisation, vad skulle du då säga är den största skillnaden i ert sätt att samordna er utan chefsfunktioner? b) Allt eftersom ni blivit mer självstyrda, och tagit bort chefsfunktioner, vad har ni då lagt till istället?	1		
		2		
31	Vilka aktiviteter, verktyg eller andra saker tycker du är särskilt hjälpsamma i samordningen för er? a) vad gör just dessa så viktiga?	1		
		2		
	8. Interview Closer			
32	Finns det något rörande ert sätt att koordinera er som jag ha glömt att fråga dig om eller som du särskilt vill lyfta fram?	1		
		2		
	* Stort tack för att du tog dig tid för detta, vi hörs igen när materialet är bearbetat så att du får möjlighet att korrigera om du har några synpunkter! Kan jag höra av mig om det är något som behöver klargöras eller kompletteras?			

The table guided both the collection of the interview data and data from triangulating sources