

Secondary Publication



Fischer, Isabel; Gimnich, Moritz; Papert, Marcel; Goertler, Thomas

Travelling the Digital Journey : a Literature Review and Framework for Change Management Actions and Tools in Digital Transformation

Date of secondary publication: 07.05.2024

Version of Record (Published Version), Conferenceobject

Persistent identifier: urn:nbn:de:bvb:473-irb-951302

Primary publication

Fischer, I. Gimnich, M.; Papert, M.; Goertler, T. (2024): „Travelling the Digital Journey : a Literature Review and Framework for Change Management Actions and Tools in Digital Transformation“. In: Tung X. Bui (Ed.), Proceedings of the 57th Hawaii International Conference on System Sciences, Honolulu, HI: Department of IT Management, Shidler College of Business, University of Hawaii, S. 4818–4827, <https://hdl.handle.net/10125/106962>.

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Travelling the Digital Journey: A Literature Review and Framework for Change Management Actions and Tools in Digital Transformation

Isabel Fischer
University of Bamberg
Chair of Supply Chain Management
isabel.fischer@uni-bamberg.de

Marcel Papert
University of Bamberg
Chair of Supply Chain Management
marcel.papert@uni-bamberg.de

Moritz Ginnich
University of Bamberg
Chair of Information Systems and Services
moritz.ginnich@uni-bamberg.de

Thomas Goertler
University of Bamberg
Chair of Supply Chain Management
thomas.goertler@uni-bamberg.de

Abstract

The emerging digital transformation (DT) poses severe challenges to companies. In order to implement respective transformation process sufficiently to seize the benefits of DT, the concept of change management (CM) becomes relevant for organizations. Considering increasing DT efforts of firms, the purpose of this study is to identify relevant CM actions that support the DT journey as well as to synthesize these findings into a comprehensive framework. Therefore, we conducted a systematic literature review and analyzed 40 pertinent scientific publications drawing on Lewin's (1947) Three Step Model with its phases unfreezing, moving and freezing. Our findings identify in total 52 individual CM actions that are necessary for implementing DT. We translated these findings into a framework that is structured according to established CM models and extends those for becoming suitable for describing DT projects. Thus, the framework advances the pertinent literature and presents relevant aspects for practitioners leading the change.

Keywords: Change Management, Actions and Tools, Digital Transformation, Framework Development, Systematic Literature Review.

1. Introduction

Since recent years, the emergence of digital technologies poses major challenges to companies as well as the entire economic landscape (Duchek, 2020; Nambisan et al., 2019; Soluk and Kammerlander, 2021). At the same time, these technologies, such as Artificial Intelligence, offer significant potential. As a missing deployment of digital technologies can significantly threaten the long-term competitiveness of a company, organizations are striving to incorporate those (Hanelt et al., 2021; Philip, 2021; Soluk and Kammerlander,

2021). In this way, companies expect not only to even survive in the market, but also to achieve competitive advantages (Duchek, 2020; Philip, 2021). As a consequence, a comprehensive digital transformation (DT) process is prerequisite (e.g., Hanelt et al., 2021; Soluk and Kammerlander, 2021). In terms of DT, we follow Vial's (2019) definition: "a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies". That is, DT emphasizes the utilization of digital technologies to achieve enhancements, such as gaining a competitive advantage, through change in entities such as organizations. In their DT definition, Hinings et al. (2018) summarize DT as the combined effects of digital innovations that create new actors and constellations of those, structures, practices, and values in an organization. In this context, the literature states that digital transformation requires comprehensive organizational change (e.g., Coile, 2000; Hanelt et al., 2021; Wessel et al., 2021) that can result, among other factors, from technological innovation and impact (Hanelt et al., 2021; Philip, 2021) and process digitalization (Baiyere et al., 2020; Soluk and Kammerlander, 2021).

When companies enter into transformations, the concept of change management (CM) becomes important. CM is an established approach that supports organizations in dealing successfully with upcoming changes by offering various actions and measures (By, 2005). In this context, CM helps to anchor innovations in organizations (Stank et al., 2011). These include the introduction of new operating procedures, adequate communication of the changes, as well as education and training, but also challenging tasks such as reducing resistance among unsettled employees, pursuing the aim of creating acceptance of the change (Milliken, 2012). In this context, several reasons for applying CM exist.

