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The Role of Change Management in Corporate Digitalization -
The Relevance of Kotter's Eight-Step Change Model within
IT/Digitalization Projects

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July, 2023



BUSINESS
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Leonardo Amaral Mancini

Resumo

No âmbito da atual transformação digital, os projetos de digitalização empresarial estão, não só a ganhar relevância, mas a tornar-se numa constante nas organizações com o objetivo último de manter a competitividade. No entanto, para que esta digitalização empresarial seja bem-sucedida e corresponda às expectativas dos stakeholders envolvidos, é necessária uma gestão adequada desta mudança digital. Por este motivo, a gestão de mudanças assume um papel cada vez mais central no sucesso da digitalização empresarial. Assim sendo, é indispensável perceber se as abordagens comprovadas são aplicáveis na gestão da digitalização empresarial.

O objetivo da pesquisa neste trabalho é examinar a relevância do modelo de referência no campo da gestão de mudanças, o modelo de oito etapas de John P. Kotter, no contexto da digitalização empresarial e, ao mesmo tempo, identificar os fatores de sucesso da prática para tais projetos.

Para atingir o objetivo da pesquisa, foi escolhida a metodologia qualitativa. Foram realizadas entrevistas, em profundidade, com especialistas que possuem vários anos de experiência em projetos na interface da gestão de mudanças e da digitalização empresarial.

Os resultados do trabalho demonstram que o modelo de referência de Kotter contém de facto elementos importantes de um projeto de mudança, mas não se foca suficientemente nos pilares essenciais da mudança digital: comunicação, agilidade e participação.

Palavras-chave:

Change Management, Corporate Digitalization, Kotter's Eight Step Change Model

Classificação JEL:

M150, M100

Abstract

During the current digital transformation, corporate digitalization projects are not only gaining ground but becoming a constant in organizations with the ultimate goal of maintaining competitiveness. However, for this corporate digitalization to be successful and to meet the expectations of the stakeholders, there is a need for a suitable management of this digital change. For this reason, change management plays an increasingly central role in successful corporate digitalization. Therefore, it is imperative to understand whether the established approaches are effective for managing corporate digitalization.

The aim of the research in this work is to examine the relevance of the reference model in the field of change management, John P. Kotter's eight-stage model, in the context of corporate digitalization and, at the same time, to identify the success factors from practice for such projects.

In order to achieve the goal of the research, a qualitative research methodology was chosen. In-depth interviews were conducted with experts that have many years of project experience at the interface of change management and corporate digitalization.

The results of the work demonstrate that Kotter's reference model does contain important elements of a change project but does not focus enough on the essential pillars of digital change: communication, agility and participation.

Keywords:

Change Management, Corporate Digitalization, Kotter's Eight Step Change Model

JEL Classification:

M150, M100

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1 Introduction

1.1 Contextualization

“The Only Constant in Life is Change.”- Heraclitus

The ancient Greek philosopher was proved right. Change is everywhere and indeed an undeniable part of daily life as well as of organizational life (McLaren et al., 2022; Muluneh & Gedifew, 2018).

Even more than that, change is a fundamental factor that drives corporate innovation and, more significant, ensures the survival of whole organizations, especially because organizations do not dwell in static environments, which ultimately makes constant adaptation strongly necessary (Huang & Huang, 2020; McLaren et al., 2022). Due to these unpredictable environments one of the most critical success factors for companies to remain competitive has always been to adapt to changing circumstances. In present times, increasing globalization, growing competition and above all, rapid digitalization are driving much of this change (Muluneh & Gedifew, 2018).

Digitalization is an increasing phenomenon that strongly influences technological opportunities, demands new digital business models but also requires powerful organizational changes (Enkel, 2012). These new opportunities are the reason why the majority of companies is looking for ways to make the most of this new digital economy. Currently, there is a very competitive environment where organizations are, with millions at stake, under high pressure to drive a successful digital transformation (Kelly, 2022).

According to historical comparisons, the effects of industrialization and digitization are comparable. In this context, the former German federal minister of economics, Philipp Rösler, is quoted as saying: "Digital economy is the growth driver of all industries". The certainty remains that prevailing business must be changed regarding digitalization (Enkel, 2012).

Through technology, the organizations intend above all to increase the efficiency of operational processes. It is obvious that digitalization does lead to concrete changes in an organization, but it must also be said, not always for the better. It is certainly not enough to digitize the existing analog processes; the best digital solution is worthless if it is not accepted by employees and integrated into existing workflows. In any case, as the pace of change in companies continues to increase, the call for change management is becoming increasingly louder (Hayes & Richardson, 2008).

However, the responsible management levels in organizations regularly forget that a poorly executed change can lead to the opposite effect. Consequently, change must

necessarily be founded on a well thought out plan following proven change management techniques (Hayes & Richardson, 2008). For the change approach to be successful, it must always be adapted to the specific project and circumstances (Galli, 2018). This is particularly important as each change management initiative is unique and therefore requires a precise understanding of the changes that need to be undertaken (Hayes & Richardson, 2008).

In corporate practice, lack of resources, resistance, organizational politics, and incompetent leaders cause most change efforts to fail (Muluneh & Gedifew, 2018). It is worth mentioning that according to studies up to 80% of all organizational change initiatives fail which was the reason that many experts have made it their task in the past to offer assistance regarding organizational change endeavors by closing the knowledge gap concerning this domain.

One of those experts which is inseparably linked to the topic of change and especially with the field of change management is John P. Kotter, a still active leadership professor at the Harvard Business School. His for the organizational level envisaged eight-step change management model was first published in his book entitled *Leading Change* in 1996 and is based entirely on his own business and research experiences. The change management model became an instant bestseller and remains up to this day a key reference in the field of change management, cited by hundreds of researchers and thus becoming an academic as well as a practical success (Appelbaum et al., 2012).

Aware of Kotter's iconic status in the field of change, the *Businessweek* magazine once called Kotter the most important *Leadership Guru* in America. Kotter's book *Leading Change*, which first defined the model, was even named one of the 25 most influential management books of all time by *Time Magazine* in 2011. Kotter's ability to combine theory and practice in the model is cited as one of the keys to success (McLaren et al., 2022). Especially the practical approach of his model, based primarily on his business experience, is often mentioned as the secret of his success, as most models in the field are based primarily on untested hypotheses regarding business reality (Appelbaum et al., 2012). Kotter's model consists of eight successive stages which, in Kotter's understanding, must be subsequently followed. According to Kotter, each step must be followed intensively so that there are no shortcuts to change success (Kotter, 1996).

Noteworthy is the fact that Kotter's change model has already been studied in numerous contexts, but the analysis in the context of IT/digitalization projects has received little attention in scientific literature, as became apparent in the run-up to this work.

1.2 Research Aim

Since, as already mentioned, constant change is increasingly taking the form of digitalization, and this in turn is manifesting itself in organizations within IT/digitalization projects, the question arises as to how this change may be managed and whether the already existing change models can handle this development. Likewise, the question arises what success factors actually exist in practice. It is therefore coherent that this work has the aim to figuring this out by examining the applicability of the reference model in the field of change management, Kotter's eight-step model, in the context of IT/digitalization projects.

In the research context of IT/digitalization projects, this work has consciously not been limited to a specific type of project in order to obtain research results that are as universally valid as possible for the entirety of IT/digitalization projects and to ensure that technically inexperienced readers of this work can gain access to the topic of change in the context of corporate digitalization.

In an article entitled "How Have Kotter's Eight Steps for Change Changed", the world-famous economic magazine *Forbes* asked itself a few years ago how relevant Kotter's change model is in today's business context, especially since a few years have passed since its first publication. One of the leading American software companies with great affinity to digital transformation and change management, WalkMe, became more specific and addressed the question of whether Kotter's eight step model is still useful in today's digital age in an article published on their official website in 2021 (WalkMe, 2021). This also underlines once again that this relationship between IT/digitalization projects in the context of corporate digitalization and the application of Kotter's change model thus represents a gap. A gap which will be examined in this work.

Thus, the general aims of this dissertation are:

- To examine today's relevance of Kotter's reference model in corporate IT/digitalization projects based on a survey of experts which are operating at the interface of digitalization and change.
- To identify which success factors exist in practice and if they differ from the model.

1.3 Research Questions and Objectives

Based on the stated research aim, the following research questions and objectives were derived for this dissertation:

RQ1: What is the relevance of the individual steps of Kotter's change model in corporate digitalization?

RQ2: Which success factors truly drive change in the context of corporate digitalization?

RQ3: Is Kotter's change management approach suitable for managing corporate digitalization at project level?

Consequently, this work has the following objectives:

- Providing a succinct overview of leading change management approaches, from the past to the present with a clear focus on Kotter's eight step change model and the basics of corporate digitalization.
- Identifying whether components of the change model are being applied in business practice and with what significance. If the steps of the model are not applied, finding out what is of importance in the current practice of corporate digitalization.
- Based on the interview and closely referring to Kotter's model, creation of an adapted change model in the context of digitalization in order to interpret the findings obtained.
- Determining whether Kotter's change model is actually suitable in the context of current IT/digitalization projects.

1.4 Structure of the Dissertation

In the first chapter of this work, the reader is offered a thematic contextualization of the research topic. In addition, the research questions and objectives are revealed.

The second chapter focuses on the literature review, which examines the various change management approaches and, above all, Kotter's eight-stage model. Basic information on corporate digitalization will also be disclosed.

In the third chapter, the research methodology followed in this work is explained to the reader.

In the fourth chapter, the results and discussion of the expert interviews will be presented, the experts' proposals for optimization with regard to an adapted model valid for the context of digitalization will be highlighted, as well as the adapted change model itself that illustrates the research results in a summarized and coherent way.

In the fifth and last chapter, the conclusions of the present work, the limitations, the recommendations for future research in this field and the contribution to the field of management are outlined.

2 Literature Review

2.1 Literature Review Methodology

The research regarding the literature review was carried out within the scientific databases *Scopus* and *Web of Science*.

Various combinations of the following words were applied to screen the article titles, abstracts, and keywords: *Change, Change Management Models, Kotter eight step model, Kotter's 8-Step, Design Thinking, Kurt Lewin, IT-Projects, Digitalization, ERP*.

The publication year of the sources ranges from 1996, first publication of John Kotter's reference work *Leading Change*, to the year 2022, whereby the majority of the sources used for the elaboration of the literature review were published within the last five years.

It is worth mentioning that over 90% of these sources consist of scientific peer-reviewed papers.

2.2 Change Management Approaches

To increase the likelihood of success, any change approach should consider, in broad terms and variable sequence, elements of the following five phases: The recognition that a change is necessary, the determination of the details/prerequisites of the change, the definition of the approach, the implementation of the change and the measurement of success (Galli, 2018).

During the first phase, when the need for change is identified, a situation is found that does not harmonize with the desired state. In the second phase, the details of the change are determined, including how certain tasks will be performed in the future and what roles/responsibilities will exist. In addition, feasibility, costs and risk analyses are usually carried out. In the third phase, the implementation phase, the various change approaches and change management models come into play (Galli, 2018).

At this stage, decisions are made on how to implement the change project and therefore the choice of the right approach/model is of utmost importance for the later success of the project. The decision and appropriate adaptation must be made regarding the concrete situation, the affected employees and the expected resistance. The fourth phase, the implementation phase, follows, in which the chosen approach is implemented. During the last phase, the monitoring phase, the changes are monitored in terms of their success and it is ensured that everything proceeds as planned (Galli, 2018).

Three of the best-known approaches to change management, which consider the above described elements in differing ways, are described below.

At the beginning, Lewin's three-stage model is explained, which is considered as the model that laid the foundation of all subsequent change management models (Lewin, 1951).

As second, the theoretical background of the main research subject of this work is explained, Kotter's eight-stage model (Kotter, 1996).

Finally, to gain an insight into new tendencies of the field of change management, Design Thinking is put under scrutiny.

In the following, thus, we will discuss the two process/workflow-centered change management models of Lewin and Kotter, and the most recent approach termed Design Thinking.

2.2.1 Lewin's Model

Kurt Lewin (1951) pioneered the development of a change model (Pregmark, 2022). This change model was based on his *Force Field Analysis*, which indicates that focusing on the driving and restraining forces within a company is of central importance in the implementation of change (Huang & Huang, 2020).

Lewin's model (1951) of organizational change consists of three stages: unfreezing, moving, refreezing. In Lewin's famous three-step change model, the main idea is to unfreeze/dissolve the current condition in order to change something and finally to refreeze/establish that new state (Pregmark, 2022). The three phases of Lewin's model are illustrated in figure 2.1. These steps will be discussed in more detail hereafter.

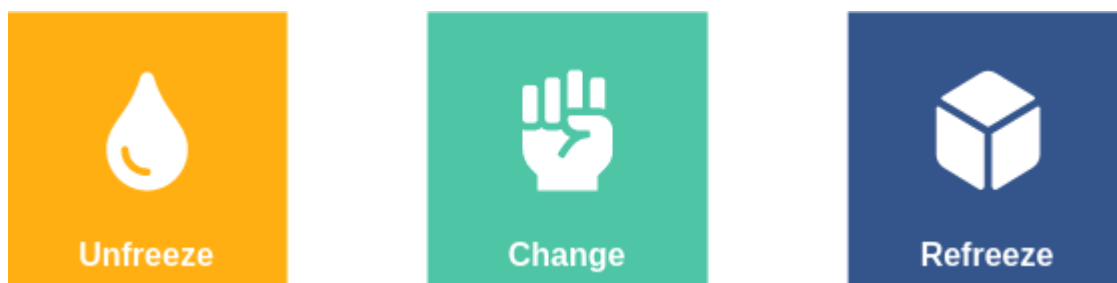


Figure 2.1: The Three Stages of Lewin's Model (1951) / Source: Website (See Reference Section)

2.2.1.1 Step 1: Unfreeze

According to Lewin (1951), the first step in his change model is to break down the current *status quo* (Burnes, 2004). If problems occur in this first step, the difficulty of the subsequent steps will increase. In this first step, the need for change, the current problems, the goals of change, possible resistances and necessary change techniques should be defined (Huang & Huang, 2020). Lewin also describes this dissolution of the *status quo* as a change in the prevailing "stable equilibrium" which sustains the prevailing behaviors and attitudes of the workforce (Brisson-Banks, 2010). Before taking this first step, however, organizations should take sufficient time to reflect on the upcoming change.

There must be an initial common understanding that change is necessary. This understanding requires a careful analysis of what works and what doesn't. The change plan must be derived from this analysis (Galli, 2018). This analysis should indicate that change is necessary for the organization to survive. Even before the first step is taken, it must be thoroughly prepared and the affected employees must be helped to accept, also by the result of the analysis of the *status quo*, the upcoming change (Brisson-Banks, 2010).

According to Lewin (1951), in order to dissolve the complacency that often prevails and to understand the need for change, the participants sometimes have to be stirred up emotionally (Burnes, 2004). This is the so-called change motivator without which no change can take place. The emotional involvement of employees is particularly important, as they are at the heart of the organization's transformation (Galli, 2018). Only by dissolving entrenched and established behaviors can the *status quo* be eliminated and successfully changed. (Burnes, 2004). Lewin (1951) saw the first step of the model, unfreezing, as a challenging reeducation process. In this process, the affected change or replace patterns of thinking, evaluation, volition or manifested behavior (Burnes, 2020). Thus, cognitive restructuring, such as semantic redefinition, cognitive extension, and new criteria for assessment or evaluation, makes up a substantial portion of change. (Bartunek & Woodman, 2015). New processes and behaviors must subsequently be incorporated into the routines of the employees concerned and old behaviors must be discarded (Galli, 2018).

Only the step of unfreezing provides the necessary dynamic which is needed for change (Burnes, 2020). However, it must be kept in mind that a change project of any kind is a deep and dynamic psychological process in order to be able to carry out the first step successfully. To successfully complete the first step, two conditions must be met: the validity of the *status quo* must be revoked, and psychological safety must be created. If the latter is not created, the denial of the *status quo* will not be recognized, and change will not occur. The people affected by the change must therefore feel secure and have no fear of loss in order to accept the change and discard old behaviors (Burnes, 2004). The following six methods have proven

to be particularly helpful for the unfreeze step: Communication, training, employee involvement, stress management, negotiation and coercion.

A brief outline: the affected employees should be given a better understanding of the change context and they should be given the knowledge and methods to achieve the envisaged goal. They should be actively and collaboratively involved in change decisions and should be given the opportunity to discuss and clarify questions within the framework of stress management. Finally, they should be given incentives within the framework of negotiation to motivate them to change and be given an ultimatum so that they can mentally prepare themselves for the change. Effective communication and leadership as well as employee involvement have proven to be particularly important (Huang & Huang, 2020).

The core purpose of the first step toward change is to identify and eliminate the entrenched, established behaviors that need to be eliminated, which Kotter also calls "quasi-stationary equilibrium" of driving and restraining forces (Burnes, 2020).

2.2.1.2 Step 2: Change

The second step is the actual change, the development of new answers and approaches based on new insights (Brisson-Banks, 2010). At this point new behaviors, values and attitudes are taught to actively change the current state to reach new standards (Huang & Huang, 2020).

This step occurs when the forces that advocate change are stronger than the forces that want to maintain the prevailing situation (Burnes, 2020). At this point of the model, Lewin recommends a trial-and-error approach since the result of planned change initiatives is very difficult to predict. This is the case because very complex forces are at work in a change project. One should become aware of the forces at work and evaluate several options by trying them out. Only by trying and experiencing different options affected employees can be led to adopt new, better behaviors (Burnes, 2004).

Nevertheless, resistance from employees will usually set in during this transition phase, as they are not accustomed to the new situation. As soon as these problems become apparent, resources should be available to facilitate the change. These resources can be training or the mere possibility to expose questions and doubts to the change responsible managers (Galli, 2018). From the moment the affected employees have accepted the change, they will support the change and adapt to it (Brisson-Banks, 2010).

The core purpose of the second step toward change is to alter behavior through an exploratory trial and error approach, also referred to as "action research" due to Lewin's academic origins in social science.

2.2.1.3 Step 3: Refreeze

The third step in Lewin's change management model is also the last one. Refreezing here means that the new, improved behaviors are permanently established to ensure that they are safe from relapse (Burnes, 2004). Thus, it concerns all the necessary changes that are required to make the new situation a permanent one (Burnes, 2020).

With regard to the timing of refreezing, it can be said that this should only take place when a certain stability is felt, which means that the majority of the employees affected by the change accept the change in their work routine. At this stage, employees' trust in management has significantly improved, and they are more hopeful about the change's impact on the future. Employee appreciation and recognition for their efforts are crucial at this point (Brisson-Banks, 2010). To accomplish this third step of refreezing, a dedicated change team is needed in the third step to introduce and test the new system and its required behaviors and to make any necessary adjustments (Galli, 2018).

According to Lewin (1951), the newly created "equilibrium" should be manifested (Burnes, 2004, p. 986). At this point, however, it is important that the new behaviors be congruent with the personality and environment of the employees concerned. Here Lewin (1951) sees the importance of groups and their dynamics in achieving successful behavioral changes in the individual, because if group norms and routines are not also adapted, the behavioral change in the individual employee will not be of lasting success. Therefore, in practice, refreezing often means making changes to the corporate culture, norms, and instructions (Burnes, 2004).

The core purpose of the third step toward change is to reinforce a new "equilibrium", thus the new situation within the company after the change.

2.2.2 Kotter's Model

Kotter's eight-step change management model (1996) is one of the most recognized and compelling models for operational change and very influential in the change practitioner community (McLaren et al., 2022; Pollack & Pollack, 2015).

This change implementation model provides accurate guidance even for major change undertakings, whereby the application of a proven approach makes sense in those cases considering that a major change project has a direct impact on business risk and therefore also financial implications (Chen, 2021; Sittrop & Crosthwaite, 2021).

Today, it is considered the key reference in change management (Pollack & Pollack, 2015). It is still widely used in practice because it is considered as simple and effective (Kang

et al., 2022). The success of Kotter's change model is based on its clarity and ease of understanding as well as on the real business success of the author(Huang & Huang, 2020).

According to Kotter (1996), leaders who successfully drive change do eight things right, in the right order (Brisson-Banks, 2010). Hereafter are listed the eight steps of Kotter's change management model described in his reference work *Leading Change* (Kotter, 1996). The following figure 2.2 illustrates the eight model steps.

1. Establishing a Sense of Urgency
2. Creating the Guiding Coalition
3. Developing a Vision and Strategy
4. Communicating the Change Vision
5. Empowering Broad-Based Action
6. Generating Short-Term Wins
7. Consolidating Gains and Producing More Change
8. Anchoring New Approaches in the Culture

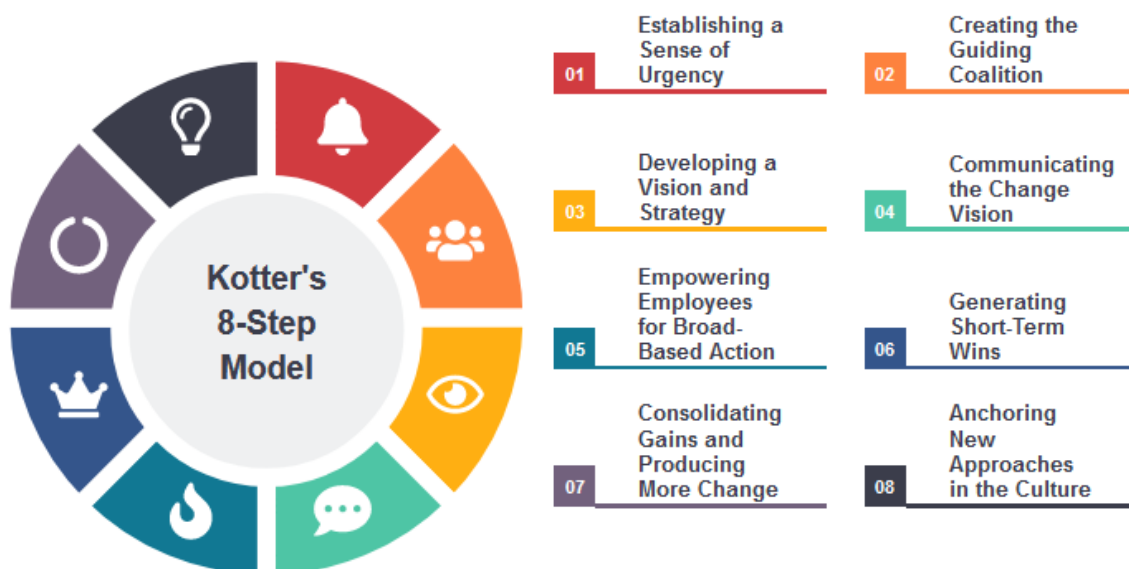


Figure 2.2: Overview of Kotter's Eight-Step Model (Kotter, 1996) / Source: Own, templated, creation through a Website (See Reference Section)

2.2.2.1 Stage 1: Establishing a Sense of Urgency

In the first stage of the Kotter change management model (1996), the organization or project team recognizes the need for change and the urgency with which it must be addressed. It is only through communicating the urgency that the organization becomes aware and sees the benefits and opportunities of the change (Galli, 2018).

This first step in the process is of utmost importance in order to gain the necessary cooperation in the organization in the first place. Without this essential cooperation, it is very difficult to drive the change within the company forward at all. The change therefore needs in the first step a constituency with power and credibility, thus enough people who are interested in this change and these can only be convinced by creating a sense of urgency regarding the intended change. According to Kotter, failure to create this sense of urgency is one of the biggest mistakes in change projects. (Pollack & Pollack, 2015).

In practice, the people who need to be convinced are first and foremost the management, who must be fully behind the change project. In summary, there must be clear pressure for change and the affected employees must understand that the *status quo* cannot be continued (Hayes & Richardson, 2008). Kotter (1996) also recommends the involvement of external consultants to create a sense of urgency and contest the *status quo*. These consultants could, for example, prepare diagnostic reports that increase the credibility of the change message to be spread. Especially if the change message is confirmed by several, external, independent sources, it gains more credibility and consistency. The latter leads to the change message becoming a topic of conversation in the respective organization, which in turn implies the intended urgency.

In summary, explaining the attractiveness of the change, clearly stating what is expected of employees, having a positive attitude, and showing that it is achievable support the urgency of change. These points are among the tasks of the guiding coalition mentioned in stage two (Appelbaum et al., 2012).

A first approach to examine the *status quo* for the need of change can be to analyze existing project documents for current performance metrics (Hayes & Richardson, 2008). In any case, market and competitive data must be evaluated and compared with internal data to determine the need for change (Brisson-Banks, 2010). In particular, the competitive situation, market position, financial performance and technological trends must be analyzed and evaluated (Appelbaum et al., 2012).

If the first phase of Kotter's change management model is not followed there is a risk that the change will be initiated but will stagnate and not be pursued due to the lack of any sense of urgency. There is also a significant risk that complacency will take over, which will also lead to stagnation (Brisson-Banks, 2010).

2.2.2.2 Stage 2: Creating the Guiding Coalition

In the second stage of the Kotter change management model (1996), leaders who have sufficient power to drive the change project need to unite (Pollack & Pollack, 2015). This is since a single person is not able to manage and lead a change process alone, therefore the composition of a proper guiding coalition is critical for the success of the endeavor (Appelbaum et al., 2012).

The members of this coalition must have a certain status and credibility in order to communicate, coordinate, and influence affected employees effectively during the course of the change project (Huang & Huang, 2020). This union can also consist of only two elements at the beginning but should grow steadily as the project gains momentum and is rolled out in order to provide all the necessary resources (Hayes & Richardson, 2008). The more complex the change project, the more important it is to have project drivers, regularly also senior level representatives, who advocate and actively support the project (Pollack & Pollack, 2015).

Change initiatives that are supported by leaders are generally more likely to be accepted by a company's employees and are therefore easier to implement. It is important to have good leaders in the guiding coalition, but also good managers. While good managers drive the change process in the individual business units and monitor progress, good leaders set the vision and direction of the change journey and initiate the entire process (Appelbaum et al., 2012).

In order to guarantee the necessary diversity in this team, it is agreed that responsible persons from as many relevant areas as possible should be represented. At best, opinion leaders who are selected by their respective team to represent them and their area in the influential change team (Adin, 2021). It is important that this union of influential leaders is encouraged to work together as a team (Brisson-Banks, 2010). It is also of great significance that the position of a change manager is created to effectively guide, drive and organize the union of influential leaders. Concluding, the elements of this union should have the following characteristics: power, the right position in the company, leadership skills and credibility. (Hayes & Richardson, 2008).

Power is to ensure that the members of the guiding coalition have enough clout to break through resistance. This does not mean, however, that influential members of the coalition can limit themselves to merely commanding and controlling; such behavior gets in the way of the change process (Appelbaum et al., 2012). Rather, the power should be used to be visible and to intervene effectively and continuously where support is needed. Credibility is to assure that the members are respected in the company so that their messages are taken earnestly. The leadership skills should guarantee that the change process can be driven and thus progress is guaranteed. Furthermore, and perhaps most importantly, the group should be made up of

experts from all the disciplines involved, so that decisions can be made that take into account all points of view (Appelbaum et al., 2012).

If the second stage of Kotter's change management model is not followed, thus, if the change project and its core team do not receive significant and powerful support within the company in the further course of the project, there is a risk that their efforts will be in vain. Influential individuals must therefore be involved in the project so that the change can take place (Brisson-Banks, 2010).

2.2.2.3 Stage 3: Developing a Vision and Strategy

In the third stage of the Kotter change management model (1996), important decisions must be made regarding the specifics of the change. It is of fundamental importance for the success of the change project that there is a clear strategy and implementation plan for it. It needs a clear vision that is both realistic and achievable, otherwise you run the risk that the project will meet resistance and rejection from employees (Hayes & Richardson, 2008).

Without a suitable change vision, the change goals can quickly end up in an accumulation of confusing and untargeted projects that do not bring the change process to a successful conclusion (Appelbaum et al., 2012). When setting the vision, one should consider the following two aspects: face reality and clearly define the need for change and set up a roadmap as a reference for all decisions to be made along the project (Hayes & Richardson, 2008).

