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## Empowering organizational agility through a holistic management control system: A conceptual model

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**Abstract:** Today's business environments demand continuous innovation and adaption in established companies for long-term competitiveness. To ensure this, many leaders thrive for agility in their organizations. Currently, this concept is mostly regarded operationally as a project management approach. But the realization of the full strategic potential of agility requires a holistic, organization-wide approach. While one possibility to implement such 'organizational agility' lies in the use of suitable management control systems, no established framework exists to achieve this. To address this gap, the present study qualitatively analyses case companies with an agility enabling MCS to answer the question of how management control systems can be designed to enable and support agile capabilities on an organizational level. The proposed novel framework for management control systems includes five elements and their mutual interactions that help leaders to enable and support organizational agility for continuous innovation and adaption: Empowerment of employees, anchoring of flexibility, performance transparency, leadership support, and the cultural foundation of organizational agility.

**Keywords:** Organizational agility; Management Control Systems; organizational resilience; innovation management; continuous innovation

## 1 Introduction

“According to Darwin’s Origin of Species, it is not the most intellectual of the species that survives; it is not the strongest that survives; but the species that survives is the one that is able best to adapt and adjust to the changing environment in which it finds itself” (Megginson, 1963). This notion postulated by Darwin is not only relevant in biology but has shown to be of crucial importance in today’s business environment as well, where uncertain and rapidly changing environments have become the standard (Reed, 2021). Facing megatrends such as digitalization, or disruptive developments such as the COVID-19 pandemic, many organizations find themselves in increasingly dynamic environments where they must constantly innovate and adapt to stay relevant (Wendler, 2013). To achieve this, few concepts have received as much attention as agility, which enables organizations to respond to changing business environments through flexible adaptation (Harraf *et al.*, 2015; Walter, 2021).

Agility is especially challenging for established companies that already exist for a longer period with a working business model and sustainable competitive advantages. Often, their success factors of the past hinder the flexible adaptation of the organization to remain relevant in the future (Harraf *et al.*, 2015). Hence there is both a high need and high difficulty for the implementation of agility in established organizations, while younger and smaller companies are usually ‘agile by nature’.

One well-examined option to enable such agility lies in agile project management, which stems from the information technology domain and has been a major trend influencing project management in recent years (Sońta-Drączkowska, 2018). However, as Theobald *et al.* (2020) show, it is not agility based on the management of single projects that enables the aspired flexibility and adaptation of organizations but rather organizational agility (OA). OA refers to a more holistic approach, postulating that agility should be implemented across the entire organization (Walter, 2021). Especially the domain of management control systems shows considerable potential for such an integration of OA in established companies, as it represents one of the core concepts of organizational steering and interaction (Harraf *et al.*, 2015). However, many organizations, especially established ones, struggle to develop and implement suitable management control systems to enable agility on an organizational level (Rigby, Sutherland and Takeuchi, 2016). From the existing literature, two major reasons for this struggle can be identified.

Firstly, the lack of a general understanding of suitable management control systems that support agility on an organizational level. While the number of practices and frameworks to enable OA grows, there is a lack of a common understanding of the integration of OA in organizational management structures (Walter, 2021). This complicates the further development of research findings and the adoption of suitable management control systems for OA in practice (Appelbaum *et al.*, 2017).

Secondly, the focus of researchers and practitioners on the management of single projects in an agile way. This focus neglects a “strategic, holistic perspective on the organization and project agility” (Sońta-Drączkowska, 2018, p. 232). Hence additional difficulties occur to consistently investigate and operationalize holistic agile practices.

Therefore, explorative research is required to propose the foundations for the design of an agility-enabling management control system. Accordingly, we examine ‘how management control systems can be designed to enable and support agile capabilities on an organizational level for established organizations.’

Beyond the focus on OA and MCS, this research question also states a focus on established organizations. This refers to organizations which have existed for more than ten years and which have built established business models without extensive reiteration as found in start-ups for instance. As shown by research, the age of an organization is a significant factor in hindering the adaptation of an organization to remain relevant (Harraf *et al.*, 2015). Hence there is a high need for the implementation of OA in older organizations. Therefore, the specific focus on more established organizations ensures that the introduction of OA shows significant potential to improve the internal ways of working.

Addressing the research question of this study covers three specific research objectives:

Firstly, the classification of elements within a management control system that enable and support agility which have been defined in the existing literature. This will be derived through the analysis and clear definition of both OA and relevant concepts within the field of management control systems.

Secondly, the conceptualization of relevant design elements for management control systems that enable agility on the organizational level. These elements will be derived through the analysis of empirical material from qualitative case study research.

Thirdly, a final framework of the elements of an agility-enabling management control system that is grounded in the comparison of the analysed elements from literature and empirical data to serve as a guideline for the introduction and refinement of OA.

Based on these three objectives, the study will contribute to filling the current gap of an academic perspective on holistic agile management control systems on an organizational level and guide further research. Additionally, this exploration of agility-enabling elements of management control systems is supposed to support practitioners to expand their OA and respond more effectively and efficiently to an ever-evolving environment.

## 2 Theoretical background

While both (organizational) agility and management (control) systems have already been examined, they are seldomly connected to provide a possible framework for establishing OA (Walter, 2021). Therefore, the theoretical background provides a short overview of the current state of research for both concepts, before discussing the existing suggestions for their integration.

### *Organizational agility*

Generally, the concept of agility has received a high amount of attention over recent years. However, with increasing interest came an increasing confusion from both practitioners and researchers concerning the definition and use of the term agility and especially OA (Walter, 2021). Therefore, to allow for rigorous and transferable results, this study aims at using a unified definition.

The concept of agility originally started in the context of project management in software development (Sońta-Drażkowska, 2018). However, this aspect of agile project management will not be described further here due to the described focus on a more holistic, organizational perspective in this study. In this context, the general concept of agility is based on two core characteristics: Flexibility and adaptability (Harraf *et al.*, 2015). According to Holsapple and Li (2008, p. 8), 'flexibility' "refers to the range of ways available to achieve success". In that sense, flexibility allows an organization to use a wide

variety of options to reach pre-defined goals. ‘Adaptability’ describes how well the responses of an organization fit to external stimuli (Harraf *et al.*, 2015). Hence agility is especially relevant in uncertain and fast-changing environments that cannot be managed with traditional tools such as risk management and hence require a high degree of flexibility, adaptability and continuous innovation (Boer *et al.*, 2001; Teece, Peteraf and Leih, 2016). Consequently, agility is no end in itself. As shown by Teece, Peteraf and Leih (2016), agility is a trade-off with efficiency as it always requires certain processes in place to respond to change. Therefore, the implementation of agility should not be unconditionally and rather be carefully considered and analysed, for instance by discussing boundary conditions and antecedents when proposing frameworks for OA.

Like the general concept of agility, OA has also been defined in various ways in recent years. One commonly quoted example from Haneberg (2012, p. 1) describes OA as “[...] the efficiency with which organizations respond to continuous change by consistently adapting”. Another more comprehensive definition from a recent literature review from Walter (2021, p. 344) defines OA as “[...] a company’s set of capabilities for thriving and prospering in an unpredictable and rapidly changing environment”. The latter definition incorporates two main aspects: Firstly, certain elements help organizations to achieve OA. Secondly, OA mostly occurs in uncertain and rapidly changing environments, which corresponds to the assessment of Teece, Peteraf and Leih (2016). As it described both context and elements that are required for OA, this definition will be used in the following when referring to OA.

Apart from these definitions of OA, other terminologies which describe similar concepts have emerged, for instance, strategic agility or corporate agility (Teece, Peteraf and Leih, 2016; Battistella *et al.*, 2017; Clauss *et al.*, 2021; Reed, 2021). As no clear differentiation between these concepts and terminology exists, we use the perspective of scholars such as Christian *et al.* (2001) who state that OA provides an umbrella term for different forms of agility within an organization. Concepts such as strategic agility are then regarded as a more specific subset under OA. This is in line with the claim in literature to establish a unified understanding of OA concepts (Wendler, 2013; Harraf *et al.*, 2015; Walter, 2021).

Within this context of OA, a variety of frameworks to explain the phenomenon have emerged in the last two decades. An impactful review comes from Wendler (2013) who distinguishes five different perspectives OA literature focuses on, namely organizational culture, workforce, customer, organizational abilities, and technology. However, the review shows that there is little to no overlap in the understanding of OA and hence Wendler (2013) calls for a unifying framework of OA and additional empirical research to support such a framework.

Consequently, an academic discussion was sparked with a variety of different thoughts and frameworks evolving in recent years. Nold and Michel (2016) for instance break down OA into a performance triangle which consists of culture, leadership, and systems. The model is derived from a comprehensive analysis of 100 case studies and survey data from 50 of these companies and has shown that the identified factors enhance organizational success, especially in rapidly changing environments (Nold and Michel, 2016). However, the integration of the triangle into the management structure of an organization is not specified.

A structure-wise similar model has been developed by Harraf *et al.* (2015) who propose nine so-called pillars of agility, consisting of a culture of innovation, empowerment, tolerance or ambiguity, vision, change management, organizational communication,

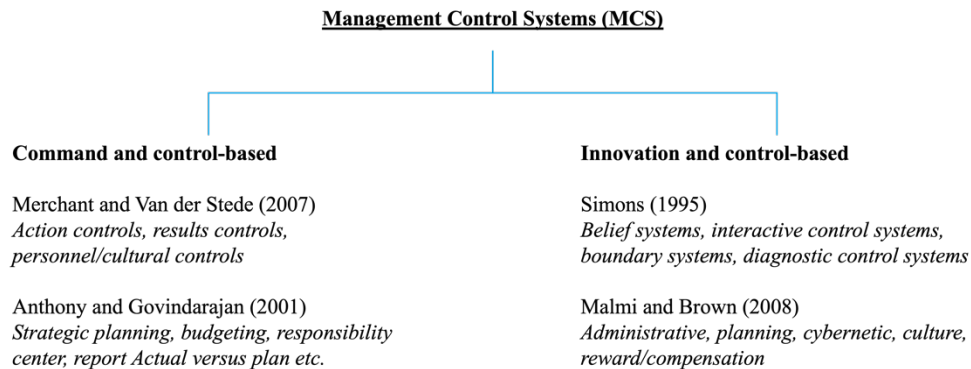
market analysis and response, operations management, structural fluidity, and a learning organization. The pillars are developed based on a literature review (Harraf *et al.*, 2015). While the article concludes that the pillars should help develop agility within an organization, it also does not specify the integration with an organization's management control system to concretize the possible implementation.

Additionally, Battistella *et al.* (2017) have explored the reconfiguration of business models through OA, which is a key factor when being engaged in uncertain environments. From their research, three major building blocks support the development of strategic agility: strategy innovation, resource capitalization, and networking. What differentiates the model from the aforementioned ones is that Battistella *et al.* (2017) integrate a higher emphasis on specific actions that organizations can take to achieve OA and hence be successful in a reconfiguration of their business model. However, the model also lacks a specific way to integrate the identified building blocks into the management control system of an organization. Consequently, a deeper look on management control systems that could help to implement and apply OA in established companies is required to eventually merge both concepts.

### *Management control systems*

From literature, the concept of management control systems (MCS) has emerged as the most comprehensive system to describe managerial processes (Carenys, 2012). Due to the high amount of existing and sometimes contradicting research on MCS, researchers such as Malmi & Brown (2008) demand that future research referring to MCS needs to be very explicit about the kind of control it addresses to ensure clear and comprehensible findings, which therefore requires an overview of different MCS concepts.