These can be grouped on the one hand in general motives for CM as minimizing employees' a resistance to change, ensuring a high employee engagement or the mitigation of risks (Cameron & Green, 2019; Weiner, 2009). On the other hand, especially DT requires CM for aligning the severe cultural shift to straighten the organizational culture with the new digital strategy (Bellantuono et al., 2021; Girrbach, 2018; Roblek et al., 2021). Further, since DT can cause vast disruption, CM needs to bring back continuity of processes (Loonam et al., 2018; Kraus et al., 2021) and to ensure an adequate adoption of the innovative technology (Kadir & Broberg, 2020; Philip, 2021).

However, the existing CM actions and measures are well-established and were discovered and described several years ago. When it comes to the implementation of innovative digital technologies, traditional CM approaches might reach a limit as they do not sufficiently consider the challenges arising from the implementation of a disruptive digitalization project (Hanelt et al., 2021). In their paper, Hanelt et al. (2021) undertake a thorough review on the literature on DT and develop several avenues for future research. In this course, the authors suggest to generate new models or adjust existing ones to theorize the phenomenon of DT.

For a possible adaptation of CM to DT, it is further necessary to consider existing obstacles as well as supporting factors (Dörries et al., 2021). Challenges include the coordination of collaboration, time constraints, and the transmission of information (Dörries et al., 2021). Factors that can lead to the success of CM in DT include suitable communication to circumvent and overcome resistance, the involvement of all those involved in the change, and adequate management of the change (Dörries et al., 2021). This is why we argue that CM is a useful concept to handle also DT-related change processes, but the required actions and tools are different, focusing on the needs of such a disruptive event. These considerations lead us to the following research questions: RQ1: *Which change management actions are needed to support a digital transformation journey?* RQ2: *How can the respective change management process be designed?*

The purpose of the study is to identify CM actions and tools that support the DT journey and to translate these into a comprehensive framework. This serves an advanced understanding of CM techniques in a highly dynamic context. Further, this paper investigates whether the applicability of traditional CM approaches, such as Kurt Lewin's (1947) Three Step Model or John Kotter's (1996) Eight Step Change Model, is given in a digital context or whether adjustments are necessary to support this comprehensive transformation. To answer the research questions, we performed a systematic literature review. Based on the analysis of 40 articles

published before June 2022, we identified 52 CM actions facilitating the transformation towards a digitized organization. We have structured our findings according to Kurt Lewin's (1947) Three Step Model, which is often titled as the precursor of many CM models (Bellantuono et al., 2021). Further, we developed a comprehensive and dynamic framework that comprises the examined CM actions as well as the basic models and theoretical foundations of CM according to Kotter (1996) and Lewin (1947). Our findings show that the assumptions of Kotter's (1996) Eight Step Change Model and Lewin's (1947) Three Step Model can be still applied to DT-related change, however in an adapted form, reflecting the dynamics and volatility of DT.

2. Theoretical Foundations

2.1. Change Management Definition and Theoretical Models

CM is an approach that supports organizations in dealing successfully with change processes in order to achieve the transition to a desired end state (Philip, 2021). Moran and Brightman (2001) define CM as a process that serves the continuous renewal of the direction, structure and capabilities of an organization. The goal of the approach is to meet the needs of external and internal customers affected by the change (By, 2005). Thereby, the concept arises from a multitude of social science disciplines (Burnes, 2009). A central function of CM is to identify sources of resistance to change within organizations and to find ways to overcome those (Cummings & Worley, 2014). Thus, CM serves to align expectations, to communicate the need for change, and to provide education and training for employees to support the transition (Milliken, 2012).

The literature proposes different theoretical models conceptualizing CM. In this context, Kurt Lewin's (1947) Three Step Model is often titled as the precursor of many CM models (Bellantuono et al., 2021). The core idea of Lewin's work is that change implies new behaviors and old behaviors in companies must be discarded before change processes can take place (Bellantuono et al., 2021). Originally, Lewin (1939) argued within his famous field theory that unknown situations can be psychologically described as a cognitively unstructured region for the individual. In his subsequently developed *Three Step Model*, Lewin (1947) asserted that social habits lead to a general resistance to change. These habits on the present level must be broken in the first step by accelerating forces in order to (1) *unfreeze* them. To increase the performance of a group, the second step is to change their behavior by introducing new measures, which Lewin (1947)

described as the (2) *moving phase* towards a new, desired level. These new processes, routines and behaviors then need to be consolidated, which he referred to as (3) *refreezing* the group life on the new level. This is important because groups tend to revert to their original behavior due to the opposing forces and influences on them (Lewin, 1947).