It is particularly important that the vision is clear and well-articulated so that it can be assumed to be understood by all concerned. This is the only way that the change message can be processed and that all those affected by the change can adjust to it, including emotionally and cognitively. Understanding the message is a basic prerequisite for looking forward to the change and for not assuming that the project will fail. At best, the vision should be desirable and meet the long-term interests of the affected stakeholders (Appelbaum et al., 2012).

This strategic vision, also called transformation vision, is important to align goals and most importantly to move forward as a change team. Without such a vision and the associated roadmap, it is impossible for the project to be successful. In the end, the vision is essential to explain the change within the company, only this way you are able to get long-term support (Galli, 2018).

To arrive at a compelling vision statement, the question should be answered of what the future will be like through the planned change and how to get there. According to Kotter, the vision must stimulate the imagination and passion of those affected, which data alone cannot do. It is important that the vision contains human and emotional elements in addition to pure

logic (Adin, 2021). In order to achieve this, the vision statement should not be created by the leadership alone, but the entire change team should be involved in the visioning process. The change team should include two to three concrete actions in the vision statement, whose execution is essential for the realization of the vision statement. The vision should be communicable, desirable, flexible, actionable, imaginable, simple, and most importantly, a written picture of the future after the change is made (Adin, 2021).

In the end, the implementation plan derived from the vision should include the specific goals of the project, describe the project scope and schedule, define success measurement criteria, clarify potential risks, and define related mitigating factors. Very important in this context is often also the necessary training plan to familiarize the affected employees with the change or new procedures (Hayes & Richardson, 2008).

If the third stage of Kotter's change management model is not followed, all the efforts made so far may fail, because the people affected by the change will have problems identifying with something that is not understood within the organization and thus has no support (Brisson-Banks, 2010).

2.2.2.4 Stage 4: Communicating the Change Vision

In the fourth stage of the Kotter change management model (1996), the vision of change must be communicated (Pollack & Pollack, 2015). Here, according to Kotter, it is important to cultivate lively communication that paints a verbal picture and makes use of metaphors, analogies and examples. This can indirectly generate enthusiasm and support for the change process (Appelbaum et al., 2012).

Unfortunately, the management underestimates regularly the amount of communication that is necessary to achieve a comprehensive understanding of the change project among those affected. However, experts confirm that the communication of the change project is one of the most important phases within the change management model of Kotter (Pollack & Pollack, 2015). There is a strong correlation between employee satisfaction and management communication. It was found that employees who were satisfied with the communication saw more personal opportunities in the change project and were generally positive about it. They were also more confident about the success of the change implementation (Appelbaum et al., 2012).

More important than simply repeating a bad communication, however, is the correct and appropriate way of communicating the vision and the importance of the project (Pollack & Pollack, 2015). At this point, regular interaction in the form of meetings with employees affected by the change is appropriate, as it has been found that employees dissatisfied with

the change are often so minded because they feel they are not involved enough in the process and receive too little information (Appelbaum et al., 2012). By involving employees, the change can be discussed in detail at an open and confidential level, employees' concerns and opinions are taken seriously and they are more likely to feel positive about the change. This approach also underscores Kotter's opinions that two-way communication is more effective than one-way communication and that non-targeted communication, i.e., generalized and non-specific, undermines the credibility of the communication concerned (Appelbaum et al., 2012).

According to Kotter, communication of the vision and implementation plan drawn up in the previous step should initially come from senior management, with feedback subsequently being sought from the employees concerned. Relevant ideas and suggestions arising from the analysis of employee feedback should be incorporated into the project plan as far as possible (Hayes & Richardson, 2008). The senior management and subsequently the change management team must communicate in a way that the affected employees become aware and convinced of the necessity of the change (Galli, 2018). According to Kotter, it is of great importance that the change message is repeatable, because according to his understanding, ideas are only absorbed after they have been heard several times (Appelbaum et al., 2012).

Cooperation with the company's communications department is of great advantage in the context of change communication. This can regularly publish articles and updates about the project and related measures on the intranet, thus promoting company-wide awareness and acceptance (Pollack & Pollack, 2015). Basically, every reasonable medium must be used to communicate the vision and the associated plan comprehensively. At best, new behaviors are demonstrated by the lived example of the change team (Brisson-Banks, 2010).

In any case, a proper communication is essential to create alignment between the leadership/change team and the affected employees. The implementation plan derived from the vision is also an important tool for communicating with those affected by the change (Hayes & Richardson, 2008). This can be used, for example, to determine how the change project will affect various positions and responsibilities. In general, the plan serves as the main information resource for all stakeholders, the study of which should, at best, resolve any resistance and clarify doubts and questions regarding the change (Hayes & Richardson, 2008).

If the fourth stage of Kotter's change management model is not followed, thus the management/change team are not coordinated with the affected employees due to poor communication, this can lead to the entire project being destined to fail (Brisson-Banks, 2010).

2.2.2.5 Stage 5: Empowering Broad-Based Action

In the fifth stage of the Kotter change management model (1996), it is all about removing obstacles and paving the way for concrete change (Hayes & Richardson, 2008). Basically, this step is about empowering the functional employees affected by the change, this can be done through training and coaching, but sometimes also requires major structural changes.

In general, also at this point, there is a positive connection between the active involvement of employees and a corresponding granting of responsibility with regard to the change and its successful implementation. This gives the employee a sense of control and power over the change, making them more willing to agree to it (Appelbaum et al., 2012).

Obstacles in the context of change projects can be structures unfavorable to change like too narrowly defined job descriptions or even the organizational structure of the company (Hayes & Richardson, 2008). The barriers found can be divided into three categories: The personal barriers, the social barriers and the structural barriers. Personnel barriers include employees whose skills and knowledge do not enable them to perform the behavior desired by the change. Social barriers include a culture that does not support employees in performing the desired behaviors. Structural barriers include the organization and general structure not allowing the desired behavior. The change team must consider these potential barriers and recognize that removing obstacles is at least as important as the basic motivation for change (Adin, 2021).

Kotter sees it as the task of the change management team to remove possible obstacles that threaten the success of the project, the team, however, must be equipped with the necessary authority beforehand (Hayes & Richardson, 2008). Nevertheless, in practice this is sometimes not possible, so the change team often has to form alliances within the company to remove some of the obstacles (Pollack & Pollack, 2015). If the internal ally in the context of communication was the company's internal communications department, in the concrete removal of obstacles it is more likely to be the human resources department or influential company departments that have an influence on the area in which a potential structural obstacle is found. Resistance is often found, for instances, when job descriptions of individual functions have to be changed as part of change projects. This is often a necessary step, as the person in question takes on other tasks. At this point, influential relationships can be the solution (Pollack & Pollack, 2015).

With regard to a successful implementation of the main change project, there are experts who suggest rolling out an initial pilot project with the basic elements of the planned change. This will allow those involved to experience new and challenging aspects of the planned change, define questions, and eliminate any doubts. This approach can be helpful in convincing affected employees and identified problems can be avoided in the main project

(Hayes & Richardson, 2008). According to Kotter, this pursuit of unusual ideas and actions, and thus also the taking of a certain risk, is necessary for the successful implementation of the change project (Brisson-Banks, 2010).

At this point, it becomes clear that communication itself is of elementary importance, but not sufficient. A change team with the necessary authority to remove obstacles and concrete approaches and ideas on how the change project can be implemented in practice is needed (Galli, 2018).

If the fourth stage of Kotter's change management model is not followed, the internal barriers to change will persist and the project is condemned to failure (Brisson-Banks, 2010).

2.2.2.6 Stage 6: Generating Short-Term Wins

In the sixth stage of the Kotter change management model (1996), so-called short-term wins must be created. According to Kotter, it takes time for significant changes to be successfully implemented and therefore there is a risk that motivation will be lost if there are no visible signs of project progress (Hayes & Richardson, 2008).

Short-term wins help to signal internally that the change plan is feasible and thus create momentum (Pollack & Pollack, 2015). In fact, short-term wins are so important in practice that it is not acceptable to wait for them to occur spontaneously. One has to make sure that they happen and then share them with all parties involved (Adin, 2021). These performance improvements called short-term wins should even be actively planned and realized. The employees involved should also be rewarded for these small successes (Brisson-Banks, 2010). Therefore, the change project should be concretized in small steps, each step having its own objectives. Fulfilling these objectives and communicating them keeps everyone involved motivated and maintains the all-important sense of urgency that is the basis of any change project. It also ensures that the change team can evaluate the progress of the project and review the plan if necessary (Hayes & Richardson, 2008).

At this point, the change plan can be measured against real operational conditions and adjustments can be made accordingly (Appelbaum et al., 2012). By dividing the project into smaller steps, the change team is able to check whether the vision and the entire derived plan can withstand real-life conditions (Galli, 2018). At this point, performance measurement methods should already be used, as the measured and confirmed success of individual project steps can contribute to the motivation of those involved in the project (Hayes & Richardson, 2008). Similarly, confirmed success can reassure management that the change project is moving positively in the right direction. Furthermore, measured success shows that there is a concrete link between efforts and actual results. This progress named short-term wins, which

is visible through performance measurement, creates a growing commitment to the change project among employees and management alike (Hayes & Richardson, 2008). However, communicating data-based short-term wins is not suitable for every change project, as certain progress only becomes apparent after a certain amount of time.

Another method to maintain motivation and attention for a change project is storytelling around the short-term wins. This is especially useful when the data alone is not yet convincing. The brain responds to the power of a compelling story and the use of metaphors in a very engaging way, so this effect can also be used to build and maintain attention for a particular project. These stories can be success stories in the context of the change project which are told in a gripping way, the challenge is to successfully communicate sometimes intangible, because small, successes (Pollack & Pollack, 2015).

If the sixth stage of Kotter's change management model is not followed, thus, if short-term wins are not systematically planned and created, there is a risk that the change project will be delayed and the participants will lose motivation (Brisson-Banks, 2010).

2.2.2.7 Stage 7: Consolidating Gains and Producing More Change

In the seventh stage of the Kotter change management model (1996), the changes and improvements made must be manifested and care must be taken to ensure that the project is completed.

Due to the length of a change project, a certain saturation or satisfaction may occur too quickly, causing initial efforts by those involved to decline over time (Hayes & Richardson, 2008). This happens because people involved often fall back into their old behaviors and habits (Galli, 2018). After early short-term wins, it is time to reinvigorate the initial sense of urgency, using those same short-term wins to strengthen and expand support internally (Adin, 2021). However, any weakening before the project is completed can cause important momentum to be lost (Pollack & Pollack, 2015). This is always to be avoided, since momentum in terms of energy and enthusiasm is crucial to execute the change. In the literature on change, momentum is even referred to as an ongoing force that in any form determines whether the change is successful or unsuccessful (Appelbaum et al., 2012). The possible loss of this effect has a negative impact on the change project, and it can be difficult to get everyone involved excited about the project again (Hayes & Richardson, 2008).

The absence of momentum results in a reduction of commitment which is likely to cause the affected employees to deviate from the change path and maintain the *status quo*, thus creating resistance to change (Appelbaum et al., 2012). For this reason, the initial implementation plan should be regularly adjusted to reflect current circumstances and

progress, and the change team should strive to ensure progress throughout the project (Hayes & Richardson, 2008). To achieve this, the change team must ensure that the short-term wins mentioned in the previous step are manifested and ensure continuous new successes (Galli, 2018). This is also to prove on an operational level that the invested costs are justified and to prove that the newly chosen path works and bears fruit.

The manifestation of the success of the initial changes in the form of short-term wins also serves to prove the critics of the change project wrong (Appelbaum et al., 2012). Complacency on the part of those involved must not be tolerated, and steady progress is the ultimate goal (Galli, 2018). Leaders should also use the momentum of short-term wins to address other issues such as systems and structures that have not yet been adapted to the changes that have been made (Appelbaum et al., 2012). The change team should constantly develop and include new key employees in the change team who are able to implement the planned vision. Furthermore, the change project should constantly try to keep the project alive with the inclusion and communication of current issues (Brisson-Banks, 2010).

Also, employees should be encouraged to initiate and experiment with change, this can encourage employees to drive the transformation, and this is important to constantly generate additional change (Appelbaum et al., 2012). Ideally, the change team must constantly look for new messages that can be communicated within the organization to maintain interest and focus on the change project. It should also be ensured that the project goal is not influenced by individual parties who see the project as an opportunity to assert their own interests during the possibly long project period. This phase of consolidating the changes achieved, nevertheless, can take a long time, especially in larger organizations (Pollack & Pollack, 2015).

If the seventh stage of Kotter's change management model is not followed, thus, proclaiming victory too early can destroy the momentum that is essential for change and bring the entire project to a halt (Brisson-Banks, 2010).

2.2.2.8 Stage 8: Anchoring New Approaches in the Culture

In the eighth stage of the Kotter change management model (1996), it is about establishing the new approaches in the corporate culture (Brisson-Banks, 2010). Establishment in corporate culture, also referred to as the institutionalization of change, means that change is part of the ongoing, day-to-day activities of an organization (Appelbaum et al., 2012).

Establishing the changes as the new ultimate norm of action makes the change likely to persist (Brisson-Banks, 2010). This means that the new behaviors induced by the change will degrade if they are not manifested in the common values and social norms of the company. In addition, in order to manifest the change in the corporate culture, employees should be

shown how the new approaches and behaviors have helped to improve performance (Appelbaum et al., 2012). It is also important to ensure that subsequent managers take the transformation to heart and stand behind it. Essentially, a fundamental shift in thinking must take place to effect lasting change and there must be an understanding of the forces and challenges that hinder change processes in the respective organization in order to be able to counter them (Appelbaum et al., 2012).

Integration into the corporate culture can take place, for example, when the core elements of change are integrated into career development plans or the company reward system (Hayes & Richardson, 2008). In addition, if necessary, there should be a support structure for the change team that guarantees ongoing training to establish competence and commitment and mentoring to maintain the change. Monitoring and control processes regarding compliance with the change should also be implemented (Appelbaum et al., 2012).

It can be said that changes are very fragile before they manifest themselves and become established in the corporate culture (Pollack & Pollack, 2015). To achieve this integration into the culture of the company, the change team must constantly demonstrate the link between the changes, the new behavior and the good results. The change team should maintain the pillars of change: Motivate and keep people motivated towards change and remove possible obstacles that stand in the way of change (Adin, 2021).

If the eight stage of Kotter's change management model is not followed, thus the changes are not institutionalized, and consequently the behavioral changes are only superficial, the change project has failed (Brisson-Banks, 2010).

2.2.3 Design Thinking

A newer approach to change management is Design Thinking (Dorst, 2011). This new approach of Design Thinking is important to mention because there are also researchers who defend that true change does not happen by simply following the steps of a method, but by a new way of team thinking. Unlike the models considered so far, Design Thinking does not have any specific steps, so that adjustments can be made flexibly. In this context, the Design Thinking approach has become more and more widespread. In recent years, numerous companies have successfully implemented changes by applying Design Thinking methods (Huang & Huang, 2020).

Even if there is no universal definition of the term Design Thinking, the approach is generally rooted in the principles of human-centered design, which puts people at the center (Ericson, 2022; Muluneh & Gedifew, 2018). It is an approach that focuses on interdisciplinary

communication/collaboration and innovative thinking and implementation methods (Huang & Huang, 2020).

However, it must be mentioned that the term Design Thinking does not originate from academic circles but has been developed by and for business and management audiences (Johansson-Sköldberg et al., 2013).

The approach has its origins in innovation management but is generally well suited as an approach to challenges and change projects in the business and IT context (Dorst, 2011). Additionally, some claim that Design Thinking is an approach for solving any unnamed organizational problem, and that it is even a skill that good managers must possess. (Johansson-Sköldberg et al., 2013).

Design Thinking is actually a highly regarded approach to change management. Unlike the change models of Lewin and Kotter, the Design Thinking approach does not follow a top-down systematic, which promotes leader-centered solutions. The essence of Design Thinking is highly democratic through intentional multidisciplinary participation (Muluneh & Gedifew, 2018).

The business community is showing increasing interest in this new approach as they feel an urgent need to expand their repertoire of strategies to handle the complex challenges of today's organizations (Dorst, 2011). For this design-based approach to be successful, however, it must initially demonstrate to leaders that Design Thinking is a viable business tool. This should be done by demonstrating the potential impact and showing how other companies have addressed their business challenges through the use of design elements (Ward et al., 2009).

However, there is a risk that if the Design Thinking approach is implemented incorrectly, it may be abandoned, and potential benefits may not be realized. Therefore, multidisciplinary teams coming into contact with this method for the first time must first build up skills to be able to implement the core elements of Design Thinking efficiently (Seidel & Fixson, 2013). Experts from practice and researchers recognize the central role of design as a driver of change (Dell'Era et al., 2020).

In fact, many consider design to be too important to be left to the designers alone, so numerous design elements are used in Design Thinking (Seidel & Fixson, 2013). This is since the way of working of designers has always been characterized by solving open, complex questions (Dorst, 2011). For a long time, design was only seen as a component of products, however, it is now receiving more and more attention in the business environment as a practice of innovation and thus also change management.

In this development, Design Thinking in particular has set itself apart from other equally design-centered approaches. Design Thinking is valued as a promising method, especially today in times of increasing complexity and vagueness, due to its responsiveness and

adaptability (Dell'Era et al., 2020). Although there are different approaches to Design Thinking, the core of the concept usually consists of three components: information gathering, idea generation, and testing/prototyping (Carlgren et al., 2016). Often, the definition step is also mentioned, so that it is argued that after the needs assessment, the clear and distinct definition of the prevailing problem is important and a prerequisite for the ideation and reframing of the problem (Muluneh & Gedifew, 2018).

The first step is research, which includes observation, that is, the definition of a problem or a possibility. In the second phase creative ideation methods, such as brainstorming, are used to find potential solutions of idea generation. In the third step of testing and prototyping, the first solution models are built to advance the development and selection of possible solutions.

The needs assessment in the first step includes a series of actions to find out the prerequisites for a new concept. This initial needs assessment, carried out by a diverse team, is part of the conceptualization process and requires a deep dive into the user's context and environment. The focus is on using information-gathering methods to empathize with the employees affected by the potential change so that they become familiar with the current challenges.

As with the ideation phase in step two, the involvement of a multidisciplinary team is of great benefit in the needs assessment. Brainstorming, for instance, is about finding solutions in a group that you might not come up with on your own (Ericson, 2022; Seidel & Fixson, 2013). At this point, as many ideas as possible are generated (Muluneh & Gedifew, 2018). A great advantage is the possibility to take up and further develop ideas of other participants in a structured setting. Although the technique of brainstorming can sometimes be disadvantageous, it has been found that for questions of moderate complexity where multidisciplinary input is needed, the advantages outweigh the disadvantages (Seidel & Fixson, 2013). The following elements can be considered as rules of brainstorming: only one person talks at a time, defer judgement, stay focused on the topic, expand on the ideas already mentioned, use visualization, encourage unusual ideas, the more ideas the better and headline the ideas (Huang & Huang, 2020).

The third step, prototyping, is the process of developing preliminary models from the ideas generated in the previous steps (Seidel & Fixson, 2013). Prototyping and corresponding presentations can be helpful to concretize abstract ideas (Huang & Huang, 2020). This allows these ideas and approaches to be better evaluated and encourages further idea generation. However, more than evaluation, prototyping is initially more about stimulating the imagination regarding new approaches (Seidel & Fixson, 2013).

The success of Design Thinking is based on the holistic approach which tries to understand the dynamics of complex systems (Dell'Era et al., 2020). It is therefore a three-

hundred-and-sixty-degree analysis of the facts, an inclusion of all possible factors in order to address the right questions at the beginning. Another strength of Design Thinking lies in the involvement of interdisciplinary teams and thus in the contribution of diversity, different views and approaches. Interdisciplinarity also ensures that no department of the company dominates in finding solutions. This diversity provides new insights and ideas (Holloway, 2009).

The method tries to reduce complexity by examining problems in their entirety and in their context of origin. This new way of considering problems often allows them to be solved at all (Dell'Era et al., 2020). Not to leave out the potential risks of Design Thinking, it must also be mentioned that the basic principles of the method (collaboration, creativity, comfort with failure) are often not in line with the standard practices of many larger and established companies. It is likely that in such cases the *status quo* will be disrupted. Therefore, in order to lead the change also in these companies without endangering oneself and one's position, a certain sensitivity has to be applied (Muluneh & Gedifew, 2018).

In order to take a more concrete look at the key points of Design Thinking, here are five core elements that are often considered when using the method and thus can be found in the five common steps of this approach: empathize, define, ideate, prototype, test. The following figure 2.3 illustrates the five core elements.

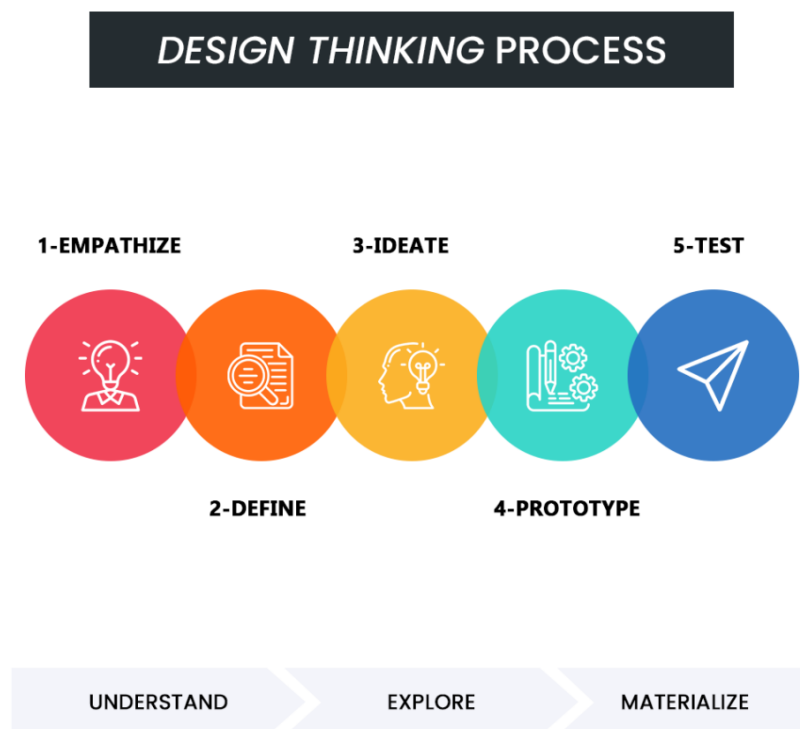


Figure 2.3: Design Thinking Process / Source: Website (See Reference Section)

2.2.3.1 *User Focus*

One of the core themes of Design Thinking is the user focus, which is reflected by the intensive involvement of the user in the process as well as by an empathetic approach (Carlgren et al., 2016).

Empathy is about understanding the real needs of the people involved. In the context of change, this means that an understanding must be created of why the change is needed and relevant to solving operational challenges (Muluneh & Gedifew, 2018). Bringing empathy to the table is perhaps the main difference between academic thinking and Design Thinking (Brown & Katz, 2011).

The user-driven approach means that the needs of the user are at the center of the development of solutions and approaches (Carlgren et al., 2016). People are more likely to accept these adjustments themselves if they consider that they are part of the solution and have contributed to the creation the change (Muluneh & Gedifew, 2018). This user-centered approach requires that every problem should be seen from the perspective of the end user, i.e., the affected employees (Ward et al., 2009). This is very important because in the end the users or those affected by the change have to live with it and involve it in their daily work. Nevertheless, some companies have problems with the change from being technology driven to being user driven.

Since the user is at the center of the effort, an essential part of Design Thinking is to get an understanding of the user and his needs, even those that he may not yet be aware of. The user focus also includes actively involving the user in the brainstorming process, as already mentioned. The same applies to the creation of solution prototypes and the validation of ideas. This involvement of the people concerned is very important in order to find an ideal solution that takes all important aspects into account (Carlgren et al., 2016).

2.2.3.2 *Problem Framing*

Another core element of Design Thinking is reframing the existing problem or problematic situation (Carlgren et al., 2016). This element is considered crucial and is strongly used, among others, in the problem definition phase to have a problem with an appropriate scope to be addressed in the further process (Huang & Huang, 2020). Instead of trying to solve the problem directly, it is seen holistically and challenged (Carlgren et al., 2016).

In reframing, the focus is initially on elements around the core problem, i.e., the overall context is used to search for solutions. This approach also emerges from a study within the design sciences, which states that even the top designers do not directly address the core problem. According to the theory, only in this way can new approaches emerge with which the

core problem can be solved (Dorst, 2011). Reframing, or creating new frames for the initial situation, is a type of analysis in which a complex situation is defined by themes. From these themes, which often cannot be assigned to either the problem or the solution spectrum, new frames often emerge that make it possible to approach the core problem in a new way (Dorst, 2011).

The initial question or problem can thus be questioned several times and undergo changes. This leads to several approaches to a solution, which is of elementary importance, as otherwise there is a danger of deciding too hastily on a solution. Through the diverse involvement of those affected, one arrives at numerous insights and perspectives and thus inevitably arrives at several approaches to solutions or changes (Carlgren et al., 2016).

However, reframing cannot be regarded as intuitive, as people usually do not even have the idea of redefining the problem but are often more solution oriented. For problem framing, it is above all important to think in a casual and future-oriented way and to show openness to the unexpected. Likewise, the participants must be able to engage with complex problems and be comfortable with them and be able to accept ambiguity (Carlgren et al., 2016).

2.2.3.3 Visualization

Visualization also plays an important role in brainstorming and prototyping to make ideas tangible (Carlgren et al., 2016). The element of visualization is even considered a rule of brainstorming (Huang & Huang, 2020).

Typically, this is done using paper notes on which to write down ideas, but there are a variety of methods that can be useful for communicating and discussing input. This visualization step occurs at the ideation and subsequent prototyping stages, where the focus is on sharing, revising, and selecting ideas to reach consensus. Tasks that are commonly described as challenging and where visualization can help.

It can be said that visualization in the context of ideation and prototyping promotes creativity, thus stimulating new ideas and providing discussion material for the involved employees (Carlgren et al., 2016).

2.2.3.4 Experimentation

One of the design principles is user involvement, as well as prototyping and testing (Ward et al., 2009). Testing brings users together with the prototypes created. The suitability of the solution for the employees concerned is tested, for example by simulating certain scenarios.

In the process, the experiences of the employees are recorded and, if necessary, adjustments are made afterwards (Huang & Huang, 2020).

Ultimately experimentation is another important element in the process of Design Thinking, which means moving between similar and different ways of thinking and simply trying things out (Carlgren et al., 2016). Generally, the design mindset makes people more optimistic, more collaborative, and more willing to take the necessary risks (Muluneh & Gedifew, 2018). This is particularly important because Design Thinking regularly involves dealing with different and numerous ideas and proposals for solutions. Experimentation prevents you from making a hasty decision in favor of one approach and not giving other, possibly better, ideas a chance. Ideas and proposed solutions should be tested as early as possible to gain valuable feedback. In this step, the belief is cultivated that making mistakes is desirable and that this should be done as early as possible (Carlgren et al., 2016).

In this phase of trying things out, curiosity, drive, optimism and a touch of humor are important in order to cope with the inevitable and desired mistakes. The employees concerned must therefore be able not to take themselves too seriously. Curiosity and energy are welcome, because you want the employees to try out your solution and not just assume that their solution will work. In general, the focus in the experimentation phase is on learning (Carlgren et al., 2016).

2.2.3.5 Diversity

The fifth element, already mentioned, is diversity. Throughout the entire Design Thinking process, a comprehensive collaboration of different teams and the inclusion of diverse perspectives is promoted (Carlgren et al., 2016).

People of different hierarchical levels and ages may also collaborate in this process (Huang & Huang, 2020). Only diverse teams, with different personalities and skills, bring the necessary number of competences to arrive at a good final solution for the organization (Carlgren et al., 2016). Although there are many advantages to conducting Design Thinking projects with people from many different fields, a common level of communication must be found in order to collaborate effectively. Design Thinking does not provide a clear solution to this potential conflict, so collaboration can also be a challenge to overcome. In the literature, a distinction is made between task conflicts and relationship problems, the latter of which can have a negative impact on cooperation and team performance (Seidel & Fixson, 2013).

Task conflicts, on the other hand, can have a positive impact on team performance, provided they are moderate and handled constructively. In multidisciplinary teams, conflicts regularly arise not only in the process of brainstorming and concept development, but also in debates about subsequent changes (Seidel & Fixson, 2013).