In terms of a general definition, a popular example comes from Merchant and van der Stede (2007) who state that MCS refer to everything used in an organization to ensure employee behavior is in line with strategies and objectives. This goes in line with the traditional view in which MCS are regarded as mechanistic systems with formal control structures and measures that ensure that organizations perform well and efficiently (Merchant and Otley, 2006). Such systems usually rely on features like a clear hierarchy of authority and centralized decision processes to ensure reaching the objectives (Carenys, 2012). According to Strauß and Zecher (2012), these systems can be regarded as command-centered systems as postulated for instance by Merchant and Van der Stede (2007) or Anthony and Govindarajan (2001) as shown in figure 1.



*Figure 1: Comparison of MCS concepts (illustration based on Malmi & Brown, 2008 and Strauß & Zecher, 2012)*

However, such command-centric systems inhibit a variety of complications, for instance not taking changes in the environment into account and being too rigid in their structure to allow for innovative or creative solutions (Neimark and Tinker, 1986; Carens, 2012). Especially in environments with a high degree of uncertainty and hence a strong need for agility, this is a major issue (Tekavčič, Peljhan and Šević, 2008). Consequently, other researchers such as Simons (1995) have expressed a more differentiated understanding of MCS by adding that factors such as the encouragement of learning and innovation are important functions of control systems (Merchant and Otley, 2006). This will also be the understanding of MCS for this study to apply the focus on OA that requires flexible and innovation-centric MCS rather than rigid and command-centric MCS.

As shown by Strauß and Zecher (2012), one core concept for such an innovation centric MCS is the levers of control (LOC) framework proposed by Simons (1995). This approach has been highly influential in the field of MCS, especially for environments with a high degree of innovation (Tekavčič, Peljhan and Šević, 2008). The LOC consists of the four levers boundary systems, diagnostic systems, interactive systems, and beliefs systems. Boundary systems describe ways in which managers avoid risks occurring from employees' behavior, for instance by implementing certain rules such as budget constraints. Diagnostic systems describe how an organization monitors the performance of individuals, for instance through key performance indicators (KPIs). Interactive systems represent information systems through which managers are involved in the decision-making of employees, for instance by engaging in a face-to-face discussion with subordinates on strategic topics (Simons, 1995). Lastly, beliefs systems represent the value an organization is oriented along, specifically an organization's values for instance. It is important to note, however, that these can only be actively influenced to a certain extent (Simons, 1995). While being important in themselves, all four levers stand in interaction with each other and, when used correctly together, allow an organization to find an ideal balance of innovation and efficiency (Tekavčič, Peljhan and Šević, 2008).

As research from van der Meer-Koistra and Scapens (2008) shows, a second important alternative to traditional hierarchical systems are MCS that consist of so-called packages. According to this view, MCS should not regard control elements in isolation but rather

employ a more holistic perspective to identify interactions between MCS elements. One example of such a package system is the MCS proposed by Malmi and Brown (2008) which includes administrative, planning, cybernetic, culture, and reward/compensation elements. Comparing this system with the LOCs proposed by Simons (1995) shows a range of similarities as shown in table 1. However, there are also differences between the systems. Malmi and Brown (2008) propose a reward and compensation element that is not specifically included as a separate lever in the approach of Simons (1995). Additionally, the planning element of Malmi and Brown (2008) is not explicitly covered by Simons (1995).

*Table 1: Comparison of Malmi and Brown's (2008) MCS package and Simons' (1995) LOC framework*

<b>Malmi &amp; Brown's (2008) MCS package</b>	<b>Simons' (1995) LOC framework</b>	<b>Exemplary elements</b>
Administrative	Boundary systems	Accountability and governance structures
Planning	<i>Not individually mentioned</i>	Action planning (goals for the immediate future with a tactical focus) and long-range planning (strategic focus)
Cybernetic	Diagnostic systems	Setting and monitoring of performance targets
<i>Not individually mentioned</i>	Interactive system	Discussion of managers with employees on strategic topics
Culture	Beliefs system	Values and beliefs within an organization
Reward/compensation	<i>Not individually mentioned</i>	Attaching rewards and compensation to goals

### *Agile management control systems*

Existing literature on the connection of OA and MCS is scarce. However, the few studies conducted have shown considerably positive effects on an organization's performance when integrating specific agile elements in the MCS of an organization. One noteworthy example is the usage of Objectives and Key Results (OKRs), a goal-setting framework aiming to improve goal-alignment and coordination for an organization. While limited to

goal setting, OKRs have shown to support large-scale agile contexts and organizational performance, for instance in knowledge sharing (Stray *et al.*, 2022). On a broader level, Lee *et al.* (2017) empirically show that there are agility-supporting elements in the LOC framework proposed by Simons (1995), such as interactive systems, and that these lead to improved organizational performance. However, the study does not explicate individual elements or their integration in an organization's management control system. Therefore, it is imperative to identify the elements within an MCS which enable and support OA.

One potentially helpful research stream consists of studies that connect agile project management and MCS. Lill and Wald (2021) for instance use the MCS approach proposed by Simons (1995) to study the impact of different management control levers on the agility of innovation projects. The study quantitatively validates, that agility and the levers of control have a significant influence on each other. Hence, organizations need to adapt their control mechanisms accordingly. This creates a strong basis for the research aim of this study, showing a high potential in the combination of these two research streams, but with a focus on OA instead of agile project management.

A second potentially helpful research stream to build the foundation of a connection of MCS and OA covers studies with a description of the development and integration process of OA. One noteworthy example is the conceptual OA framework developed by Margherita, Sharifi and Caforio (2021). The framework described the development of OA based on the dimensions of an agility strategy formulation, agility action implementation, and agility performance checking. Each of these dimensions is based on a list of elements that enable the respective dimension. While this extensive study creates a structured summary of existing research on the development of OA, it is positioned on a very conceptual level and lacks the integration of the previously discussed specific MCS frameworks.

Žitkienė & Deksnys (2018) have developed a more holistic and cohesive framework of OA which aims to be transferable to a wider variety of contexts. The concept is based on an analysis of existing literature and consists of Agility Drivers, Agility Enablers, Agility Capabilities, and Agile Practices as shown in figure 2. The framework is especially of interest as it further details the relationships between the different parts of the framework and hence creates a more holistic perspective, which previously analysed OA frameworks lack. While the framework remains on a rather broad level and does not detail specific management practices which contribute to the development of OA, its comprehensive nature distinguishes it from previously discussed frameworks. Therefore, specific OA practices and MCS elements will be derived from qualitative data but eventually compared with this framework to provide the best possible explanations of relevant elements for an agility-enabling management control system, subject to further enhancement and testing.



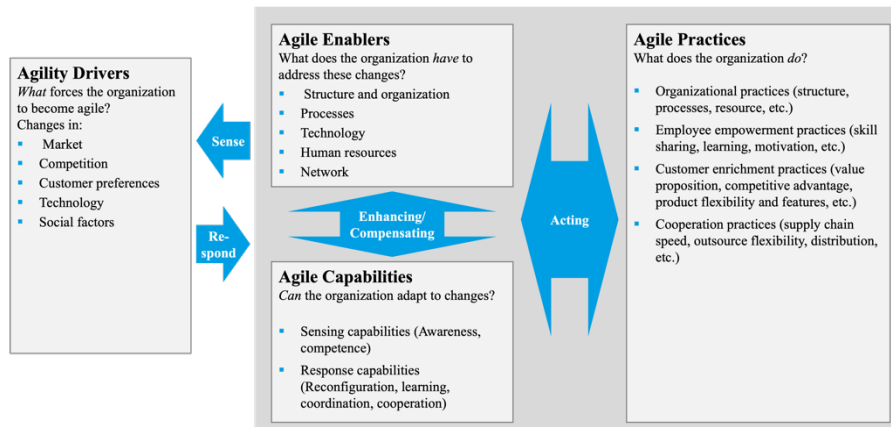


Figure 2: Conceptual model of OA (illustration based on Žitkienė and Deksnys, 2018)

### 3 Research design

#### *Research methodology*

This study aims at exploring the necessary elements in MCS for establishing OA. As shown in the theoretical background, OA in general is an under-theorized phenomenon with a variety of potential perspectives. Especially an established foundation for an integration with MCS concepts is missing to better understand the implementation and application of OA in practice. Therefore, a rigid cause-effect structure as with deductive research would not be suitable to provide such a foundation (Saunders, Lewis and Thornhill, 2007). Instead, this study will follow first an inductive approach to allow for its explanatory nature to broaden the understanding of OA, and then an abductive approach by comparing emerging data with existing literature to provide best possible explanations for agility-enabling management control systems (Locke, Golden-Biddle and Feldman, 2008).

Consequently, the phenomenon of OA will be researched qualitatively. Compared to quantitative research, qualitative research is better suited to the topic at hand firstly due to its openness to potential answers. While quantitative research requires an initial theoretical understanding of the researcher to provide a fixed set of answers, qualitative research can leverage open-ended questions to reveal information not anticipated by the researcher (Guest, Namey and Mitchell, 2013). This aligns with the described inductive approach to explore emerging theory instead of testing existing theory (Saunders, Lewis and Thornhill, 2007; Easterby-Smith *et al.*, 2015). Secondly, qualitative research enables the collection of richer, more detailed empirical material as the researcher can probe into responses or observations of the interviewees which is not possible in quantitative research (Guest, Namey and Mitchell, 2013). Hence qualitative research is more appropriate to achieve the goal of this study to provide a deep and differentiated understanding of the potential elements of OA in management control systems.

Holistic, agility-enabling management control systems are both under-theorized and highly dependent on their respective context as shown before. Therefore, the chosen

research strategy must enable on the one hand a high richness of the data collected and on the other hand a flexible approach that reflects the differences between contexts. While there is a variety of potential qualitative research approaches, comprehensive comparisons such as from Saunders, Lewis and Thornhill (2007) show that the case study approach fulfils these requirements very well as a case-study approach generally allows for a comprehensive research perspective on a topic (Gehman *et al.*, 2018). Additionally, case studies allow understanding a phenomenon in its context rather than in isolation and are especially applicable for topics where a rare and specific characteristic is researched as is the case with the connection of OA and MCS (Easterby-Smith *et al.*, 2015; Yin, 2018). This will be implemented through a case study method analogous to the method proposed by Gioia *et al.* (2012) as this approach is very well-suited for the present exploratory and inductive approach. Based on this, the present study also follows the revelatory case logic as proposed by Yin (2018) to develop new insights for the understudied phenomenon of OA. This will allow the present research to observe and analyse a phenomenon that few have considered before (Saunders, Lewis and Thornhill, 2007). Following this understanding, certain organizations will be sampled depending on whether they have introduced OA, and subsequently regarded as a homogenous set to identify enabling and supporting elements for OA in a management control system (Langley and Abdallah, 2011). Consequently, the present approach is oriented along the single case study approach of Gioia (2021) rather than that of multiple case studies from authors such as Eisenhardt (2021).

Beyond the collection of empirical material through the cases, the study will also be supplemented by selected literature to compare emerging insights with existing literature and hence derive best possible explanations (Locke, Golden-Biddle and Feldman, 2008). However, scholars such as Gioia (2021) do not recommend conducting an extensive literature review to avoid bias of the researchers. Hence the aim was rather to identify important existing conclusions from literature to allow for the discovery of new insights. Due to this recommendation, only a selected number of impactful literature reviews of both OA (e.g., Theobald *et al.*, 2020) and MCS (e.g., Merchant & Otley, 2007) were used to build an initial frame of reference of existing conclusions within the researched field. Subsequently, a limited number of specific articles were researched which corresponded to these literature reviews to create a comprehensive assessment of both OA and MCS.

