Designing Change Project Monitoring Systems: Insights from the German Manufacturing Industry

Research Paper

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Abstract. Given the importance, but also difficulty of organizational change, change project monitoring systems aim to enhance the transparency and decision-making of change management. Yet, little is known about how to design such systems. Therefore, we present insights from our action design research (ADR) project with two German manufacturing companies. The system includes a newly developed questionnaire-based survey, and an interactive dashboard for data analysis and visualization. In this paper, we present the prototype, discuss its design challenges, and propose generalized requirements and design principles for change project monitoring systems. Our design principles consider both the design artifact and design process. Thereby, we provide valuable insights for practitioners and academics, contribute to an emergent field of research about technological change management support, and work towards a design theory for change project monitoring systems. From a design research perspective, our findings reflect and extend discussions on the importance of trade-offs for design.

Keywords: Change Management, Monitoring, Action Design Research, Design Science, Industry.

1 Introduction

To survive, organizations need to adapt to changing environments (By, 2005). This is currently exemplified by the German manufacturing industry: It is in the middle of multiple large and structural shifts of its business environment caused by factors such as technological developments (e.g., green technologies, digital transformation), added regulatory requirements (e.g., sustainability goals), increasing competition (e.g., Chinese manufacturers), and growing financial pressures (e.g., energy prices, tariffs, and economic turmoil). This requires organizations not only to decide strategically how to change but also to be able to coordinate, implement, and oversee—to manage—change projects effectively (Ginsberg, 1988). This is the task, goal, and challenge of *change management* (Oreg & Berson, 2019; Stouten et al., 2018; Hagl et al., 2024). With change, we refer to a planned "difference in form, quality, or state over time in an organizational entity" (Van de Ven & Poole, 1995, p. 512). To illustrate, at our project partner *ManufacturingCorp*, change management is responsible for supporting change

20th International Conference on Wirtschaftsinformatik
September 2025, Münster, Germany

projects such as the organizational restructuring of departments, cultural change projects, the implementation of agile approaches, or supporting employees during the shift to the fabrication of new products.

In this context, change managers are increasingly using innovative information technology (IT) to improve their change management interventions and enhance the change process and results. This concept is also referred to as technologically-mediated change management (Kanitz & Gonzalez, 2021). Examples of these technologies include platforms for change initiation and communication (Bjelland & Wood, 2008; Tavakoli et al., 2017), personalized feedback campaigns (DiLeonardo et al., 2020; Ewenstein et al., 2015), and change-related learning platforms (Brechtelsbauer & Laumer, 2024). Another example, and the focus of this paper, are change project monitoring systems (Naslund & Norrman, 2019; Norrman & Naslund, 2025; Wolf et al., 2023). These systems collect, analyze, and present data on the state of a change project on a regular basis. This enhances project transparency, improves decision-making, enables focused change management interventions, and thereby increases the success of change projects. On an organizational level, this improves the ability of organizations to facilitate change, increasing their adaptability and survivability.

However, despite their potential, empirical research into the design and impact of change project monitoring systems is very scarce, as evidenced by a review on performance measurement systems for change initiatives by Norrman & Naslund (2025). Therefore, we contribute design knowledge on change project monitoring systems, addressing technical and organizational elements of the *design artifact*, as well as the *design process*. Thereby, this paper seeks to answer the following research question:

RQ: *How can change project monitoring systems be designed?*

To approach this question, we present insights from our action design research (ADR) (Sein et al., 2011) prototype development project at ManufacturingCorp. We first describe the prototype and present the most relevant design challenges we encountered. Then, we derive three generalized requirements (Walls et al., 1992) for change project monitoring systems that reflect the perspectives of diverse stakeholders and the specificities of the change management domain. Finally, we propose eight design principles considering the form and function of change project monitoring systems, and their design process. With this, we contribute to an emergent field of research about technologically-mediated change management and work towards a design theory (Jones & Gregor, 2007) for change project monitoring systems specifically. Further, our findings reflect and extend an ongoing discussion about the importance and necessity of trade-offs for design (Wessel et al., 2024). These insights are valuable for practitioners such as system designers and change managers, and academics such as change management scholars and design science researchers alike.