Further, John Kotter's Eight Step Change Model (see Kotter, 1996) is one of the most widely used CM models (Bellantuono et al., 2021). In its first step, Kotter (1996) states that a *sense of urgency* must be evoked to achieve the necessary cooperation within the organization. The second step involves establishing a *guiding coalition* that is leading the change, because changes cannot happen through one person alone. According to the third step, a *shared vision* must be created, as it will keep the goal in mind, motivate employees, and support coordination. The fourth stage encompasses the need for *the vision and strategy to be communicated* by the leading coalition in order to increase understanding and commitment among employees. This dissemination should provide reduction of resistance of the organizational members to change processes. While the first four steps already promote the empowerment of employees, further *barriers must be removed* with the fifth step, which can arise from structures, skills, systems, or superior. According to the sixth step, *short-term successes* must be planned and created to demonstrate the benefit of the change and to engage and motivate more employees. The seventh step states that short-term successes are to be celebrated, but victories should *not be declared too hastily*, especially when the sense of urgency has diminished. Finally, the eighth step constitutes the importance of creating a *culture of change* that reflects the new shared values and behavioral norms. Therefore, it is essential to develop and live a new culture and to anchor it in the entire organization.

In addition to the models mentioned here, several others exist. For this paper, we build on the both mentioned models as they are well established and proven for conceptualizing change. This is in line with the avenues for future research as developed by Hanelt et al. (2021), who state that existing theoretical models should be adjusted to theorize the phenomenon of DT.

2.2. Digital Transformation

In an era of Industry 4.0, which is seen as a new chapter in the management and control of the industrial value chain, the term DT has arisen (Ghobakhloo and Iranmanesh, 2021). As a unified definition lacks, DT can be described as an organizational process that brings disruptive changes to an organization that is enabled and driven by digital technologies (Barann et al., 2019). Uhl

& Gollenia (2014) consider DT to be a specialized type of business transformation in which information technology (IT) plays a dominant role in transforming the strategy, structure, culture, and processes of companies. In a similar vein, Hanelt et al. (2021) define DT as an organizational change that is triggered and shaped by the widespread use of digital technologies. As mentioned in the introduction, Vial (2019) extends the view on DT by emphasizing its process character and the aim of digitalization efforts of triggering organizational changes by means of information, communication or technologies. According to the author's view on DT, the transformational concept sees improvement as an expected outcome of DT (Vial, 2019). Further, a plethora of authors notes that DT is driven by the use and consideration of digital technologies and IT (e.g., Barann et al., 2019; Culot et al., 2020; Hanelt et al., 2021; Matt et al., 2015). Regarding further definitions of DT, aspects as the modification or adaptation of business models through the setting of adequate targets (Kotarba, 2018), internal processes and value creation (Mergel et al., 2019; Zaoui & Souissi, 2020), comes into place. In their definition, Hinings et al. (2018) summarize DT as the combined effects of digital innovations that create new actors and constellations of those, structures, practices, and values in an organization. The overarching goal of any action here is to maintain competitiveness (Hinings et al., 2018; Leonardi & Treem, 2020). As a DT is an immensely resource-intensive and complex process that can be characterized by inevitability, irreversibility, rapidity and uncertainty (Ghobakhloo & Iranmanesh, 2021). Therefore, sufficient CM to manage this complex change are required.

3. Research Design and Method

Our research design is based on a literature study in the sense of a theoretical review (Paré et al., 2015). We argue that this type of review is appropriate to answer our RQs and to develop a conceptual framework for CM. To ensure a systematic approach, we followed Denyer and Tranfield's (2009) five-step process.

Our review began with the formulation of a research question (see 1. Introduction). The second step is to search for relevant literature. Prior to the extensive database search, we conducted a preliminary search to get an overview of relevant keywords (e.g., Gehanno et al., 2013; Kitchenham et al., 2016). We then conducted the database search. Since this work examines CM in the context of DT, we reflected on these terms enriched by various synonyms in the search string. We used Boolean operators and truncation characters to combine the keywords into the following search term:

(“Change Management” OR “Implementation Management” OR “Organizational Change”) AND (“Digital Transformation” OR “Digital Change” OR “Digital Implementation” OR “Digital Technology”)

We applied this search string in the five academic databases Business Source Ultimate, Science Direct, Web of Science, Springer Link and Emerald. The search was performed using the Advanced Search Option in Title OR Keywords OR Abstract fields, without limiting the search period. The data export took place in June 2022, which marks the upper limitation of our data sample. We focused on academic journal articles as well as research and review articles to ensure the quality of the publication in our literature sample. Searching for this the string yielded a total of 178 results, of which the majority of papers with 110 results originated from the Web of Science database. The sample was reduced to 141 hits after the removal of duplicates.