However, in principle diverse perspectives and inspiration from numerous areas are generally considered important in the entire process. One consequence of this Design Thinking approach to diversity is a democratic attitude and an increased openness to different professional backgrounds (Carlgren et al., 2016).

Although, the idea of diversity can also be understood in a broader sense, so that generally looking beyond one's own horizon, the horizon of the company, is also considered diversity. In this way, the exchange with other organizations can also broaden one's own solutions and points of view. Diversity in the context of Design Thinking can also mean that a variety of research sources from different fields should be consulted in order to have the widest possible range of alternative solutions (Carlgren et al., 2016).

2.3 Corporate Digitalization

2.3.1 An Overview

At the outset of the remarks on corporate digitalization, it seems important to properly classify the following three terms that are often mentioned in the context of this topic: digitization, digitalization and digital transformation. It must also be said that this differentiation is often not made when the topic is addressed.

While digitization describes the transformation of analog information into a digital format, digitalization defines the phenomenon of the adoption and use of digital technologies in a social and business context (Dąbrowska et al., 2022; Legner et al., 2017). Digital transformation, on the other hand, is a societal phenomenon, namely a socioeconomic change across individuals, organizations, ecosystems and societies sparked by these digital technologies. It becomes evident that digitalization and digitization are essential elements of the digital transformation and that these three elements must be seen in a common context (Dąbrowska et al., 2022; Legner et al., 2017).

A distinction is made between three aspects of digital transformation. First, the result of a digital transformation, i.e., the goal achieved after the process has been completed. Second, the process of organizational transformation, such as the creation or adaptation of roles. And third, the necessary technological background to the transformation and its integration into the existing system landscape. The last two steps can be attributed to digitalization, which acts as an enabler of digital transformation (Legner et al., 2017).

An unprecedented wave of digitalization has been triggered by the convergence of the so-called *SMAC* technologies (social, mobile, analytics, and cloud computing) (Legner et al., 2017). According to Oswald & Kleinemeier (2017), there are five technology trends that are

driving corporate digitalization: hyper-connectivity, cloud computing, cyber security, supercomputing, and the so-called *smarter world*. Hyper-connectivity includes technologies such as social & business networks and the Internet of Things (*IoT*). Cloud computing includes various cloud services and technologies such as software as a service (*SaaS*). In addition to data protection in the field of cyber security, supercomputing is focused on topics like big data. The *smarter world* trend mainly includes elements of machine learning and artificial intelligence at corporate level.

These technologies have a significant impact on the corporate business world. The internal connectedness between people and technology is increased by technologies like cloud computing, the Internet of Things, and big data, which also enable new work, collaboration, and automation models. This has a substantial impact on processes and business models. This leads to a strong expansion of the scope of business-related IT usage (Legner et al., 2017).

Organizations strive for digitalization to get the maximum benefits from digital technologies, which include productivity improvements, cost reduction and technological innovation. The corporate digitalization is driven and crafted on the application of digital technologies (Balakrishnan & Das, 2020). Companies that want to succeed in this new competitive environment need to unleash the potential of digital technologies. First, companies undergoing digitalization need to understand and manage the disruptive potential of digital technologies in order to understand, through an appropriate analysis, which technologies can move them forward (Legner et al., 2017).

In addition, competencies must be developed within the company so that these technologies can be used in a targeted and efficient manner. Only after this has happened the actual targeted transformation in the processual and organizational field follows in order to be able to succeed in the current digital age (Legner et al., 2017).

Today's wave of digitalization focuses primarily on the company's internal IT departments, which, due to their technological focus, are called upon to identify technological innovations for the company and turn them into solutions that contribute to the company's success (Legner et al., 2017). It is not always guaranteed that these departments will be able to do this due to their inherent structure and capabilities. To be able to address the topic efficiently the IT function must be better integrated with the rest of the business and the ability to innovate must be improved. Ultimately, the IT function must complete a transformation from service provider to consultant, enabler and innovator for corporate digitalization (Legner et al., 2017).

Likewise, there are companies that defend that the responsibility for IT systems should be transferred to the business units, so that these, which are at the core of the business, are better informed, more flexible and faster when it comes to adapting IT to appearing market

opportunities. According to this approach, there would be a *digital IT* alongside the already existing, traditional IT department; this coexistence is called *bimodal IT* (Horlach et al., 2016).

As digitalization takes over every aspect of our personal and professional lives, it has become a priority for today's managers. This leads to an increasingly digital business and becomes highly relevant for a growing number of stakeholders. In the wake of this digital revolution, an increasing number of governments are defining digitalization as a strategic priority and are promoting the digitalization of their business location on a large scale (Legner et al., 2017). As a result, organizations are forced to undergo an ongoing technical transformation that affects their organizational structures, strategy and applied methods, as well as their IT infrastructure. The following core issues, among others, are regularly affected by organizations' digital efforts: IT architecture transformation, process digitalization, automation as well as digital security and compliance topics (Legner et al., 2017).

Digitalization trends are driving change the way companies do business (Caputo et al., 2021). It is transforming how firms organize for value creation and delivery. The arrangement and use of digital data structures for the performance of control, communication, and tasks operationalized by an assortment of interfaced hardware and software can be summed up as digitalization. The main subject of corporate digitalization are generally the corporate digital communication infrastructure and digital in situ technologies, which are also grouped under the umbrella term information and communications technologies (*ICT*) (Autio et al., 2021). Digital communication technologies increase efficiency and reduce the costs of activity coordination. These include technologies that also digitize customer relationship management, for instance. On the other hand, in situ technologies are seen as tools of operations management, these technologies include the use of digital technologies to automate and reorganize processes. These technologies increasingly make use of artificial intelligence and big data analytics and thus offer entirely new value propositions (Autio et al., 2021).

IT is a critical factor for companies to gain a competitive advantage in the prevailing global business context. This is underlined by the need to process important and real-time information precisely in order to achieve business goals and maintain long-term competitive edges. The need to efficiently share large amounts of data within the company and with its stakeholders require the constant application and further development of integrated information systems (Tambovcevs, 2012).

The adoption of digital technologies is influencing almost all areas of modern organizations. The beginnings of digital transformation date back to the 1980s, when researchers studied the impact of information technology on performance. With the spread of computers and the internet, IT-enabled business transformation has taken hold over time and has been given a new revival by crises such as COVID-19 (Plekhanov et al., 2022).

The latter demonstrated how digital technologies boost businesses' resilience in the face of disruptive occurrences that impede the flow of people and products. In fact, global disruptions generally have accelerated the rate at which digital communication technologies are being adopted and leveraged (Autio et al., 2021).

The rapid developments of the past decade in the field of information and communication technologies have led to a fundamental change in communication, collaboration and processes among all organizations. Digitalization has gained enormous momentum and is gradually affecting every industry. Technological progress is creating numerous opportunities to modernize the working environment in companies and simplify processes. Companies see digitalization as one of the most important and biggest challenges (Barth & Koch, 2019; Mandl et al., 2018).

In addition to larger ERP implementations and smaller ERP upgrade projects, ERP is short for enterprise resource planning and refers to the type of software used by organizations to manage day-to-day business operations, many IT projects in companies have the goal of introducing so-called social tools. Tools that enable location-independent work, communication, and the exchange of knowledge as flexibility characterizes the modern workplace in its temporal and spatial dimensions (Barth & Koch, 2019; Mandl et al., 2018).

More and more companies want to enable work across national borders and time zones. This leads to better availability of knowledge throughout the company, independent of hierarchies, and to more transparency and synergies in collaboration (Barth & Koch, 2019; Mandl et al., 2018).

This inevitable organizational change through digital technologies ultimately ought to lead to improved business results (Bican & Brem, 2020).

Digitalization is all about connectivity and reorganizing an organization's resources and capabilities. The new digital capabilities guarantee new dynamic opportunities along the value chain, as well as data analytics, agile project management and the integration of teams with different backgrounds and work styles (Balakrishnan & Das, 2020).

However, the real success of digital technologies does not depend on the implementation alone, but on the actual value added to the company by the active transformation of the organization (Balakrishnan & Das, 2020).

2.3.2 Potential Benefits of Corporate Digitalization

Some of the potential benefits of corporate digitalization projects are listed below (Abou-foul et al., 2021; Al-Mashari et al., 2003; Berchet & Habchi, 2005; Tambovcevs, 2012). Which benefit is actually evoked, or which one predominates always depends on the type of the

concrete project and the execution of the digital change project, but an increase in efficiency is a central goal and characteristic of many digitalization efforts.

Potential Benefits of Corporate Digitalization

- Enhanced business operations through streamlining, improvement and control of key business processes.
- Coherence and reliability of data.
- Ease and speed of accessing information.
- More adequate resource allocation.
- Higher transparency.
- Better information flow.
- Improved IT infrastructure.
- Performance improvement.
- Significant cost and time savings in specific business processes.
- More efficient allocation and control of the resources used.
- Increased productivity and quality, reduced delivery times, more accurate delivery times, inventory reduction and increased customer satisfaction.
- Simplified communication and data transfer of critical information across the enterprise. Instant, customizable, access to real-time information, reports and documents.
- Reduction of activities that do not generate added value.
- Comprehensive business analysis.
- Single, consolidated, and timely vision of the business. System acts as single point of truth.
- Improved decision making and planning through precise real-time data.
- In total, the possible benefits can be divided into five groups: Operational, Managerial, Strategic, IT infrastructure, organizational.

2.3.3 Success Factors of Corporate Digitalization

Since, according to Duh et al. (2006), the main reason for the failure of IT projects is the lack of attention paid to organizational and human factors, the following is a list of the most important success factors in this regard.

It should also be noted that even authors such as Leyh & Crenze (2013), who differentiate between ERP projects and other type of IT projects, conclude that most of the success factors

for both are similar and only a few relate exclusively to one form of digitalization. This particularity is mentioned at this point since in the scientific literature IT projects are largely represented in the form of ERP projects. Therefore, the mention of ERP projects in the following is representative for the entire range of IT projects.

In this analysis, management support and project management are among the top two success factors for both approaches.

2.3.3.1 *Solution fit*

Many digitalization projects are unsuccessful, due to the potential conflict of interest between the companies looking for a digital solution and the corresponding technology providers. This is reinforced by the fact that one side wants as quick as possible a solution to its problem and the other side likewise wants to sell as quick as possible. While the companies generally strive for highly individualized solutions, the vendors prefer generalist *best practice* solutions which can be implemented in as many companies as possible without major adjustments (Akkermans & van Helden, 2002).

Therefore, the individual organizational fit is of great importance in a digitalization project. Even if occasionally unmentioned by the vendors, some solutions are more suitable for larger companies and others for smaller ones. It is also important to decide which version and which modules are best suited to the company's needs (Akkermans & van Helden, 2002).

At this point, it must be weighed up whether the solution harmonizes with the company's current business processes (Hong & Kim, 2002). If the wrong decisions are made here, the company risks a mismatch between the selected solution and the business processes and strategy, or the need for time and cost-intensive major modifications (Akkermans & van Helden, 2002).

In this context, however, the offer of *best practice* solutions is often considered illusory, since the business context is unique and regular adjustments to the implemented system are necessary. The adaptation of a digital solution to the processes of an organization is a process that is clearly shaped by the structural characteristics of the organization and the built-in properties of the digital solutions. At this point, there is a conflict between adapting the digital solution to the circumstances of the company and adapting the affected company processes to the properties of the digital solution (Hong & Kim, 2002).

In order to reduce this conflict, it is necessary to identify from the outset where there are gaps between the properties of the digital solution and the requirements of the company. A major misfit would mean massive changes to the affected company processes and the digital solution (Hong & Kim, 2002).

Hence the importance of the greatest possible organizational fit between the digital solution and the business, bearing in mind that a minimum level of congruence must always exist (Hong & Kim, 2002).

2.3.3.2 *Project Management*

Poor project management is a key reason for the failure of IT projects. In particular, large projects without effective planning or experienced project managers have an increased risk of failure (Hughes et al., 2017).

Good project management, including a detailed project plan and milestones aligned with the project objectives, is fundamental to ensure implementation success (Barth & Koch, 2019). Especially successful ERP implementations require excellent project management (Umble et al., 2003).

This is the case, as such implementations are very complex due to the involvement and combination of hardware, software, and organizational issues (Akkermans & van Helden, 2002). To achieve the desired goals and benefits in cost-intensive and challenging implementation projects, these must be thoroughly managed and controlled. Therefore, project management is crucial for the success of the project (Al-Mudimigh et al., 2001).

Velcu (2010) also describes project management as critical because it enhances the effect of implemented information systems on business performance. Not only must project managers be as strategic as tactical, but they should also have a combination of business, technical and change management skills. Project management encompasses numerous aspects such as planning, organization, personnel selection, monitoring, and the actual management itself (Umble et al., 2003).

Successful project managers should also demonstrate well-developed soft skills to ensure better outcomes, a factor that used to receive less attention in the past (Hughes et al., 2017). A best practice approach would include the following three stages: Plan and schedule creation, monitoring, and feedback as well as risk management. The project plan describes exactly which activities are necessary to achieve the project objectives. However, the project plan should contain ambitious but achievable schedules. It is important that the project objectives are clearly defined so that the scope does not compromise the budget, project progress and implementation (Umble et al., 2003).

However, a certain flexibility should be applied when defining the objectives and corresponding activities, as these cannot always be precisely defined at the beginning of a project due to the concept of evolutionary complexity of the project (Akkermans & van Helden, 2002).

Monitoring, one of the main tasks during the project, is about verifying the progress of the project and intervening, in a targeted manner, if necessary. Risk management is about identifying problems in advance and taking countermeasures to ensure that the plan and the budget are adhered to. It can also be described as the ability to deal with unexpected problems and deviations from the plan (Al-Mudimigh et al., 2001).

In the case of larger implementation projects, such as ERP projects, a certain degree of improvisation skills should also be part of the project manager's competencies (Akkermans & van Helden, 2002).

2.3.3.3 Customization

This success factor is particularly relevant for large projects, such as ERP implementations, which have a major impact on the organizational structure and business of a company (Leyh & Crenze, 2013).

Even if the digital solution within the context of organizational fit must, from the outset, meet the companies' requirements, the customization of the solution to be implemented is of great importance as it significantly contributes to the success or failure of the whole project (Tambovcevs, 2012). Because even the best solutions can only meet a maximum of 70% of a company's requirements (Bingi et al., 1999). Organizations need to understand the essence of integration and how it affects the entire business. Especially with cross-departmental ERP systems, an error that occurs in one business unit can quickly impact others in real time (Bingi et al., 1999). Furthermore, the full potential of a new software will only be realized once it has been properly integrated into the company's existing system landscape (Tambovcevs, 2012). It is difficult to create the expected connections between the databases and activities of a given business process without customizing digital data items or processes. This functional misalignment occurs when the functionality of the digital solution does not match the organizational requirements.

There are two approaches to customization: non-core and core customization. While non-core customization is about the interface adaptation of modules, core customization is about a revision of the base code. The benefits of a digital solution, particularly in the post-implementation phase, depend significantly on customization in the context of software configuration. Customization has a major impact on the intermediate benefits, which ultimately influence the overall benefits of the digitalization project (Chou & Chang, 2008).

The importance of functional alignment and customization for the manifestation of the benefits of the digital solution is estimated to be even higher than that of organizational acceptance of alignment (Chou & Chang, 2008).

2.3.3.4 Management Support and Leadership

As Umble et al. (2003) state, successful implementations demand the management's cooperation, strong leadership, and dedication. An analysis of further scientific IT literature indicates that successful IT projects critically require management support (Bingi et al., 1999). The effectiveness of support is even cited as one of the strongest predictors of success or failure (Hughes et al., 2017). All adjustments to practices, methods of operation, and organizational restructuring associated with a new information system also require managerial support to be carried out successfully. The likelihood that the impacted employees will accept a new system is higher if the manager gives it a high priority (Laudon & Laudon, 2020). The larger the digitalization project, the more important it is to have management support. In large projects, it is a crucial factor, as many resources are needed and the executives are the responsables who must back it up (Dezdar & Ainin, 2011). The size of the company likewise matters at this point, within large companies, top management awareness and support has a particularly strong influence on complex system implementations such as an ERP system implementation (Soja, 2006).

The willingness of management to offer the required resources and the use of authority for project success is typically referred to as management support. Besides the provision of resources, the most important aspect is quick decision-making and support in the acceptance of the project within the company (Al-Mudimigh et al., 2001). As a rule, management support helps to overcome obstacles and political resistance and encourages organization-wide participation (Wang et al., 2008). Two factors are important in management support: the provision of the required resources and the leadership and associated communication of the required commitment and project goals (Dezdar & Ainin, 2011).

Another aspect of leadership that should not be underestimated is the management of expectations during the project (Akkermans & van Helden, 2002). In many digitalization projects, it is also necessary for the management level to develop a new mindset within the company concerned, characterized by values such as networking, openness and agility. This is very important because the digital shift entails not only technical changes, but also cultural changes, primarily in leadership style (Mandl et al., 2018).

ERP projects can be cited again at this point as an example of a large IT projects, these projects in particular are about repositioning the company and transforming business practices. Due to the strong impact on competitive advantage, management must consider the strategic implications of such an implementation (Bingi et al., 1999). It must be considered whether the digital solution will increase competitiveness and what the impact on the organizational structure will be. Alternatives and the scope of the implementation must also be weighed. Due to the high impact of such large-scale digital systems on the business, the

implementation must not be left to the technology department alone; management must be present at every step of the implementation (Bingi et al., 1999).

Even when external consultants are involved, which is regularly the case during digital implementations, proactive management support remains of utmost importance. Management must constantly monitor progress and provide direction to the implementation team (Wang et al., 2008). Support should not only be provided in the initial phase, but ideally over the entire duration of the project (Dezdar & Ainin, 2011).

In the context of management support, there should be a so-called project champion who takes on the essential functions of transformational leadership and is responsible for mediating the project to the users. Ideally, it should be a leader with enough authority to initiate far-reaching organizational changes (Akkermans & van Helden, 2002).

Management must lead the change, not only on a process and technology level, but also on the people level. A look at successful digital implementations shows that the key to success lies in effective change management performed by the leaders. Effective management commitment can lead to an organization-wide commitment, and this is a sure path to a successful IT/digitalization project (Bingi et al., 1999).

2.3.3.5 Training

Training of the employees concerned is one of the most recognized success factors in an IT/digitalization project (Umble et al., 2003). Complex systems require specialized training to ensure future users can utilize them effectively (Dezdar & Ainin, 2011). The benefits of large-scale systems such as an ERP system cannot be obtained as long as the employees concerned are not enabled to use the introduced system correctly (Umble et al., 2003).

However, training and skill updating are one of the biggest challenges. The lack of training or inappropriate training is one of the main causes for the failure of ERP projects. The project team is introduced to the system, its features, and project management during the initial phase of training (Al-Mudimigh et al., 2001). The system users are then trained according to their roles within the organization so that they can use the system and comprehend the underlying business processes. The training should be adapted to the specific role of the system users and follow an appropriate plan (Al-Mudimigh et al., 2001).

In order to ensure that user training is as effective as possible, it should begin as far in advance as possible of the concrete time of implementation (Umble et al., 2003). Without proper training, up to 40% of the employees affected by the change will not be able to manage the demands of the new system (Bingi et al., 1999). Everyone must be able to understand how their own data, which one causes in its function in a certain department, affects the rest of the organization. Therefore, everyone must be trained and encouraged to make the right

decisions within the introduced system. ERP systems in particular are very complex and require rigorous training that is difficult to accomplish in a short period of time. Instead, companies should provide regular training for their employees so that they are prepared for the ever-changing business requirements (Bingi et al., 1999). Only an adequate level of knowledge and competencies imparted by appropriate training enables an employee to increase individual performance and thus the performance of the organization. The likelihood of project success is significantly increased through training measures because it prepares users for the change in a positive way, reducing resistance (Dezdar & Ainin, 2011).

Since much of the learning process also takes place outside of the initial training, in day-to-day operations, a project manager should stay always in contact with all system users to identify problems. Here, regular meetings can help to share common problems and lessons learned, and eventually the need for post-implementation training can be stated (Umble et al., 2003).

2.3.3.6 Communication

Communication between the units affected by the project is essential for the successful execution of IT/digitalization projects (Dezdar & Ainin, 2011). Therefore, one of the biggest priorities should be the introduction of a communication culture that, in addition to the enablement of the coordination between the departments concerned, also allows them to reveal their interests regarding the IT/digitalization project (Barth & Koch, 2019).

This is also emphasized as evident from the IT implementation literature, which pointed out the importance of communication between the various business functions in the context of project management. If the IT/digitalization project is a larger one, such as an ERP project, communication is even more important, since at its core lies the integration of the various business functions (Akkermans & van Helden, 2002). At the same time, communication is one of the most difficult and challenging tasks in large implementation projects. It is important that project scope, goals, and objectives are considered in proper communication. Also, it matters that an open information policy is in place throughout the project (Al-Mudimigh et al., 2001).

Since appropriate communication helps to reduce resistance, it is of great importance from the very beginning and throughout the entire course of the project. Communication within the company is just as important as communication within the project team. Communication plans should be established to inform management about the project impact, progress, challenges, and risks (Dezdar & Ainin, 2011).

In conclusion, one of the most tough and difficult duties of a digitization project is communication. Mainly, it is important that affected employees are informed in advance about the scope, goals, activities, and updates in order to make the digitalization project more

efficient. Early, consistent, ongoing communication is essential. It should include an overview of the system, justification for adoption, and an early look at how the technology will serve the business (Dezdar & Ainin, 2011). In addition, regular project reporting, since it is a matter of communication, should also be part of the communication plan (Barth & Koch, 2019).

Communication is even more important as poor visibility of digital implementation processes is identified as one of the most common failure reasons (Hong & Kim, 2002).

2.4 Summary of the Literature Review

In the previous literature review, the author of this work gave an overview of change management approaches and corporate digitalization.

Concerning the topic of change management approaches, the well-known models of Kurt Lewin and John Kotter, as well as the Design Thinking approach, which is becoming increasingly important in the context of change, was discussed.

Concerning the topic of operational digitalization, the author emphasized the potential benefits and the main success factors cited in the literature.

The explanation of Lewin's change model was of great importance, as it is the basis for all subsequent models. Kotter's change model is also based on Lewin's and can be understood as a further development.

For example, the first four stages of Kotter's model (*Establishing a Sense of Urgency, Creating the Guiding Coalition, Developing a Vision and Strategy, Communicating the Change Vision*) can be attributed to the first stage of Lewin's model (*Unfreeze*). Essentially, this stage involves identifying the state to be changed and carrying out preparations for the following change, through challenging the *status quo* and creating a company-wide awareness that change is necessary. The change is prepared and communicated to all stakeholders, with great emphasis on ensuring that all those affected by the change understand the need for change and are engaged in the process.

The steps five, six and seven of Kotter's model (*Empowering Employees for Broad-Based Action, Generating Short-Term Wins, Consolidating Gains and Producing More Change*) can be attributed to the second step in Lewin's model (*Moving*). In essence, these steps are about the actual change itself. Obstacles of any kind that stand in the way of change are removed and the path to change is paved. In addition, short-term wins are promoted here, i.e., small but steady successes that show all project participants that they are on the road to success and thus keep motivation high. At this point, care must be taken to ensure that the changes are continuous and the progress steady so that the project stays on track and comes to a conclusion. It is therefore important to tighten the reins and to use the momentum from the short-term wins achieved.

Step eight of Kotter's model (*Anchoring New Approaches in the Culture*) can be attributed to the third and final step in Lewin's model (*Refreezing*). This step is about manifesting the change across the organization and making sure it is established.

It is worth noting that the first and fourth step in Kotter's change model, *Establishing a Sense of Urgency* and *Communicating the Change Vision*, are considered as the most important by John Kotter. According to his opinion a sense of urgency is essential to maintain motivation and the will to change throughout the course of the project. The fourth step is also of utmost importance, as the correct communication of the upcoming change determines whether the affected employees want to follow the path of change and thus also the path of success. If you fail to correctly involve the employees at this point, to address their objections and concerns, or to ignore the important feedback from the employees, the change project is on its way to failure.

Regarding the Design Thinking approach, it can be summarized that this instrument is relatively new in the field of change management. The origins lie in the design sciences; however, it's becoming very popular in the business and IT context. Unlike the change models of Lewin and Kotter, it does not follow a top-down system, so the outputs are less leader-centered. Unlike the aforementioned change models, there is no requirement to follow specific steps in a particular order. Individual adaptations can therefore be made, which increases the flexibility and applicability of the approach in different contexts.

Basically, Design Thinking follows an interdisciplinary communication and collaboration approach and is highly team centered. The five basic principles of the Design Thinking approach (*Empathize, Define, Ideate, Prototype, Test*) already indicate that the user focus is particularly important (*Empathize*).

This is expressed in the particularly strong involvement of the users affected by the change and the joint generation of solutions. The needs and comments of the users are of utmost importance, as only their consideration guarantees that the change will be lived and manifested later on.

It is also very important to try to look at the problems encountered from all possible angles in order to find the perfect solution for all concerned, this approach is called problem framing and is attributed to the *Define* principle.

The *Ideate* principle is again strongly related to the *Empathize* principle and highlights joint solution finding, classically in a brainstorming context.

The last two principles, *Prototype* and *Test*, are intended to ensure that the jointly developed solutions are effective and achieve their purpose. This step is particularly important because Design Thinking, due to its democratic character, produces numerous solutions which are then finally evaluated in practice. In addition, there is the possibility to integrate practical feedback from those affected by the change into the solution finding process.

With regard to corporate digitalization, it can be summarized that it's already part of everyday life in the vast majority of organizations, without which it would not be possible to operate competitively. This digitalization phenomenon has been fueled by the convergence of various technologies, such as analytics and cloud computing. Innovations like big data, machine learning and artificial intelligence, which are emerging as a result of the constant digitalization of every sector, are already having a massive impact on the corporate business world, on its processes and business models.

The operational application areas of IT are therefore constantly increasing. Organizations are increasingly looking to digitalization to get the most benefit from digital technologies, as it fundamentally increases their ability to innovate, but also provides productivity gains and cost reductions. To achieve this, organizations must unleash their digital potential and restructure themselves internally. For example, the IT department should not be a simple service provider, but rather be integrated into the business and support the business units as an advisor and enabler. On the other hand, there are also efforts to bring the digital know-how into the business units in order to become more independent of the central IT department. In any case, companies must also address such structural challenges in their digitalization efforts.

Digitalization is increasingly becoming a top strategic priority for organizational leaders, and it is changing the way companies do business. Crises such as the COVID-19 pandemic have shown that digital technologies increase the resilience of organizations during disruptive events. It has become clear that digitalization is vital for the survival of organizations in such unpredictable situations. This is one of the reasons why the number of IT projects that need to be implemented and that represent a major change for those affected is constantly increasing in companies. It's all about connectivity and a better and more efficient organization of the companies own resources and capabilities.

Digitalization not only promotes the efficiency of business operations, but also increases the coherence and credibility of data, as well as the availability of information and thus improved decision-making, to name just a few potential benefits of digitalization. With regard to the aforementioned success factors of corporate digitalization projects, management support and project management are particularly worthy of mention. Both factors have a strong influence on the successful implementation of IT/digitalization projects. However, it is also important to mention that the selection of the right technology and the corresponding customization according to the goals and needs is of utmost importance. The training of the employees concerned is at least as important, since they are the ones who ultimately decide on the success or failure of the digitalization project.

In addition to focusing on Kotter's change model, the literature review placed the topic of the master's thesis in an appropriate context so that the reader can better understand what the mentioned topics of change management and corporate digitalization entail and how they

relate to each other. It becomes evident that change management today is increasingly related to digitalization and IT projects, because these are indeed frequently the issues that are causing or driving change in today's organizations. The following qualitative empirical study aims to figure out which particularities of IT projects influence the field of change management in which way. In concrete terms, experts from the field are asked how they assess the relevance of Kotter's model steps and the model as a whole for IT projects, as well as their change approach in order to determine the relevant factors in today's IT projects.

3 Research Methodology

3.1 Research Design

At the beginning of this chapter I want to provide a short information concerning research type, research method and interview type.

The research type of this thesis is of qualitative origin. The research method chosen are in-depth interviews and the interview type is semi-structured.