To add additional rigour, triangulation of empirical material was used by including different organizations as well as a selection of respondents from each organization as proposed by Lamnek and Krell (2016) or Guba (1981). To further differentiate results, the collection of empirical material within the organizations also aims at a wide variety of perspectives by including respondents which engage with the examined organization from different perspectives such as internal change managers and external consultants as subject matter experts.

### *Data sampling*

With regards to sampling, the study aims at providing an in-depth examination of elements that enable and support OA in organizations. The purpose of this research is not to generalize these elements to an entire set of organizations but rather provide novel research which can be built upon and validated by additional research. Therefore, the present study follows a non-probabilistic sampling strategy instead of random sampling (Saunders,

Lewis and Thornhill, 2007). To ensure comparability between cases of the present study, the geographical area was limited to German organizations.

To identify elements that enable and support OA, it is crucial that the sampled organizations possess elements of OA. To ensure this premise, organizations were selected based on whether they use OA, which requires a purposive sampling strategy (Neuman, 2014). This purposive sampling ensures a stronger connection to the research area than other sampling approaches such as convenience sampling would allow (Saunders, Lewis and Thornhill, 2007; Easterby-Smith *et al.*, 2015). Additionally, it provides a higher degree of transferability for the research results and hence increased trustworthiness (Guba, 1981).

Beyond being engaged in the introduction of OA, organizations were sampled based on their age and accessibility as well. As explained, the development of OA tends to become more difficult and more relevant, the older an organization is. Therefore, this study focuses on established organizations which are older than ten years rather than emerging ones, which is hence also a prerequisite for the sampled organizations. As for accessibility, the introduction of OA elements is usually a delicate topic in organizations as it affects sensitive areas such as organizational goal setting or structures (Walter, 2021). Therefore, it is presumably difficult to engage as an external researcher with matters in the context of OA. Additionally, this study focuses on management structures that require a certain engagement with the management of the sampled organizations. Hence the sampled organizations were also selected based on their approachability and accessibility of their management. The organizations were selected from the network of the co-authors. Within each of the sampled organizations, recipients were then selected based on their expertise with OA or insights into the functioning of the organization to follow the guideline of Gioia *et al.* (2012, p. 26) to give “[...] extraordinary voice to informants, who are treated as knowledgeable agents.”. Additionally, if possible, interviewees with an external view of the organization or unit were selected to enrich the research and contribute to trustworthiness (Langley and Abdallah, 2011).

From this sampling approach, a total of four different organizations with between one and three interviewees each arose, which are described in the following.

Organization A is a German company that provides information technology and data processing services for energy management. The organization exists since 2002 and has 100 employees to date. The offered services have traditionally been focused on labor-intensive aggregation of pricing information and are increasingly moving into software-oriented services. The business environment has been subject to disruption in recent years due to regulation changes, which undermine the existing business model. To counteract such developments, the company has introduced agile project management techniques several years ago and recently employed agile measures on an organizational level. Together with an external consultancy the company started to introduce an agile management control system, which is why the case is examined for this study. The interviewees include the chief executive officer (CEO) of the organization, a line manager from the product development division, and a consultant from an external consultancy who supports the company in the introduction of the agile management control system.

Organization B is a German provider of social services which exists for more than 70 years. The organization is divided into regional charters which each support local communities in social services such as daycare or nursing. Due to a variety of disruptive external developments such as the COVID-19 pandemic, the organization has seen a need to respond more flexibly to external developments. Therefore, a project was started with a consulting company to develop an agile management control system and hence enable a

higher degree of OA. The interviewees include the CEO of social services, a manager in the innovation and project management department, and a consultant from the external consultancy who supports the company in the introduction of the agile management control system.

Organization C is a German manufacturing company active in the international mobility business. The company has existed for more than 30 years. The products are sold to international mobility providers. Due to increasing changes in the mobility sector, the company has recognized the need to realign its management structures to better respond to external changes. The change has taken place in a production facility in Germany, which has been restructured into independent, self-organized groups to achieve OA. Interviewees include an agile and lean coach who has supported the reorganization of the selected unit, a change coach who has a good overview of the organization as a whole, and a person from the mentioned agile unit.

To complement the insights from these organizations, an additional interviewee from a fourth organization (organization D) was selected. Organization D is a German operator of an electronics retail chain that has existed for nearly 60 years. Due to disruptive changes in the electronics retail market and resulting fierce competition, the organization has set up a new unit that focuses exclusively on eCommerce. The selected interviewee leads the eCommerce business development and process management and has implemented a structure using OA principles within the unit. It must be noted, however, that the organization is not part of the case study as OA is not yet introduced. The interviewee can rather be seen as a knowledgeable expert on OA whose responses add additional insights and therefore trustworthiness to the research results (Guba, 1981).

### *Data collection*

For the exploratory approach used within this study, Saunders, Lewis and Thornhill (2007) suggest three possible ways to collect data: Searching existing literature, interviewing experts, or conducting focus group interviews. As argued before, this study follows the empirical case study approach proposed by Gioia (2021), hence relying on a literature review for data collection can be excluded. Between focus group interviews and expert interviews especially expert interviews appear suitable as these allow for the requirement of Gioia (2021) to give the contributions of individual experts enough room in the interview process. As shown by Lamnek and Krell (2011), this can be a threat in a group discussion where rather quiet participants can be silent when confronted with rather active participants. Based on this the approach of individual interviews was chosen.

These interviews were designed along the guidelines for semi-structured interviews. Such an approach allows integrating exploratory elements in the research rather than more descriptive elements as would be the case with structured interviews (Saunders, Lewis and Thornhill, 2007). Hence, as this study aims at exploring new concepts, the data collection procedure will rely on semi-structured interviews. As recommended by Easterby-Smith et al. (2015) a questionnaire was prepared to use as a guideline for the semi-structured interviews. Instead of fixed questions, the questionnaire was structured along the following four broader topics: The current usage of MCS elements in the respective organizations, the usage of agility, OA elements and limitations within the organization. This allows for a certain flexibility of the questionnaire and hence “probing” into selected answers from the interviewees. Furthermore, this flexible setup of the questionnaire allowed to generate additional background material which was not anticipated when designing the

questionnaire. The questionnaire was pre-tested with a fellow student before engaging in interviews to ensure understandability and result-orientation of the questions. After the first interviews, the selection of questions during the interviews was also partly adopted as proposed by Gioia et al. (2012) to account for increasing theoretical saturation. Based on this, factors such as drivers of OA were deprioritized, and the interviews were steered more into uncovering actual elements of management control systems structured along OA principles. The interview guide can be found in Appendix 1.

As the topic of OA can be rather complex, the interviews were targeted to last for approximately one hour, especially for the early research stages with low theoretical saturation. As saturation increased, probing was increasingly employed, and interviews became slightly shorter. After the first five interviews, basic elements of the final model emerged and after ten interviews the interview process was stopped due to theoretical saturation which aligns with the guidelines from Guest, Bunce, and Johnson (2006).

From the general approach, the interview process stayed the same across all interviews. In the beginning, interviewees were given a brief overview of the research purpose and the research question. Additionally, the interviewees were introduced to methodological and privacy aspects, including that they should talk as freely as possible and that everything happening during the interview is handled completely anonymously. The interviewees then had ample time to ask questions and object to interview procedures such as the recording.

Due to the COVID-19 pandemic, all interviews were conducted in an online setting using the video call tools Microsoft Teams and Zoom. All interviews were conducted as one-on-one interviews and in German. The key characteristics are summarized in table 2.

*Table 2: Overview of the conducted interviews (own illustration)*

<b>Organization</b>	<b>Label</b>	<b>Position</b>	<b>Length</b>
Organization A	Interviewee 1	CEO	56:42
	Interviewee 2	Manager product development	54:16
	Interviewee 3	External consultant	53:25
Organization B	Interviewee 4	CEO social services	01:06:12
	Interviewee 5	Manager (Innovation & Project Management)	57:09
	Interviewee 6	External consultant	27:17
Organization C	Interviewee 7	Agile and lean coach	01:19:48
	Interviewee 8	Change coach	50:56
	Interviewee 9	Employee in purchasing	46:37

Organization D	Interviewee 10	Lead eComm Business Development & Process Management	01:16:18
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### Data analysis

To allow for a strong connection between the data, emerging concepts, and the final framework, data was analysed according to Gioia et al. (2012) who propose a systematic coding process depicted in figure 3.

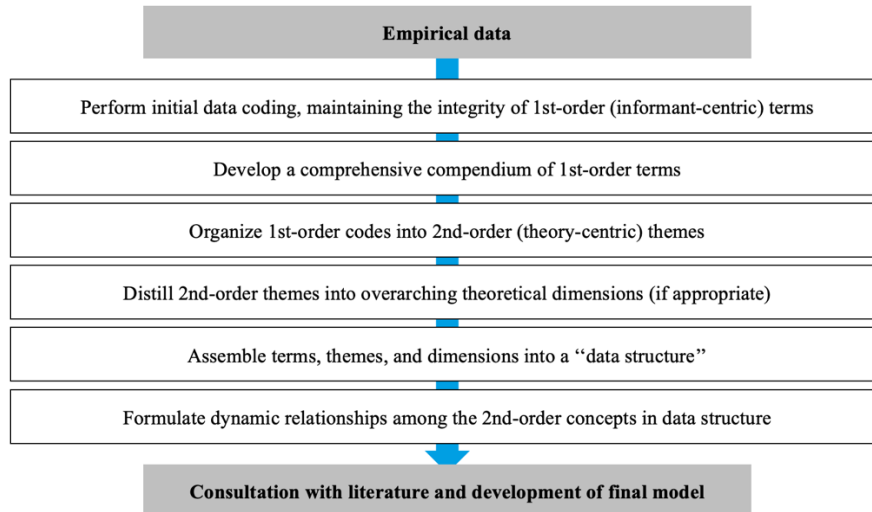


Figure 3: Data analysis process (own illustration based on Gioia et al., 2012)

To generate the empirical data to be coded, all interviews were recorded and transcribed with the online transcription service *trint* using machine-based transcription and afterward manually corrected. During the correction process of the transcripts, a detailed set of notes was started to improve comprehension of the analysis and hence improve the dependability of the research (Guba, 1981).

For the coding itself, Atlas.ti was used as a dedicated software as recommended by Linneberg and Korsgaard (2019).

As recommended by Gioia et al. (2012), the coding was started with no pre-defined codes. Instead, 1<sup>st</sup> order codes were developed directly from the data to stay as close to the empirical material as possible and not include biases. Based on this procedure, all interview transcripts were coded with a total of 116 codes emerging. However, as not all of these were mutually exclusive, therefore they were reviewed and partially combined, resulting in a total of 87 first-order codes. The codes were developed informant-centric, meaning that they directly expressed what the respective interviewee said without analyzing the statement. In line with the recommendation from Gioia et al. (2012), all first-order codes were collected in a comprehensive compendium which can be found in appendix B of this study.

To improve reliability after the first step of coding, two fellow students were asked to code randomly selected and anonymized data segments each (O’Connor and Joffe, 2020).

The differences between coding approaches were then reviewed and used to refine the general coding procedure for first-order codes.