In order to maintain a clear focus of the relevant literature, we applied two deselection criteria in the screening and evaluation process. The first deselection criterion filtered the articles according to the research question formulated in the introduction. Articles that do not relate to this question, in that they do not refer to either sub-areas of digital transformation or any form of change in companies, are excluded from further consideration. The second exclusion criterion refers to the discipline of the regarded publications. Literature results with a too strong or too specific focus on IT or a certain technology as well as publications examining the public sector or marketing were omitted for the following screening process in order to specify the focus of the paper. The screening of the titles reduced the final sample to 98 publications and evaluating the abstracts yielded 74 applicable hits. In total, 36 articles were considered relevant for answering the research question. Through performing a backward-search, we could enrich the sample by 4 articles. Online appendix 3.1. contains a comprehensive list showing the papers of the final sample as well a research protocol that summarizes the conducted steps of the SLR.

A descriptive analysis of the identified studies provides insight into the time of publication of the selected studies as well as the respective outlets. The final sample consists of 28 journal papers, 6 conference papers, and 2 anthology contributions. Conferences included among other the Americas Conference on Information Systems or the International Conference or the Hawaiian International Conference on System Sciences. Among the journals, for examples, the *Frontiers in Psychology*, the *Forecasting and Social Change*, the *MIS Quarterly Executive*, or the *Behaviour & Information Technology* are represented.

A descriptive analysis provides information on the distribution of the publication dates of the articles: all

but one paper were published between 2016 and 2022, where the data export took place. The vast majority of papers was published in 2021. From these results, we state that on the one hand, the interest in CM and DT research has increased, and on the other hand, the publications on CM in connection with DT have started to appear already shortly after the emergence of the research field of DT. These findings underline the importance of a joint regard of CM and DT.

For the identification of cross-article structures and the analysis of its content, the set of relevant sampling must be considered holistically. For this purpose, the method of qualitative content analysis according to Mayring (2021) was applied. Here, the research contributions are systematically examined and evaluated following an inductive coding approach using MAXQDA software. We compared our findings to the conceptual framework of Lewin (1947) in order to be able to assign the CM measures for DT mentioned in the literature to the model’s respective phases. This should provide the foundation for the later framework development as presented in Section 4.2.

The coding was carried out by two authors, who then discussed it with the other authors. After several iterations, the coding was finalized and translated into the framework that will be presented in the next chapter.

4. Results

4.1. Change Management actions, methods and tools for Digital Transformation

The content-related analysis revealed in total 52 different individual CM actions, measures and tools that are relevant in different stages of conducting a DT.

4.1.1. Voluntary and forced Change. Before presenting the results according to Lewin’s (1947) model, this paper addresses another central aspect that has attracted attention in the literature stream at the intersection of CM and DT. According to Philip (2021), a DT can happen on a voluntary or forced basis. A voluntary DT occurs as a result of internal factors, such as when companies seek competitive advantage and therefore make a conscious decision to invest in technological innovations (Philip, 2021). In contrast, extrinsic or exogenous factors force companies into a forced transformation, which is characterized by a low degree of voluntariness and often a rapid and unprepared implementation (Philip, 2021).

4.1.2. Unfreezing the present level. In the initial phase, 11 key actions and measures were identified. These include informing and preparing employees for

upcoming changes, emphasizing the urgency, and ensuring effective communication to reduce potential resistance. Further, it is crucial to assess the necessary competencies, including digital capabilities like literacy and cybersecurity, as well as transversal skills such as problem-solving and teamwork (Ferrari, 2012). Organizations should address competency gaps through internal training or external acquisitions as well. A long-term vision and strategy are vital, with the Chief Digital Officer (CDO) responsible for their development, assessing digital maturity, and defining DT goals becomes a central aspect. (Bellantuono et al., 2021; Bordeleau & Felden, 2019; Giebe, 2019; Girrbaach, 2018; Kadir & Broberg, 2020; Roblek et al., 2021).