In order to fulfill the objective of this thesis, the determination of the relevance of Kotter's change management model and the achievement and answering of all further research questions and objectives mentioned in chapter 1.3, qualitative research was conducted. Only for the evaluation of individual elements a quantitative approach in the form of evaluation questions was used, but this did not affect the qualitative nature of the survey. A qualitative research method is very well suited to exploratory research such as the present one, as it was intended to determine the opinions, experiences, and own approaches of the participants to the research topic. The qualitative research approach allowed a further understanding of complex contexts and to gain deep insights into the topic and in this way to better understand the background and cause of the respective answers in the complex subject matter (Rahman, 2016) .

The choice of qualitative research method also prevented the authors perspectives and interpretations in relation to the research topic from influencing the results. Rather, the qualitative approach focuses only on the uninfluenced responses of the participants. The qualitative research consisted of conducting semi-structured in-depth interviews with subject matter experts. The interview as a qualitative method was chosen in order to get original, unique and tailored to the requirements of the thesis data directly from relevant experts. By asking precise questions in combination with targeted, selective questioning and explanation in the interview situation, it was possible to ensure that the participant understood the question correctly and shared all of his or her relevant knowledge on the relevant point. Likewise, by experiencing the voice and the accentuation, it was possible to easily determine how a particular statement was meant (Rahman, 2016).

The form of the semi-structured interviews was chosen in order to obtain as much detailed information as possible from the participants without restricting them in their answers. The open-ended questions allowed the participants to answer freely without having to follow a predefined structure. Only the given thematic framework or questions were the same for each participant in order to capture the different opinions on the research topic. A structured interview design would have restricted the experts too much and would have obscured

important details and particulars. An unstructured interview model would not have suited the research work, which was oriented to Kotter's change management model. The compromise between the two mentioned interview models, the semi-structured interview, was therefore the best choice for this thesis, as a consistent thematic framework was given to each participant, but the experts were completely free to answer without restrictions. In this way, the best of both interview models was combined the best of both interview models: comparable, consistent answers and the necessary flexibility in answering and follow-up questions on the part of the interviewer (Jamshed, 2014).

Likewise, the thematic structure avoids distractions and drifting off topic without compromising the depth of detail of the answers. Asking certain questions in a certain order has enabled me to compare the answers of the interviewed experts in the best possible way and thus to achieve the objectives of this research work.

3.2 Sample

To be considered for the interview, each potential participant had to meet the following criteria:

a) Work at the interface of change management/digitalization b) At least 7 years of professional experience c) Project experience in a responsible position.

Criterion a) was necessary because the topic change management and digitalization, is at the heart of this research work.

Criterion c) was necessary because this research work is about examining the relevance of Kotter's change management model, which was originally intended for the organizational level, at the level of digitalization/IT projects. Related project experience was therefore required at this point.

The leading project experience defined in criterion b) should ensure that the expert is a project expert and has already experienced every relevant project situation in the digitalization context in order to be able to examine Kotter's model steps regarding the digital context.

Seven hand-picked experts, four of which emerged from the professional contacts of the researcher, were selected with an average professional experience per head of about 13 years. Exactly seven interviews were conducted, as it was observed after the seventh interview that participants were beginning to repeat aspects and no significant new insights could be gained. Due to the many years of professional experience the participants are highly qualified professionals with many years of practical experience.

The participants originate from Germany and the USA. Four of the seven participants are managers or senior managers in large consulting firms, the rest are either CEOs of consulting firms in the study area or certified change managers. The constellation of participants and the

focus on participants with consulting background enabled the researcher to speak with experts who have already supported and implemented hundreds of IT/digitalization projects for companies of all sizes.

The participants were recruited via the following means: personal network, placement agency for experts and cold messaging via the LinkedIn business platform.

One of the main challenges of this research work was indeed to find the experts and to fix the respective appointments for the interviews. The required criteria and the limited time available to the experts, due to their professional obligations, made the search quite difficult.

An overview of the participant parameters can be seen in the following table 3.1.

Table 3.1: Sample / Interview Participants

Organization	Years of Experience	Position	ID	Date	Interview Duration (approx., minutes)
Ernst & Young Global Limited	8	Manager	ID1	02.02.23	60
WTS Global	11	Senior Manager	ID2	02.03.23	45
WTS Global	10	Senior Manager	ID3	08.03.23	75
Greenfield Finance	9	Senior Manager	ID4	09.02.23	65
Carpe Viam Consulting	30	CEO	ID5	11.04.23	40
Janus Insights LLC	20	Certified Change Management Professional (CCMP)	ID6	02.04.23	40
Venture Wizards (Digital Product Development)	7	CEO	ID7	04.04.23	40

3.3 Data Collection and Analysis

As already mentioned, qualitative data collection was carried out using a semi-structured interview guide with a majority of open questions and some closed questions for evaluation purposes. The closed evaluation questions made the assessment of the individual model steps much easier than a sole qualitative approach.

The interviews lasted on average between 45 and 60 minutes and took place between February and April 2023 via the video communication platform Zoom. Video communication was used because the participants were experts who were far apart in location and because of long, irregular working hours, which made it impossible to plan an on-site interview. Due to the purchased Zoom Pro license, it was possible to conduct longer interviews at a time, as the free version has a time limit.

The interviews were recorded using the recording function integrated in the zoom platform. With the assistance of the transcription software *Amberscript* and the subsequent thorough manual review and revision, the transcripts were created, which serve as the data basis of the empirical analysis for this research.

The first interview with ID1 (see Table 3.1) served as a pilot interview to ensure that the interview guide was designed to effectively elicit the information from the participating experts needed for the research. Based on the results and feedback from this pilot interview, minor changes were made to the question and interview procedure. It also made it clear to the researcher, at this point in the role of the interviewer, how much time was appropriate for each question and how best to encourage participants to share the relevant information. The pilot interview was therefore a good method to test the effectiveness of the interview guide and to gain experience with the interview situation in terms of time management, interview conduct and correct questioning. In this way, important insights were gained for all further interviews and the best possible interview approach was obtained.

3.3.1 Interview Guide

Before the actual interview began, the participating experts were asked about the industry in which they work and how many years of relevant professional experience they have with change projects in the IT/digitalization context.

The interview guide consists of two parts, Part A and Part B (see appendix). Part A deals specifically with John P. Kotter's change model, while Part B is mainly concerned with the respondents' own change approach and two questions regarding a possible model adaptation (Kotter, 1996).

In Part A, the focus is on a brief quantitative classification and on the expert's personal opinion regarding the individual eight steps of the Kotter change management model, visible in table 3.2, in the context of operational IT/digitalization projects. The questions in part A of the interview guide are therefore based on Kotter's eight model steps (Kotter, 1996). For each of the model steps there was a small explanatory text on the interview guide. The question asked at each of the eight steps is: "What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?".

The quantitative rating scale of the closed questions with which the importance of each model step in the context of IT and digitalization projects was to be evaluated at the beginning of each model step by the participants is a Likert scale, a scale also used also in other researches on Kotter's change model. Based on the research objective, the author and researcher has decided that this scale approach is likewise appropriate for the present work. Following the steps of the used scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No opinion.

Table 3.2: Steps of Kotter's Change Model

The eight steps of the Kotter change management model
1. Create a sense of urgency
2. Build a guiding coalition
3. Develop a vision for change
4. Communicate the change vision
5. Remove obstacles
6. Generate short-term wins
7. Build on the change
8. Embed changes into culture

In Part B of the interview guide, the focus was on the respondent's change approach in the IT/digitalization context, on how the model could be adapted in this context, and on an evaluation of certain Design Thinking elements. Part B consists of three questions. It was stated that the participant could mention aspects already mentioned in part A or completely new ones. The first question in part B was designed to find out how the participant approaches change projects in the IT/digitalization context and whether he has a best practice approach. At the same time, the most important success factors in this context should also be mentioned. The first question in part B was: "How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?".

Since one of the objectives of this research project is to adapt Kotter's change model to the IT/digitalization context based on the research results and thus to create a model based on Kotter's model, the participating experts were asked how they would adapt Kotter's change model for IT/digitalization projects. They were also asked what they thought about the chronological order of individual model steps. The second question in part B was: "How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you, if you think a chronological order makes sense, change the order of some steps or repeat any steps throughout the model?".

Since, as already mentioned in the literature review, increasingly Design Thinking elements are finding their way into the field of change management, the last question of the

interview guide was a question aiming the possible adaptation of the model to the IT/digitalization context by questioning the experts surveyed about their opinion and assessment of the following three core elements of Design Thinking: User Focus/Diversity, Problem Framing, Experimentation. Depending on the participants' response, the elements would potentially be considered in subsequent model adaptation for the IT/digitalization context. The quantitative rating scale is identical to that from part A. The third question from part B was: "How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information". For each of the three elements there was a small explanatory text on the interview guide.

3.3.2 Qualitative Analysis Approach

The content analysis of the interviews was carried out with the qualitative data analysis software MAXQDA (Version Plus 2022, Release 22.5.0). This type of software is also called CAQDA software, computer assisted qualitative data analysis software. As the name suggests, this software only assists in the analysis, the main work is still the manual categorization of the text by the author.

This software was chosen because it is ideal for a category-based analysis method, thus for an approach centered on the coding of unstructured text elements. The software was used to guarantee transparency and academic rigor in this research. By analyzing the corresponding texts through the software, the conclusions can be reconstructed by the reader.

With regard to the coding approach, a deductive category application was used, thus the categories were derived from the existing literature. This is the ideal approach for this research, since an existing model from theory, Kotter's change management model, is the central object of research (Pearse, 2019). Thus, categories did not have to be developed inductively from the data collected. The coding categories derived deductively from Kotter's model are thus the eight model steps mentioned above, and the data collected from the interviews are thus divided into eight categories, analogously to the structure of the interview guide. The eight categories identified in this way were applied to the data collected from Part A of the interviews (Pearse, 2019).

The following three categories, which were applied in part B of the interview, were also determined deductively and were derived from the theory and the objectives of the research work: Own Change Approach, Model Adaptation, and Design Thinking Consideration. Adding these three categories from part B to the eight categories from part A results in 11 coding categories, which were used seven times due to the seven interview participants.

In summary, the way in which the coding categories were determined, and the number of categories resulted from the available data and the objectives of the research work.

The table 3.3 below lists the coding categories used. The following figure 3.1 illustrates the procedure within the applied research methodology.

Table 3.3: Applied Coding Categories

Applied Coding Categories
1. Step 1: Establishing a Sense of Urgency
2. Step 2: Creating the Guiding Coalition
3. Step 3: Developing a Vision and Strategy
4. Step 4: Communicating the Change Vision
5. Step 5: Empowering Employees for Broad-Based Action
6. Step 6: Generating Short-Term Wins
7. Step 7: Consolidating Gains and Producing More Change
8. Step 8: Anchoring New Approaches in the Culture
9. Experts' Individual Change Approach
10. Experts' Model Adaptation Proposals
11. Experts' Design Thinking Consideration

Simplified Illustration of the Procedure Applied within the Research Methodology

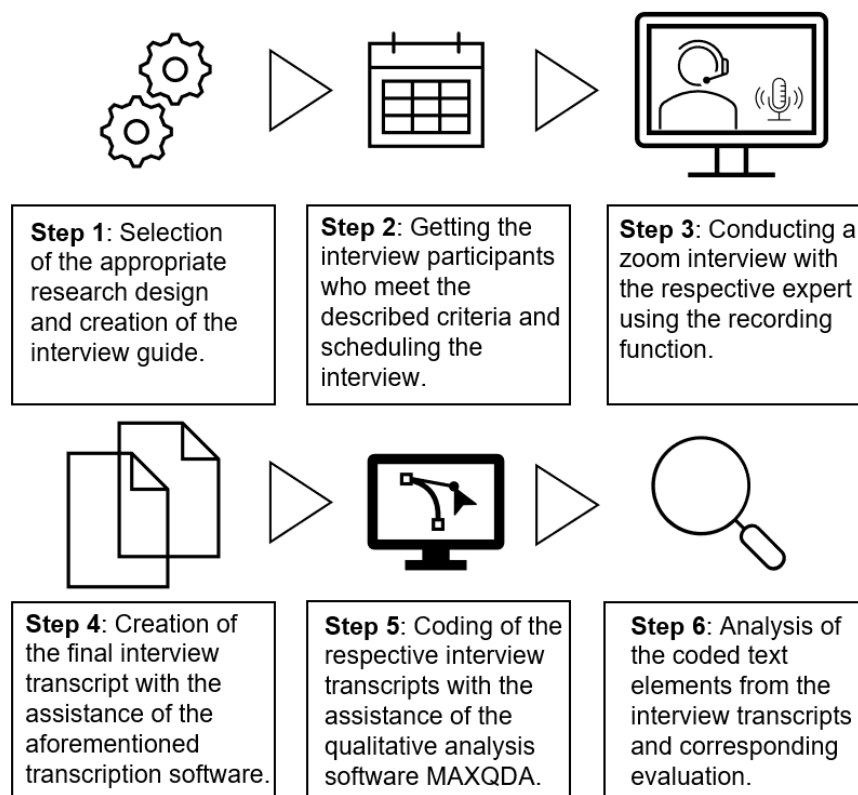


Figure 3.1: Procedure Research Methodology / Source: Own Elaboration

4 Results and Discussion

4.1 Evaluation of Kotter's Model Steps

4.1.1 Establishing a Sense of Urgency

The following table 4.1 lists the assessments of all interview participants concerning this step in the context of corporate digitalization.

Table 4.1: Evaluation Model Step 1

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	4
ID2	1
ID3	2
ID4	3
ID5	4
ID6	3
ID7	4
Average	3

The first step in Kotter's change management model, create a sense of urgency, was on average rated as *Fairly important* by the experts interviewed.

Most of the experts emphasized the importance of convincing the decision-makers, namely management, about the project in question and creating a sense of urgency among them. It was said that without the approval of management, it would not help if employees at lower levels of the hierarchy approved the IT/digitalization project and initiated a change, because only management could drive the project forward internally and ensure its success. Management must be persuaded to take on the new project in addition to its current goals and projects. According to the experts, it is more difficult to get management excited about digital topics, especially in smaller companies, because they often stick to the *status quo*.

However, the experience with the pandemic situation would have led to a greater sensitivity for IT/digitalization projects in the management of the companies and it is now easier to create a sense of urgency, as it became clear during the pandemic how critical an effective digital infrastructure in the company can be for survival. So, the urgency must be created with management so that management itself can guarantee the appropriate urgency for the corresponding project within the organization, and for management to understand this urgency, the IT/digitalization project has to be business critical. The urgency of the project and the ease with which management can create that urgency therefore also always depends on how important the corresponding added business value is to which it is conducive. Such

projects therefore do not convince management by themselves, but there must be a business-related added value that justifies the management's action.

Independently of this, however, there are also digital projects that are only indirectly business-critical, such projects being support or modernization projects for important IT systems in the company, for example, without which the company cannot operate. In these cases, no additional value is created, but the regular business could not continue without these projects.

The urgency of such a project is therefore never created at the project level, but always at the management level. All stakeholders at the highest level of responsibility must therefore be involved in the decision, it has been said, because IT/digitalization projects do not just affect individual departments of the organization, but often the entire company.

The experts shared the opinion that locating such projects outside of leading management is often the first step in the failure of such projects. In this respect, the experts agreed with Kotter that management must first be convinced for the project to be successful (Hayes & Richardson, 2008).

But not only on this point do the opinions of the experts interviewed agreed with Kotter's statements on this point, just like Kotter, the experts said that the initial urgency for such a project can be derived from an internal and external analysis and a corresponding comparison. At the internal level, the experts mentioned, that key figures can be analyzed, and at the external level, might be analyzed trends like digitalization and competitive data (Appelbaum et al., 2012; Brisson-Banks, 2010).

Where the experts differed somewhat from Kotter is in the classification of the need to create urgency throughout entire the organization, among the employees affected by the change, so that there is enough strength and conviction in the project to bring it to a successful conclusion. In accordance with Kotter, management must first be convinced so that it can then convince the employees. The participants referred, however, that convincing management is much more important than convincing employees. The latter usually resist change with all their strength and want to keep everything as it is, including their IT and digital infrastructure, because otherwise they fear additional work. This is the case even though it is precisely the employees affected by the change who know best that a change is necessary in their own department. It was reported that there are always employees who want to prevent a digital project, no matter how hard you try to explain the urgency and involve everyone in the project. The experts considered that most of the time and resources should be spent on convincing management and accepting that it will never be possible to convince all the employees affected by the project. Whereas Kotter saw management's conviction merely as a tool for convincing the employees affected by the change project and classified employee conviction as a success factor, the experts interviewed see only management's conviction as a success

factor. Convincing the affected employees was rated as a nice extra but not as critical to success because, it was reported, that employees are generally opposed to all changes and that if a company were guided only by the opinion of its employees, it would never embark on any new projects. This difference of opinion between Kotter and the experts interviewed may be since Kotter defined his change model for major change issues at the organizational level, and these may not be implementable without employee conviction at this level.

However, the experts interviewed who work in the digital sector appear to be more pragmatic and solution-oriented in their approach, placing the success of the company above the complete conviction of the employees, and tend to focus their approach on the most powerful people in the organization, namely management.

The following table 4.2 illustrates with which key statements mentioned by Kotter regarding this step the experts agree.

Table 4.2: Step 1 / Comparison of Key Statements

Key Statements	Kotter	Experts
Convincing management is crucial	Yes	Yes
No success without convincing employees	Yes	No
Urgency for change can be derived from internal and external analysis	Yes	Yes

4.1.2 Creating the Guiding Coalition

The following table 4.3 lists the assessments of all interview participants concerning this step in the context of corporate digitalization.

Table 4.3: Evaluation Model Step 2

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	2
ID2	4
ID3	3
ID4	3
ID5	4
ID6	4
ID7	3
Average	3.28

The second step in Kotter's change management model, build a guiding coalition, was on average rated as *Fairly important* by the experts interviewed.

The experts interviewed agreed that the correct composition of the guiding coalition for IT/digitalization projects is elementary to the success of the project. At this point, they already agreed with Kotter, who emphasizes in his remarks on this step how important the change team is for the success of the project (Appelbaum et al., 2012).

According to the experts interviewed, when forming the guiding coalition for the change project, it is essential to ensure that all stakeholders and representatives from the departments affected by the IT/digitalization project are involved in the change team without exception, in accordance with the principle of demand management. Kotter, like the experts, was also convinced that responsible persons and representatives of the various interest groups from as many departments affected by the project as possible should be included in the guiding coalition so that they can be represented in the best possible way in the influential change team to ensure that decisions can be made taking into account all relevant perspectives (Adin, 2021; Appelbaum et al., 2012).

Furthermore, the experts were also of Kotter's opinion regarding the following point in the composition of the guiding coalition, namely that not only top leaders should be represented in the change team but also responsible managers or representatives from the affected departments, because while the top leaders set the direction, the responsible managers in their departments ensure that the necessary changes are implemented and monitor progress (Appelbaum et al., 2012).

The experts considered, however, that not all affected employees can be involved, since this would not be possible from an organizational aspect, but key is that appropriate representatives of the affected employees or departments are included in the guiding coalition. The experts were unanimous in considering that these representatives can then act as multipliers or facilitators in their respective departments and provide regular information about all the benefits and insights relating to the project. The importance of the presence of such representatives was explained by the fact that the affected employees, namely the users of a possible new system, are among the most important people in an IT/digitalization project, as they must work with the new solution on a daily basis and know the context best. As a result, key users could possibly be appointed as user representatives. The presence of all affected parties is important not only for information purposes, but above all to represent their interests. All important technical concerns and requirements for the IT/digitalization project can thus be placed at the central point for the project, ensuring that the new solution is an ideal fit for the company and takes all important points into account. This is essential for the success of the project. The experts considered that this approach is just as important for smaller projects as for projects of a larger dimension.

Another important point mentioned by the experts interviewed was that the larger the organization in which the IT/digitalization project is to be rolled out, the larger the project usually is and the more top leaders from the higher levels of the hierarchy must be included in the guiding coalition for successful project completion. This is the case because larger digitalization projects can often be accompanied by change at the organizational level. Since the latter is always associated with costs, you need top leaders in the change team who provide sufficient budget for this. It is important, however, that these top leaders are open to digitalization topics and therefore also consciously want to invest in them. Kotter also believed that the more complex a change project is, the more important it is to have senior top leaders in the change team who drive the project forward (Pollack & Pollack, 2015).

Such projects should be promoted by top management not only for image reasons, as is sometimes the case. Even if these top leaders can contribute less to the subject matter of IT/digitalization projects than the corresponding experts from the departments concerned, their presence in the guiding coalition is nevertheless of utmost importance in order to remove possible obstacles and to motivate the entire organization until the project is completed. Here, too, the experts' opinion is in line with Kotter's opinion; in fact, Kotter also said that members of the guiding coalition should have a certain status in the organization in order to coordinate key issues and to positively influence the employees affected by the project with regard to the change (Huang & Huang, 2020). In addition, the participants referred that, they are important to act as contact persons for operational managers and employee representatives at lower hierarchical levels involved in the change context. Top leaders are therefore important for convincing those affected by the project. The added value of top leaders in a change team is undeniable, but as described, it is more strategic than operational. Of course, the importance of top leaders in the guiding coalition depends on the type and size of the IT/digitalization project and its impact on the organization as a whole.

The experts considered that it is of central importance that the guiding coalition, and above all, the top leaders in it, align their goals. Often, egos and individual agendas of influential leaders cause disagreement on the path to take, leading to the development of uncoordinated solutions rather than a centralized digital solution that is best for the organization. At this point, according to the experts, it is important that the so-called "must-win battles" are defined jointly among the top leaders before the start of the project; these represent common goals of the organization on which there can be no discussion. Accordingly, the topic of digitalization must be defined as a priority in the run-up to an IT/digitalization project. Kotter was also of this opinion and emphasized the importance of encouraging influential top leaders to work together as a team (Brisson-Banks, 2010).

An interesting point that was made in the interviews, and which addresses a very practical aspect of project work, is that when establishing the guiding coalition, the timing of contacting

top leaders who are important to the success of the project is crucial. They are usually very busy and if you involve them too early in a particular issue and then make them wait again, it is very difficult to get their attention again. Contacting and involving top leaders from lower levels of the hierarchy must therefore be very targeted. It needs to be the right time and the right question so that the top leader does not lose interest in the project.

In conclusion, the experts interviewed almost completely agreed with Kotter in their assessment of this second model step in the context of IT/digitalization projects.

The following table 4.4 illustrates with which key statements mentioned by Kotter regarding this step the experts agree.

Table 4.4: Step 2 / Comparison of Key Statements

Key Statements	Kotter	Experts
A diverse guiding coalition with all important stakeholders is crucial	Yes	Yes
Senior top leader needed for strategy, department manager for execution	Yes	Yes
The larger the project, the more likely top leaders are needed	Yes	Yes
Joint strategic alignment of the top leaders as a team is crucial	Yes	Yes

4.1.3 Developing a Vision and Strategy

The following table 4.5 lists the assessments of all interview participants concerning this step in the context of corporate digitalization.

Table 4.5: Evaluation Model Step 3

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	3
ID2	2
ID3	2
ID4	3
ID5	2
ID6	4
ID7	3
Average	<u>2,71</u>

The third step in Kotter's change management model, develop a vision for change, was on average only rated as *important* by the experts interviewed.

The experts interviewed agreed that an IT/digitalization project must have a vision, in the sense of a specific direction in which the project is headed in the long term and in which it fits in. Already at this point, the experts interviewed agreed with Kotter, who said in his remarks on this model step that a clear vision is an important success factor for a change project (Hayes & Richardson, 2008). It must be clear to all involved what the larger goal of the operational IT and digitalization strategy is, and when you intend to achieve something.

It is important for the employees affected by the project to understand why a particular IT/digitalization project needs to be carried out. You have to be able to plausibly explain to employees how the project fits into the overall strategy so that they are convinced, support the project and actively participate. According to the experts, it is essential to explain the reason for a change to the employee. It must be made clear to the affected employees why the change needs to be made and the reason for the timing of the change, and it must also be made clear what potential current or future problems will arise if the change project is not carried out. If the IT/digitalization project is not linked to an overarching vision or strategy, then you cannot answer these important questions to the employees. In addition, when it comes to digitalization strategy today, it is important to explain to the affected employees that their function and work in the company remains important and that it will not become redundant or put the job at risk due to digital solutions. The participants referred that the comprehensive explanation ensures that employees are not afraid of digitalization and are more motivated to actively drive the project forward thanks to the background information provided. In emphasizing the importance of the explanation with regard to the project, the interviewees agreed with Kotter, who also emphasizes in his comments on this step that it is of the utmost importance for the success of the project that the employees concerned have understood the vision and the goals, and that in order for this understanding to set in, it is absolutely necessary to create a vision first in order to explain the digital change project (Appelbaum et al., 2012; Galli, 2018).

Moreover, the experts interviewed agreed with Kotter on the consideration of human and emotional aspects in the vision, as evidenced by the fact that they are convinced that it is important to ease the fear of the IT/digitalization project for the employees concerned and to reassure them that their function and work force will remain important despite the new digital solution (Adin, 2021).

The experts considered, however, that in the digital context it is often quite simple to make the affected employees understand the vision, since the elements included, such as an improved IT infrastructure or new digital solutions for all, obviously contribute to a better performance of the company, to problem solving and to making work easier. Most of the changes are tangible for employees and the benefits are very concrete, but still this does not

guarantee that the employees concerned are committed to the project and want to actively drive it forward.

Finally, it is important to mention that the integration into an overall strategy and the corresponding explanations are truly only necessary for larger projects that have a concrete impact on the organization, the employees and their work. For example, according to the experts, a minor replacement of the in-house chat software does not need to be explained and contextualized to the extent described.

However, the most important point mentioned by the experts with regard to the third step in Kotter's change model is the flexibility required in the digital context when setting up a vision and the derived strategy. It is imperative that the vision and the derived goals remain flexible and adapt to changing circumstances. At this point, the experts interviewed for the research context of digitalization agreed with Kotter's comments on the third model step, because Kotter is also convinced that a vision must be flexible (Adin, 2021). However, flexibility is much more important in the digital context than in the contexts Kotter may have had in mind when he created his change model. The experts therefore agreed in principle with Kotter on the point of flexibility but attach much greater importance to this aspect than Kotter does, precisely because he did not create the model specifically for the digital context. In digital projects, and especially in longer projects, the experts said that the goals derived from the vision change over time, precisely because of the changing framework conditions mentioned above, and become "moving targets". In accordance with Kotter, a vision should be realistic, achievable and understandable, and the participants referred that, this does not contradict the aforementioned "moving target" concept from the digitalization context, as the vision and the derived goals remain realistic and achievable precisely because of the constant adaptation to the changing parameters, and the vision thus remains understandable for the employees concerned, as they see that the company is adapting to reality (Appelbaum et al., 2012; Hayes & Richardson, 2008).

If the company does not react to the changing framework conditions, then the vision and the goals would not be realistic and achievable and would therefore not correspond to Kotter's ideas of the same. The adjustments required in the digital context are therefore entirely in line with Kotter's ideas about the realism and achievability of a vision. As Kotter also mentioned, a vision should always face reality (Hayes & Richardson, 2008).

However, where the experts deviated somewhat from Kotter with the "moving target" concept is on the point of specificity; obviously the concreteness of the vision and the derived goals suffer as a result of the constant adjustments, in order to always be adaptable, these cannot be formulated as concretely as Kotter requires (Hayes & Richardson, 2008).

In the area of IT/digitalization, according to the experts, it is often not even worth developing a long-term vision and plan, as the technology and the market context can change very

quickly. A vision and the derived goals must therefore be agile and adaptable. The experts considered that the vision must be constantly adapted to influential factors such as customer needs, competition and, above all, technology. In today's volatile times of digital transformation, it makes no sense to initially have an overly fixed vision and a resulting IT/digitalization strategy. Due to the constant changes in technology, some experts have even mentioned that there should not be a dedicated digitalization and data strategy at all and that these topics should be characterized by maximum agility. It was mentioned that there should instead be rough roadmaps that show the framework and direction of the digitalization efforts, but regarding all other important elements, such as digital infrastructure, concrete methods and hardware, there should be the aforementioned flexibility. The participants referred that the rough direction should be given, but also the awareness that the way to get there can change constantly due to the changing circumstances in the digital context.