The resulting first-order codes were then analysed to identify patterns and develop the theory-centric second-order themes. This step of the coding process followed more of a classification than a description to identify overarching structures from the first-order codes (Linneberg and Korsgaard, 2019). To improve the confirmability of the research, the interpretations made by allocating first-order codes to second-order themes were discussed with two fellow students and the allocation was adapted accordingly (Guba, 1981).

Lastly, the codes were analysed for relationships between them and based on these assembled into a data structure depicted in figure 4. This structure is supposed to provide a graphical depiction of the relevant structures and systems uncovered throughout the interviews (Gioia, Corley and Hamilton, 2012). To provide a comprehensive overview of this model, the respective dimensions are explained further in the findings section. To fulfil the requirement of Gioia (2021) to predicate the findings on the interviewee's experience and hence make the results as credible as possible, all findings are substantiated with adequate quotes from the interviews.

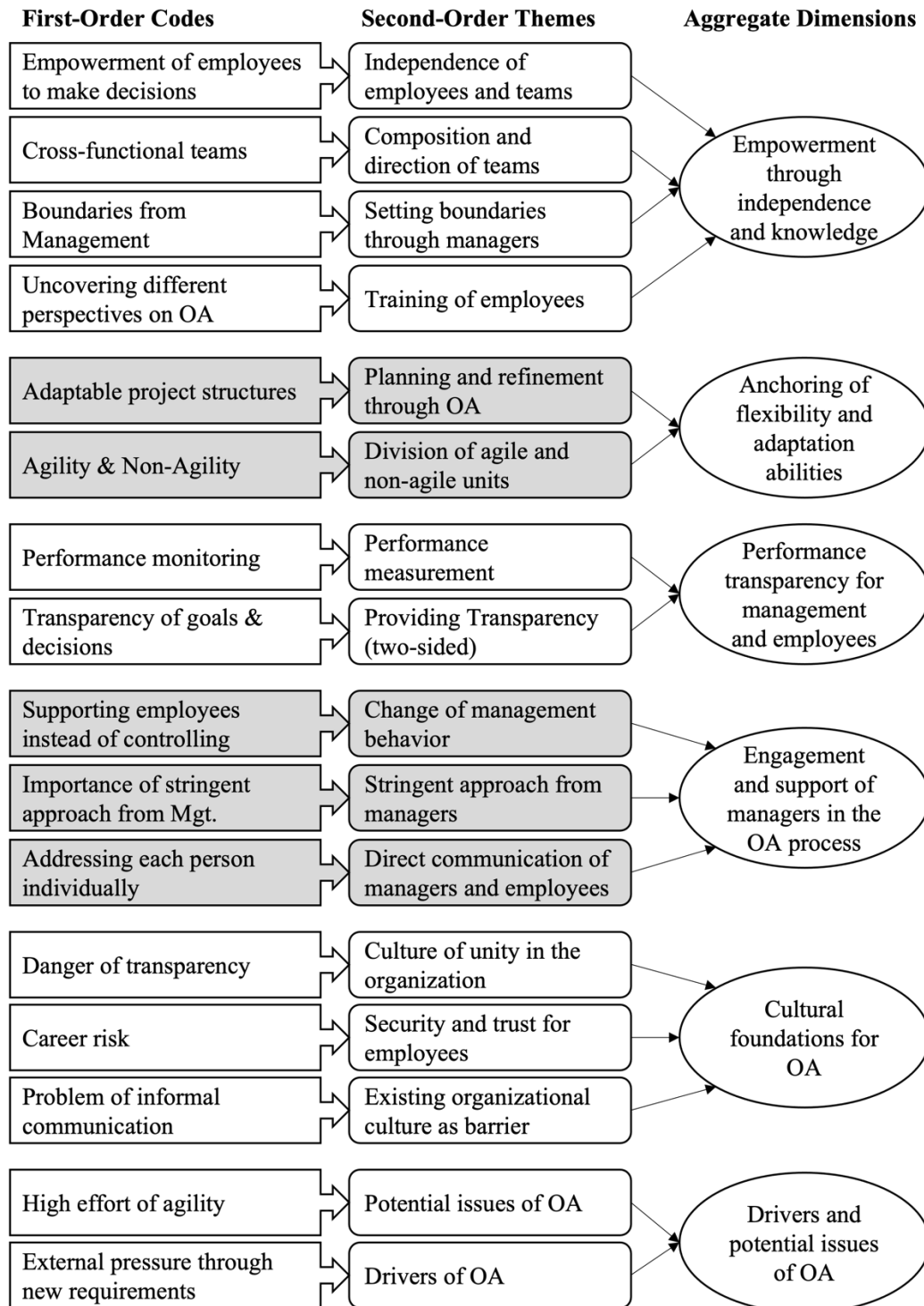


Figure 4: Data structure (own illustration)



## 4 Findings

The following section serves to present the findings from the interviews which are structured according to the data structure presented in the analysis section. As all data was originally collected in German, all relevant quotations were translated. The findings show the elements within an MCS discovered through the interviews which enable and support OA.

### *Empowerment through independence and knowledge*

For the development of OA, the independence and knowledge an organization provides to empower its employees took centre stage within the interviews. Four distinctive areas emerged within this dimension, namely the independence of employees and teams, the composition and direction of teams, boundaries set by management, and the training of employees.

The independence of employees and teams was predominantly expressed by the interviewees as enabling teams and employees working within OA to independently make decisions as shown by interviewee 7 for instance:

*“We’ve transferred a lot of that accountability space out to the staff and teams. And that’s what you’re doing now. So who and how and so on, that’s all your issue.”* (Interviewee 7)

This approach took several directions, from enabling teams to independently propose and evaluate new projects to selected teams being fully self-managed with minimal hierarchies and only certain KPIs that need to be fulfilled. This also included encouraging teams for proactivity. For organization A, for instance, enabling the teams to make their own decisions was only one side of the coin. The other was to motivate employees to take on and use their new responsibilities. This was achieved through active involvement and communication of managers but also the establishment of security for employees in terms of jobs and roles.

Another aspect mentioned in the interviews was that teams are built in a cross-functional and product-centred way. Especially the aspect of having multiple functions such as sales or production planning included in one team which is organized along a value stream has been highlighted as an important aspect, for instance by interviewee 9:

*“We are, so to speak, people from different areas, so the schedulers, the production planners, the purchasers, there is someone from the purchasing team, there is also someone from the logistics area, and the group leaders, team leaders are also there from the respective production areas. All centred around one product.”* (Interviewee 9)

According to the interviews, this cross-functional composition of the teams enables them to leverage their room of responsibility and hence act autonomously, making the heterogenous composition a crucial aspect when aiming to build empowered teams.

However, while the independence and diversity of teams have shown to be important to implement and improve OA within the organization, interviewees also mentioned that it was critical to be aware of the boundaries in which the team is operating. These were mostly set by the management. Within organization C for instance, interviewee 9 mentioned that there are certain baselines such as fundamental changes to production lines which are theoretically possible but must be approved by managers first:

*“Or if we say we want to completely reorganize our production or something, that's not so easy either. Yes, it always depends on the value, which effects it has, also on other areas or on the entire value flow.” (Interviewee 9)*

An additional point to achieve the empowerment of employees and teams is to provide employees within the organization with appropriate knowledge and training concerning OA. As shown in the definition of terms, OA is a topic with a variety of different understandings, which can complicate the introduction. This was confirmed by several interviewees. Interviewee 5 for instance highlights that the implementation of OA based on misunderstandings can be a reason that dissatisfaction arises:

*“But I could imagine that frustration or dissatisfaction with agility actually never or rarely has to do with the fact that true agility, so to speak, is what frustrates people, but that they are frustrated because things are not running as they should.” (Interviewee 5)*

Therefore, all the interviewed organizations implemented targeted educational programs to provide their employees with knowledge of the contents and goals of OA. Examples of such programs were classical approaches such as coaching from external mentors, but also the use of online education tools to enable the education of a wide range of employees.

#### *Anchoring of flexibility and adaptation abilities*

The anchoring of flexibility and adaptation, the two core elements of OA, was attributed to two key aspects by the interviewees: Relying on OA to plan and refine project approaches within the organization and differentiating agile and non-agile units.

The topic of planning and refinement of the project portfolio through OA was overall highly important to respondents. Most notable was the process of establishing new projects to address flexibly changing environmental circumstances and evaluate such projects. Most respondents highlighted, that such a project portfolio must be based on criteria that align with the company's goals as interviewee 1 points out:

*“On this project, for example: Does it inspire the employees, does it increase customer satisfaction and does that have a social added value. And you can see, that is in addition to sales and expenses, which is of course decisive, [...] whether the project makes sense.” (Interviewee 1)*

This alignment of goals especially helped organizations A and B to evaluate upcoming projects efficiently and effectively which plays a key role in responding to external changes such as new regulations. In connection to this, interviewees also frequently mentioned the importance of iteratively developing and adapting the OA processes. Interviewee 5 for instance stressed that the elements of the approach such as goals must be scrutinized regularly:

*“But you must get involved in it together and work it out together and also check it together again and again and have routines for this, that you check it repeatedly” (Interviewee 5)*

This was also a central point for organization A, where other agile concepts have been introduced in the past which were partly met with frustration from the employees. Due to such frequent and structured feedback cycles for the project portfolio development, the process was more suitable to add flexibility and adaptability to the desired parts of the organization. For organizations A and B for instance this means specifically to engage in a discussion on strategic goals yearly, review the current set-up of the project portfolio every

three months in form of a retrospective and integrate status checks of the project progress every two weeks as shown in figure 5.



Figure 5: Project portfolio evaluation process of organizations A and B (own representation based on interviews with interviewees 1 and 4)

An additional aspect mentioned beyond the definition and regular improvement of the project portfolio through OA was that it must be clear where to introduce such elements of OA and which parts of the organization should rather continue with their traditional way of working. As the CEO of organization A shows, this is a central challenge when introducing OA:

*“This means that we also live two worlds in our organization. One is the agile world. One is the traditional world. Marrying these two worlds is a challenge. You could almost say an imposition, but in a positive sense.” (Interviewee 1)*

The interviews have shown that such agile approaches should be limited to certain areas of the organization and introduced in a stepwise approach to iteratively confirm the selection of such areas. The selection of these units was based on whether these required the flexibility and adaptability provided through agile evaluation approaches. Specifically, areas with fixed ways of working and goals such as bookkeeping were regarded as areas where OA does not add value as these are not significantly affected by uncertainties. The interviews have shown that the stepwise combination of agile and non-agile parts of the organization is a significant aspect for the success of OA and should not be disregarded in the introduction of OA.

However, while the element of anchoring flexibility and adaptability has shown to be a key aspect in successfully using OA, it must be noted that the element is not exclusively responsible for the creation of flexibility and adaptation in the organization. It is rather one element where these capabilities show most notably and can be operationalized, but which is also reliant on surrounding elements such as empowerment as elaborated in comparison of empirical findings and theoretical classification.

### *Performance transparency for management and employees*

While important in many organizations, performance transparency within the OA context took a prominent spot in multiple interviews. Two areas emerged in this regard: Being able to measure the performance of teams in an OA setting and providing two-sided transparency for both employees and managers concerning the performance of and satisfaction with OA.