4.1.3. Moving to a new level. In the second phase, 32 crucial measures were identified, emphasizing the centrality of people and employees in DT (Ng, 2021). As such, Ng (2021) and Bonanomi et al. (2020) stressed the significance of informal structures and cross-functional teams for effective collaboration and knowledge sharing. Further, Cortellazo et al. (2019) recommended the overcoming of organizational boundaries as well as a democratized decision-making among employees. In this vein, applying user feedback systems for new technologies were found essential to avoid employee frustration and reluctance (Kadir & Broberg, 2020; van der Schaft et al., 2020). Also, digital tools played a crucial role, with apps aiding intensive employee assessments (Berges & Kon, 2019). This is in line with Meske & Junglas (2020), who found that networking functionalities within technologies facilitated employee connections. Such tools helped gauge employee comprehension of change and reasons for resistance (Spieth et al., 2021). Top management's role in this phase involved concretizing the DT vision, focusing on systemic changes to establish a digital culture (Bellantuono et al., 2021; Girrbaach, 2018; Roblek et al., 2021). In this vein, the required leadership style needs to be transformative, innovative, and data-savvy (Hanelt et al., 2021; Stefanic et al., 2019). To support CM measures, Vey et al. (2019) recommended the employment of change agents, which are often external consultants and are empowered by the management. Their task is to facilitate change adoption and innovation using concepts like Holacracy and Innovation Labs (Bonanomi et al., 2020; Gilch & Siewecke, 2021; Krüger & Teuteberg, 2021; Machado et al., 2021; Vey et al., 2017; Windt et al., 2019).

4.1.4. Freezing the new level. In the final stage, 9 actions were identified. These include standardizing new practices, establishing life-cycle management systems for digital solutions, appointing a CDO for change leadership, fostering employee technical skills

and stakeholder engagement, emphasizing corporate culture, promoting collaboration, and incorporating change measures into the company's psychological contract (Kadir & Broberg, 2020; Giebe, 2019; Roblek et al., 2021; Berges & Kon, 2019; Gfrerer et al., 2021; Philip, 2021). Online appendix 4.1. summarizes the identified CM actions, including 11 measures for the *unfreezing* phase, 32 in the *moving* stage as well as 9 in the *freezing* phase.

4.2. Framework for Change Management Actions supporting Digital Transformation

We translated the findings from Chapter 4.1. as well as the theoretical foundations into a comprehensive framework. This is displayed in Figure 1 (for a larger view the figure is displayed in online appendix 4.2.). The purpose of the framework is to graphically present the needed CM actions for realizing a DT journey, resulting in a successful implementation of the DT initiative. The framework is structured according to Lewin's (1947) Three Step Model, containing the main phases of *unfreezing*, *moving* and *freezing*. Each phase of the framework is structured similarly: As depicted directly under the phases' names, we included the DT-specific CM methods, actions and tools that we have uncovered in Section 4.1. Further, we have extracted specific aims for each of the phases based on John Kotter's (1996) Eight Step Change Model.

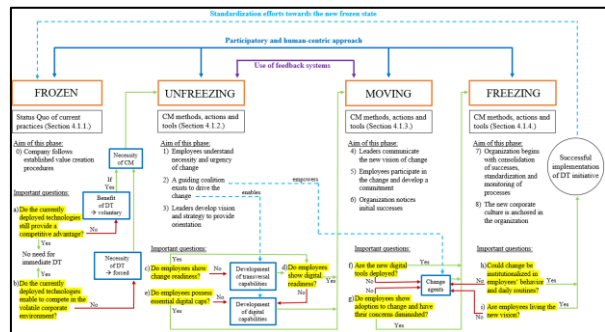


Figure 1. Framework for CM actions supporting the DT journey

Finally, each stage ends with important questions that also stem from the literature and summarize its most crucial aspects. The answers to the respective questions influence the further path through the framework. Only when all of the questions have been adequately answered, the phase is considered complete and moving on to the next is possible.