This paper proceeds as follows: Section Two reviews literature on technologically-mediated change management and on change monitoring systems specifically. Section Three outlines the research project and method. Section Four presents our findings, consisting of the prototype description, design challenges, and generalized requirements and design principles. Section Five discusses theoretical and practical implications, as well as limitations and future research opportunities. Section Six concludes the paper.

2 Background

2.1 Technologically-Mediated Change Management

As outlined above, change management is concerned and challenged with the management of all kinds of organizational changes. Given the importance and inherent challenges of organizational change (Pettigrew et al., 2001), both change practitioners (e.g., DiLeonardo et al., 2020; Ewenstein et al., 2015; Wolf et al., 2023) and change scholars (e.g., Kanitz & Gonzalez, 2021; Jick & Sturtevant, 2017) have been exploring how IT can enhance change management processes. This includes a wide array of technologies that aim at supporting different aspects of change management, such as communication platforms to organize and initiate change projects (Bjelland & Wood, 2008; Tavakoli et al., 2017), IT-enabled personalized communication campaigns (DiLeonardo et al., 2020; Ewenstein et al., 2015), digital learning platforms to promote new skills and approaches (Brechtelsbauer & Laumer, 2024), and change analytics and monitoring systems (Naslund & Norrman, 2019; Norrman & Naslund, 2025; Wolf et al., 2023).

Technologically-mediated change management "is fundamentally altering the change process in terms of its adaptiveness, personalization, and openness" (Kanitz & Gonzalez, 2021, p. 448). Its potential benefits are faster feedback, tailored communication and interventions, and a democratization of change processes. However, it also carries risks and challenges such as information overload, requiring new skills, additional complexity, and increased stakeholder expectations (Kanitz & Gonzalez, 2021). Critically, research to guide practitioners to design, implement, or use such systems, is very limited.

2.2 Change Project Monitoring Systems

We understand change project monitoring systems as ensembles of material and organizational features that are bundled in hard- or software (Orlikowski & Iacono, 2001; Sein et al., 2011). Their purpose is to regularly assess change projects by collecting and analyzing data with the goal of improving the transparency and decision-making of change management. We explicitly use the term *monitoring* to express that the system does not just provide a before-and-after comparison of change-related outcomes but a regular and continuous assessment of the change project.

Despite established concepts on measuring change-relevant dimensions (e.g., Armenakis et al., 2007), and a large body of literature on dashboard development (e.g., Bach et al., 2023; Sarikaya et al., 2019; Toreini et al., 2022), research on change monitoring systems, and especially design knowledge, is scarce (Norrman & Naslund, 2025). Most closely related to our work, Naslund & Norrman (2019) present a performance measurement system for change initiatives that uses a web-based survey to measure stakeholders' perceptions throughout different project phases. Interestingly, investigating its long-term use, they find that change leaders often do not act on the information that the system provides due to organizational tensions (Norrman & Naslund, 2025), thereby stressing the need to consider and investigate the system's organizational elements in its design.

In sum, research and design knowledge on change project monitoring systems, especially regarding their organizational elements to ensure their effective and successful usage, is both scarce and valuable for organizational change management.

3 Methodology

3.1 Project Context

Our research project is in cooperation with two internal change consultancies of subsidiaries of ManufacturingCorp, referred to as Alpha and Beta. Both are large German industrial manufacturers with global operations and revenues in the tens of billions. To maintain anonymity, we omit further organizational details. Intensified by the initially mentioned challenges, Alpha and Beta are engaging in many change projects relating to their organizational structure, products, and processes.

In this context, change managers at Alpha and Beta want to enhance the speed and quality of their decision-making, to improve the efficiency of their change management (e.g., through reduced cost and improved interventions), and the success of change projects (e.g., through improved outcomes). To achieve this, they aim to develop a change project monitoring system that collects, analyzes, and visualizes data on the status of a change project, enabling change managers to evaluate progress and intervene more quickly and precisely. This data focuses on change recipients' change acceptance and perception of the change communication and change support, allowing targeted interventions directed at specific issues. Further, this generalized change assessment is independent of the specific change project and can be applied across the organizations.