At this point, the experts differed from Kotter's statements, as he requires that the methods for achieving the goal be described initially in the vision. The experts interviewed, on the other hand, disagreed with the initial definition of the methods for achieving the goal and consider only the initial definition of the rough direction of the goal to be essential, as many things, and above all the methods for achieving the goal, change over time (Adin, 2021). The experts agreed with Kotter's conviction that there should be a reference roadmap with regard to the vision; despite the necessary flexibility in the digital context, a rough roadmap is important as an orientation (Hayes & Richardson, 2008).

In accordance with the experts, it makes sense to have a clear strategic vision of the future, but it makes less sense to define a definitive vision at the outset, because in the digital context a lot is only decided along the way and over time. In conclusion, the best approach to visioning, according to the participants, is a combination of the classic waterfall model and the more modern agile approach. Initially, a firm, reliable direction should be set, but there should also be agility in order to be able to adapt to new realities.

As a marginal note, the experts mentioned that despite all the necessary agility, it is very important to always remain consistent with the company's values and not to follow every technology trend. You should only ever opt and invest in a technology if the specific application of the technology in question is useful for the company. The new technology must always fit the company, the knowledge of the employees, the prevailing structure and the business case of the company.

The following table 4.6 illustrates with which key statements mentioned by Kotter regarding this step the experts agree.

Table 4.6: Step 3 / Comparison of Key Statements

Key Statements	Kotter	Experts
Flexibility as top success factor and thus less specific targets	No	Yes
Comprehensive clarification regarding the vision for employees is of great importance	Yes	Yes
A roadmap as reference for decisions/directional guide is important	Yes	Yes
Methods for attaining the objectives should be defined in advance	Yes	No
It is important that the vision includes human and emotional elements	Yes	Yes

4.1.4 Communicating the Change Vision

The following table 4.7 lists the assessments of all interview participants concerning this step in the context of corporate digitalization.

Table 4.7: Evaluation Model Step 4

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	4
ID2	4
ID3	2
ID4	4
ID5	3
ID6	4
ID7	3
Average	3,42

The fourth step in Kotter's change management model, communicate the change vision, was on average rated as *Fairly important* by the experts interviewed.

The experts interviewed agreed on the importance of communication when it comes to change topics, as everyone in an organization, regardless of hierarchical level, needs to understand the reason for which they have to carry out a particular activity. The topic is considered so important that the specific context, whether it is a matter from the digital/IT area or outside this area, is of secondary importance. Experience shows that a detailed explanation

of the vision, objectives and background results in more focused, efficient and motivated employees. At this point, the experts agreed with Kotter, who has also determined a correlation between good communication and a positive attitude among the employees concerned towards the change project (Appelbaum et al., 2012).

Precisely because the top leaders of organizations often massively neglect the topic of communication and underestimate how important the topic is for the success of the project, new roles are being created at the highest hierarchical level in the organization for the IT area in many companies, such as the position of CDO (Chief Digital Officer), so that there is someone at the highest management level who is not only responsible for the implementation and success of the corresponding IT/digitalization projects, but also to ensure that there is someone who is responsible for the key topic of change communication in these areas. The experts considered that it is very important that representatives from top management themselves become active in terms of communication. At this point, the experts again agreed with Kotter, who emphasizes that the communication of the change message should initially originate from top management (Hayes & Richardson, 2008).

It is very important that this representative of top management, together with his change team, manages to gain trust within the IT/digitalization project through appropriate communication. This is of central importance, since fear of change is very present when it comes to the digital sphere, according to the experts interviewed. In specific terms, the employees concerned are often afraid of no longer being relevant as a workforce, of having to undergo retraining, or of earning less money. This trust, which is important for the success of the project, can be achieved by communicating a job guarantee or corresponding training opportunities in the respective digital field. Only once a certain level of trust in the change has been established the concrete content of the change should be addressed and the opportunities offered by the change emphasized. The participants referred that the way in which the change is communicated is of utmost importance. At this point, the experts interviewed agreed with Kotter, who places correct and appropriate communication of the change message above the repetition of poor communication (Pollack & Pollack, 2015).

If the communication is not appropriate, the experts said, the employees affected will have no interest in the project and, in the worst case, will try to convince others of their opinion. So even the best strategy won't help if the communication is not right. This means that the employees affected by the change will be lost if the communication is not accurate and if they are burdened with wrong types of communication. The experts considered that communication at an equal level and not from the top down is very important. In accordance with the experts, appropriate communication is so important to the success of the project that it cannot be a by-product of chance but must be planned and recorded in an appropriate communication plan. For appropriate communication, the same change message should be communicated five to

seven times on five to seven channels. At this point, the experts interviewed again agreed with Kotter, as he also emphasized that every appropriate channel should be used to communicate the change message (Brisson-Banks, 2010).

The change message should therefore be communicated repeatedly so that the importance of the change becomes very clear to those affected. In business practice, the most important message is often the one that is repeated several times. Often, especially in the IT context, the number of times a change message needs to be communicated is underestimated. At this point, the experts agreed with Kotter's remarks, Kotter also emphasizes that it is of central importance that the change message is communicated sufficiently often and that it is repeatable. Indeed, Kotter believes that ideas are not absorbed until they have been heard numerous times (Appelbaum et al., 2012; Pollack & Pollack, 2015).

Even though, according to the participants, often only the email channel is used for communication, this is by no means sufficient. Statistically, the email channel has an effectiveness rate of only seven percent. While it should be a channel of communication, it should never remain the only one. The experts considered that the most important and most effective communication channel by far is personal communication. In accordance with the opinions gathered, all other channels are ranked further behind. Personal communication rounds, such as personal town hall meetings and personal question rounds, are much more effective than the anonymous email channel, according to the experts. Again, the experts interviewed agreed with Kotter, who defends that face-to-face two-way communication is much more credible and effective than one-way and non-specific communication (Appelbaum et al., 2012).

One interviewee, who was himself in a change situation at the time of the interview, said that he considered sincere, appreciative face-to-face communication to be much more valuable than being spammed with overloaded emails. The participants referred that the communication conveyed by a face-to-face meeting shows a certain appreciation by the responsible management and the change team, since time was intentionally taken to explain the change message in a structured way.

A special aspect of IT/digitalization projects is that those affected by the change should have the opportunity to access the spread information at a later point in time. There should therefore be an internal digital repository for the most important information relating to the change, which is frequently done via an established share point on the intranet. This communication tool can be used to answer or eliminate any doubts and questions that may arise during the aftermath of the communication.

About transparency in the context of communication, it is important to remain as transparent as possible at all times. In practice, however, according to the participants, it is

often not possible to communicate all the details with those affected by the change due to a number of regulations.

Even though the experts interviewed have concrete ideas about ideal communication, they also said that communication is something very subjective and that every employee affected has a different understanding of what constitutes appropriate communication. For example, everyone has different preferences regarding the right way to communicate and the communication channels to use. It also depends on the specific project and the size of the project in question whether communication is appropriate and how important the topic of communication is in each individual case.

Although, as mentioned above, it should be the task of senior management to design appropriate communication, the important role of cross-departmental managers should also be mentioned in this context. The experts considered that in an ideal change approach, these individuals should be members of the change team and act as change agents in their area of influence as representatives of the change. In accordance with the experts, implementing these change agents as part of a change project in the IT/digitalization area is an important success factor. In the domain of communications, they can relieve senior management of some of the communication workload and act as a direct point of contact for the affected employees in their respective departments. They are thus the voice of management in their area of influence, and in this way the change is tangible for the affected employees in the form of a familiar change responsible at departmental level. However, the transfer of tasks of this kind to the change agents must be formal and well organized. Only in this way can they be credible to the employees and contribute to the success of the project. Some of the experts interviewed would even limit the greatest communication efforts to these strategically important change agents for reasons of effectiveness. According to these participants, they should be the only ones to be kept always fully informed of every detail of the change project, so that they can act as a point of contact for their department's employees. In this opinion, the employees concerned would be overburdened with the communication of every detail of the change project and should only receive this from their change agent on request.

In accordance with these voices, the most important thing is that the affected employees receive enough information to be able to get their job done. The participants referred that the concept of change agents is an ideal tool for ensuring the success of IT/digitalization projects, especially in the critical domain of communication. Although Kotter mentions the importance of department managers, as possible members of the guiding coalition, in implementing and monitoring the progress of the change project, he does not envisage this detailed role for these individuals in the field of communicating the change message. Thus, the experts interviewed, and Kotter differ to some extent on this point.

Finally, it should be mentioned that communication is rated as one of the most important aspects of the entire change model. At this point, they agreed with Kotter, who also considers his fourth model step to be indispensable (Pollack & Pollack, 2015).

The following table 4.8 illustrates with which key statements mentioned by Kotter regarding this step the experts agree.

Table 4.8: Step 4 / Comparison of Key Statements

Key Statements	Kotter	Experts
Classification as one of the most important model steps	Yes	Yes
The communication of the change message should initially originate from top management	Yes	Yes
Ample communication channels should be used, and message must be frequently repeated	Yes	Yes
Face-to-face communication is the most important and effective form of communication	Yes	Yes
Implementation of change agents with extended communication function	No	Yes

4.1.5 Empowering Employees for Broad-Based Action

The following table 4.9 lists the assessments of all interview participants concerning this step in the context of corporate digitalization.

Table 4.9: Evaluation Model Step 5

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	3
ID2	4
ID3	2
ID4	2
ID5	4
ID6	4
ID7	2
Average	3

The fifth step in Kotter's change management model, remove obstacles, was on average still rated as *Fairly important* by the experts interviewed.

According to the experts interviewed, removing obstacles is one of the main tasks in any change project. It requires being constantly present on enough lines of communication, listening carefully, fostering relationships, and prioritizing which obstacle needs to be eliminated first. The experts considered that it is essential to analyze whether the existing way of working and project management is suitable for the upcoming IT/digitalization project. Especially in the digital field, organizations need to be flexible on these points and adapt their original approach to the requirements. For example, shortening the sprint time in a development environment or integrating customer feedback to design effective solutions can be possible solutions when applicable. Regardless of what should be adapted in a particular case, it is important to act quickly so that the project can be completed promptly. How many obstacles are encountered in such a change project in the digital field, and therefore how relevant this point actually is, varies greatly from organization to organization and is highly individual.

The participants referred that this depends very much on the corresponding digital maturity of the organization in the areas of leadership, employee skills, organization, culture, and processes. At this point, the experts agreed with Kotter, who also said that the structure and culture of an organization can certainly be an obstacle to change. These two elements can prevent new necessary behaviors from being encouraged, supported or possible (Adin, 2021; Hayes & Richardson, 2008). If the organization has a certain degree of digital maturity in these areas, meaning that it has already opened or turned towards digital to some extent in its core, then IT/digitalization projects will work better. One example cited by the experts is that the probability of success for such a project is generally higher in an organization that employs more technically skilled people than those who are averse to the digital topic. The points mentioned above therefore have a major influence on how much resistance and obstacles the IT/digitalization project encounters in the organization.

A special characteristic of the digital context mentioned by the experts is that the implementation of IT/digitalization projects is not only about removing obstacles, but also about creating obstacles in the former, undesirable direction. Obstacles that make the behaviors that the new project is supposed to prevent impossible. In the digital context, one such obstacle would be the shutdown of an existing system. These are obstacles that prevent the employees concerned from applying the old process. In accordance with the participants, the old system should therefore be shut down if possible or made unattractive so that the new digital solution has to be used. This special characteristic of creating obstacles is perfectly

possible in the digital sector more than in any other possible context. The experts considered that switching off the previous system or making it unattractive would thus be a push factor from that system, and making the new system attractive and user-friendly would be a pull factor towards it. The participants referred that the accessibility or attractiveness of the old system could also be classified as an obstacle to the implementation of the new system. Generally, removing obstacles in the digital context includes, for example, emphasizing user-friendliness, designing onboarding processes for the new system, creating training materials, and setting up a service hotline.

According to the experts interviewed, a lack of IT skills is often an obstacle to the success of digital projects, and this obstacle can be overcome through workshops and training. At this point, the experts interviewed agreed with Kotter, because Kotter also said that this model step is primarily about empowering the employees affected by the change, for example through appropriate training. Kotter also emphasizes that a lack of relevant skills can be an obstacle, as it prevents the affected employees from carrying out the activities required for the change (Appelbaum et al., 2012).

On this point, there were also experts who defended the use of the change agents mentioned in the previous point, arguing that the change agents, usually department managers, are very close to their employees affected by the change and therefore know best where there are obstacles that need to be removed. It is primarily the employees who see the existing problems in the corresponding processes and projects every day and know best what works and what is an obstacle. They know where optimization potential exists and where things can be improved. If they cannot eliminate the problems themselves, the change agents can act as a spokesperson for the affected employees in the direction of upper management. In this way, in accordance with the participants, the powerful upper management is informed about relevant obstacles and can remove them with their authority.

The experts considered that a big mistake that often takes place in IT/digitalization projects is that existing, poor processes are immediately digitalized without a comprehensive analysis of these processes. However, only a thorough analysis of such projects can often identify where things can be improved and where obstacles to the project's success need to be removed. At best, this should be done in close cooperation with the employees concerned, so that they can give their input directly and help shape the new process. In this way, the employees also experience appreciation. At this point, the experts interviewed agreed with Kotter's remarks for this model step, as Kotter also emphasized that there is a positive correlation between the involvement of the employees affected by the change and the success of the project (Appelbaum et al., 2012).

According to the experts, it is essential to analyze in advance and during such an IT/digitalization project what is obstructing the success of the project, otherwise the digitalization endeavor will not succeed.

The following table 4.10 illustrates with which key statements mentioned by Kotter regarding this step the experts agree.

Table 4.10: Step 5 / Comparison of Key Statements

Key Statements	Kotter	Experts
Factors such as the structure and culture of an organization can pose obstacles to the success of a project	Yes	Yes
Empowering the employees concerned, such as in the form of training, is one of the key points of this model step	Yes	Yes
There is a connection between the involvement of the affected employees in the process of removing obstacles and the concrete success of the project	Yes	Yes

4.1.6 Generating Short-Term Wins

The following table 4.11 lists the assessments of all interview participants concerning this step in the context of corporate digitalization.

Table 4.11: Evaluation Model Step 6

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	3
ID2	2
ID3	3
ID4	2
ID5	3
ID6	3
ID7	2
Average	2,57

The sixth step in Kotter's change management model, generate short-term wins, was on average only rated as *important* by the experts interviewed.

The experts interviewed agreed that the creation of so-called "short-term wins" contributes significantly to the morale and motivation of the employees affected by the change. It is a very important point, especially in large, long-term projects, to enable employees to work toward a specific milestone. Already at this point, the experts agreed with Kotter's comments on this

point, because he also said that real change takes time and that there is a risk that motivation will be lost if there is no visible project progress in the form of sub-goals (Hayes & Richardson, 2008). In the case of long projects, in accordance with the experts, it is particularly important to celebrate successes along the way. The experts considered that each department involved should be provided with appropriate milestones on the path to the larger objective of the company. This would enable employees at lower levels of the hierarchy to be given responsibility and thus actively involve them in the change process. In this way, senior management is no longer solely responsible for the change in each individual department but can hand over responsibility and act more as a sparring partner.

This point is particularly important in IT/digitalization projects in larger companies that do not have a strong sense of ownership among employees. By applying the short-term wins approach, employees tend to feel noticed and have the feeling that they can contribute to the company's success. The challenge here is, however, to ensure that the employees affected by the change are personally interested in the success of the company. This is easier, if the employees concerned identify with the company and its goals and are enthusiastic about working for it.

Here, as in most cases, communication plays a major role, because the short-term wins only develop their full effect in terms of motivation, energy release and persuasion if they are communicated appropriately. The participants referred that the achievement of short-term wins should be communicated widely so that the employees who have achieved this success feel seen, praised and appreciated, while the others see that success is possible. At this point, the experts agreed with Kotter, who also said that short-term wins are so important that they need to be communicated to all project participants and that the respective employees should receive recognition for these small successes (Adin, 2021; Brisson-Banks, 2010). According to the participants, one form of short-term wins on a smaller scale, at the daily level, would be, for example, the establishment of a "win-of-the-day channel" in the internal communication infrastructure, in which each employee can independently share his or her biggest success of the day with the other colleagues involved.

The experts considered that the creation of short-term wins is not a characteristic of IT/digitalization projects, but a component of every good project, as there is often a steering committee in front of which the project responsables must justify themselves on a regular basis. On such occasions, results must be delivered in the form of partial successes, known as short-term wins. Only if top management regularly acknowledges these partial successes will it maintain full support for the IT/digitalization project and guarantee the respective funding and any necessary resources. Top management needs constant success stories regarding the project so that they feel that progress is being made and that the goal is being achieved. Therefore, according to the experts, short-term wins are not only a motivational tool for

maintaining employee morale, but of significant strategic importance in keeping the attention of top management and everything that goes with it. Short-term wins are those that justify the investments of all kinds that have already been made in the IT/digitalization project, and those that underpin the investments that will be needed in the future. At this point, the experts interviewed agreed with Kotter, who said in his remarks on his sixth model step that short-term wins are important as an internal signal, especially to management, to show that the project plan is feasible and that one is going in the right direction (Hayes & Richardson, 2008; Pollack & Pollack, 2015).

The participants referred that a very important aspect of short-term wins is performance measurement, meaning the method used to determine whether a certain, previously defined short-term goal has been achieved. KPIs, or key performance indicators, have become established in practice for this purpose. In accordance with the participants, however, the use of these KPIs is highly problematic in practice, as they generally only track activities, although this alone is useless and overrated in most cases. Performance measurement methods should at best be used to provide data-based evidence of positive developments in terms of sub-goal achievement. The experts considered that there needs to be a shift in practice away from a focus on mere activities to a focus on results when it comes to the important tool of performance measurement. This is of utmost importance, as in practice much is made dependent on these KPIs. The entire attention of an employee in a project is usually focused on meeting his or her KPIs. After all, employees are often measured, evaluated, and paid solely on the basis of these KPIs. However, if this central tool, the KPI, is not effective, the employee concerned is working more on behalf of the KPI than on behalf of the company and its goals. In fact, data and the way in which it is compiled in a KPI can be a major distraction from the actual goal. It can distract management from the actual end results they are aiming for and cause them to do things that do not serve to achieve the goals. Only at this point do the experts deviated from Kotter's explanations, because he is completely convinced of data-based progress measurement in the form of KPIs and therefore makes no attempt to differentiate between a focus on activities and a focus on results. In his defense, however, it can be said that at the time the model was created, data-based performance measurement was quite advanced and the realization that a further differentiation is needed at this point could not yet be imagined.

According to the queried, however, it must be mentioned at this point that an IT development project cannot be completed without the execution of certain sub-steps and activities. Activity tracking is therefore also justified in the IT context. In the Scrum context, which is often used for such development projects, the sub-steps, called epics and features, could also be described as a form of the short-term-wins approach, in accordance with the experts. However, according to the participants, as a change manager, in order to keep an

eye on the big picture and not just individual technical developments, one must fundamentally focus more on the actual results and less on pure activities and the method of control.

In any change, whether it is an IT/digitalization project or any other, it is mainly about the people involved, and people are much more complex than can be mapped solely in activities and data. The need to manage the many variables and influencing factors of people often causes IT/digitalization projects to fail. The participants referred that you can't just focus on a list of activities without considering the real factor in performance measurement: The measurement of actual results.

As mentioned earlier, creating short-term wins has a positive impact on the morale of the employees involved, but more than that, creating short-term wins is especially helpful when the IT/digitalization project is not too popular with the employees involved at the beginning. Often, especially at the beginning, there are a number of employees who do not see the concrete benefits and purpose of the project. By quickly achieving short-term wins, however, these skeptics can often be shown that change is possible.

The experts agreed on the importance of short-term wins, on the need to measure performance correctly, but also on the importance of how to design these sub-targets. They said, for example, that short-term wins should not be ruined by linking them to a specific, inflexible deadline that cannot be met. The experts considered that this would create demotivation instead of motivation. Milestones should be progress- and result-related rather than deadline-related. They should always be based on the actual degree of progress. This approach should not be undermined by making it unachievable or unrealistic by setting too ambitious a time or target.

In accordance with the queried, however, the focus on a progress-based approach is easier to implement for internal projects than for external customer projects. These are also always time-bound, as the customer usually requires a time frame. However, according to the experts, the time component also plays a role in internal projects, precisely because of the need to regularly justify the project to top management.

Finally, the experts considered important in this step to use short-term wins as well as possible "short-term failures" for the purpose of change, because mistakes can also teach a lot for current and future projects.

Even though step six of Kotter's model was largely accepted by the experts interviewed, some believe that a suitable project structure and a full-time project manager are more important than the creation of short-term wins. In accord to these critical voices, the danger with the short-term-win approach is that it is lost sight of the big end goal and don't make significant progress because it were planned too many small, insignificant steps.

The following table 4.12 illustrates with which key statements mentioned by Kotter regarding this step the experts agree.

Table 4.12: Step 6 / Comparison of Key Statements

Key Statements	Kotter	Experts
There is a correlation between creating short-term wins and lasting motivation of the employees involved in the change	Yes	Yes
The employees concerned should receive recognition for achieving the short-term wins	Yes	Yes
The creation and achievement of short-term wins are important for strategic reasons, in order to justify the deployment of resources and the project itself to the management	Yes	Yes
Conventional KPIs are key to monitoring short-term wins	Yes	No

4.1.7 Consolidating Gains and Producing More Change

The following table 4.13 lists the assessments of all interview participants concerning this step in the context of corporate digitalization.

Table 4.13: Evaluation Model Step 7

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	2
ID2	2
ID3	2
ID4	2
ID5	3
ID6	1
ID7	3
Average	2,14

The seventh step in Kotter's change management model, anchoring new approaches in the culture, was on average only rated as *important* by the experts interviewed.

According to the experts interviewed, this step is important because even though everything may be planned in advance of an IT/digitalization project, the realization itself can be a major challenge. Constantly working toward the goal is essential since, in accordance with the queried, motivation often decreases after achieving certain partial successes in larger projects. At this point, the experts emphasized the special significance of communication in order to guarantee constant results by the employees involved. It is particularly important to explain the vision and the respective corporate goals behind the project, so that the employees

always know why certain things are being done. This is important so that motivation is maintained until the goal is reached and does not diminish once important milestones have been reached and nobody rests on their laurels. At this point, the experts interviewed agreed with Kotter, who in his remarks on this step was also of the opinion that after initial successes it is important to emphasize the reason and root cause of the change anew (Adin, 2021).

The experts considered that an IT/digitalization project always builds on the change it has triggered, as new use cases, topics and situations that were not previously considered emerge with the progressive use of the new system, so that even after the actual completion of the project, i.e., implementation, the project in question ensures further developments in the field of digitalization. At this point, the experts interviewed agreed with Kotter, who says in his statements that the momentum of initial successes - in an IT/digitalization project, implementation would be such an initial success - should be used to align other topics in line with the change (Appelbaum et al., 2012).

For instance, it is often the implementation and the associated training of employees that leads to further developments based on the project, so that an IT/digitalization project generally ensures ongoing change.

Particularly in the IT context, and contrary to Kotter's view, according to the participants, every individual, small step forward should be evaluated positively, so that even failure to achieve the overall goals does not necessarily have to be viewed negatively. At this point, however, it depends on the given context. At this point, the experts differed from Kotter, who insists in the explanations of his seventh model step that changes necessarily must be manifested or the project must be completely finished (Hayes & Richardson, 2008).

Digital solutions, on the other hand, do not need to be manifested or fully rolled out to have a positive impact in the organization. This means, therefore, that in the IT context, not only the comprehensive achievement of all targets is acceptable, but also that individual milestones often mean major progress considering the condition that prevailed before. As a rule, in accordance with the experts in the IT context, the progress already achieved is often very visible and the risk of the project being abandoned prematurely can therefore be classified as low. Often, the results of the effort are very tangible for the employees involved and there are opportunities to test them, which by itself is an important factor in maintaining motivation and demonstrating the effectiveness of the new solution.

At this point, the experts again mentioned the agility required for IT/digitalization projects. Even if this model step emphasizes continuity and not losing sight of the goal, it is, as already mentioned, particularly in the IT context, the case that the goals must be constantly and quickly adapted to the changing environment.

The fixation on a constant goal and the continuity mentioned in this step therefore do not quite apply to the IT context. Nevertheless, according to the participants, it is very important

to keep building on what have already been achieved. Especially because in practice, in accordance with the queried, it can often be observed that many projects are initiated but are forgotten over time and thus the necessary momentum is lost. Here, too, the experts interviewed agreed with Kotter, who also noted that any weakening before project completion can lead to a loss of momentum (Pollack & Pollack, 2015).

A certain degree of continuity and perseverance are nevertheless important at this point, according to the experts, and are therefore a particularly important leadership and communication task. The participants referred that this applies to projects of all kinds and can strengthen the ability to change and the agility of the company in the long term.

The experts considered that the so-called change agents could be used again for this point. Provided they are appropriately empowered and integrated into the organization, they can help to build up the competencies important for this point, such as the aforementioned continuity, and anchor them in the company. Furthermore, an appropriate team is often better able to maintain the necessary momentum at this point than individual managers.

Finally, the experts mentioned that more important than steady progress in an IT/digitalization project is that the work results are constantly scrutinized and progress so that all important information and processes are always taken into account. Especially in the IT context, preliminary processes and data used must always be correct so that the end result can be satisfactory. In accordance with the participants, this honesty and thoroughness in the own work is more important than pushing the project unconditionally forward and ending up with an unusable result that is of no use at all. Constant progress, considering the necessary agility, is therefore important according to the queried, but not at any price. It should not be forced. At this point, the experts' opinion differs somewhat from Kotter's, as he says without restrictions that constant progress is the ultimate goal to be pursued (Galli, 2018).

The participants referred that it is particularly important that there is no concealment of errors and improper work for the sake of supposed progress. As already mentioned, the initial goal, which according to Kotter should be pursued with all continuity, can be lost sight of in the IT context due to changing framework conditions, as long as it is conducive to the success of the project. The values of continuity and progress emphasized in this point must therefore be defined and evaluated slightly differently in an IT/digitalization project than in any other kind of project.

The following table 4.14 illustrates with which key statements mentioned by Kotter regarding this step the experts agree.

Table 4.14: Step 7 / Comparison of Key Statements

Key Statements	Kotter	Experts
It is important to constantly emphasize the origin of the change in order to sustain the motivation of the involved employees	Yes	Yes
Successes should be used to expand the change further	Yes	Yes
Weakening before target achievement detracts momentum	Yes	Yes
Unconditional progress is the ultimate goal in this model step	Yes	No
Only the complete achievement of the project objectives can be considered a success	Yes	No

4.1.8 Anchoring New Approaches in the Culture

The following table 4.15 lists the assessments of all interview participants concerning this step in the context of corporate digitalization.

Table 4.15: Evaluation Model Step 8

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	4
ID2	0
ID3	2
ID4	2
ID5	4
ID6	4
ID7	4
Average	2,85

The eighth step in Kotter's change management model, anchoring new approaches in the culture, was on average only rated as *important* by the experts interviewed.

In the eighth step of the model, the experts interviewed were surprisingly divided. To give the reader a better overview at this point, the critical opinions are highlighted first, followed by the affirmative ones.

The experts who were critical at this point believe that culture plays a subordinate role in the context of digitalization. According to these experts, an effective IT/digitalization project simply requires integration into the prevailing system landscape. Those critical experts believe that a company that invests in such projects and has a digital vision must have a basic affinity for digital issues without the need for this eighth culture-centric model step. Other experts agreed and believed this eighth model step bears little relation to IT/digitalization projects, since

technical possibilities can force the use of new digital solutions. The critical experts defended a more pragmatic approach at this point, saying that addressing the prevailing corporate culture would involve too much effort. Other critical experts considered this step to be important within the change context in principle, but do not see any concrete use case in the IT context due to the technical possibilities in an IT/digitalization project and hence see a certain irrelevance at this point. The integration of change into the culture is seen more as a side effect following the technical implementation and not as an aspect that should be actively shaped in advance.