4.2.1. Frozen status quo. Before Lewin's (1947) *unfreezing* phase, we have added a preceding phase that is based on our findings from Section 4.1.1. We call this phase the *frozen* phase as this stage comprises the status

quo of any company doing its current business. The organization is following established ways of value creation procedures that are well-known by every employee, and therefore deeply *frozen* in their behavior. This condition is designed to be kept, any changes would bring turmoil to the existing behaviors and practices. In this state, there arise two questions that companies need to ask themselves. The first question is a): “Do the currently deployed technologies still provide a competitive advantage?” This question refers to Philip’s (2021) elaborations on voluntary change. A company’s business and value-creation processes are stable, but investing in technological innovations would bring additional competitive advantages. The organization is not dependent on undergoing the DT, but additional useful opportunities and benefit would result. Therefore, the drivers for a potential DT are endogenous as the company can actively decide for itself whether to undertake the transformation or not (Philip, 2021). If the answer to this question is “yes”, there is no need for an immediate DT. However, if the answer is “no”, a DT of voluntary character becomes an interesting consideration. The second question in this stage is b): “Do the currently deployed technologies enable to compete in the volatile corporate environment?” This refers to the unplanned characterization of DT (Philip, 2021). A company is forced to transform by extrinsic or exogenous factors such as inadequate positioning in the competitive environment due to poor technology deployment. Compared to the voluntary DT, the existence of the company depends on this type; DT has an immense and necessary importance here. An answer to this question with “yes” has no consequences for a company since it is well positioned even in a turbulent environment. However, a “no” requires to transform digitally. When a DT is either useful (planned change) or necessary (unplanned change) and a company decides to begin its DT journey, sufficient CM actions become necessary. As pointed out, this is required to successfully deal with transformation processes and to implement it in the entire organization. In our framework, we follow the elaborations of Bellantuono et al. (2021) and Ng (2021) that place the employees and their needs at the center of the DT project. This can prevent resistance to change and reduce the risk of failure (Bellantuono et al., 2021). This is why we included the compliance of a participatory and human-centric approach throughout the entire change process.

4.2.2. Unfreezing the present level. If a company decided to undertake the DT journey, the first step is to *unfreeze* existing structures and to arouse motivation for change. Therefore, our framework suggests the CM actions as outlined in Section 4.2.1. The aims of this phase are manifold: 1) Employees need to understand

the necessity as well as the urgency of change; 2) the management has to establish a leadership team that guides and drive the changes; and 3) a sufficient vision and strategy has to be developed by the top management team for providing orientation during the entire transformation process (Kotter, 1996).

In our framework, this phase is determined by three important questions. For this, we refer to Gfrerer et al. (2021) and to Bellantuono et al. (2021). The first authors state that for an efficient kick-off of a DT project, employees need to possess *digital readiness* (Gfrerer et al., 2021). Further, the authors note that the concept of digital readiness is based on *change readiness*. This is why we have added these concepts in sequential order in the framework. Gfrerer et al. (2021) describe readiness as the state of being prepared for something which results in the execution of planned actions to achieve a desired outcome, change or state. The goal of being ready is reached, when employees start to prepare for the change. Further, *digital readiness* is described as an operationalization of change readiness, moving tech-specific challenges, attitudes and capabilities into the focus (Gfrerer et al., 2021). To reflect these thoughts in the framework, we first formulated question c): “Do employees show change readiness?” If the answer is “yes”, it needs to be checked if it is the same with *digital readiness*, as this is a DT-specific manifestation of change readiness (Gfrerer et al., 2021). If the answer of question c) is “no”, employees’ *transversal capabilities*, as characterized in Section 4.1.2., need to be enhanced, either internally from training and education or externally through cooperations (Bellantuono et al., 2021; Sen & Gupta, 2020). If these are in place, it can be proceeded with question d): “Do employees show digital readiness?” If this is the case, a sufficient condition for the completion of the *unfreezing* phase is already given. If not, the change leaders must ensure *digital capability* building that is also required in this phase (Bellantuono et al., 2021). A second path in this phase begins with question e): “Do employees possess essential digital capabilities?”, as these are essential for understanding and applying new technologies (Bellantuono et al., 2021). As compared to digital readiness, digital capabilities can be described as the confident, critical and creative use of innovative technologies. If the answer on this question is “yes”, the CM process can go into its next stage. If not, the intermediate step must first be taken via dedicated build-up of digital capabilities (Bellantuono et al., 2021). The *unfreezing* phase can be considered successfully completed when it is assured that employees are ready for the change (c+d) as well as digitally enabled (e).