The team consists of change managers from Alpha and Beta with change-related, technical, analytical, and statistical knowledge. After finding no fitting existing solutions, the team decided to collaboratively develop its own solution resembling a citizen development approach. Where needed, collaborations with other stakeholders, consultants, and universities, are used for support on specific topics such as questionnaire development, technical implementation, and prototype evaluation. Importantly, while change managers at Alpha and Beta deal with similar change projects, Alpha and Beta are separate entities with different organizational requirements. This poses design challenges due to their similarities and differences, but crucially improves the generalizability of our results.

3.2 Method

We joined the project team in mid-2024 to support the design, implementation, and evaluation of the change project monitoring system. Due to our active participation, the practice-inspired nature of the project, and our goal to develop design knowledge, we follow an ADR approach that combines design research with action research and can deal with the intertwinement of building and evaluating that makes a clear separation between the phases difficult (Sein et al., 2011). In line with Sein et al. (2011), we view the change project monitoring system as an ensemble artifact and therefore consider the technical, material, and organizational design of the system and aim to understand its shaping through the actual usage by different users in practice. Following the ADR method, we began with the problem formulation (stage 1) (Sein et al., 2011). There, based on reviewing the relevant literature on change management monitoring and measurement technologies, and through discussions at Alpha and Beta, we developed an understanding of the practical issue as an instance of an under-researched class of problems: Change project monitoring systems.

As the project is still continuing, the building, intervention, and evaluation (BIE) stage (stage 2) is ongoing. Overall, there are technological innovations, e.g., in the newly developed data visualization dashboard and questionnaires, and organizational innovations that revolve particularly around the usage of the system and its integration into work practices by change managers and their clients. However, the integration of the artifact into the wider organization happens at a more mature stage (version 1.0) while the initial alpha version (prototype) is tested in selected pilots, hence the BIE is skewed towards IT-dominance (Sein et al., 2011), see Figure 1. During the BIE stage, our deep involvement in the development of the system, e.g., through advice on data management, analysis techniques, or visualization, and regular communication with project stakeholders and potential users has provided us with great insights. We participated in multiple weekly project meetings to discuss and advise on different issues, such as the system's architecture, data visualization, or the reduction of system discontinuities. Further, we have access to 35 interviews with diverse stakeholders about their requirements and potential concerns. Additionally, we evaluated the prototype with 22 change managers at Alpha and Beta. For this, we created an artificial case study, introduced them to the prototype, observed their usage, discussed their feedback in focus groups with two to ten members each, and measured the system usability score, perceived usefulness, and perceived ease of use. We adapted established questionnaires from Brooke (1996) and Davis (1989) as they help us to design a "theory-ingrained artifact" (Sein et al., 2011, p. 40). Most importantly, the evaluation revealed the need to enhance the ease of use and incorporate additional layers of analysis.

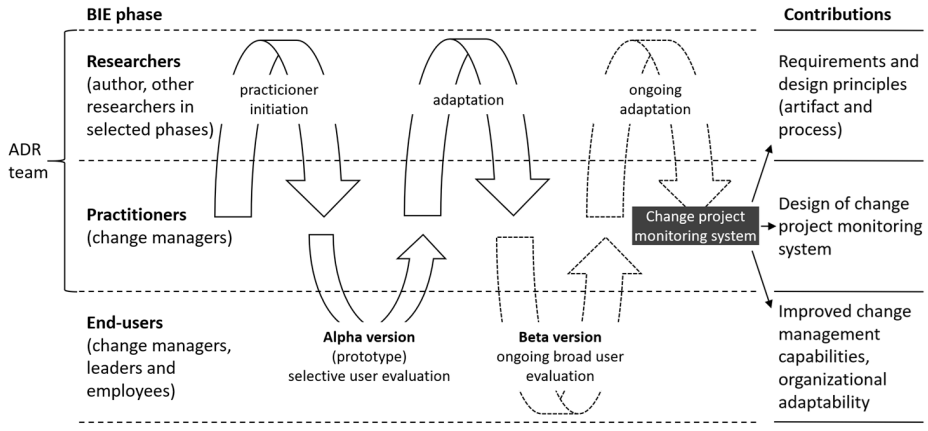

Figure 1. Our BIE phase, adapted from Sein et al. (2011)

Throughout the project, we regularly reflect on and learn (stage 3) about the implications for the general class of problems of change project monitoring systems. This is triggered, for example, through discussion with team members or users that lead to considering differences between monitoring and controlling systems, reconciling different conceptualizations of change, or readjusting the scope of the system.