However, the experts who were positive about this model step considered it to be extremely important in the context of digital projects, since the entire way of working in the companies concerned often has to be adapted to the digital context. In accordance with these voices, this change in working habits has a major impact on the prevailing culture. This digital culture must be characterized by openness and flexibility, so that it is always possible to adapt to changing needs and circumstances. The participants referred that this special mindset must be represented throughout the entire organization and must become part of the holistic corporate culture. If the culture does not adapt to the digital context, there is the risk, according to the experts, that the prevailing behaviors in the organization concerned will revert to "analog" non-digital patterns after the completion of an IT/digitalization project. At this point, the experts agreed with Kotter, who also said that non-integration into the norms of action and culture ensures that the changes do not last (Brisson-Banks, 2010).

These experts agreed that culture should be defined as the way things are done in a company, and based on this definition, in accordance with the participants, technology always has an impact on culture, since often things are approached differently in the company as a result of the implementation or change brought in by technology. At this point, the experts agreed with Kotter, who also states in his remarks on the eighth model step that culture can be defined as the ongoing, day-to-day activities. The activities refer to the way things are done (Appelbaum et al., 2012).

In other words, a technology-based change always influences the behavior of the affected employees, and cumulative changes in behavior have an impact on culture. The experts considered that the prevailing culture should not only be adapted to the technology, but the corresponding IT/digitalization project should ideally be designed in such a manner that the existing culture is able to produce the business targets. Following this idea, both elements, culture and technology, pursue the business goals and the culture is not only an enabler of the potential of technology. The participants referred that the culture should not be adapted to the implemented technology afterwards, but the respective organization should instead consider before and during an IT/digitalization project which culture it actually wants to have. Only after doing so will it be possible to adapt the respective technology and create this new,

intended culture. According to the queried, before the technology-based changes are anchored in the culture, the IT/digitalization project should be designed in such a way that, as far as possible, the desired culture that is conducive to the company's objectives is developed.

The experts considered that, at best, employee reward systems should be linked to the technology to be introduced, in such a way that the technology enables the employees affected by the change to achieve their personal goals. In this way, the commitment of the employees to embrace the changes implied by the IT/digitalization project is much higher. And since the reward system is an integral part of any corporate culture, this is a good tool to work on a technology affinity culture. At this point, the interviewed experts again agreed with Kotter, who also said that an integration of change into the corporate culture can take place if elements of change are integrated into the company-wide reward system (Hayes & Richardson, 2008).

In general, the queried who rated this point as important agreed that this step is particularly important for IT/digitalization projects that affect the entire company. Particularly in the case of large, influential projects with a large number of changes, it is important, in accordance with the experts interviewed, that these changes are also reflected in the corporate culture in some way. In the IT context, such projects could be ERP projects, for instance, in which all existing company processes and all work steps are often subjected to a digital transformation. The participants referred that a fundamental success factor in the eighth model step is that the employees affected by the change are empowered. A culture can only be adapted through a new mindset, and a new mindset can only be created by equipping employees with new competencies. This empowerment can be provided, for instance, by the change agents already mentioned in the previous model steps. At this point, the experts agreed with Kotter, who also said that a support structure should be created to ensure that training builds the competencies needed to integrate the change into the culture (Appelbaum et al., 2012).

According to the participants, it is also particularly important in an IT/digitalization project that the employees affected by the change are given a certain tolerance for mistakes, because punishing every mistake in such a change process significantly inhibits the likelihood of success. The experts considered that one reason why many leaders have difficulties with the topic of culture is that no one really knows how to approach this apparently abstract topic. At this point, the experts again defended a simplified definition of the term culture, namely the way people think and act. In accordance with the queried, change in the area of culture mainly succeeds through adapted processes, for instance in the area of communication and leadership, and also through an appropriate culture of mistakes and the communication of relevant competencies.

In this way, the topic of culture can be made more concrete and tangible for everyone, and leaders can be shown how they can make a difference in their organization through an appropriate approach to the topic.

The following table 4.16 illustrates with which key statements mentioned by Kotter regarding this step the experts agree.

Table 4.16: Step 8 / Comparison of Key Statements

Key Statements	Kotter	Experts
Merely an integration into culture and norms of action guarantee lasting change	Yes	Yes
Culture is defined as the way things are done	Yes	Yes
Elements of change can be integrated into the culture by integrating them into the company reward system, as this is an important pillar of the prevailing culture	Yes	Yes
Building new competencies among the employees involved is an important aspect to manifest the change into the culture	Yes	Yes
The change should be adapted as far as possible to the intended culture	No	Yes

4.2 The Experts' Model Adaptation Proposals

4.2.1 Proposals Based on Direct Statements

The following table 4.17 lists the proposals of all interview participants concerning a model adaptation. At this point, only the direct statements are taken into account.

Table 4.17: Experts' Model Adaptation Proposals (Direct Statements)

Proposal	Justification
Elimination of the sequence for the individual model steps/ Introduction of a tool-box concept	In accordance with experts, defining the sequence of the individual model steps from Kotter's change management model makes no sense in the IT context. Rather, the experts would consider the steps as elements of a toolbox that can be applied when needed, depending on the circumstances and situation. For the experts, Kotter's model steps are only one of many components of this tool-box approach, especially in the IT context.

Table 4.17 (Continuation)

Proposal	Justification
Step four of Kotter's model should be applied repeatedly	The experts considered that step four of Kotter's change management, communication, should not be applied at a specific point in a project, but at any time. At best from the beginning to the end of a project. Care should always be taken to communicate in a clear and appropriate manner.
Remove model step number eight for smaller projects	The participants referred that step eight from Kotter's change management model is too unspecific for the IT context. Furthermore, the usefulness of an application is doubted for regular projects. If, on the other hand, the basic way of working is changed by a very large project, then step number eight could also have its relevance.
Add stakeholder management to the model	According to the queried, stakeholder management is an important element that should be added to Kotter's change management model. Stakeholder management should be understood less as an independent model step and more as an element and basic framework of an IT/digitalization project that must be considered from the beginning to the end of the project. The experts considered that it is particularly important in such projects to respond quickly to the feedback received from the stakeholders involved and to incorporate it into the current work. It is important to obtain feedback from all stakeholders involved, both internally and externally, and to always try to include the end users in the development process in order to create the best possible result that fits the current requirements. The application of stakeholder management is intended to eliminate the top-down approach inherent in Kotter's model, which is very unsuitable for the agile IT context. As part of stakeholder management, it is important to bring all project participants together and keep them informed so that they all have the same level of knowledge. The participants referred that this is particularly important because the success of a project in the IT sector depends heavily on the participants being motivated, informed and actively involved throughout the entire duration of the project.

Table 4.17 (Continuation)

Proposal	Justification
Add an iterative and agile approach to the model	<p>In accordance with the participants, it should always be possible to adapt everything to the circumstances at any time. The development process should always take small steps and it should always be checked whether what has already been done makes sense and functions. A regular exchange with the project participants is essential to discuss the current requirements and to explain them again if necessary. In principle, constant communication with all those involved is an important element of the iterative approach. The experts considered that the iterative approach is a success factor in the IT context and includes trusting and error-tolerant cooperation between all parties involved.</p>
Realization of a feasibility analysis in the run-up to an IT/digitalization project	<p>The participants referred that it makes sense to carry out a feasibility study in advance of a project to identify possible obstacles and pain points. The planned project steps would be gone through and bad concepts and approaches could be removed. The goal of this approach should be to identify any factors that could hinder the progress of the project. According to the experts, feedback should be obtained from all project stakeholders involved in order to check in advance the level of acceptance among them with regard to the planned IT/digitalization project. If, for example, central decision-makers already have doubts about the project in advance, no further resources should be used to drive the project forward, as the prospects of success are low. The experts considered that feedback from stakeholders and the reasons for a possible rejection should be analyzed critically. Frequently, the wrong digital solution may have been chosen that does not fit the needs and ideas of the stakeholders. For a successful project, I therefore recommend carrying out a feasibility study in advance, as far as possible.</p>

Table 4.17 (Continuation)

Proposal	Justification
Implementation of change agents	The participants referred that it would be advisable to enhance Kotter's change management model by adding empowered change agents. These do not necessarily have to be new employees but could also be recruited from within the existing organization.
Add emotion management to the model	According to the queried, the correct handling of comfort zones, emotions, power and powerlessness is very important in a change project. When it comes to emotions, for example, it is important to know how to use them for positive action. When it comes to powerlessness, on the other hand, it is essential to know how to get out of this state. In this context, it can also be important to be able to identify different personality and stress types to be able to work together in the best possible way.
Add change coaching to the model	The experts considered that change coaching could be an important additional element in larger change projects in order to enable reflection in terms of the change and to expand competencies at a non-technical level. The participants referred that change coaching is mainly about releasing already existing resources in people. The latter has a direct positive effect on the culture and thus also on the upcoming change itself.
Regarding model step one: Modification of the definition	In accordance with the experts, it is important to define urgency in step one of Kotter's change management model, but care should be taken not to frighten the employees involved in the change. Kotter's definition has too negative connotations according to the participants. The communication of urgency should be cooperative and appreciative without threatening with drastic consequences. Otherwise, there is a risk of losing the best staff for the project.
Regarding model step three: Agility must prevail regarding the goals and methods for achieving them	Especially in an IT/digitalization project, the goals and methods for achieving them must be constantly adapted to current conditions, according to the queried. In this fast-moving context, it is impossible to define everything in advance.

Table 4.17 (Continuation)

Proposal	Justification
<p>Regarding model step six: Introduction of agile short-term wins and result oriented KPI's</p>	<p>The experts considered that the very important short-term wins in an IT/digitalization project should not be undermined by inherent unrealistic targets and timelines. Otherwise, they may have the opposite effect. They should, as far as possible, be linked to progress and always realistic, and thus achievable. To this end, they must always be adapted to the current circumstances. In addition, in accordance with the participants, the KPIs used for project management should be as results oriented as possible so that they can reflect positive developments. They should not only track activities, as these provide insufficient information in a complex change context.</p>
<p>Regarding model step seven: Increased agility in the pursuit of progress</p>	<p>The participants referred that it makes little sense in an IT/digitalization project to simply strive for as much progress as possible. It must always be verified that the path being taken is the right one and that the final solution is suitable for the organization and the end user. It is therefore also justifiable to temporarily dispense on progress instead of working in the wrong direction. This applies especially to the context of digitalization, as there are usually many stakeholders involved and circumstances as well as goals can change quickly.</p>
<p>Regarding model step eight: Adapt the selection of the digital solution to the intended culture</p>	<p>According to the queried, before embarking on a major IT/digitalization project, it is important to consider what kind of culture the organization intends in the long term. If possible, the digital solution to be implemented should then be selected on the basis of this culture. Consideration of the existing and intended culture should therefore play a role in the selection and planning of an IT/digitalization project, so that culture is not limited to a reactive state.</p>

4.2.2 Proposals Derived from the Experts' Individual Change Approach

The following table 4.18 lists the proposals of all interview participants with regard to model adaptation. Only proposals that could be derived from the experts' described individual change approach by the author of this work are listed here.

Table 4.18: Experts' Model Adaptation Proposals (Derived)

Proposal	Justification
Application of agile/lean change management	The experts considered that the application of an agile/lean framework is the basic framework for proceeding with technology projects in a change context.
Conducting an initial <i>status quo</i> /process analysis to assess the existing/required IT and data structure	The participants referred that this should ensure that the digital solution fits the system landscape and can be fed with reliable data. Only if the technical capacity and the data quality should be sufficient can the project be carried forward. At the same time, requirements are recorded, and an assessment is made of the potential for optimization as well as possible risks. In addition, the current and target processes are defined. In terms of demand management, it is particularly important at this point, according to the experts, to involve all the stakeholders involved so that they can communicate their requirements and ideas regarding the change.
Conducting an actual-target analysis	In accordance with the participants, requirements are recorded, and an assessment is made of the potential for optimization as well as possible risks. In addition, the current and target processes are defined. In terms of demand management, it is particularly important at this point, according to the experts, to involve all the stakeholders involved so that they can communicate their requirements and ideas regarding the change.
Setting up an operational project team	As part of the guiding coalition, experts said that IT/digitalization projects require an effective operational team that complements each other and has technical skills. A clear distribution of tasks is important so that everyone contributes to the success of the project.
Introduction of the KISS approach	The experts considered that the KISS approach (Keep it simple, stupid) should eliminate complexity in an IT/digitalization project as far as possible.

4.3 Evaluation of specific Design Thinking Elements

4.3.1 User Focus/Diversity

The following table 4.19 lists the assessments of all interview participants concerning this element in the context of corporate digitalization.

Table 4.19: Evaluation of the Design Thinking Element User Focus/Diversity

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	4
ID2	1
ID3	2
ID4	3
ID5	2
ID6	2
ID7	4
Average	2,57

The participants referred that the *Design Thinking* element *User Focus/Diversity* is important since if the users affected by the change do not work with the system introduced, the project can be considered a failure. A certain degree of agreement is therefore needed among the employees involved in order not to lose them.

On the other hand, the experts criticized that the current trend in user focus tends too much in the direction of empathy and harmony. The experts said that although it is important to find compromises with the users and to guarantee that the system will be used after implementation, not all resources should be put into user focus. Among other things, because according to practical experience, it is not possible to completely satisfy the entire user base. A certain amount of work and training cannot be taken away from the employees involved. In accordance with the queried, not everyone can be pleased in IT/digitalization projects, but it should be tried to please most of them.

The opinion was shared that user focus plays a role throughout an entire IT/digitalization project, so feedback and different perspectives are constantly solicited to reveal optimization potential. With regard to the aspect of user focus, the experts interviewed agreed with the theory to the extent that users should be involved so that the digital solution introduced is also used afterwards.

However, the point of empathy toward user needs, which is particularly emphasized in the Design Thinking theory, is disregarded by the experts. It is even mentioned that they

disapprove of this very empathy and often find the current focus on an empathic approach in practice exaggerated.

So, there is a clear deviation from the theory here. The understanding of user focus is thus largely limited to ensuring use by the employees involved and product optimization, but without emphasizing the aspect of empathy in particular.

The aspect of diversity was not particularly mentioned by the experts interviewed (Carlgren et al., 2016; Muluneh & Gedifew, 2018).

4.3.2 Problem Framing

The following table 4.20 lists the assessments of all interview participants concerning this element in the context of corporate digitalization.

Table 4.20: Evaluation of the Design Thinking Element Problem Framing

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	3
ID2	4
ID3	1
ID4	4
ID5	4
ID6	3
ID7	3
Average	3,14

The experts considered that the Design Thinking element *Problem Framing* is particularly important since no IT/digitalization project will work without a precise definition of the problem to be solved. The problem must be very explicit in order to be able to communicate the benefits of the solution.

This point is also important as practical experience shows that many companies do not even know what problems they actually want to solve at the beginning of a project. Often, according to the participants, not even top management is unanimous about the problem in question, which makes it essential to define the core problem at the beginning. Otherwise, all further efforts are obsolete and the project is headed in the wrong direction. The participants referred that it is therefore initially important to check whether the apparent problem exists actually in the way it is communicated in the organization.

Even if the experts interviewed agreed with the theory in broad terms, i.e., that one should not try to solve the problem directly so that one goes in the right direction, they do not mention the details mentioned in the theory. The origin of this Design Thinking element from the design

sciences does not seem to be relevant in practice. The original approach with a creation of new themes on the way to a completely new framing which can neither be assigned to the problem nor to the solution spectrum has not found its way into practice.

The understanding of this step is therefore limited to a challenge of the alleged problem in order to confirm its validity. In practice, there seem to be many interfering factors on the way to the correct problem definition, such as conflicts of interest, that a challenge of the problem at hand already represents a success. Without room, however, for a deep scientific examination of the original theory of origin of this Design Thinking element (Carlgren et al., 2016; Dorst, 2011).

4.3.3 Experimentation

The following table 4.21 lists the assessments of all interview participants concerning this element in the context of corporate digitalization.

Table 4.21: Evaluation of the Design Thinking Element Experimentation

Rating scale: Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0)	
Expert	Rating
ID1	4
ID2	1
ID3	1
ID4	2
ID5	4
ID6	4
ID7	2
Average	<u>2.57</u>

In accordance with the experts interviewed, the *Design Thinking* element *Experimentation* is of great importance, since basically all changes at the beginning are an experiment. It is never known with certainty whether the planned change in the form of an IT/digitalization project will achieve the intended goal.

The experts considered that it's no secret that change is accompanied by mistakes, hence the importance of experimentation and the need to plan for it from the outset. Especially since many companies often embark into new territory with a new IT/digitalization project. Everyone should be aware from the outset that things can go wrong, and this should definitely be taken into account in the initial planning in the form of creating resources for experimentation.

The participants referred that classifying the project as a large-scale experiment creates a safe space in which everyone has the courage to express their thoughts and opinions. At the beginning of an IT/digitalization project, a significant amount of experimentation is required to

find the best possible direction of development, according to the queried. After a certain point, however, a certain direction manifests itself and only smaller experiments are carried out.

However, the experts interviewed agreed that experimentation should always be used to try to create a better solution for users in the light of changing requirements. So, there should never be any resting on the already existing development status. According to the experts, one method of doing this is to conduct interviews in which the employees involved are shown the current stage of development; in the course of this, outstanding requirements can also be recorded. On the other hand, quantitative tests in the analytics area can also be carried out to determine where improvements can be made in the IT/digitalization project. The experts considered that these two methods have proven successful around experimentation.

Especially in the digital context, it is important to develop a certain willingness to experiment, since many things cannot be determined initially. When experimenting, the focus should always be on heading in the right direction, as intended by the end user, without wasting resources, and ensuring that all stakeholders are satisfied at the end of the project.

However, the basic prerequisite for this Design Thinking element is that budget is allocated for it in the first place. And this is precisely where a major problem of experimentation lies: it is expensive. In accordance with the participants, many companies would not be willing or able to pay for experimentation. It usually takes very IT-savvy organizations, such as IT companies or IT service providers, to ensure that this point is often given the necessary consideration. According to the practical experience of some experts, experimentation only works particularly well in small companies in which the employees involved are very committed to the project and technically skilled, so that they are able to provide valuable feedback on the project. However, according to the queried, the key users to be involved would first have to be identified in advance, since not every employee involved is suitable for experimentation.

In practice, however, most employees usually do not have sufficient capacities and technical skills to act as development partners in the field of experimentation. Experimentation is therefore not applicable in practice for many companies.

If experimentation, which as mentioned above costs time and money, is not considered in the initial project planning for these very reasons, this must, in accordance with the experts, be described as a planning error, as it is too important.

About the Design Thinking element experimentation, the experts interviewed fully agreed with the related Design Thinking theory. As in the theory, the experts advocated trying out solutions and an openness to mistakes. The theory also emphasizes, as do the experts, that only by experimentation can the right solution and approach be found and the potential for optimization revealed. Particularly in the digital context, there are always numerous alternative solutions, so that both theory and practice agree that experimentation is the only way to avoid making hasty decisions in one direction. The interaction between the end user and the solution

to be introduced, which is highlighted in theory, is also at the focus of this topic for the experts. From a purely theoretical point of view, there is thus total agreement between theory and the experts interviewed; only feasibility and funding are likely to pose a challenge in practice (Carlgren et al., 2016; Huang & Huang, 2020).

4.4 Elaborated Change Management Model

Based on the comments and assessments of the experts interviewed on Kotter's eight model steps and the proposed changes derived from the direct interview and the experts' individual change approaches, a coherent summary is now presented in a model that the author of this work created for this purpose. This model attempts to reflect the author's interpretation of the information collected as best as possible in order to establish a change management model that is valid for major IT/digitalization projects. The following values are at the center of the model:

- Agility
- Participation
- Communication

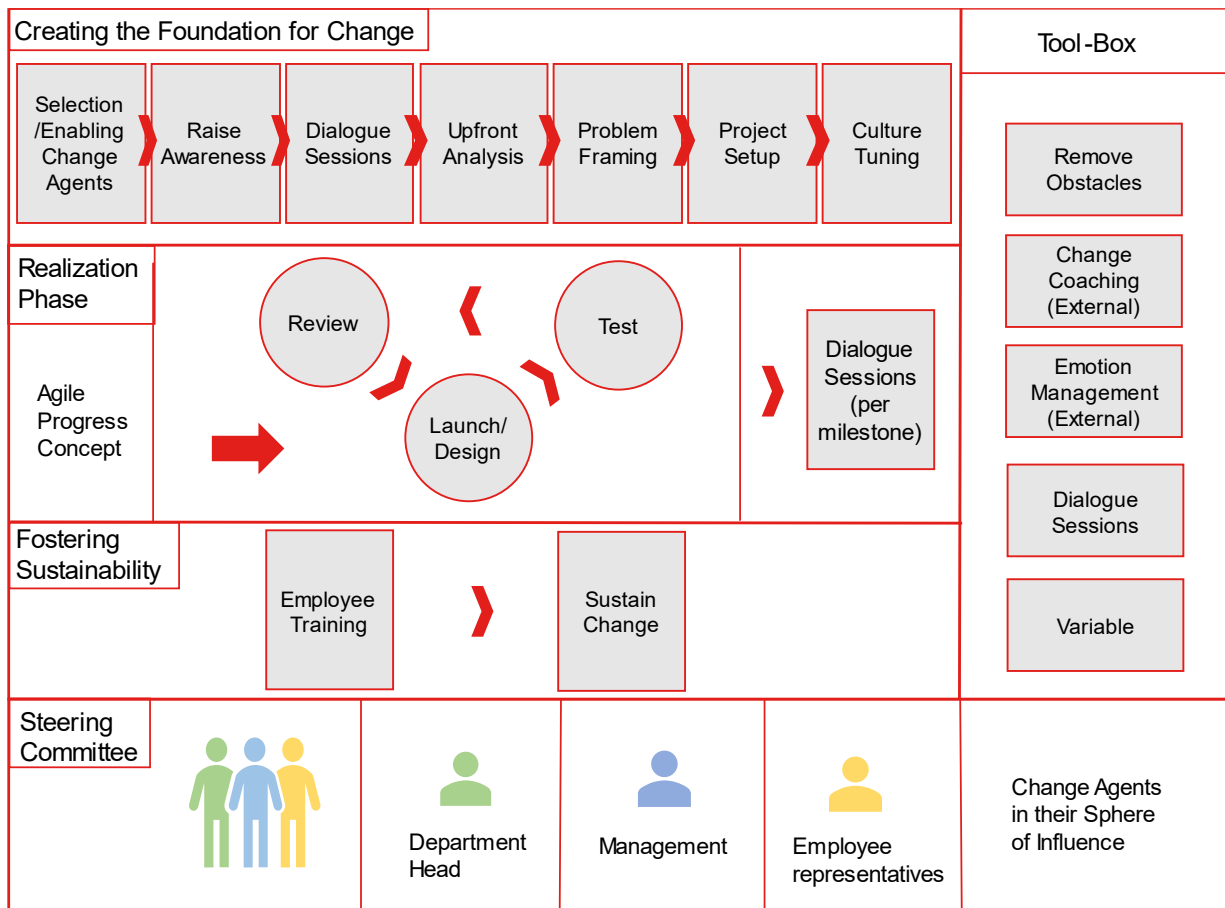


Figure 4.1: Elaborated Change Model for Major IT/digitalization Projects / Source: Own Elaboration based on Kotter's Change Management Model (1996), specific Design Thinking Elements and the Interview Results

The model visible in figure 4.1 consists of three phases, the first of which, Creating the Foundation for Change, lays the foundation for lasting participatory change. The second phase, the realization phase, is about implementing the actual change in a project-based, iterative, agile approach. The third phase, fostering sustainability, aims to anchor the change in the company in the long term. In addition, a tool-box concept is in place in which various elements can be used depending on the situation and requirements. The change project is also constantly accompanied by a steering committee, in which management, the department head and employee representatives are represented and constantly exchange information about potential obstacles, new requirements and current progress.

The focus of this change model is on agility, participation and communication. Agility, as it was the most frequently mentioned requirement for a modern IT/digitalization project by the experts interviewed. In particular, they emphasized the need for flexibility to respond to new requirements and to be able to make constant adjustments, as new requirements are constantly arising, especially in the context of digitalization.

Participation is also a focus of this model, since participation increases acceptance, and an IT/digitalization project can ultimately only be considered successful if the end users appreciate using it.

The last core element of the model created is communication, which takes on a central role from the beginning of the model to the end, not only through the constant communicative and active support of the steering committee, but also as a common thread throughout the entire model. Especially in a larger project with many stakeholders, constantly changing requirements and a need for convincing, communication is the foundation of a successful IT/digitalization project.

The special feature of this model is that it is possible to skip back to a previous step at any time if the next step is considered premature. A flexibility that Kotter's model does not provide in this form, but which is essential, especially in the context of IT/digitalization projects, as the research results reveal. Likewise, steps can be skipped if they are not required for a particular organization. Thus, a logical basic sequence is given, but the path that is ultimately followed is characterized by utmost agility.

First Phase: Creating the Foundation for Change

As mentioned earlier, the first phase of the model is about creating the basic structure for a successful project. Not in a top-down approach like in Kotter's model, but through the active involvement of the employees concerned.

As with any IT/digitalization project, a review of the technical situation and processes must be carried out and an agile project plan drawn up. Likewise, the culture is already being worked on in this phase in order to adapt the tools and mindset of the employees concerned for the coming change.

The following table 4.22 explains the individual steps of the first model phase.

Table 4.22: Elaborated Change Model - Creating the Foundation for Change

Model Step	Comment
Selection/Enabling Change Agents	<p>Change agents in this model are the interface between the respective operational teams and the department head and management. They are permanently represented on the steering committee and communicate important updates, requirements, and current progress not only to the department head and management, but also to their own operating team. Change agents are the first point of contact for the department head, management, and the digital solution provider for the processes for which they are responsible. Change agents are key users in their area and should have a strong understanding of change processes and business processes, as they must constantly analyze what is required. They must also have good communication and moderation skills. If the selected change agents do not yet have the necessary skills to perform their role, they should be enabled accordingly. Ultimately, they are responsible for communication and successful implementation in their area of operation. At best, the operational teams themselves decide who will represent them on the steering committee. This ensures that the change agents are uncontested and have the necessary authority.</p>
Raise Awareness	<p>In this step, the affected employees are informed about the IT/digitalization project for the first time to explain the purpose and background behind it. At this point, particular emphasis is placed on appreciative communication, so that the valuable work done by the affected employees up to this point is emphasized. At this point, in addition to the management and the department head, the change agents also take part, explaining the upcoming change in their teams and providing answers to questions. It is important in this step not to take the affected employees by surprise or frighten them. Appreciation and respect for the previous work and the employees are the focus of this step. Positive future prospects and the advantages should be explained. It should also be emphasized that everyone is needed with all their knowledge and experience.</p>

Table 4.22 (Continuation)

Model Step	Comment
Dialogue Sessions	<p>As there are many questions and concerns among the affected employees after the announcement of the IT/digitalization project, dialogue sessions are organized with the management, the department head as well as the change agents, in which each individual comment is discussed in small rounds, face to face. This appreciative, direct communication is intended to make the affected employees feel valued and appreciated. In addition, the dialogue sessions are used at this point to collect ideas, concepts and suggestions for setting up an effective project plan and ultimately for a successful project. The employees concerned know their work area and thus the optimization potential best and should therefore be given full scope to use their creative power. They should be shown that they are the shapers of change.</p>
Upfront Analysis	<p>As with any IT/digitalization project, the existing technical infrastructure, the data structure and the affected processes must be analyzed in advance. It must be ensured that the selected solution fits completely into the system landscape. This <i>status quo</i> analysis is carried out by the change agents, as they are also the key users in their area and are most acquainted with the processes. An actual-target analysis is performed, in which the technical current status is recorded as well as the target process. In this process, new requirements for the digital solution are recorded. Ultimately, this step should ensure that the digital solution can be fed with the necessary data and fits into the existing infrastructure. Possible risks and optimization potential are also highlighted at this point.</p>

Table 4.22 (Continuation)

Model Step	Comment
Problem Framing	<p>After all opinions and comments received from the affected employees and the upfront analysis performed with all its insights the problems initially assumed by management for certain processes during the selection of the digital solution must be redefined and evaluated by the steering committee. Issues that management did not take into account when selecting the digital solution are now discussed again, so that adjustments can be made with the digital solution provider if necessary. Problem framing is important to define the essential problems to be solved by the new solution and to avoid working prematurely in the wrong direction. Without the preceding dialogue sessions and the upfront analysis, however, this would not be possible, since only the input of the affected employees and the technical insights makes it clear whether the right direction is being taken. At this point, based on this information, the plan specified by management is critically scrutinized and different options and paths are evaluated. The goal here is that the right direction is determined at the end of the process.</p>
Project Setup	<p>After the dialog sessions, the upfront analysis and the problem framing, a realistic project plan can finally be drawn up by the department head and the change agents. In this plan, agile project goals and short-term wins are defined, taking into account the previous input. The concrete implementation plan is drawn up and the final operational teams are composed. Milestones are also set and communication channels are organized. The measures for cultural work are also defined, which conclude the first phase.</p>

Table 4.22 (Continuation)

Model Step	Comment
Culture Tuning	Since it is important for a successful IT/digitalization project that the employees concerned have the right mindset and the necessary skills before the actual change work, it is necessary to conduct suitable workshops. Not only should it be guaranteed after the project that the implemented solution is in line with the prevailing culture, but the prevailing culture also plays a role during the implementation of the change. Only with the right mindset will employees approach the change with motivation and contribute effectively. Necessary competencies facilitate work with new technologies and advance the change process more quickly. Mindset and competencies are inseparable elements of the corporate culture, important for the execution of the project and therefore to be located in the first phase of the model.