4.2.3. Moving to a new level. As this phase begins, the CM methods and actions we outlined in Section 4.1.3.

become relevant. The stage is aimed at achieving 4) an organization-wide communication of the developed vision of change; 5) an active participation and commitment of employees; and 6) reaching first milestones as well as the recognition of initial successes (Kotter, 1996).

Regarding relevant CM actions, two specific questions summarizing this phase arise. The first one is f): “*Are the new digital tools deployed?*” This question aims at the internalization of technologies in the daily tasks of the employees as stated important by Cortellazzo et al. (2019). If this is the case, the first central cornerstone for the *freezing* phase has been laid. If the answer is no, the top management has to engage *change agents* that serve the role as outlined in Section 4.1.3. Another question to be answered is g): “*Do employees show adoption to change and have their concerns diminished?*” This question is a significant indicator of the commitment and participation of the employees. Gfrerer et al. (2021) describe *adoption* as the state when employees have altered their mindset and behaviors to meet the change-related expectations. If they did and the answer to the question is “yes”, the organization is fully prepared for the *freezing* phase. If not, top management needs to empower the external *change agents* for familiarizing the change (Vey et al., 2017). Especially in the *unfreezing* and *moving* phases, it is important to get a feel for the employees’ state of mind. This is why we emphasize the use of feedback systems in our framework (Hanelt et al., 2021; Kadir & Broberg, 2020; van der Schaft et al., 2020). These are essential to stay close to the employees, following the human-centric approach. The *moving* phase can be considered completed when it is assured that employees apply the new digital possibilities (f), start adopting to the change, and their concerns diminish (g).

4.2.4. Freezing the new level. In the final phase of the DT journey, its stabilization and integration takes place. This is manifested by the CM actions outlined in Section 4.1.4. The aim of this phase is to 7) consolidate successes, standardize, and monitor processes as well as 8) anchor a new corporate culture according to the change (Kotter, 1996).

As in the previous phases, two essential questions arise. The first one is h): “*Could change be institutionalized in employees’ behavior and daily routines?*” According to Gfrerer et al. (2021), institutionalization occurs when new procedures have become a stable part of the employees’ behavior. If this is the case, a big step was taken towards a successful DT implementation. If not, we suggest a back-loop to involving the *change agents* once again (Vey et al., 2017). The last sufficient condition for the DT journey is i): “*Are employees living the new vision?*” This

question aims at the standardization of the new ways of working, the elimination of old structures as well as the achievement of a culture of community (Kadir & Broberg, 2020; Philip, 2021). If employees still struggle with internalizing the new procedures, *change agents* can remedy the situation (Vey et al., 2017). However, if the answer to this question is “yes” as well, all the conditions for a successful implementation as proposed in the pertinent literature are met. Once the DT initiative has been implemented, this state is the new status quo. Therefore, standardization efforts are useful to create a new *frozen* state, indicated through the back arrow.

As it has become clear, the framework is anchored in several theoretical foundations and elaborations on the related literature. Table 1 in the online appendix 4.2.1 provides an overview of the main concepts and components of our framework in the left column. The right column shows the corresponding sources from the scientific literature.

5. Discussion and Conclusions

The purpose of this work was to contribute to the existing research on CM actions supporting DT journeys of companies, considering established models of CM (Kotter, 1996; Lewin, 1947). Based on a SLR, we analyzed 40 scientific articles and identified 52 CM actions organizations should consider when undergoing DT. For conceptualizing DT, we mainly draw on the definition and elaborations of Vial (2019) that emphasize the utilization of digital technologies to achieve enhancements, such as gaining a competitive advantage, through change in entities such as organizations.

Further, we synthesized these findings into a comprehensive framework that includes specific questions and aspects that help companies during the DT process. The framework is structured according to the approach of Lewin’s (1947) Three Step Model, including the main phases of *unfreezing*, *freezing*, and *refreezing*. Based on insights of the pertinent literature, we added a preceding phase that we call *frozen*. This stage describes the current business practices of organizations and its questions and aspects serve as a starting point for DT. Once the DT journey has begun, the main phases from Lewin (1947) shape the further proceedings, including Kotter’s (1996) insights.