In terms of measuring the performance of teams, interviewee 7 for instance highlighted the potential benefit of a clear set of KPIs which reflects the performance of the team

working in an OA setting. Additionally, he elaborates the advantage of integrating this approach with OKRs:

*“And you can see that a self-organized unit that has a strong KPI view on the one hand, but also pursues a good strategy via OKR on the other, is significantly more powerful than a functional setup.” (Interviewee 7)*

The core idea of such a KPI set is that the teams can be fully autonomous in their way of working by only being accountable to the quantifiable goals they have to fulfill. Hence this aspect supports the establishment of self-managed teams discussed in the section on the empowerment through independence and knowledge. Following this approach, interviewee 7 also pointed out that the initiated KPIs allowed the organization to directly measure the positive impact of OA on the performance of the respective team:

*“And they took appropriate acceleration measures and managed to increase their on-time delivery performance from an average of 75 percent, if you count out the crisis, to well over 90 percent in a short time.” (Interviewee 7)*

This connects with the second major point in terms of performance openness: Transparency of management and team processes. This means making the decisions of the management team transparent on the one hand. On the other hand, making the work within teams transparent, for instance, which team works on which topic.

The transparency of management decisions was mentioned especially in connection to the evaluation of proposed projects of employees. As shown in results concerning the empowerment through independence and knowledge, most of the interviewees highlighted the independent evaluation of projects by employees as a central part of the introduction of OA. Consequently, several interviewees emphasized that the management must make project decisions, for instance, transparent so that employees can understand how the evaluation criteria are used. According to these interviews, evaluation procedures as described in the section of the anchoring of flexibility and adaptation abilities, will not function properly without the support of transparency regarding respective management decisions. As interviewee 1 for instance shows, a key enabler to ensure this feedback mechanism is to make every decision and the corresponding criteria as transparent as possible:

*“And it's transparent for everyone. That is important. It's often the case that decisions are made to implement things where many people wonder: Where did this come from? Here, the decision is completely transparent.” (Interviewee 1)*

Making the work of teams transparent has been mentioned as an important cornerstone in creating more motivation among employees to engage within the OA process. This was ensured in various ways within the examined organizations. Organization C for instance uses the OKR approach to make goals explicit and transparent for both management and other teams to see as underlined by interviewee 9 for instance:

*“And OKRs help you to see what the others are working on and what the whole team is working on.” (Interviewee 9)*

Within organization C, OKRs are used to inform both the team and managers about team processes, which has shown to be a highly effective process. However, organization A for instance has recently discarded OKRs to restructure their organizational goal setting using a tailored project portfolio evaluation. According to interviewee 2, this approach has been successful in setting the right goals and tracking them:

*“We also want to soften this a bit more, so that we don't have these fixed structures, that either only the team leader or only the former OKR master then makes this check up every two weeks, so to speak, and then presents it at the company level, but that everyone*

*from the team can then also see that we include even more people if they want to.” (Interviewee 2)*

Additionally, interviewees frequently mentioned that the effort for individual employees of some OA elements such as OKR was too high. This shows that the concepts used to follow such transparency must fit the individual position of the organization and need to be adapted where necessary.

### *Engagement of managers with employees in the OA process*

A variety of interviewees mentioned that the engagement of managers with employees during the introduction but also the operation of OA represents the key element of OA. From the interviews, this element can be broken down into three more specific aspects: The change of management behavior, the direct communication between managers and employees, and the stringency of the approach to OA employed by managers.

The first aspect, the change of management behavior, relates to interviewees stating that managers must visibly change their management behavior when introducing OA. One key element of this point is that employees should rather be supported instead of controlled. Especially with more responsibility given to employees, interviewees mentioned that managers should transition their role to mentors to help employees with occurring uncertainties or problems which replaces the traditional controlling aspect of managers:

*“But if they need help, they can ask us for it. This has been a product group event. So you have to move away from a controlling instrument to an “I can unload my loads here”-instrument.” (Interviewee 7)*

This aspect was supported by several other interviewees. Interviewee 10 for instance accentuated the necessity of becoming a leader instead of a manager when introducing OA, mentioning several key differences between the two roles which are shown in figure 6.

<b>Manage</b>	<b>Lead</b>
Direct	Engage
Control	Influence
Dominate	Motivate
Command	Inspire

*Figure 6: Difference between managing and leading (own illustration based on material from interviewee 10)*

An additional aspect mentioned was the reduction of operational effort for managers through OA and with that the ability to increase their focus on more central tasks. Interviewee 7 for instance pointed out, that managers who were previously frequently occupied with several operational issues have seen a significant drop in their workload due to the shift to OA:

*“And that is also the case, of course, that the managers then have fewer tasks. In operational terms, they have far fewer tasks and receive far fewer e-mails. But the ones they get are now really essential, they really have to take care of them. In the past, it was difficult to see what was important and what was not.” (Interviewee 7)*

This also ties in with the second aspect of management engagement: Direct and frequent communication with employees about the introduction of OA and channels for employees to directly engage with managers to establish a unified information flow. Especially the direct channel between managers or respective information facilitators and employees was highlighted by many interviewees, meaning that individual employees have a direct way of approaching either a manager or another person facilitating information:

*“Then I say of course also: If you have questions, come at any time, it does not have to be at the pre-defined meetings.” (Interviewee 2)*

Within that topic, a variety of interviewees also pointed out that managers should act as a single point of information for issues concerning OA or must put such a single point of information in place. Interviewee 10 for instance argues that this does not only reduce the effort of individual employees but also informal communication and hence supports the success of OA:

*“We bring the information together. And then we share it with the organization, so there are no rumors and there's a single point of contact that everybody can go to, and we evaluate what's going on.” (Interviewee 10)*

Beyond communicating frequently and openly about the introduction of OA, the interviews have also shown that the approach of managers to OA must be stringent. This means, that managers must align their decisions with previously integrated systems and values. Interviewee 3 for instance draws attention to the fact that managers must accept independent decisions of teams once they occur instead of only blaming teams for mistakes:

*“These are the criteria, this is the target picture that we have agreed on. And I, as an employee, then bring in a project and rely on these criteria and the target image. Then there must also be the psychological certainty that I will be listened to. And then no arbitrary decisions may be made by the management.” (Interviewee 3)*

This stringency has on the one hand shown to be crucial in driving and eventually realizing the change to OA. On the other hand, not employing stringency in the manager's approach, for instance by making arbitrary evaluation decisions that are not transparent, was mentioned as a major reason for failing OA systems by a variety of interviewees.

### *Cultural foundations for OA*

The culture was a special element occurring during the interviews as it was perceived as a result of the interplay of the different elements rather than being deliberately built. Based on the interviews three aspects of culture were expressed: Organizational unity, the creation of security and trust for employees, and potential barriers from the existing corporate culture.

In terms of organizational unity, a variety of interviewees mentioned that they frequently observed differences in the understanding of and satisfaction with OA between fellow employees, both in teams working in an OA setup and ones that were not. From their point of view, a crucial element of a successful OA system was to establish a united picture of OA which all employees work towards. Therefore, this aspect stands in close connection to the structures and goals created through the anchoring of flexibility and adaptation abilities. As interviewee 4 for instance mentions, such a feeling of unity can arise from increased transparency as discussed before:

*“At the very least, that we're all working toward the same goal. So first make it transparent: What are we working on? Why is that important? Then what? And that's how it came about, because otherwise I would have gone under, too.” (Interviewee 4)*

Other interviewees also mentioned influencing factors such as the direct communication of managers or interpersonal events to be of significant influence on this element. All interviewees stated, however, that such unity is important in building and sustaining a successful approach to OA.

Creating security and trust for employees refers to the fact that many interviewees mentioned that the feeling of security and the resulting trust is a key factor for employees to actively engage with OA as there are certain risks involved in such an engagement. This closely relates to the importance of job and role security when empowering employees and teams mentioned in the description on the empowerment through independence and knowledge. As shown by interviewee 4 for instance, making presumably wrong decisions when introducing OA can quickly turn into a career risk, which creates discouragement and possibly fear for employees taking the decisions:

*“Of course, you can also fall away in between. So, when the management board changes, you're quickly out of the picture. And of course, many people have said, "I've already experienced several managers. Well, I'm not going to burn myself out here, I want to grow old here. That's the danger, of course.” (Interviewee 4)*

Hence, to counteract such fears, many respondents mentioned that a culture of security must be built between managers and employees to mitigate potentially negative results of decisions as interviewee 3 for instance mentions:

*“But what I noticed at [organization A] is that there is a very, very high level of trust and that you really have the opportunity to approach the management because of the almost family-like environment there or the family-like orientation.” (Interviewee 3)*

Such a culture creates courage for employees to fully engage in OA and follow the various changes inherent in the process.

Several interviewees also stressed that the existing culture can be a barrier to OA. Interviewee 10 for instance emphasized that older, more traditional forms of leadership culture can represent a significant roadblock for OA:

*“I don't want to say that they are bad per se, but rather that the management culture may already be old and in many ways obstructive.” (Interviewee 10)*

During the interviews, it also became clear, that a carefully composed, target-oriented combination of the different OA elements described has proven to be successful enablers to overcome such cultural barriers. In the organization of interviewee 10, organization D, for instance, the increasing empowerment of teams has shown to reduce negative influences of the described old management cultures. However, in the interviews, it was made clear that it is important to keep such cultural influences in mind and adjust the respective OA elements accordingly if one notices negative influences.

### *Drivers and potential issues of OA*

Throughout the interviews, there was also a significant number of dangers and drivers of OA mentioned. While the aim of this study is not to show the necessity and potential issues of introducing OA, some of these aspects show considerable impact on the potential OA elements previously elaborated and are hence presented in the following.

In terms of drivers, interviewees pointed out the importance of external changes such as new product requirements from customers or regulations. It became evident, that global

disruptions such as the COVID-19 pandemic had a lasting impact on all participating organizations due to the high degree of resulting uncertainties. The introduction of OA helped tremendously in mitigating the respective negative effects such as production capabilities. Hence the discussed elements of OA can potentially help a wide array of organizations, even the ones which are seemingly not engaged in highly innovative environments for instance as shown by interviewee 4:

*“And you also have to say how to buffer social challenges. That also means organizing and maintaining volunteer structures so that things like refugee aid or vaccinations can be buffered.” (Interviewee 4)*

In terms of potential issues of OA, frequently mentioned points include the loss of focus of employees due to high effort arising from certain OA elements. Interviewee 5 for instance notes, that formerly introduced OA elements have shown to require a high effort of the participating employees, which led to frustration concerning OA within the organization:

*“Otherwise, a retro is planned once a year and then it's simply a matter of, in the old one we did it every quarter, stretching it out a bit so that the time required for 100 people is not quite so large.” (Interviewee 2)*

This assessment reinforces the fact that the introduction of OA must be carefully considered, both in terms of affected areas within an organization and the extent to which agile structures are established as argued before.

In conclusion, one can see from the interviews that OA has a significant potential to create a variety of lasting benefits within an organization if certain key aspects are met. That means to achieve these benefits the approach to OA must be carefully evaluated by identifying suitable elements and the appropriate course of action to introduce them. To provide such an understanding the elaborated findings will be discussed in connection with existing literature in the subsequent discussion to identify a final model on management control system elements that can be used to enable and support OA within established organizations.

## **5 Discussion**

The following section discusses the presented findings along the aggregated dimensions in context with the relevant existing literature. Subsequently, a conceptual model for agility-enabling MCS is developed, and resulting practical and theoretical implications are presented.