Second Phase: Realization Phase

In the main phase of the IT/digitalization project, a key requirement of the experts interviewed is implemented: the agile approach. This agile approach is applied in the respective operational teams and is based on the short-term wins established in the project setup.

These short-term wins specify the day-to-day work objectives of the operational teams. Each operational team includes a change agent who is the key user and expert for the for the area on which the work is done.

Without going into the theory of agile methodology at this point, agile for the purposes of this change model means that concepts for achieving the short-term wins are created collectively in the operational teams, tested, discussed again and, if necessary, adjusted again until the requirements are met. In this way, changes can always be adapted to the changing conditions in the digitalization context.

The iterative, agile approach means that all small progress steps are jointly designed, tested, discussed and otherwise adjusted again. The agile approach is the only way to work effectively in the digital area. In this step, too, the focus is on the collaborative design of the change by the employees involved.

The following table 4.23 explains the individual steps of the second model phase.

Table 4.23: Elaborated Change Model - Realization Phase

Model Step	Comment
Design	The design of the progress is based on the short-term wins of the implementation plan and solutions are found jointly in the operational teams. The operational teams organize their own working methods and can adjust the short-term wins according to progress and the prevailing circumstances. The focus here is on the power of collective design.
Test	This step is about testing and experimenting the developed progress. In the digital context, this step is indispensable; any progress must always be tested for its effectiveness, as it is difficult to make any statements about the actual effectiveness in advance.
Review	During the review, every advance is discussed internally in the operational team and feedback is obtained from all those involved. This collection of different opinions guarantees that development is going in the right direction. These internal feedback rounds are an essential part of the agile approach.
Dialogue Sessions (per Milestone)	The project plan drawn up in the first phase includes milestones as well as agile short-term wins. Milestones are specific target points on the way to project implementation and are achieved if certain short-term wins are achieved. After these milestones have been reached, dialogue sessions are scheduled with the remaining operational teams and the steering committee. Outside of the usual exchange between the change agents and the steering committee, the remaining members of the operational team get a chance to speak and share the most important changes and insights. These face-to-face meetings create cohesion at the project level and share learning with other teams. So these meetings are not just about sharing updates, but the operational teams benefit from each other and can better drive change.

Third Phase: Fostering Sustainability

The final phase consists of anchoring the change in the organization in the long term so that the employees concerned do not fall back into old patterns of behavior. Even though the model aims to avoid this from the outset, special attention is paid to this topic again in this third and final phase of the model. Furthermore, measures are used here that are difficult to implement before the completion of the majority of the operational work.

The following table 4.24 explains the individual steps of the third model phase.

Table 4.24: Elaborated Change Model - Fostering Sustainability

Model Step	Comment
Employee Training	Only after the majority of the change work has been done and the procedures and processes have been defined is it possible to start with the specific employee training. The change agent for each area prepares the training materials due to his or her expertise. The training ensures that the employees concerned are able to use the digital solution properly and have all the necessary skills. Only when end users are confident in using the new solution will they accept it in the long term.
Sustain Change	In the final step of the model, the corporate culture is worked on again. The company's reward system is linked to the new solution so that the employees involved have a strong interest in integrating the new solution into their daily work as well as possible. In addition, the company's operating instructions will be adapted so that its use becomes more and more part of the daily work routine. If necessary, final culture workshops are held again to manifest the new agile approach to digital changes, also for the future. It must be emphasized that the digital age will bring constant change and that employees now have the necessary skills for the coming times. It is also very important that all employees involved are appropriately celebrated and that the success of the implementation is communicated to the entire company. Appreciation of all those involved is very important at the end of the project.

Tool-Box Concept

The Tool-Box represents a set of specific instruments for targeted problem solving. These are elements that are essential but are difficult to locate at a certain point in the model. The tools are to be perceived as solvers of constraints and are intended to pave the way for change. They can be used at any time and to the desired extent.

The following table 4.25 explains the individual steps of the model's Tool-Box.

Table 4.25: Elaborated Change Model - Tool-Box

Instrument	Comment
Remove Obstacles	This is one of the main elements of any change and the most important task of any change manager. This tool is so important that it cannot be placed at a specific point in the model. It must be used constantly, as the situation requires. Especially in a larger IT/digitalization project, there will be many obstacles of all kinds that need to be removed, so this tool will have to be used frequently.
Emotion Management (External)	The correct handling of comfort zones, emotions, power and powerlessness is very important in a change project. This coaching emphasizes the empathic approach of this model and should at best be carried out by an external coach due to the distance to the project situation that may be necessary.
Change Coaching (External)	Change coaching could be an important additional element in larger change projects in order to enable reflection in terms of the change and to expand competencies at a non-technical level. Here, too, an external coach would be useful in order to reach a better level of discussion.
Dialogue Sessions	In order to do justice to the pillar of participation, dialogue sessions should always be organized when it is appropriate for the progress of the project.
Variable	The variable should always be used to apply the tool that is currently needed, regardless of the recommendations of this model. A model can never represent the abstract reality and this element in the tool-box should do justice to this.

Location of Kotter's Model Steps in the elaborated Change Model

In table 4.26, it will be made clear to the reader of this work at which position, if at all, Kotter's model steps are located in the elaborated change model.

Table 4.26: Kotter's Model Steps in the elaborated Change Model

Kotter Model Step	Model Phase in the Change Model	Model Step in the Change Model	Justification
1. Establishing a Sense of Urgency	-	-	This work focuses on examining the relevance of Kotter's model steps at the project level. The initial urgency of a large IT/digitalization project, however, is created at the organizational level by top management and therefore does not find its way into the model created. At the project level, the aim is merely to inform the employees concerned in an appreciative manner and to generate enthusiasm.
2. Creating the Guiding Coalition	Creating the Foundation for Change	Selection/Enabling Change Agents	The guiding coalition mentioned in Kotter's second model step is represented in the created model by the steering committee, which is completed right at the beginning by selecting and enabling the change agents. The change agents are the most important element of this leadership union and ensure the active participation of the affected employees in the change process.
3. Developing a Vision and Strategy	Creating the Foundation for Change	Project Setup	The vision and strategy for a major IT/digitalization project are created outside the project level and are therefore not included in the model that. However, the concrete goals derived at project level are defined after the insights from the dialogue sessions and the upfront analysis have been obtained.

Table 4.26 (Continuation)

Kotter Model Step	Model Phase in the Change Model	Model Step in the Change Model	Justification
5. Empowering Employees for Broad-Based Action	Tool-box	Remove Obstacles	As already mentioned, this step is located in the tool-box section of the created model, since it has to be used several times and cannot be located at a specific position in the model. For the sake of simplicity and to better suit the purpose of this step, it has been renamed as Remove Obstacles.
6. Generating Short-Term Wins	Creating the Foundation for Change	Project Setup	The short-term wins mentioned in Kotter's model are also of great importance in the model created, as they represent the goals that the operational teams work towards in the realization phase. As already mentioned, the achievement of a certain number of short-term wins represents a milestone. The short-term wins are initially defined in the project setup step of the model, but can be updated by the operational teams depending on progress and circumstances.
7. Consolidating Gains and Producing More Change	-	-	The experts interviewed considered this step to be the least relevant for an IT/digitalization project and it was therefore not included in the model. However, constant progress is ensured in the model by the focus on agility, participation and communication.

Table 4.26 (Continuation)

Kotter Model Step	Model Phase in the Change Model	Model Step in the Change Model	Justification
8. Anchoring New Approaches in the Culture	Creating the Foundation for Change/ Fostering Sustainability	Culture Tuning/ Sustain Change	In contrast to Kotter's change model, in the model created, culture work takes place not only at the end of the model but also in the preparation phase. As already mentioned, it is important that the mindset and the required competencies are adapted to the implementation phase of the change so that the employees concerned are able to drive the change forward effectively. In the final step of the model, as in Kotter's case, work is done on anchoring the change in the existing culture in the long term.

Location of the Design Thinking Elements in the elaborated Change Model

In table 4.27, it will be made clear to the reader of this work at which position, if at all, the aforementioned Design Thinking elements are located in the aforementioned elaborated change model.

Table 4.27: Design Thinking Elements in the elaborated Change Model

Element	Model Phase in the Change Model	Model Step in the Change Model	Justification
User Focus/Diversity	Creating the Foundation for Change/ Realization Phase/ Fostering Sustainability		Due to the basic pillars of the model - agility, participation and communication - the Design Thinking element User Focus/Diversity is also indirectly in the spotlight of the model and can therefore not be located at any particular point in the model. The emphasis is constantly on the affected employees and thus the end users of the digital solution, who can actively participate in the change. In the realization phase, the testing carried out by the operational teams always ensures that the requirements of the end users are met.
Problem Framing	Creating the Foundation for Change	Problem Framing	This element was emphasized by the experts interviewed as the most important of the three elements listed, therefore it was included without alteration in the preliminary phase of the change. After the dialogue sessions and the upfront analysis, the problem is defined anew in the created model. This step is particularly important, since it is necessary to ensure at the outset that the work is being done in the right direction and that resources are being used effectively.

Table 4.27 (Continuation)

Element	Model Phase in the Change Model	Model Step in the Change Model	Justification
Experimentation	Realization Phase	Test	<p>This step is one of the main components of the realization phase, in which each change is tested for effectiveness by the operational team following joint conception. At the same time, it is ensured that the requirements of the end users have been met. According to the queried interviewed, this step is particularly important in the context of digitalization, as it is difficult to make precise predictions about the functionality of the changes developed in advance.</p>

Word Combinations

The following chart illustrates the most frequently word combinations with a minimum frequency of two used by the experts interviewed during the interviews. For better results a stop word list was used to exclude redundant terms.

Surprisingly, it is not the word combination *change management* that is at the center of the chart, as would be expected, but the word combination *change agents*. This impressively illustrates the important standing of this change management tool among the experts surveyed. This is also one of the reasons why change agents play a central role in the change model which was previously presented.



Figure 4.3: Word Cloud - Word Combinations / Source: MAXQDA (Version Plus 2022, Release 22.5.0)

4.5 Summary of the Results and Discussion

The interview of experts and their assessment of Kotter's change model steps in the context of IT/digitalization projects showed that many aspects mentioned by Kotter are still relevant today in any change context, regardless of the specific discipline.

For instance, half of the eight steps in the model were rated by the experts interviewed as *Fairly important*, the second-highest rating. For the most part, the experts also agreed with Kotter's core statements on the corresponding model steps. The model step with the highest rating is model step number four, *Communicating the Change Vision*, with a rating of 3.42, whereby 4 is the highest possible rating level. The model step with the lowest rating is model step number seven, *Consolidating Gains and Producing More Change*, with a rating of 2.14, where 0 is the lowest rating level.

However, what the experts interviewed criticized, particularly with regard to the research topic of change management in corporate digitalization, was that the model is excessively top-down oriented, and the employees involved are given too little of a role in shaping change. At the level that was the main focus of the work, the project level, the initiation usually comes initially from management, but according to the experts, the employees involved should contribute to the change. Otherwise, there is a risk that the digital solution will not be accepted and used by the end users.

Another point that should be given greater importance in the course of IT/digitalization projects, according to the queried, is communication. Such is the case since there are always multiple stakeholders involved in such a project and the requirements are constantly changing. Only a focus on communication, in accordance with the experts, ensures harmonization of all stakeholders and requirements and thus successful project completion.

According to the participants, it is essential to maintain an agile approach when it comes to digitalization. At the core of this is the need for flexible adaptation to changing circumstances and a collaborative way of working, especially in a fast-moving context.

Based on the comments and suggestions of the experts interviewed, three requirements can be identified for an adapted change management model: agility, participation and communication.

The change management model created by the author of this work was based on these three pillars. This model attempts to represent the entirety of the research results in the best possible and most coherent way. A large part of Kotter's model steps has found their way into it, even though in a way adapted to the digital context. Likewise, all three Design Thinking elements have been considered in the model, which the experts interviewed unanimously rated as very suitable for IT/digitalization projects.

5 Conclusion, Limitations, Suggestions and Recommendations

5.1 Conclusions

The aim of this work was to examine the relevance of John P. Kotter's change management model, which is classified as a reference in the business world, for IT/digitalization projects in the context of corporate digitalization (Kotter, 1996). A further aim was to identify the success factors from practice for such projects.

For this aim, the qualitative research method of in-depth interviews was chosen, whereby experienced experts operating at the interface of digitalization and change shared their experience on the topic.

The results of the work demonstrate that Kotter's reference model does indeed contain important elements of a change project but cannot be used as a guide for IT/digitalization projects. The research demonstrated that successful change in the context of corporate digitalization depends on agility, participation by those affected by the change and extensive communication. These three pillars pave the way to success, with communication as the main enabler.

Even if change management models are tempting due to their apparent simplicity, facing the exposed research results it must be highlighted, that there are no universally valid rules for the successful management of change. Change is always a highly individual and organization-specific issue, which is why models can only be used as a rough guideline and thought support.

Linear models, such as Kotter's change management model first published in 1996, increasingly no longer fit into a volatile world and ever more complex change contexts, especially due to digitalization.

Since in such complex times one has hardly any influence on the many factors influencing a change and since the density of change is constantly increasing due to the digital transformation, long-term change competence seems to be more important than short-term change planning. This change competence should be built around the pillars of agility, participation and communication, as the research findings of this work reveal. The path to success, however, must be found by each organization itself.

In the following, the research questions mentioned in the introduction are answered, considering the research results obtained.

RQ1: What is the relevance of the individual steps of Kotter's change model in corporate digitalization?

As the interview of experts made clear, the eight steps in Kotter's change management model are still relevant when considered individually, since most of them are central elements of any change process, regardless of the specific subject. As already mentioned, half of the steps were rated as *Fairly Important*, which suggests that Kotter's model steps are still taken into account in some way in business practice. Kotter's fourth model step, *Communicating the Change Vision*, received the highest rating in this context, indicating that communication remains central to working with multiple stakeholders. At this point, the experts agreed with Kotter, who also considers his fourth model step to be indispensable (Pollack & Pollack, 2015). In accordance with the experts, the individual steps of Kotter's model are thus largely still relevant in practice today. This is because they are basic components of any successful project.

RQ2: Which success factors truly drive change in the context of corporate digitalization?

According to the queried interviewed, the three success factors in the context of corporate digitalization are agility, participation and communication.

Agility basically refers to flexibility at project level regarding the way work is done. At its core is the ability to respond effectively to unforeseen events and new requirements. From the outset, changes are anticipated and actions are not only reactive but also proactive. An agile way of working emphasizes collaborative development of progress, efficacy testing, and detailed analysis of feedback. In accordance with the participants, agility also means rethinking hierarchy and applying it as effectively as possible. Operational teams organize themselves according to what is most conducive to progress. It is particularly important that all team members, including managers, are valued equally and actively contribute to change. In summary, agility is the ability to adapt strategies, structures and processes at short notice to actual circumstances.

In accordance with the experts, participation is particularly important in the context of corporate digitalization, as the best digital solution is of no value if at the end of the project it is not used by the end users. To guarantee that it is used, it must meet the problems and requirements of the user. To determine these, it is necessary to involve the end user throughout the project. Moreover, it would be ineffective not to take into account the formative power of the affected employees. Resistance from affected employees should always be

considered because there may be good reasons why employees are not committed to the change. In the same way, there may be proposals for improvement, since the employees know their area best. At this point, the experts interviewed unknowingly agreed with Appelbaum et al. (2012), who argued that involving employees in the change process is of major importance, not least because employees feel taken seriously in this way and ultimately look forward to the change in a positive way. According to the queried, successful IT/digitalization projects are designed jointly, with the active involvement of all stakeholders.

In accordance with the participants interviewed, communication is the cornerstone without which agility and participation would not be possible in the first place. The focus of communication should be on two-way, face-to-face communication so that those affected feel valued and taken seriously. There must be active listening and it must be ensured that the meaning and background of the digital transformation is understood by every stakeholder involved. Empathy and sincere interest should be at the heart of communication. Because this guarantees the basis of trust that is necessary for any successful collaboration in an IT/digitalization project.

These three success factors in the context of corporate digitalization emerged in the course of the interview of the experts.

RQ3: Is Kotter's change management approach suitable for managing corporate digitalization at project level?

Kotter's eight-step change management model, which was first published in 1996 in his book *Leading Change* and was republished unaltered in 2012, is one of the most known and widely spread change management models in the world, as mentioned at the beginning of this work.

Even though it mentions elementary aspects that are of central importance for every change process, it cannot be used as a reference model for IT/digitalization projects. Kotter considers change to be a step-by-step, rigid process that is based on the authority of top management. It is a classic top-down approach, in which the essence of the change is designed by management and the affected employees must carry it out. The shaping power of the employees has only a minor role to play in the model. In the same way, communication in this model goes only one way, from the top down.

Kotter's model lacks a basic essence that is indispensable in the context of digitalization: agility and participation. Successful digital change thrives on an agile approach, where progress is conceived, tested and discussed together, and where responding to changing conditions is more important than rigidly following a plan. Regression is an integral part of

these digital projects and is adequately addressed through the agile approach. Successful digital transformation also depends on the involvement and collaboration of end users.

Above all, successful digital transformation depends on two-way communication, which makes agility and participation possible and is the basis of every IT/digitalization project. At this point, the results are in line with the ideas of Brisson-Banks (2010), who said that a lack of coordination caused by poor communication can lead to the failure of the entire project.

The unique characteristic of corporate digitalization is that dealing with people in an appreciative manner and dealing effectively with technology are two critical success factors. Kotter's model does not provide a useful framework for either factor. His idea of top-down people management is outdated and his proposed way of working has little relevance for dealing with digital change. Kotter's stage model understands change as hierarchical imposition of management decisions. This approach is out of date and not suitable for operational digitalization.

Kotter's change management model can at best serve as a supporting concept in the domain of corporate digitalization, but by no means as a serious guide for the realization of successful IT/digitalization projects.

5.2 Limitations

The main limitation of this work lies in the fact that it does not focus on a specific type of IT/digitalization project. In the course of the current digital transformation, there are a variety of different project types in the digital context, ranging from the simple introduction of smaller collaboration platforms to the company-wide introduction of large ERP systems that govern the entirety of the company's business processes. In addition, there are further differences within the same project type depending on the industry and the size of the company. Not taking these differences into account could selectively reduce the validity of some research results or require further contextualization. However, this distinction was intentionally not made in order to gather insights for the entirety of IT/digitalization projects and to enable technically inexperienced readers of this work to gain access to the topic of change in the context of corporate digitalization.

Another limitation of this work could be the fact that more experts might have provided even more significant research results. The challenge here, however, was the difficulty of convincing senior experts from the IT/digitalization context to participate in lengthy in-depth interviews. That's because each expert has an average experience of around 13 years and hence a very busy schedule. Organizing the experts interviewed for this research was a tedious process and probably the most difficult part of this work. Nevertheless, in the authors

opinion, this form of research was the most effective for the defined research goals and well worth the effort.

5.3 Suggestions for Future Research

It is recommended that the subject of change management be investigated in a more specific IT/digitalization project in a particular industry and company size in order to obtain more concrete results at the interface of change management and corporate digitalization for a specific field/use case.

It is also recommended that a greater number of experts be interviewed. I would keep the research method of in-depth interviews because of its great effectiveness. The challenge, however, will be to convince a large number of experienced experts in a very specific type of IT/digitalization project.

Furthermore it is recommended that the change management model presented by the author in the results section be examined for its validity in the more specific context mentioned. This would be particularly interesting in order to examine the general nature of the research findings of this work concerning IT/digitalization projects.

5.4 Contributions to Management

Evidently, the greatest contribution to management of this work is the elaborated change management model presented in the results section, which, as mentioned above, may be tested regarding its operationality in more complex studies.

Furthermore, this work reveals that conventional, established (change) management models cannot be applied for corporate digitalization projects without a critical evaluation. This work has shown that the most famous change management model in the world, Kotter's eight-step model, is completely unsuitable as a roadmap for the realization of IT/digitalization projects.

As this type of project becomes part of the everyday business of companies in the course of the current digital transformation, and thus also of the responsible management, tried-and-tested management models must be subjected to a critical examination of their validity.

New times require new approaches, the operational reality is becoming more complex and the factors of influence more volatile than ever before.

Models that provide relief in this confusing context seem more tempting than ever, but at the same time they are more useless than they have ever been. It is becoming evident that models are simply too simplistic for the complexity of change, especially in the digital context.

As Heraclitus said, the only constant in life is change, and this change dynamics unfortunately also affects models that are supposed to assist in managing change.

However, despite all the complexity, and as the research results of this work indicate, the following fundamental pillars can guide any management in the pursuit of corporate digitalization: agility, participation and communication.

6 References

- Abou-foul, M., Ruiz-Alba, J. L., & Soares, A. (2021). The impact of digitalization and servitization on the financial performance of a firm: an empirical analysis. *Production Planning & Control*, 32(12), 975–989. <https://doi.org/10.1080/09537287.2020.1780508>
- Adin, C. A. (2021). Leading and Influencing Culture Change. *Veterinary Clinics of North America: Small Animal Practice*, 51(5), 1071–1078. <https://doi.org/10.1016/j.cvsm.2021.04.018>
- Akkermans, H., & van Helden, K. (2002). Vicious and virtuous cycles in ERP implementation: a case study of interrelations between critical success factors. *European Journal of Information Systems*, 11(1), 35–46. <https://doi.org/10.1057/palgrave.ejis.3000418>
- Al-Mashari, M., Al-Mudimigh, A., & Zairi, M. (2003). Enterprise resource planning: A taxonomy of critical factors. *European Journal of Operational Research*, 146(2), 352–364. [https://doi.org/10.1016/S0377-2217\(02\)00554-4](https://doi.org/10.1016/S0377-2217(02)00554-4)
- Al-Mudimigh, A., Zairi, M., & Al-Mashari, M. (2001). ERP software implementation: an integrative framework. *European Journal of Information Systems*, 10(4), 216–226. <https://doi.org/10.1057/palgrave.ejis.3000406>
- Appelbaum, S. H., Habashy, S., Malo, J., & Shafiq, H. (2012). Back to the future: revisiting Kotter's 1996 change model. *Journal of Management Development*, 31(8), 764–782. <https://doi.org/10.1108/02621711211253231>
- Autio, E., Mudambi, R., & Yoo, Y. (2021). Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces. *Global Strategy Journal*, 11(1), 3–16. <https://doi.org/10.1002/gsj.1396>
- Balakrishnan, R., & Das, S. (2020). How do firms reorganize to implement digital transformation? *Strategic Change*, 29(5), 531–541. <https://doi.org/10.1002/jsc.2362>
- Barth, C., & Koch, S. (2019). Critical success factors in ERP upgrade projects. *Industrial Management & Data Systems*, 119(3), 656–675. <https://doi.org/10.1108/IMDS-01-2018-0016>
- Bartunek, J. M., & Woodman, R. W. (2015). Beyond Lewin: Toward a Temporal Approximation of Organization Development and Change. *Annual Review of Organizational Psychology and Organizational Behavior*, 2(1), 157–182. <https://doi.org/10.1146/annurev-orgpsych-032414-111353>
- Berchet, C., & Habchi, G. (2005). The implementation and deployment of an ERP system: An industrial case study. *Computers in Industry*, 56(6), 588–605. <https://doi.org/10.1016/j.compind.2005.02.009>
- Bican, P. M., & Brem, A. (2020). Digital Business Model, Digital Transformation, Digital Entrepreneurship: Is There A Sustainable "Digital"? *Sustainability*, 12(13), 5239. <https://doi.org/10.3390/su12135239>
- Bingi, P., Sharma, M. K., & Godla, J. K. (1999). Critical Issues Affecting an ERP Implementation. *Information Systems Management*, 16(3), 7–14. <https://doi.org/10.1201/1078/43197.16.3.19990601/31310.2>
- Brisson-Banks, C. V. (2010). Managing change and transitions: a comparison of different models and their commonalities. *Library Management*, 31(4/5), 241–252. <https://doi.org/10.1108/01435121011046317>
- Brown, T., & Katz, B. (2011). Change by Design. *Journal of Product Innovation Management*, 28(3), 381–383. <https://doi.org/10.1111/j.1540-5885.2011.00806.x>
- Burnes, B. (2004). Kurt Lewin and the Planned Approach to Change: A Re-appraisal. *Journal of Management Studies*, 41(6), 977–1002. <https://doi.org/10.1111/j.1467-6486.2004.00463.x>
- Burnes, B. (2020). The Origins of Lewin's Three-Step Model of Change. *The Journal of Applied Behavioral Science*, 56(1), 32–59. <https://doi.org/10.1177/0021886319892685>
- Caputo, A., Pizzi, S., Pellegrini, M. M., & Dabić, M. (2021). Digitalization and business models: Where are we going? A science map of the field. *Journal of Business Research*, 123, 489–501. <https://doi.org/10.1016/j.jbusres.2020.09.053>