During the development of the framework, we noticed several aspects that we either included in the model or excluded consciously due to tangible reasons. A facet we did not include in the framework addresses the downsides of the top management support (Elbanna & Newman, 2022; Guenzi & Nijssen, 2021). On the one hand, farsightedness and increased communication of long-term strategic effects of a new system have a

negative impact on operational processes (Elbanna & Newman, 2022). On the other hand, employees perceive a higher investment in digital technologies by top management as enlarged commitment, which increases their uncertainties about the future and correspondingly raises their stress levels (Guenzi & Nijssen, 2021). Paradoxically, CM activities often possess opposing effects in a sense that insecurities among employees about increased requirements or higher workloads arise (Guenzi & Nijssen, 2021). This is in line with van der Schaft et al. (2020), who emphasized that change leads to anxiety-filled expectations of the future, which decreases employee motivation and commitment. Executives need to be aware of these downsides of CM, e.g., an increase in stress levels due to a sense of urgency or proximity to change. They need to implement further measures such as analyzing workloads or appropriate training and support to minimize such negative effects (Guenzi & Nijssen, 2021). However, our findings are in line with Kanitz and Gonzalez (2021) that presented a possible restructuring of pure CM toward technology-enabled CM. According to the authors, the use of digital technologies permeates the practice of change. By collecting and analyzing data, a holistic overview of the progress of change is created and measures can be adjusted accordingly. The authors see CM as a continuous process, where stakeholders can collaborate using technology to implement change. As such, faster communication and feedback can be facilitated between those managing change and those implementing it (Kanitz & Gonzalez, 2021).

Our findings provide contributions to the academic literature. We extended the models of Kotter (1996) and Lewin (1947) so that they become suitable for describing DT projects. The basic structure of Lewin (1947) has been made dynamic by the inserted back loops and possibly necessary iterations. This reflects the complexity of DT in its implementation process. Additionally, as the constructs of the developed framework are drawing on the established literature at the intersection of CM and DT and were enriched by these thoughts, the relevant existing findings are synthesized holistically. Despite the advancement of an existing model, we still maintain and adopt the more top-down shaped view on CM as proposed by Lewin (1947) for several reasons: this is justified by its advantages of providing clear directions, which facilitates an overall and organization-wide alignment of the newly developed DT strategy (Bellantuo-no et al., 2021; Girrbach, 2018; Roblek et al., 2021). Additionally, a top-down approach as suggested in our model eases consistency in processes as well as strategic communication and enhances faster decision-making (Anderson & Thompson, 2004). Thus, our findings

advance the knowledge on CM actions for DT journeys by structuring the respective insights.

Further, our findings also provide managerial contributions as they offer guidance for practitioners intending to undertake DTs. Executives leading change projects can work their way through the process along the framework, taking into account the important aspects and considerations. Therefore, the framework can be regarded as a guideline, supporting practitioners in planning, implementing, managing, and monitoring required resources in a targeted manner.

However, this study also comes with some limitations. As such, our methodology depends on the quality of the selected databases. Further, the study suffers from the general methodological weaknesses of a SLR. The findings of this paper build on the 40 papers identified, which represent just a fraction of the numerous publications in the research area of CM and DT. Moreover, as the framework is rather qualitative, it does not include any scales for measuring the impact of the respective constructs. This makes it difficult for companies to set a threshold when answering questions with “yes” satisfactory. Here, further research could explore approaches for a quantifiable measuring of constructs. Additionally, we did not make a distinction between corporations and small and medium sized enterprises (SMEs), like the research of Barann et al. (2019), who focus on change in SMEs.

Examining the possible distinction of the CM processes of differently sized or structured companies offers interesting potential for further studies. This goes along with another shortcoming of our study that an empirical verification of the results is missing. Research should therefore be conducted in a practical environment, into the extent to which the identified methods and tools of CM serve the support of the DT journey, so that they provide different solutions to various scenarios that executives can draw upon. In the context of an empirical verification, further research potential lies in the consideration of different industries (e.g., Healthcare or Construction industry) as these vary in their inertia and rigidity (e.g., Lovell & Smith, 2010; Mokyry, 1992). Lastly, an interesting avenue of further research lies in the consideration of the framework for the implementation of different digital technologies in different functional areas of the firms as procurement or accounting. Each technology or department may have specific requirements that need to be addressed in a context-sensitive manner.

6. Online Appendix

For supplementary material, please see: <https://figshare.com/s/9500109db0c728995dc9>.

7. Acknowledgements

The research project has been funded by the Fraunhofer Institute for Integrated Circuits IIS, Department for Supply Chain Services, Nuremberg/Germany.

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