Based on these reflections, and during the development of this paper in particular, we formalized these learnings (stage 4) in order to develop generalized outcomes in form of

the requirements and design principles presented in the following chapter. For this, we analyzed and integrated our various data sources, such as meeting notes, evaluation data, observational data, interview data, as well as insights from related literature. However, this stage is not the end of our research project as we are currently planning the evaluation of version 1.0 in multiple pilot projects to better understand its integration into the users' actual work practices. Therefore, we will return to the BIE stage to refine the system and develop a design theory of change project monitoring systems.

4 Insights from the Design Project at ManufacturingCorp

4.1 ManufacturingCorp's Change Project Monitoring System

From a technical perspective, the change project monitoring system consists primarily of two parts: Three surveys to generate data and a dashboard for data visualization. Due to confidentiality and space limitations, the survey questionnaires cannot be displayed, but their scope and content are described. First, the initial survey consists of 23 questions and is conducted at the start of a change project to capture its goals and starting conditions, e.g., the affected areas, resources, change complexity, and assess the need for additional measures before the project start. Second, the regular survey is conducted every few months, depending on the change project, to assess the current state of the change project. It consists of 31 questions that cover change-relevant dimensions, such as the perceived quality of the change communication, change acceptance, openness to change, employee participation, change satisfaction, and emotional reactions to the change. Third, the final survey consists of five questions to measure the goal achievement rate at the end of a project. All questionnaires were developed within the project, based on change management literature, scientific advice, and the experience of the team. The surveys use a five-point Likert scale (previously a seven-point scale during the previous evaluation, explaining the difference in Figure 2) but also include free-text feedback. They are conducted via the respective survey software of Alpha and Beta and exported to CSV format for storage and further processing steps.

The dashboard is implemented using Power BI, which aligns with the citizen development approach by combining ease of use, flexibility, necessary capabilities, and extensibility. Importantly, it is also part of the IT landscape at both Alpha and Beta. To enable a quick overview, the survey questions are aggregated into four *change performance indicators*: Change readiness, change acceptance, change implementation, and change effects. The dashboard consists of a cockpit page and dedicated pages for each change performance indicator (see top of Figure 2). The cockpit page offers an overview over all indicators featuring their aggregated value across all dimensions, and their definitions to give a quick impression of the project's current status and identify potential issues. Each indicator page shows the aggregate values of its dimensions for different points in time to provide an intuitive understanding of their development over time (see middle of Figure 2). Here, users have the option to drill-down to the individual questions of each dimension to analyze the root cause of certain values and developments. These analyses can further be filtered by department or role (see left side of Figure 2). However, in line with organizational regulations, only the results of sub-groups with a minimal size of

five members can be displayed in order to avoid the identification of individual project members. This anonymity also fosters the willingness to answer the survey honestly.

Figure 2. "Change Implementation" page of the dashboard prototype (branding removed)

Change managers have the option to adjust the departments and roles depending on the change project and can enter free text in the cockpit to share their interpretations and recommendations with project managers or executives in the "Notes" field. In addition, information buttons on each page offer additional explanations, e.g., for the change performance indicators' meanings, and a dedicated website offers further support materials. In future versions, additional functionalities such as data-based intervention recommendations are planned, signifying a shift from purely descriptive analysis towards data-driven prescription.

4.2 Design Challenges at ManufacturingCorp

Now, we describe challenges that we observed during the project and that significantly influenced the design process and resulting artifact. We focus primarily on challenges that are inherently related to the change domain and hence likely to also occur in other organizations that plan to design and use a change project monitoring system.