### *Empowerment through independence and knowledge*

A variety of researchers have elaborated on the importance of empowering employees to make decisions concerning the development of agility in general. Appelbaum et al. (2017) for instance argue that the decentralization of decision-making is a key factor in building a successful OA environment within organizations. Based on an empirical study on project agility in the manufacturing sector, Sharifi and Zhang (2001) confirm this assessment by showing that the results of empowered employees such as a quick integration of changes in product development are a key factor in achieving the benefits of agility. Adding to the empowerment, Theobald et al. (2020) emphasize that it is crucial to build teams along value



streams and in a heterogeneous way to leverage their full potential. Additionally, Žitkienė and Deksnys (2018) include the importance of proper training of employees as core empowerment practice, which also corresponds closely to the assessment generated through the interviews.

From the perspective of MCS, the empowerment of employees and teams to independently make decisions falls in the domain of boundary systems (Simons, 1995) and administrative elements (Malmi and Brown, 2008). The interplay of these systems also shows very well the core notion of empowerment inferred from the present study. It is crucial to provide teams with enough room to make their own decisions that are closely connected to their work, for instance through independent goal setting or evaluation of projects. However, managers must establish boundaries as guidelines and an environment of security for jobs and roles in which this empowerment takes place.

### *Anchoring of flexibility and adaptation abilities*

In terms of organizational planning, OA researchers agree that a combination of sensing and acting capabilities to develop flexibility and adaptation to establish a basis for continuous innovation is a key factor in OA (Margherita, Sharifi and Caforio, 2021). Additionally, a variety of researchers show that organizational strategy must be closely connected to the introduction of OA (Teece, Peteraf and Leih, 2016). However, a structured project portfolio evaluation approach that involves both short- and long-term planning as elaborated during the interviews does not explicitly take centre stage within the existing literature. Rückert et al. (2021) have proposed, and academically founded, an organizational planning cycle for such continuous assessment and innovation of the portfolio. As shown within the results section of the anchoring of flexibility and adaptation abilities of this study, such an approach played a key role in the introduction of OA within organizations A and B and should hence be included more prominently in OA literature. Therefore, this process is regarded as a key part of anchoring flexibility and adaptation abilities within an organization.

An aspect frequently mentioned within OA literature is the differentiation of units working within OA in an organization. As Teece, Peteraf and Leih state (2016), not all units within an organization require the benefits OA brings such as increased speed and flexibility. Therefore, the introduction of OA does not necessarily have to happen on a full organizational scale but can be done in a flexible, selective way.

MCS literature further supports these claims, especially in combination with the importance of empowerment of employees and teams. Malmi and Brown (2008) for instance show that organizational planning is a pivotal factor in a functioning management control system. As shown in their research, planning takes a central role in directing and supporting employee behavior and should hence be regarded as a separate element within MCS literature. Based on this assessment, the aspect of planning will be included as an individual element of an MCS enabling and supporting OA.

### *Performance transparency for management and employees*

The use of performance indicators in the context of OA has received significant attention in the existing literature. Margherita, Sharifi, and Caforio (2021) for instance show that organizations that introduce OA must establish dedicated performance KPIs to evaluate

and eventually fine-tune the agility actions implemented within the organization. Additionally, these research results support the notion that performance transparency must be two-sided by making management and team actions visible throughout the organization. Walter (2021) shows in her literature review that teams must be aware of KPIs they are measured with and that they can independently aim to fulfill these. Moreover, existing literature advocates that digital performance checking systems are an essential part of the introduction of OA (Gunasekaran *et al.*, 2018). As this aspect was not explicitly emphasized during the interviews, it will not be further integrated within the model as an extensive amount of literature already exists on this matter (Cao & Dowlatshahi, 2005; Lee *et al.*, 2015).

In terms of MCS literature, both Simons (1995) and Malmi and Brown (2008) highlight the importance of performance measurement systems. Simons (1995) for instance shows that a well-implemented diagnostics system enables managers to keep track of crucial business developments while not getting lost in micromanaging teams. Hence this aspect can also be seen as a strong supporting factor of the individual empowerment discussed in the comparison of empirical findings and the theoretical classification.

#### *Engagement of managers with employees in the OA process*

The point of engagement of managers with the introduction of OA aligns very closely with the importance of communication highlighted by several researchers. Nold and Michel (2016) for instance state that managers must emerge as drivers of the introduction of OA and “[...] champion creativity and experimentation”. This underlines the importance the engagement and motivation of leaders have on the introduction of OA, as the interviews also show that the engagement of management is one, if not the one, core factor when introducing OA. Additionally, Harraf *et al.* (2015) specifically support the premise that the communication between managers and employees is a crucial element of enabling and supporting OA by showing that leadership functions are only effective when available communication channels are used. The interviews confirmed this assessment, especially regarding the personal communication channels between managers and employees. This is further supported by Theobald *et al.* (2020) who emphasize that managers must develop towards mentors as also stressed during the interviews. This means frequently and openly communicating with employees but also accepting the new room for decision-making given to teams.

This also aligns closely with the interactive system proposed by Simons (1995) as described in the section on the characteristics of MCS. One can infer that OA should be regarded as a core topic for managers which must be included in all available communication channels, especially personal ones.

One aspect not as prominently represented as leadership engagement and communication in the existing literature is the importance of stringency in the management approach when introducing OA. In line with the results concerning the engagement of managers in the OA process, this aspect should therefore also be considered as a core element.

### *Cultural foundations for OA*

Cultural aspects also represent a core element in several models in the existing literature on OA. Nold and Michel (2016) for instance integrate culture as one pillar within their OA performance triangle. According to them, especially a collectively shared mindset about OA within the organization is crucial to enable other key elements such as knowledge sharing, confirming the assessment from the interviews. Additionally, Appelbaum et al. (2017) underline the importance of risk-taking and proactivity to a successful OA approach with empirical evidence. Research shows, that employees working in a culture with a high degree of security, especially regarding the security of jobs and roles, tend to become more proactive and risk-taking (Sun, Zheng and Lan, 2022). Therefore, the described culture of security is a significant element in building a cultural foundation to enable and support OA. Harraf et al. (2015) also show that potentially negative effects might arise from corporate culture, for instance when existing management control systems are too traditional and rigid as is often the case with established institutions on which this study focused. Hence such influences must be mitigated by implementing the OA elements centrally within an organization's management control system.

From an MCS perspective, Simons (1995) also notes that the values integrated within an organization's beliefs system must be firmly founded and visible, underlining the importance of a unified vision. Additionally, Malmi and Brown (2008) confirm the assessment from the results of the cultural foundations that culture might be beyond the control of managers but still represents a crucial element. Therefore, culture will be further included in the conceptual framework.

### *Drivers and potential issues of OA*

As shown in the section on the results of drivers and potential issues of OA, a variety of factors were mentioned by the interviewees that drive the introduction of OA. However, most of the identified drivers could not be converted into elements of a management control system that supports and enables OA and hence are not in line with the research direction of this study. As a result, these drivers will not be further detailed and researched. Still, it is important to note that all drivers identified through the empirical material are covered in existing literature reviews on the drivers of agility, showing the quality of existing research within that specific area (Žitkienė and Deksnys, 2018; Walter, 2021).

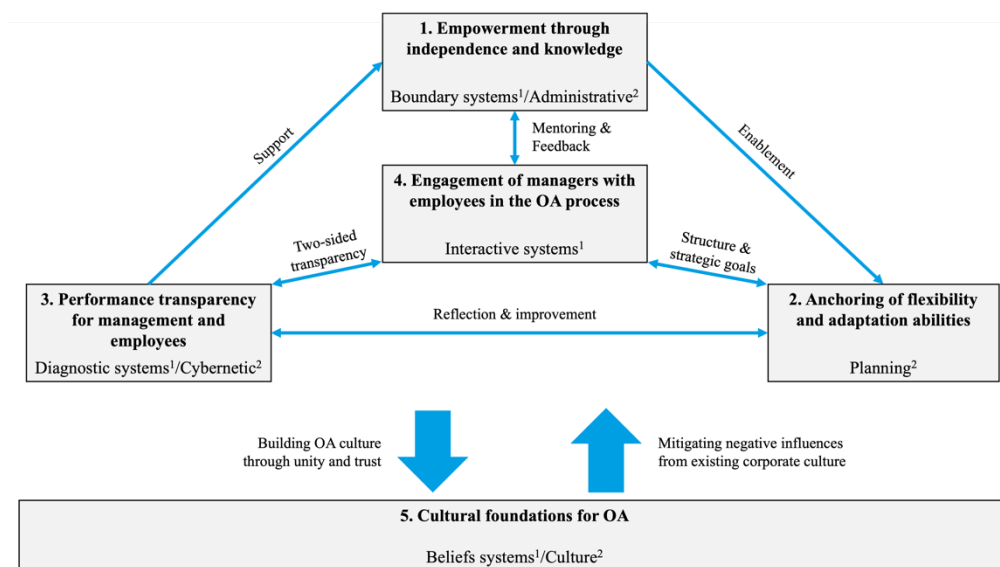
The potential issues of OA will also not be discussed further. This is due to the fact, that the influence and especially the mitigation of all identified potential issues were considered during the discussion of the previous elements. The dissatisfaction with OA for instance can be mitigated by emphasizing the open and frequent communication by managers or uncovering the variety of different perspectives on OA through targeted training modules. However, as these aspects are not directly attributable to one single element, they are not specifically included in the conceptual model.

In conclusion, the discussed elements include but also exclude certain aspects touched upon both from an OA and an MCS point of view. Most notably, one can infer that the reviewed MCS structures can accommodate all identified OA elements. However, not all aspects included in the reviewed MCS models represent elements of the conducted research. Specifically, the aspect of reward and compensation from Malmi and Brown (2008) was not mentioned within the empirical material and is hence not further included in the model. Building upon these findings, the resulting five elements will be examined

further for their interconnection as well as practical and theoretical implications in the following.

*Conceptual model of a MCS which enables and supports OA*

As depicted in figure 7, the five identified elements of the management control system do not occur in isolation but are rather part of a process and hence interconnected and re-enforcing. To make the integration of the identified OA elements within MCS more explicit, each element is allocated the respective MCS aspect from Simons (1995) or Malmi and Brown (2008) as discussed in the comparison of empirical findings and theoretical classification.



<sup>1</sup> Referring to Simons' (1995) LOC framework    <sup>2</sup> Referring to Malmi and Brown's (2008) MCS package

Figure 7: Conceptual model of OA enabling and supporting MCS elements (own illustration)

The model includes all relevant elements derived from the interviews and discussed with aspects from existing literature. The five included elements are all actively influenced through the management control system of an organization and are explained in the following.

Throughout both the interviews and the discussion with literature it became apparent, that the empowerment of employees and teams in decision-making but also individual responsibility builds the foundation for OA. Hence this aspect constitutes the first element of the model. Based on the discussion with the given MCS concepts this part can be seen as a form of boundary systems and administrative control. It refers to an increased number of empowered teams, but also to clear boundaries of management as to which part cannot be fully decided by teams but should rather be decided by management such as budget decisions.

The second element of the model, the anchoring of flexibility and adaptation abilities through measures such as value-oriented project evaluations, requires the independence of

teams and employees to make decisions themselves and engage proactively and independently. A key example of this element is the project portfolio evaluation approach mentioned within the anchoring of flexibility and adaptation abilities, where employees can independently evaluate and propose projects along organizational values. Such self-managed planning is enabled through the selective empowerment of both employees and teams, as it requires employees to be aware of the criteria for project evaluation and most importantly use them themselves. Once implemented this approach has shown to be a highly effective way of planning, both in terms of short-term project planning but also long-term organizational planning.

The third element of the model, performance transparency for management and employees, refers to performance controls put in place for teams to measure themselves and see progress as well as performance feedback to management. As seen with the OKR process, for instance, this is a crucial element to establish independent performance measurement for the teams. To function, this element requires planning capabilities of teams to establish their own goals. In return, the performance controls also provide a measure to reflect on and improve the planning and hence OA approach within an organization. Additionally, targeted performance controls have shown to make the progress of teams visible and are hence key elements to revise and improve the degree of employee empowerment and with that the state of OA within an organization.

As shown in the conceptual model in figure 8, these three elements rely on one centrepiece: The engagement of management with employees, which represents the fourth element of the model as the interactive system. As the discussion has shown, the engagement and stringency with which management from all levels supports and interacts within the individual OA elements are key in building successful structures. Firstly, this means to stringently provide employees and teams with the freedom to make their own decisions and support them as mentors throughout the whole process by communicating frequently and openly. In that regard, it is crucial to accept the decision of employees when they are oriented along pre-defined boundaries or values. Secondly, it requires managers to structure the planning element and provide high-level, organizational goals to guide the element along. Thirdly, managers must provide transparency about their decisions and internal processes to support OA performance monitoring.

The fifth element, culture, forms the basis of the model. By combining and developing all elements, a variety of positive factors such as organizational unity or courage of employees is achieved, which feeds into organizational culture. This way, culture becomes OA-oriented and enables further development through a strong foundation. Additionally, negative influences through the existing organizational culture, such as rigid hierarchical management structures, must be observed and mitigated through the other four elements. It is through this combination of elements in the management structures of an organization that a self-enforcing, virtuous circle of OA can be built.

### *Practical and theoretical implications*

In conclusion, the model shows that all five elements of an MCS are crucial in enabling and supporting OA as asked at the outset of the present study. Additionally, the elements interact with each other, and all these interactions are considerably shaped by managers. How such interactions can and should take place has also been elaborated in the presentation as well as the discussion of findings. The specific implications from this model will now be discussed from both a practical and theoretical standpoint.

From a practical point of view, the derived results firstly indicate that the role of management must change when using OA, depending on the existing understanding of the respective organization. As shown in the model, managers are not only involved in every element but their engagement through interactive systems considerably shapes the success of OA. Based on this it seems imperative, that managers put down traditional behaviors such as controlling and commanding elements and change into a role where they support employees and accept possible drawbacks through empowerment. As this research has shown, the gains made from such a change are more than worth the difficulties along the process.

Secondly, the developed model aims to show that OA must be individually tailored for each organization, surely in the introduction but also constantly during the usage of OA. Hence OA should be understood as a highly individual, ever-developing system of feedback and refinement. This implies that it is not sufficient to allow a small group of employees to make individual decisions or introduce OKRs to assume that the organization is now fully agile. It is rather the constant organization-specific refinement of the introduced OA elements as shown in the conceptual model which creates the desired adaptability and flexibility. Within the present study, an array of specific examples for the design of each element has been discussed. However, these are firstly not exhaustive and secondly, the design of each element is highly individual. This implies that organizations should rather rely on an adaptation of organization-specific aspects along the conceptual model presented than implement a pre-defined list of aspects included in each element.

From a theoretical point of view, the present research has firstly shown that the successful introduction and operation of OA depends on strong and concise foundational frameworks. This implies, that the described debate about definitions and understandings does not necessarily support the usage of OA but rather discourages further research due to the disagreement of existing material (Wendler, 2013). Hence the present study aims at advocating a stronger focus on developing more unified and target-oriented frameworks. The developed conceptual model could for instance be integrated with the aforementioned model from Žitkienė and Deksnys (2018) as shown in figure 9. This does not only extend the usefulness of the presented model as it also integrates extensively researched agility enablers, capabilities, and drivers but it can also serve as the basis for further refinement and testing of the model as recommended in recommendations for future research of this study.

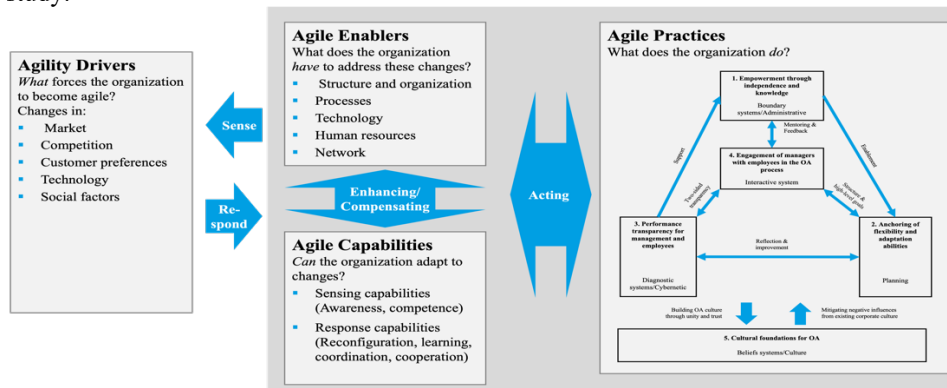


Figure 8: Combination of the OA model of Žitkienė and Deksnys (2018) and the conceptual model of the present study (own illustration based on Žitkienė and Deksnys, 2018)

Secondly, on a theoretical level, the present study implies that it is imperative to further connect OA with research streams outside the domain of agility. While the individual OA elements identified during the research were helpful, the development of the model was only possible through a close connection with the MCS research stream. Hence a further implementation of OA in MCS research or for instance research on organizational designs could surely help popularize the advantages of OA while benefiting the newly connected research streams by introducing the various advantages of OA to new contexts.

## **6 Conclusion**

The present study set out with the aim to explore an approach on how organizational management control systems, especially in established organizations, can become more agile to establish continuous innovation in ever-changing and disruptive environments, addressing the research question how management control systems can be designed to enable and support agile capabilities on an organizational level for established organizations.

From the empirical research, six general aggregate dimensions evolved. Through the comparison with existing literature on OA and MCS, the following five elements for MCS were derived eventually which enable agility on an organizational level: The empowerment of employees and teams through independence and knowledge, the anchoring of flexibility and adaptation within the organization, performance transparency for management and employees, the engagement of managers with employees in the OA process and the cultural foundation of OA. The resulting conceptual framework proposes the relationships of these elements. Based on these possible explanations, OA follows a self-enforcing, circular process that essentially evolves from the empowerment of employees and teams. Secondly, managers on the one hand shape every single element, but on the other hand, must also change their individual approaches and interact with employees within every single element. Lastly, culture plays an important role in the success of the management control system, but it rather develops through the configuration of the other four elements. If done right, these four elements significantly strengthen an organization's OA culture, hence building a self-enforcing cycle.

### *Contribution and limitations*

From a practical point of view, the developed model can first and foremost be seen as a theoretically founded tool to help practitioners in introducing and refining OA and hence establish higher flexibility, adaptability for changing environments and continuous innovation. The introduction of OA is complex due to several reasons, most importantly because no unified understanding of OA exists, and little guidance on which OA elements to implement. The present study helps in contributing to the solutions of this issue based on the developed model by firstly relying on a theoretically founded definition and discussing the concept of OA from a management perspective. Secondly, the model can be directly used to guide the introduction of OA from the start of the process to continuously iterating it. This implies that an OA introduction will be more accessible to organizations who do not use OA yet and hence possibly increase the degree of agility of a wide range

of organizations. Additionally, the model can be used to refine existing OA models. The model is built in a modular way with a variety of elements considered. It is supposed to enable practitioners to choose from the stage they need and possibly identify elements that will complement their existing approaches.

From a theoretical perspective, the developed model has proven to be integrable with existing research approaches while still adding informative value. This can help to guide literature into a more unified direction instead of developing an increasingly frayed picture of OA. An issue, which was criticized throughout this study. Hence research can increasingly establish common ground. Additionally, the present study connects two formerly rarely connected research streams, namely OA and MCS. Due to the connection of the streams with this study, OA can be featured more prominently in other research fields and hence gain more attention. Overall, this will help to develop the term agility beyond the understanding of pure project agility to a more holistic, organization-wide understanding. It must be noted however, that this does not offer a generalization but rather a best possible explanation through the comparison of emerging data with existing theory. Hence, the explanations derived during this study are subject to further testing as presented in the subsequent section on recommendations for further research.

To some extent, the present research was also subject to limitations. Firstly, the global COVID-19 pandemic had a significant influence on the research process as cases of illness and the limitation of contacts restricted the availability of interviews. Additionally, while a variety of measures were taken to ensure the transferability of the results, the selection of respondents and their respective organizations was subject to the available network of the researcher. Therefore, the results are partially limited to the context of their geographical location and network. Additionally, although the practical and scientific goals of this work have been achieved, the assessment of the current state of research in the theoretical foundations has shown that many publications highlight the phenomenon of fundamentally different understandings of OA. And while this study has examined an underrepresented aspect, this disagreement appeared to be an immense limitation in the context of the entire study as it restricted the discussion and integrability of findings.

### *Recommendations for future research*

Looking at the process and findings of this study but also the limitations pointed out, a variety of potential future research directions becomes apparent.

Firstly, as shown during the presentation of limitations the developed results are subject to testing. Therefore, it is advisable to potentially extend and ideally validate the developed model. While the defined elements are supported by empirical evidence, the present study only represents one perspective on the matter of OA in management control systems. Additionally, each of the derived elements is based on phenomena that rely on extensive research streams by themselves such as empowerment or culture. Hence further research could add to the derived elements through additional research with the objective to detail each element more closely. Additionally, it would then be highly interesting to empirically validate the model and confirm its performance. A possible additional research objective could therefore be to quantitatively verify the effect of the individual elements on the degree of agility within a broader range of organizations.

Additionally, it would also be beneficial to transfer the research approach employed to fundamentally different contexts, for instance, other countries, to explore potential



differences in the focus areas of agility between contexts. Hence an additional research objective could be to replicate the chosen approach in a set of different countries to eventually compare the resulting models and develop country-specific recommendations for usage of the model.

Furthermore, the generated findings from this study can also support further connections of OA and other research streams. Specifically, one approach could be to further detail the model of Žitkienė and Deksnys (2018) by connecting it with additional research streams. Regarding the agile enablers for instance additional research could transfer the findings from the connection of OA and MCS of the present study and qualitatively explore organizational structures or elements which enable such connections.

Overall, the developed model of this study proposes a multi-faceted approach to the integration of OA in the MCS of an organization which enables practitioners to further leverage the potential of OA. Additionally, the model has shown to relate to existing OA models from adjacent research streams, which can contribute to a more unified direction of future research. Hence, while leaving room for future research, the present study hopefully stimulates future practical and theoretical discussions to make organizations more adaptable and contribute to a strong basis for successful organizational evolution to establish long-term competitiveness.