First, to ensure widespread adoption and usage of the system, the project team regularly had to carefully balance and reduce the effort required to evaluate, learn, or use the system. Often, this came at the expense of deeper or more precise insights (e.g., regarding the scope and frequency of surveys), leading to discussions on how much effort was acceptable, and which aspects to prioritize. While reducing effort and ensuring ease of use is a challenge for any system, this challenge becomes even more pronounced in the context of change project monitoring systems, as organizational change inherently demands additional time, attention, and engagement. As a result, systems supporting such initiatives must be particularly usable and useful to avoid resistance.

Second, different understandings of what change is and how it should be managed (e.g., between Alpha and Beta, between different projects, or between change managers)

regularly challenged the design of the change project monitoring system because they required trade-offs between standardization and adaptability. At times, this additional adaptability required only limited implementation efforts, but sometimes it also endangered the comparability between projects (e.g., wishes for individual questionnaire adjustments), or would increase the administration and maintenance considerably.

Third, it was important to create a shared and realistic understanding of the possibilities, but also costs and requirements of quantification. This includes general limitations of quantification to capture and reflect social processes, the cost and effort of data generation, data requirements to use advanced data analytics methods, or necessary trade-offs regarding precision versus practicability. These difficulties would sometimes lead to false expectations and over- or underestimating the system's capabilities which harmed the acceptance of some users. While skepticism about quantification is an old issue (Irving et al., 1986), the social and personal nature of change management is likely to foster this.

Last, occasionally, a clear, shared vision and a common language for understanding the tool were missing or underdeveloped. This was reflected, for example, in the relatively low perceived usefulness observed among some users. Such challenges are particularly critical for an innovative system like this, where users may be unsure of what to expect or how to use it effectively. Further, this led to over-exaggerated positive or negative expectations that could unjustly harm the system's adoption. One example of a lack of common language was miscommunication within the team regarding the dashboard design, as names of pages, change performance indicators, and visualizations changed throughout the process, which slowed down development.

5 Developing Requirements and Design Principles for Change Project Monitoring Systems

5.1 Requirements for Change Project Monitoring Systems

For brevity, we only focus on generalized requirements (Walls et al., 1992) that are directly related to the change management context and disregard general (non-)functional requirements here. These requirements are informed by our analysis of the requirements by stakeholders from the stakeholder interviews, team discussions, the project challenges described before, as well as the evaluation of the prototype.

First, change projects generally have various, often very different stakeholders (e.g., change managers, project managers, executives, or project employees) that need to be involved in its decision-making processes in order to support the change project effectively. These stakeholders often have differing needs, tasks, skills (e.g., data literacy), and resources (e.g., time and effort). Accordingly, we propose requirement 1 as follows:

Requirement 1: *A change project monitoring system should provide information according to the information needs, tasks, skills, and resources of different user groups.*

Furthermore, change projects often differ significantly, e.g., in their size, duration, area, and goals. Similarly, change management approaches often differ, e.g., between organizations, departments, or change managers. Therefore, it is important to avoid narrow conceptualizations to achieve the broad and lasting usage of the system throughout an organization. Therefore, we formulate requirement 2 as:

Requirement 2: *A change project monitoring system should be usable for various types of change projects and compatible with a range of change management approaches.*

Last, because change projects generally cause additional strain for organizations and their members, the additional effort for implementing, learning, and using a change project monitoring system (e.g., completing surveys, importing data, preprocessing, finding and processing information) should be minimized. This is critical to avoid change overload, frustration, non-use, or harming the change project. Hence, requirement 3 is:

Requirement 3: *A change project monitoring system should conserve scarce resources during organizational change.*

5.2 Design Principles for Change Project Monitoring Systems

Next, we present a total of eight design principles aimed at fulfilling the system requirements and navigating the design challenges. They are based on our analysis and insights of the development project at ManufacturingCorp. We group them into principles that focus on the design artifact and principles that focus on the design process. Accordingly, we refer to them as *design artifact principles*, and *design process principles* (Jones & Gregor refer to them as "principles of form and function" and "principles of implementation" (2007, p. 312)). Generally, each design principle is formulated based on Gregor et al.'s (2020) structure, consisting of its (1) aim, implementer, and user, (2) context, (3) mechanism, and (4) rationale. The following four design principles focus on the form and function of change project monitoring systems:

Design Artifact Principle 1: *To increase ease of use, reduce effort and enhance adoption, designers should use widespread data formats in the architecture of system interfaces (e.g., CSV for data collection, preprocessing, storage, and import, or Microsoft PowerPoint to export visualizations). This allows users to build on existing knowledge, to include the system into existing practices more easily, and reduces the effort required to learn and use the system, especially during straining change projects.*

Design Artifact Principle 2: *To enable widespread adoption throughout an organization, designers should ensure that the system's architecture affords its usage in different change projects and organizational contexts through modularity (e.g., combination of questionnaires, survey repetitions) and adaptability (e.g., project or organization specific branding, adjustable department and role filters).*

Design Artifact Principle 3: *To increase ease of use, enhance system usage, and promote a shared understanding among the diverse user base, system designers and administrators should provide explanations and guidance (e.g., through tutorials, workshops, and context menus). This reduces the effort to learn and use the system, fosters a consistent use of terminologies, and thereby enhances communication.*

Design Artifact Principle 4: *To enable varying levels of engagement with information and data based on a user's task and skill, dashboard designers should create visualizations that offer intuitive aggregations and functions to drill down to understand data in detail, as well as data comparisons (e.g., across time or sub-groups).*

The following five design principles focus on the process of developing change project monitoring systems successfully and effectively:

Design Process Principle 1: *To account for the very different stakeholders of change projects, system designers should involve various stakeholders (e.g., change managers, project managers, employees, and the works council) throughout the development and evaluation process to include their domain knowledge.*

Design Process Principle 2: *To prevent change overload and achieve a positive user perception, designers and implementers should minimize unnecessary strain on stakeholders, such as excessive involvement during the design and implementation process that can lead to exhaustion and resistance.*

Design Process Principle 3: *To avoid confusion, false expectations, and unjustified concerns that may lead to user resistance, designers should develop and communicate a clear vision. This is crucial due to the innovative nature of change project monitoring systems, and particularly important in early development stages, e.g., during prototyping, when the system's goals and scope may not yet be clearly evident.*

Design Process Principle 4: *To design effective change project monitoring systems, designers should be aware of the challenges and limitations of quantifying and monitoring change projects and communicate and display how this awareness affects their design and vision of the system. This is important because it reduces skepticism about quantification, limits potential uncertainties about the changing role of users (e.g., change managers and project managers), and builds trust with users.*

6 Discussion

6.1 Contribution and Theoretical Implications

With this paper, we offer three contributions to the literature. First, the study extends current, largely conceptual, discussions about risks of systems for change support (Kanitz & Gonzalez, 2021) with empirical insights into how they can negatively affect change processes (e.g., change overload, and skepticism about quantification) and how this needs to be considered in the design (e.g., through being aware of these issues and signaling this awareness) of these technologies. Here, our finding regarding the occurrence and impact of general negative attitudes towards quantification, largely *independent of its actual performance*, is a substantial risk in the context and extends prior findings indicating that performance monitoring can create the perception that managers prioritize quantity at the expense of quality (Irving et al., 1986). Further, we offer pathways for dealing with such issues in the design of change project monitoring systems.

Second, we provide explicit design knowledge on how change project monitoring systems can be designed. As outlined before, design research at the intersection of change management and monitoring is rare (Naslund & Norrman, 2019). While the system presented by Nayland and Norrman (2019; 2025) has similarities with our system (e.g., some questionnaire dimensions), its scope and questionnaire are smaller, it does not include a visualization dashboard, it is designed for less regular measurements, and no explicit design knowledge is developed. With this study, we contribute design principles focusing on the design artifact, as well as the design process. In the future, these can be further extended towards a complete design theory (Jones & Gregor, 2007) for change project monitoring systems. Additionally, due to the contextualization of

change management, we believe that many of our results can also be applied beyond the context of monitoring systems and inform designers of various change-related systems.

Third, our findings also contribute to the ongoing discussion in the design science literature about the importance of trading-off and expand it beyond the scope of smart service systems (Wessel et al., 2024). As our challenges and design principles reflect, trading-off and balancing conflicting interests are central for the successful design of change project monitoring systems. For example, balancing data volume and quality against data generation effort to minimize potential overload among surveyed employees. Here, it is important to note that the configuration of these trade-offs depends on the system's organizational context and can therefore only be developed within the design process and not be given a priori. Instead, in the initial design phases, it is important to acknowledge the need for trade-offs and to identify potential dimensions and limitations for trading-off.

6.2 Practical Implications

Based on our findings, we encourage organizations to consider implementing and possibly designing their own change project monitoring systems, if they have the necessary capabilities and existing market solutions do not suffice, e.g., because they do not fit with its change management approach or IT landscape. For this, organizations should first develop a clear understanding of how they envision their change process to evaluate how, or even if, it can and how it should be quantified and monitored. Such a clear understanding is valuable for the design and can help persuade skeptics.

For managers and designers, it is then important to regularly consider and communicate this understanding throughout the design, implementation, and usage process to develop an artifact and establish usage practices that are consistent and acceptable across an organization. In this context, it is important to consider that monitoring can evoke fear or reservations, which should be taken into account, especially during times of change, when uncertainties are already present and may reinforce each other. In essence, the design and implementation should be considered as a change project of its own and be managed accordingly. This is especially important if the development or implementation of a change project monitoring system is running in parallel with other significant organizational changes, because this "change within the change" can lead to interference that can harm both changes.

Regarding the development approach, citizen development seems to be a viable approach for the design of change project monitoring systems, or at least for the development of prototypes. This is because their technical complexity is manageable and the close interaction with change managers, as well as related stakeholders is critical and beneficial to achieve regular iterations and a high development speed.

Finally, organizations and designers should recognize the necessity of balancing conflicting interests and priorities, and develop their ability to make trade-offs in order to create a system that can and will be widely adopted. This is particularly important in the context of change management because it is affected by various factors, such as organizational culture and history, governmental regulations, or an organization's current situation, that may differ between organizations, within organizations, and over time.

6.3 Limitations and Future Research

Since this paper is based on a prototype that is not yet implemented in the field broadly and designed based on two cases only, evaluating and generalizing it is challenging. However, with this paper, we provide valuable early insights based on the prototype development and evaluation that can inform practitioners and academics. In the future, we aim to provide a long-term perspective to understand this usage and its effects (see e.g., Norrman & Naslund, 2025) based on our ongoing participation and evaluation of pilot projects. As of now, we only have partial insights into the organization-wide rollout and implementation process, which we will also explore in the future. Moreover, we hope this provides an opportunity for others to initiate similar research projects.

Furthermore, the development project together with two largely separate organizations adds complexity to the study and some of its implications will not apply to change project monitoring systems in general. Nevertheless, we believe that such challenges are common for many large corporations and reflect real-world conditions. For future studies, we also aim to investigate the inclusion of prescriptive data analytics that have an even greater potential to shape the change management process, and develop a design theory (Jones & Gregor, 2007) of change project monitoring systems.

7 Conclusion

With this study, we aim to offer practical insights into the design of change project monitoring systems that, as we believe, hold a great potential to support the ongoing and continuing transformation of (industrial) organizations. Here, the presented prototype, challenges, requirements, and design principles can serve as guidance and contribute towards a larger design theory for change project monitoring systems in the future.

However, as mentioned in the challenges and practical implications, we also want to caution against naïve attempts and expectations about designing and using change project monitoring systems. Like many (monitoring) technologies, they come with the inherent risks of degrading the quality of the process they are supposed to help improve. For example, by oversimplifying it, through measurement errors, by requiring excessive additional work, or by destroying employee trust. Accordingly, as change project monitoring systems concern a critical organizational function, these risks need to be considered as critically in their design.

8 Acknowledgements

This research was carried out as part of the project “Transforming digitally: Digital innovations for the successful realization of organizational change” (KON-21-0000013), funded by the Bavarian Research Institute for Digital Transformation (bidt), an institute of the Bavarian Academy of Sciences and Humanities. The author is responsible for the content of this publication. We thank our project partners at ManufacturingCorp for their cooperation and openness, and the members of “Transforming digitally” for the discussions and collaboration. Furthermore, we thank Xhovana Prenga for her support.

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