## List of References

- Anthony, R.N. and Govindarajan, V. (2001) *Management control systems*. 10th edn. McGraw-Hill Irwin.
- Appelbaum, S.H. *et al.* (2017) ‘The challenges of organizational agility (part 2)’, *Industrial and Commercial Training*, 49(1), pp. 6–14. Available at: <https://doi.org/10.1108/ICT-05-2016-0027>.
- Battistella, C. *et al.* (2017) ‘Cultivating business model agility through focused capabilities: A multiple case study’, *Journal of Business Research*, 73, pp. 65–82. Available at: <http://dx.doi.org/10.1016/j.jbusres.2016.12.007>.
- Boer, H. *et al.* (2001) ‘Knowledge and continuous innovation’, *International Journal of Operations & Production Management*, 21(4), pp. 490–504. Available at: <https://doi.org/10.1108/01443570110381390>.
- Cao, Q. and Dowlatshahi, S. (2005) ‘The impact of alignment between virtual enterprise and information technology on business performance in an agile manufacturing environment’, *Journal of Operations Management*, 23, pp. 531–550.
- Carenys, J. (2012) ‘Management Control Systems: A Historical Perspective’, *International Journal of Economy, Management and Social Sciences*, 1(1), pp. 1–18.
- Christian, I. *et al.* (2001) ‘Agile Manufacturing Transitional Strategies’, in *Proceedings of The Fourth SMESME International Conference. SMESME International Conference, MANUFACTURING INFORMATION SYSTEMS*.
- Clauss, T. *et al.* (2021) ‘Organizational ambidexterity and competitive advantage: The role of strategic agility in the exploration-exploitation paradox’, *Journal of Innovation & Knowledge*, 6, pp. 203–213. Available at: <https://doi.org/10.1016/j.jik.2020.07.003>.
- Darwin, C. and Quammen, D. (2008) *On the origin of species*. Sterling.
- Easterby-Smith, M. *et al.* (2015) *Management and business research*. 6th edn. London: SAGE.
- Eisenhardt, K.M. (2021) ‘What is the Eisenhardt Method, really?’, *Strategic Organization*, 19(1), pp. 147–160. Available at: <https://doi.org/10.1177/1476127020982866>.
- Gehman, J. *et al.* (2018) ‘Finding Theory–Method Fit: A Comparison of Three Qualitative Approaches to Theory Building’, *Journal of Management Inquiry*, 27(3), pp. 284–300. Available at: <https://doi.org/10.1177/1056492617706029>.
- Gioia, D.A. (2021) ‘A Systematic Methodology for Doing Qualitative Research’, *The Journal of Applied Behavioral Science*, 57(1), pp. 20–29. Available at: <https://doi.org/10.1177/0021886320982715>.

Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2012) 'Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology', *Organizational Research Methods*, 16(1), pp. 15–31.

Guba, E.G. (1981) 'Criteria for Assessing the Trustworthiness of Naturalistic Inquiries', *ECTJ*, 29(2), pp. 75–91. Available at: <https://doi.org/10.1007/BF02766777>.

Guest, G., Namey, E.E. and Mitchell, M.L. (2013) *Collecting Qualitative Data: A Field Manual for Applied Research*. London: SAGE. Available at: <https://doi.org/10.4135/9781506374680>.

Gunasekaran, A. *et al.* (2018) 'Agile manufacturing practices: the role of big data and business analytics with multiple case studies', *International Journal of Production Research*, 56(1–2), pp. 385–397. Available at: <https://doi.org/10.1080/00207543.2017.1395488>.

Haneberg, L. (2012) 'Training for agility: building the skills employees need to zig and zag', *Human Resource Management International Digest*, 20(2), pp. 51–56. Available at: <https://doi.org/10.1108/hrmid.2012.04420baa.013>.

Harraf, A. *et al.* (2015) 'Organizational Agility', *The Journal of Applied Business Research*, 31(2), pp. 675–682. Available at: <https://doi.org/10.19030/jabr.v31i2.9160>.

Holsapple, C. and Li, X. (2008) 'Understanding organizational agility: A work- design perspective', in: *13th International Command and Control Research and Technology Symposium*, Seattle, WA.

Lamnek, S. and Krell, C. (2016) *Qualitative Sozialforschung*. 6th edn. Weinheim: Beltz.

Langley, A. and Abdallah, C. (2011) 'TEMPLATES AND TURNS IN QUALITATIVE STUDIES OF STRATEGY AND MANAGEMENT', in D.J. Ketchen and D.D. Bergh (eds) *Building Methodological Bridges (Research Methodology in Strategy and Management, Vol. 6)*. Bingley: Emerald Group Publishing Limited, pp. 201–235.

Lee, O.-K. *et al.* (2015) 'How Does IT Ambidexterity Impact Organizational Agility?', *Information Systems Research*, 26(2), pp. 398–417. Available at: <http://dx.doi.org/10.1287/isre.2015.0577>.

Lee, S. *et al.* (2017) 'The Role Of Agility In The Relationship Between Use Of Management Control Systems And Organizational Performance: Evidence From Korea And Japan', *The Journal of Applied Business Research*, 33(3), pp. 521–538. Available at: <https://doi.org/10.19030/jabr.v33i3.9944>.

Lill, P.A. and Wald, A. (2021) 'The agility-control-nexus: A levers of control approach on the consequences of agility in innovation projects', *Technovation*, 107, pp. 2–11. Available at: <https://doi.org/10.1016/j.technovation.2021.102276>.

- Linneberg, M.S. and Korsgaard, S. (2019) 'Coding qualitative data: a synthesis guiding the novice', *Qualitative Research Journal*, 19(3), pp. 259–270. Available at: <https://doi.org/10.1108/QRJ-12-2018-0012>.
- Locke, K., Golden-Biddle, K. and Feldman, M.S. (2008) 'Making Doubt Generative: Rethinking the Role of Doubt in the Research Process', *Organization Science*, 19(6), pp. 907–918. Available at: <https://doi.org/10.1287/orsc.1080.0398>.
- Malmi, T. and Brown, D.A. (2008) 'Management control systems as a package—Opportunities, challenges and research directions', *Management Accounting Research*, 19, pp. 287–300.
- Margherita, A., Sharifi, H. and Caforio, A. (2021) 'A conceptual framework of strategy, action and performance dimensions of organisational agility development', *Technology Analysis & Strategic Management*, 33(7), pp. 829–842. Available at: <https://doi.org/10.1080/09537325.2020.1849611>.
- van der Meer-Kooistra, J. and Scapens, R.W. (2008) 'The governance of lateral relations between and within organisations', *Management Accounting Research*, 19, pp. 365–384. Available at: <https://doi.org/10.1016/j.mar.2008.08.001>.
- Meggison, L.C. (1963) 'Lessons from Europe for American Business', *The Southwestern Social Science Quarterly*, 44(1), pp. 3–13.
- Merchant, K.A. and Otley, D.T. (2006) 'A Review of the Literature on Control and Accountability', in C.S. Chapman, A.G. Hopwood, and M.D. Shields (eds) *Handbook of Management Accounting Research*. Elsevier Science.
- Merchant, K.A. and Van der Stede, W.A. (2007) *Management control systems. performance measurement, evaluation, and incentives*. 2nd edn. Prentice Hall. Available at: <https://search.ebscohost.com/login.aspx?direct=true&db=cat03459a&AN=hhl.36069&site=eds-live&scope=site>.
- Neimark, M. and Tinker, T. (1986) 'THE SOCIAL CONSTRUCTION OF MANAGEMENT CONTROL SYSTEMS', *Accounting, Organizations and Society*, 11(4/5), pp. 369–395.
- Neuman, L. (2014) *Social Research Methods: Qualitative and Quantitative Approaches*. 7th edn. London: Pearson Education Limited.
- Nold, H. and Michel, L. (2016) 'The performance triangle: a model for corporate agility', *Leadership & Organization Development Journal*, 37(3), pp. 341–356. Available at: <https://doi.org/10.1108/LODJ-07-2014-0123>.
- O'Connor, C. and Joffe, H. (2020) 'Intercoder Reliability in Qualitative Research: Debates and Practical Guidelines', *International Journal of Qualitative Methods*, 19, pp. 1–13. Available at: <https://doi.org/10.1177/1609406919899220>.

Reed, J.H. (2021) 'LEVERAGING STRATEGIC AGILITY IN THE PANDEMIC ENVIRONMENT', *Global Journal of Entrepreneurship*, 5(1), pp. 55–68.

Rigby, D.K., Sutherland, J. and Takeuchi, H. (2016) 'Embracing Agile', *Harvard Business Review*, 94(5), pp. 40–50.

Rückert, T., Sauberschwarz, L. and Weiss, L. (2021) 'Strategy needs agility: implementing a novel agile management system at fast pace', in *LUT Scientific and Expertise Publications. ISPIM Connects Valencia – Reconnect, Rediscover, Reimagine*, Valencia.

Saunders, M., Lewis, P. and Thornhill, A. (2007) *Research Methods for Business Students*. 4th edn. Harlow: Pearson Education Limited.

Sharifi, H. and Zhang, Z. (2001) 'Agile manufacturing in practice Application of a methodology', *International Journal of Operations & Production Management*, 21(5/6), pp. 772–794.

Simons, R. (1995) 'Control in an Age of Empowerment', *Harvard Business Review*, 73(2), pp. 8–88.

Sońta-Drączkowska, E. (2018) 'From Agile Project Management to Agile Organization? - a literature review', *Emerging Challenges in Modern Management*. Edited by P. Klimas and A. Lipińska, 19(6), pp. 231–242.

Strauß, E. and Zecher, C. (2013) 'Management control systems: a review', *Journal of Management Control*, 23(4), pp. 233–268. Available at: <https://doi.org/10.1007/s00187-012-0158-7>.

Stray, V. *et al.* (2022) 'How agile teams make Objectives and Key Results (OKRs) work', in *ICSSP'22*, Pittsburgh, PA, USA. Available at: <https://doi.org/10.1145/3529320.3529332>.

Sun, F., Zheng, A. and Lan, J. (2022) 'Job Insecurity and Employees' Taking Charge Behaviors: Testing a Moderated Mediation Model', *International Journal of Environmental Research and Public Health*, 19(2). Available at: <https://doi.org/10.3390/ijerph19020696>.

Teece, D., Peteraf, M. and Leih, S. (2016) 'Dynamic Capabilities and Organizational Agility: RISK, UNCERTAINTY, AND STRATEGY IN THE INNOVATION ECONOMY', *California Management Review*, 58(4), pp. 13–35. Available at: <https://doi.org/10.1525/cm.2016.58.4.13>.

Tekavčič, M., Peljhan, D. and Šević, T. (2008) 'Levers Of Control: Analysis Of Management Control Systems In A Slovenian Company', *The Journal of Applied Business Research*, 24(4), pp. 97–112. Available at: <https://doi.org/10.19030/jabr.v24i4.1333>.

Theobald, S. *et al.* (2020) ‘Agile Leadership and Agile Management on Organizational Level – A Systematic Literature Review’, in M. Morisio, M. Torchiano, and A. Jedlitschka (eds) *Product-Focused Software Process Improvement*. Springer, pp. 20–35. Available at: [https://doi.org/10.1007/978-3-030-64148-1\\_2](https://doi.org/10.1007/978-3-030-64148-1_2).

Walter, A.-T. (2021) ‘Organizational agility: ill-defined and somewhat confusing? A systematic literature review and conceptualization’, *Management Review Quarterly*, 71, pp. 343–391. Available at: <https://doi.org/10.1007/s11301-020-00186-6>.

Wendler, R. (2013) ‘THE STRUCTURE AND COMPONENTS OF AGILITY – A MULTI-PERSPECTIVE VIEW’, *BUSINESS INFORMATICS*, 2(28), pp. 148–169.

Yin, R.K. (2018) *Case study research and applications: design and methods*. 6th edn. Los Angeles: SAGE.

Žitkienė, R. and Deksnys, M. (2018) ‘Organizational Agility Conceptual Model’, *Montenegrin Journal of Economics*, 14(2), pp. 115–129. Available at: <https://doi.org/10.14254/1800-5845/2018.14-2.7>.