- Carlgrén, L., Rauth, I., & Elmquist, M. (2016). Framing Design Thinking: The Concept in Idea and Enactment. *Creativity and Innovation Management*, 25(1), 38–57. <https://doi.org/10.1111/caim.12153>
- Chen, C. J. (2021). SoTL enculturation guided by Kotter's model of change. *International Journal for Academic Development*, 26(4), 468–472. <https://doi.org/10.1080/1360144X.2021.1890605>
- Chou, S.-W., & Chang, Y.-C. (2008). The implementation factors that influence the ERP (enterprise resource planning) benefits. *Decision Support Systems*, 46(1), 149–157. <https://doi.org/10.1016/j.dss.2008.06.003>
- Dąbrowska, J., Almpantopoulou, A., Brem, A., Chesbrough, H., Cucino, V., Di Minin, A., Giones, F., Hakala, H., Marullo, C., Mention, A., Mortara, L., Nørskov, S., Nylund, P. A., Oddo, C. M., Radziwon, A., & Ritala, P. (2022). Digital transformation, for better or worse: a critical multi-level research agenda. *R&D Management*, 52(5), 930–954. <https://doi.org/10.1111/radm.12531>
- Dell'Era, C., Magistretti, S., Cautela, C., Verganti, R., & Zurlo, F. (2020). Four kinds of design thinking: From ideating to making, engaging, and criticizing. *Creativity and Innovation Management*, 29(2), 324–344. <https://doi.org/10.1111/caim.12353>
- Dezdar, S., & Ainin, S. (2011). The influence of organizational factors on successful ERP implementation. *Management Decision*, 49(6), 911–926. <https://doi.org/10.1108/00251741111143603>
- Dorst, K. (2011). The core of 'design thinking' and its application. *Design Studies*, 32(6), 521–532. <https://doi.org/10.1016/j.destud.2011.07.006>
- Duh, R.-R., Chow, C. W., & Chen, H. (2006). Strategy, IT applications for planning and control, and firm performance: The impact of impediments to IT implementation. *Information & Management*, 43(8), 939–949. <https://doi.org/10.1016/j.im.2006.08.007>
- Ellen Enkel. (2012). *Increasing digitalization enables and demands new digital business models*. Zeppelin University. https://www.zu.de/institute/innovationsmanagement/assets/pdf/Enkel_Increasing-digitalization-enables-and-demands-new-digital-business-models.pdf
- Ericson, J. D. (2022). Mapping the Relationship Between Critical Thinking and Design Thinking. *Journal of the Knowledge Economy*, 13(1), 406–429. <https://doi.org/10.1007/s13132-021-00733-w>
- Hayes, S., & Richardson, I. (2008). *Scrum Implementation Using Kotter's Change Model* (pp. 161–171). https://doi.org/10.1007/978-3-540-68255-4_16
- Holloway, M. (2009). How tangible is your strategy? How design thinking can turn your strategy into reality. *Journal of Business Strategy*, 30(2/3), 50–56. <https://doi.org/10.1108/02756660910942463>
- Hong, K.-K., & Kim, Y.-G. (2002). The critical success factors for ERP implementation: an organizational fit perspective. *Information & Management*, 40(1), 25–40. [https://doi.org/10.1016/S0378-7206\(01\)00134-3](https://doi.org/10.1016/S0378-7206(01)00134-3)
- Horlach, B., Drews, P., & Schirmer, I. (2016). Multikonferenz Wirtschaftsinformatik. *Bimodal IT: Business-IT Alignment in the Age of Digital Transformation*, 1417–1428.
- Huang, Y.-L., & Huang, D.-H. (2020). *Application of Design Thinking to Optimize Change Management Procedures with a Case Study on Reference Book Stores*. 91–103. https://doi.org/10.1007/978-3-030-49788-0_7
- Hughes, D. L., Rana, N. P., & Simintiras, A. C. (2017). The changing landscape of IS project failure: an examination of the key factors. *Journal of Enterprise Information Management*, 30(1), 142–165. <https://doi.org/10.1108/JEIM-01-2016-0029>
- Jack Kelly. (2022, February 8). *Companies Are Racing Toward Digitalization To Unlock Value And Improve The Customer And Employee Experience*. Forbes. <https://www.forbes.com/sites/jackkelly/2022/02/08/companies-are-racing-toward-digitalization-to-unlock-value-and-improve-the-customer-and-employee-experience/?sh=7bd26dbf589c>
- Jamshed, S. (2014). Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy*, 5(4), 87. <https://doi.org/10.4103/0976-0105.141942>

- Johansson-Sköldberg, U., Woodilla, J., & Çetinkaya, M. (2013). Design Thinking: Past, Present and Possible Futures. *Creativity and Innovation Management*, 22(2), 121–146. <https://doi.org/10.1111/caim.12023>
- Joseph Galli, B. (2018). Change Management Models: A Comparative Analysis and Concerns. *IEEE Engineering Management Review*, 46(3), 124–132. <https://doi.org/10.1109/EMR.2018.2866860>
- Kang, S. P., Chen, Y., Svihla, V., Gallup, A., Ferris, K., & Datye, A. K. (2022). Guiding change in higher education: an emergent, iterative application of Kotter's change model. *Studies in Higher Education*, 47(2), 270–289. <https://doi.org/10.1080/03075079.2020.1741540>
- Kotter, J. P. (1996). *Leading Change*. Harvard Business School Press. <https://doi.org/10.15358/9783800646159>
- Laudon, K. C., & Laudon, J. P. (2020). *Management Information Systems: Managing the Digital Firm* (16th ed.). Pearson Education.
- Legner, C., Eymann, T., Hess, T., Matt, C., Böhmman, T., Drews, P., Mädche, A., Urbach, N., & Ahlemann, F. (2017). Digitalization: Opportunity and Challenge for the Business and Information Systems Engineering Community. *Business & Information Systems Engineering*, 59(4), 301–308. <https://doi.org/10.1007/s12599-017-0484-2>
- Lewin, K. (1951). *Field Theory of Social Science: Selected Theoretical Papers* (D. Cartwright, Ed.). Harper & Brothers.
- Leyh, C., & Crenze, L. (2013). *ERP System Implementations vs. IT Projects: Comparison of Critical Success Factors* (pp. 223–233). https://doi.org/10.1007/978-3-642-36611-6_20
- Mandl, T., Schwab, E., Heuwing, B., & Womser-Hacker, C. (2018). Digitalisierung in Unternehmen. *Information - Wissenschaft & Praxis*, 69(4), 190–200. <https://doi.org/10.1515/iwp-2018-0018>
- McLaren, T. A. S., van der Hoorn, B., & Fein, E. C. (2022). Why Vilifying the Status Quo Can Derail a Change Effort: Kotter's Contradiction, and Theory Adaptation. *Journal of Change Management*, 1–19. <https://doi.org/10.1080/14697017.2022.2137835>
- Muluneh, G. S., & Gedifew, M. T. (2018). Leading changes through adaptive design. *Journal of Organizational Change Management*, 31(6), 1249–1270. <https://doi.org/10.1108/JOCM-10-2017-0379>
- Oswald, G., & Kleinemeier, M. (2017). *Shaping the Digital Enterprise* (G. Oswald & M. Kleinemeier, Eds.). Springer International Publishing. <https://doi.org/10.1007/978-3-319-40967-2>
- Pearse, N. (2019, June 20). *An Illustration of Deductive Analysis in Qualitative Research*. <https://doi.org/10.34190/RM.19.006>
- Pollack, J., & Pollack, R. (2015). Using Kotter's Eight Stage Process to Manage an Organisational Change Program: Presentation and Practice. *Systemic Practice and Action Research*, 28(1), 51–66. <https://doi.org/10.1007/s11213-014-9317-0>
- Pregmark, J. E. (2022). Renewing models for change. *The Learning Organization*, 29(3), 255–274. <https://doi.org/10.1108/TLO-05-2021-0056>
- Rahman, M. S. (2016). The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language “Testing and Assessment” Research: A Literature Review. *Journal of Education and Learning*, 6(1), 102. <https://doi.org/10.5539/jel.v6n1p102>
- Seidel, V. P., & Fixson, S. K. (2013). Adopting Design Thinking in Novice Multidisciplinary Teams: The Application and Limits of Design Methods and Reflexive Practices. *Journal of Product Innovation Management*, 30, 19–33. <https://doi.org/10.1111/jpim.12061>
- Sittrop, D., & Crosthwaite, C. (2021). Minimising Risk—The Application of Kotter's Change Management Model on Customer Relationship Management Systems: A Case Study. *Journal of Risk and Financial Management*, 14(10), 496. <https://doi.org/10.3390/jrfm14100496>
- Soja, P. (2006). Success factors in ERP systems implementations. *Journal of Enterprise Information Management*, 19(4), 418–433. <https://doi.org/10.1108/17410390610678331>

- Tambovcevs, A. (2012). ERP SYSTEM IMPLEMENTATION IN LATVIAN MANUFACTURING AND CONSTRUCTION COMPANY. *Technological and Economic Development of Economy*, 18(1), 67–83. <https://doi.org/10.3846/20294913.2012.661176>
- Umble, E. J., Haft, R. R., & Umble, M. M. (2003). Enterprise resource planning: Implementation procedures and critical success factors. *European Journal of Operational Research*, 146(2), 241–257. [https://doi.org/10.1016/S0377-2217\(02\)00547-7](https://doi.org/10.1016/S0377-2217(02)00547-7)
- Velcu, O. (2010). Strategic alignment of ERP implementation stages: An empirical investigation. *Information & Management*, 47(3), 158–166. <https://doi.org/10.1016/j.im.2010.01.005>
- WalkMe. (2021, November 17). *Is Kotter's 8-Step Model Still Useful in the Digital Age?* <https://change.walkme.com/kotters-8-step-model/>
- Wang, E. T. G., Shih, S.-P., Jiang, J. J., & Klein, G. (2008). The consistency among facilitating factors and ERP implementation success: A holistic view of fit. *Journal of Systems and Software*, 81(9), 1609–1621. <https://doi.org/10.1016/j.jss.2007.11.722>
- Ward, A., Runcie, E., & Morris, L. (2009). Embedding innovation: design thinking for small enterprises. *Journal of Business Strategy*, 30(2/3), 78–84. <https://doi.org/10.1108/02756660910942490>

Figure References

Figure 2.1: Lewin's Model

Lewin's 3-Stage Change Model [Figure]. Visual Paradigm. <https://online.visual-paradigm.com/de/diagrams/templates/lewins-change-model/lewins-3-stage-change-model/>

Figure 2.2: Kotter's Eight-Step Model

John Kotter Model of Change [Figure]. Visual Paradigm. <https://online.visual-paradigm.com/pt/diagrams/templates/kotters-8-step-change-model/john-kotter-model-of-change/>

Figure 2.3: Design Thinking Process

Design Thinking Process [Figure]. Great Innovus. <https://www.greatinnovus.com/blogs/a-design-thinking-approach-to-software-development/>

Appendix

Appendix A

Questionnaire

Interview Guide / Questionnaire

Name/Student no.: Leonardo Amaral Mancini/103868

Course/University: MSc Management / ISCTE Business School

Thesis title: **“The Role of Change Management in Corporate Digitalization:
The Relevance of Kotter’s 8-Step Change Model within IT/digitalization
Projects”**



Notice

Your participation is voluntary. Your response is based on personal beliefs and will only be utilized for this research. The information obtained will be handled anonymously, and according to the rules of the General Data Protection. The interview will take approximately 30-60 minutes.

Introduction

Kotter's 8 Step change Management Model is a method created to assist executives in implementing organizational change effectively. This paradigm was created by Harvard Business School professor John P. Kotter and published in his book Leading Change. In my thesis I would like to examine the relevance of the individual steps of this model in the context of IT/digitalization projects. The specific IT project was purposely not limited in order to gain as broad a spectrum of impressions as possible and to be able to conclude common, industry- and project-wide, generally valid statements in the context of digitalization. Your practical experience from change scenarios within IT/digitalization projects shared during this interview is of utmost importance to make this possible.

Part A

Classification and opinion regarding the individual steps of the Kotter Change Management Model in the context of corporate IT/digitalization projects:

1. Establishing a Sense of Urgency

Context: As Kotter found out, most change management projects fail at the very beginning. That's because a company's employees don't understand the importance/benefits of changing the status quo. That's why he recommends creating a sense of urgency by analyzing the market situation in detail to gain the necessary cooperation to drive the change within the company.

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Question:

What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?

2. Creating the Guiding Coalition

Context: To execute the company's change project, Kotter recommends a coalition of influential partners - called the guiding (leadership coalition) - to drive the change. The members of this coalition must have a certain status and credibility in order to communicate, coordinate, and influence affected employees effectively during the course of the change project.

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Question:

What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?

3. Developing a Vision and Strategy

Context: According to Kotter, change requires a plan. This should be based on a strategy, which in turn is based on a vision and derived implementation plan. Only if you know where you want to go (goals) and why, you can derive the appropriate measures. According to Kotter, the goals and measures should, among other things, be comprehensible to all employees, realistic/achievable and specific. In addition, one have to make sure that the plan also has enough flexibility.

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Question:

What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?

4. Communicating the Change Vision

Context: According to Kotter, lasting, transparent and appropriate communication should be key to change in the management process. Experts underline the importance of this step and state that the management underestimates regularly the amount of communication that is necessary to achieve a comprehensive understanding of the change project among those affected. Therefore, all impacted employees must always understand what the intended change is supposed to bring and how the change will take place. This should make it possible to obtain long-term support.

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Question:

What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?

5. Empowering Employees for Broad-Based Action

Context: This phase is about removing all (organizational/structural/methodical) obstacles that inhibit the process of change and paving the way for concrete change. Often, the employees affected do not yet have the necessary skills to carry out the new role resulting from the change. Here, you should break up old structures and enable employees to be given the opportunities to implement/execute the change. Empowering employees and removing structural barriers are common possibilities at this point.

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Question:

What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?

6. Generating Short-Term Wins

Context: A change process can sometimes take a very long time, especially in larger companies. To ensure that the guiding coalition as well as the involved employees do not lose faith in the project, it needs, according to Kotter, visible signs of project progress, thus quick and presentable successes. Therefore, the best thing to do is to set several small goals that are easily achievable - this is supposed to boost motivation, to demonstrate that the change plan is feasible and as a result creates momentum. In the context of short-term wins, performance measurement methods should at best be used to provide data-based evidence of positive development (KPIs, etc.).

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Question:

What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?

7. Consolidating Gains and Producing More Change

Context: Despite quick successes, Kotter argues that one should not lose sight of the change project too quickly or be satisfied too soon with what has already been achieved. The changes and improvements made must be manifested and care must be taken to ensure that the project is completed. Care must also be taken not to deviate from the initial project goal in the course of time. Any weakening before the project is completed can cause important momentum/focus to be lost. It should be used what has already been accomplished, such as the short-term wins, to build on. Based on this, further progress should be initiated to drive the change forward. Therefore, the urgency of the change should be pointed out repeatedly.

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Question:

What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?

8. Anchoring New Approaches in the Culture

Context: According to Kotter, the change processes are only successful if they are firmly anchored in the corporate culture, so that there is no possibility of a workaround or a step back. Integration into the corporate culture can take place, for example, when the core elements of change are integrated into career development plans, the company reward system or in similar internal company standards and practices. According to Kotter, establishing the changes as the new ultimate norm of action makes the change likely to persist.

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Question:

What is your opinion on this and what specifics do you see from your experience on this point in relation to IT/digitalization projects?

Part B

Own change approach / Model Adaptation / Consideration of Design Thinking elements:

In the following four questions you are welcome to name aspects that have already been mentioned, expand on them or name completely new ones:

1. How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?
2. How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you change the order of some steps or repeat any steps throughout the model?
3. How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information

Design Thinking Elements		
User Focus/Diversity	Problem Framing	Experimentation

Classification:

Very important (4) / Fairly important (3) / Important (2) / Slightly important (1) / Not at all important (0) / No Opinion

Additional information regarding some Design Thinking core elements		
User Focus/Diversity	Problem Framing	Experimentation
The user-driven emphatic approach means that the real needs of diverse users and their perspectives are at the center of the development of solutions and approaches, to ensure that the solution is accepted and used. The involvement in the solution finding/experimentation is essential to also identify the unconscious needs/behaviors.	Redefinition of the known issue for which one is looking for a solution in order not to choose the first best approach. The focus is initially on elements around the core problem. The issue is viewed holistically and challenged to include all perspectives and eventualities also to reduce complexity.	Experimentation, in the sense of learning-focused prototyping and testing of solution approaches (e.g. by simulating current scenarios) in a real user-centered operational context, should ensure that the most suitable solution is chosen or appropriate changes are made before implementation.

Appendix B

Interview Transcripts

▪ Interview-Transcript // Expert ID1

Organisation	Years of Experience	Position	Date	Interview Duration (approx., minutes)
Ernst & Young	8	Manager	02.02.23	60

Part A

1. Establishing a Sense of Urgency

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- I think the first step is important, because the change itself is not an operational goal of the company; it only changes the way things are done. This means that the employees in the operational area, and certainly not in the strategic area, will not be aware that some changes have to be made at all, and that is why this feeling has to be created artificially. Unless it is a matter of facts that are obvious. But this is rarely the case with IT projects. On the contrary, I would say that in IT projects the change is more likely to be what the user doesn't want, because everyone likes to keep their IT landscape the same and leave everything as it is.
- My impression is that change is not driven by itself because, as I experience in my current projects, change is always perceived as bad. Everything is supposed to be kept exactly as it is. I sometimes get queries whose only justification is: "Yes, but it wasn't like that in the past".
- You have to do a lot of convincing when you introduce a change. Especially if the last change was made a long time ago. If, on the other hand, you are in a "constant change environment", then it is probably different. Then I would say the necessity of the step changes, i.e. the Urgency of Creating a sense of Urgency. This is not so urgent in such an environment. So there's no need to put that pressure on people if things are changing all the time anyway and people are already used to a certain rhythm of change. If you have a team or an organization where things are constantly changing, then yes, the change itself is what I just excluded, operationally, in itself, is important. What I mean by that is that if you're a chocolate maker, you make chocolate. You don't sell change. And if there was a company that was selling change, yes, people there would probably be much more open to change in their own context. But for very few companies, dealing professionally with change contexts is the order of the day.
- According to my experience, this step is absolutely right and important. In the area of taxes, there is also the fact that tax law is so sluggish when it comes to changes, which means that the affected organizations and employees can even argue with the law in themselves to justify their lack of change, according to the motto, "tax law has not changed, why should I change something in my IT landscape or in IT in the tax context". You have to overcome this resistance and for this the first step "Create a sense of urgency" is particularly important. Perhaps a word on how to create the

urgency mentioned in the first step: In my case, the Urgency is definitely rights-based and thus often in my favor. You therefore have the law on your side when it comes to initiating and executing a change project. The applicable law and its implications are the biggest driver here, for example approaching deadlines/statutes of limitation, impending tax penalties and the like which virtually force changes.

- And otherwise, of course, the urgency and motivation to change quickly can be generated with company metrics, such as looking at current costs, and emphasizing that the change can avoid future insolvency or job cuts.

2. Creating the Guiding Coalition

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- Kotter would probably like to imply at this point that the higher the rank of the people involved in the guiding coalition, the better. On an operational level, I consider the involvement of influential management to be less important in the IT environment, at least in my experience of user-oriented IT. This may possibly be different if I want to tackle deep cybersecurity issues. In that context, there may be people involved where that kind of pressure/push from the top may be greater and more meaningful. In my context, I deal with factual people and they actually know best what their job is and would not take anyone seriously who arrives at C-level and wants to try to explain how to do their job. That is, in my environment, influential project stakeholders are less important because these people have little influence on day-to-day operations. In terms of content, they therefore have a limited effect, but they can be important at the end of the project in the role of motivator/pusher and to remove major obstacles out of the way and, of course, serve as a point of contact for other influential managers involved in the change context. A certain seniority is therefore important to convince those affected by the change to communicate it correctly. In summary, we can say and differentiate that the added value of senior managers in projects is more strategic than operational. However, it depends on the type of projects, for example, the presence in projects that affect the IT architecture and are therefore important for the entire company, can show a greater need for senior managers. However, the most influential and important people in an IT project are usually the users or their representatives. The people who have a concrete relation to the IT solution and the operational context. Key users could possibly be cited here.
- If by influential people, you mean people who have a high level of influence on the employees affected by the change, then of course that is "nice to have".
- The first two points of the model are somewhat antiquated.

3. Developing a Vision and Strategy

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- So in the IT context, creating a vision is probably still very easy. First, to have a vision and second, to communicate it, because the changes in an IT environment are very tangible. That's the case because changes are very tangible for everyone involved. For example, when introducing a more resilient IT structure or a new tool, everyone

can relate to it. It may be different with social change topics, for example in the area of inclusion. IT topics, on the other hand, can be grasped; everyone can imagine something about them. For these reasons, the creation of a vision in the IT context is less difficult.

- In my personal experience, I have seen how important this is, but I have also seen how difficult it is to keep the goal constant or the same. In my experience, the longer a project goes on, the more likely it is that the original goal will change and become a moving target, so to speak.
- Even if the goal expressed in the vision becomes a moving target, it can still remain realistic and achievable, that does not contradict itself. Also, just because of the adjustments, it remains understandable them still. The more the target changes, the less specific the original vision. So if, for example, requirements are added, you have to adjust the vision again and again, in the way you think you can implement it.
- By turning the vision or the goal proclaimed in the vision into a moving target, the concreteness of the goal/vision suffers.
- Although I have these three points (comprehensible/realistic/specific), it needs to be flexible. Compressible Realistic and Pacific. Despite these three points, which actually live from the fact that the goal is once fixed and I then only carry it out, I must ensure that I remain flexible and can also react to changing conditions.
- In the IT context, the vision and the goals derived from it are particularly formalized (blueprints, concepts).
- You then derive requirements from the blueprint and technical requirements from the requirements.
- From the coarse to the fine, but that is no longer modern with the current agile approach, but somewhere in the middle lies the truth. Of course, you need the reliability of a fixed goal. The goal should not change, if possible, so that people are clear about it. The goal of change. What can constantly change, on the other hand, is how you go about it and that you also address changing conditions in the way you do it. I am personally a friend of this change. In the past, everything was set in stone, very fixed. At the beginning of the project, a blueprint was written, then requirements were derived from it, which were then implemented. And if the entire process took three years, then you just have an implementation that is based on a three-year-old goal, i.e. it is no longer up to date.
- In my opinion, the best approach lies somewhere between the agile and the classic waterfall model. You need an initial goal, but agility is also important to adapt it to changing circumstances.

4. Communicating the Change Vision

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- I am an absolute friend of this step and find it very important. The change should be communicated often, but there are two sides that need to be considered. One side is that the employees affected by the change, must be told in a repeated way what is specifically meant, so that it also becomes important how important this change is. That which is repeated frequently is important. In my IT context, but the changes I set in development, yes, the developers have to implement and in that context I often notice, even if I feel I've addressed things quite often, how often I repeat myself, but then I still often notice that they haven't understood. I agree that people often underestimate how much you have to communicate a change message. On the other hand, with the people who are affected by it and not the people who are changing it, so I'm mentioning two different groups of people here, with those who are affected by the change, I think you can also quickly make yourself unpopular with them. So I differentiate in the IT context the groups of those who have to implement the change technically, for example developers, and the group of people who are ultimately affected by the change. If the change affects me and I get too much information about it, for example by email, then it just annoys me. Here I would prefer that the right way and the right degree of communication would be chosen. So a serious, appreciative communication instead of spamming with irrelevant emails. I am also currently affected by a change and in my case I would rather sit in a conference once a month for a certain amount of time and feel that someone is taking serious time to explain the change to me in person in a structured way, instead of many emails on the subject. So communication is very important, but you have to be very careful that it is done properly. You lose the people affected by the change if you don't communicate properly and if you overload them with communication in the wrong way. Communicating at eye level, not from the top down, it's a point where you can get a lot wrong. Nevertheless, in the end, the execution of the necessary change is more important than the perfect execution, better to initiate the change with mistakes than no change at all.

5. Empowering Employees for Broad-Based Action

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- Removing obstacles moves the project forward. This is the operational part of the change. The change itself has to happen, quasi passively. What you can do is just remove obstacles in one direction and maybe even create new obstacles in the old direction. In the IT environment, such a step would logically be the shutdown of an old system. So create obstacles so that users do not use the old process anymore or it is very inconvenient/unattractive and with disadvantages to use the old system. These things are more than in other contexts, optimally possible in IT context. Making the old system/process unattractive would thus be the push factor and making the new system/process attractive/user-friendly would be the pull factor. You could also think of it as making it a barrier to getting the new system/process up and running if the old system/process is still good. At this point I see the core of the process as the object where obstacles have to be removed. Removing obstacles in the IT context also means user friendliness, creating help, onboarding processes, training materials, service hotline.

6. Generating Short-Term Wins

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- Short wins, such as milestones, must not be ruined by linking them to a deadline that cannot be met, as this could create demotivation instead of motivation. Milestones should be progress/result related rather than deadline related, based on the actual progress level.
- Don't ruin the short-win by making it unattainable or unrealistic through overly ambitious timelines or targets.
- In the IT context, all this Scrum posturing with the user stories and the individual tickets and the features and the epics etc. is a manifestation of these short term wins. A breakdown of the entire project into manageable short term wins. Individual features of an epic can thus be described again as short-term wins, of the already existing short-term win (epic).

7. Consolidating Gains and Producing More Change

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- Firstly, in IT, every step forward is often 100% more than was originally expected. Especially because it's a fast-moving environment and it updates quickly, there's naturally a lot of pressure to do nothing at first. I don't think this step is so necessary, because every change is already good, even if you are too early in terms of changes. In the IT context, the goals are usually, in my experience in application development, very visible. Therefore, there is no danger that you will break them off prematurely. Actually there is not, because in application development for operational activities the results are very visible and tangible and you can even test them. And if the changes are not yet satisfactory, then the goal has not yet been achieved. That's one reason why I don't think this step is so important. And the other is that, as I mentioned before, you should maintain a certain agility. If the environment you are exposed to changes, then the goal should also be adjusted. But that applies to all contexts, whether IT or not. In my opinion, this point is least specific in the IT context.

8. Anchoring New Approaches in the Culture

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- In the change environment, I consider this step to be fundamentally important. In the IT context, however, this step is not difficult compared to other contexts, because by shutting down the old system, one only has to take care of the accompanying processes. The step is therefore important, but not particularly applicable to the IT context, so individually not a step that is applicable to this context. If this step is not followed, then the project would fail, but it cannot be done at all. This step occurs inevitably and is unavoidable, thus a concomitant.

Part B

1. How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?

- Knowing the goal, I would say, is the first step. In my opinion, you don't even have to call it a "vision" in the IT context. I believe that the goal must be absolutely clear, as must the people involved in the change project. It is important at the operational level, regardless of the Guiding coalition, to put together a good team with the right people and to make the distribution of tasks clear.
- This team at the operational level should consist primarily of people who complement each other. Then I need the infrastructure. In addition, it must be clear beforehand, in my opinion, what technical conditions I can rely on and whether their technical capacity is sufficient or whether the technical infrastructure can cope with the planned technical intensity. That would be something that I would have to establish beforehand and then also maintain over the entire duration of the project. This is now a very operational aspect, but in my opinion very important. I would want to know in advance for sure that the technical infrastructure needed is in place for the changes I want to make. That's important to clarify in advance, because that's one thing that often has to be approved and funded in advance. Also, communication, even for merely strategic projects like IT security, is important. For example, in the case of a planned two-factor authentication, which would place an additional burden on the employees concerned, it would often be necessary to explain why this is so important, and perhaps it would also be necessary to scare people a little at this point to point out the dangers of hackers.

2. How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you, if you think a chronological order makes sense, change the order of some steps or repeat any steps throughout the model?

- I would complement the model with the iterative, the possibility should be there to adapt everything to the circumstances at any time. Take small steps. Always check if what you have already done makes sense. If it works. Also, so that you leave the people who work daily on the technical implementation, the developers, too long alone. Personally, I would never let my developers work on something alone for a week, only to find out afterwards that their implementation is faulty. At that point, I like to have the daily exchange with the developers to talk together about the project, important points and the necessary requirements/tickets. The iterative, the regular exchange and repeated communication and explanation of the requirements is very important and I would like to add this point to the model. The iterative, the constant review of the current situation is important. That's a point where I would say, also owed to my experience in the IT context, that's part of my approach and independently I would say that it's important. In the IT context, I would also call this a success factor.
- Steps seven and eight of the model are too unspecific for me. Although they are important from a general point of view, I would leave them out in the IT context because the application does not really make sense in this context. The first six steps of the model are much more important to me. Of the six steps, I would especially repeat communication over and over again, in a clear and appropriate way. Not at a specific point in the model but from the beginning to the end of the project. Care should be taken not to over-communicate the change issue.
- I would define the first step of the model differently. At this point, the employees affected by the change should not be frightened. This step has too negative a

connotation for me, so I would change it. An urgency should definitely be communicated, but without the fear. Communicating urgency should be done in a cooperative and appreciative way and without threatening consequences, otherwise you lose people for the project. Or worse, you lose the good people.

- In my opinion, there should be no order in the application of the individual steps. All steps must be applied constantly, depending on the situation. If necessary, the steps must be applied permanently. Sometimes more, sometimes less.
- Not following an order should not mean starting with steps that don't make sense to begin with, such as "Generating short term wins". To stay with short term wins: After all, the name already implies that they have to happen multiple times and not just explicitly after the communication step. So I see continuity in the individual steps and targeted application depending on priority. For example, as already mentioned, the vision/goals should be permanently applied or adapted on an operational level. But also the vision step, for example, would not be chosen right at the beginning. So, in the IT context, I basically don't like the order suggested by Kotter, each step should be able to be applied flexibly and there should be a focus on agility. Each step can be important. Step seven and eight I would remove from the model as I said. The step of short-term-wins must be repeated permanently in any case, as this is the key of motivation for the employees concerned, short-term-wins should therefore take place/be planned constantly.
- So I would basically add the topic of iteration and agility.

3. How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information

User Focus/Diversity

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

Problem Framing

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

Experimentation

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- I find all the elements of Design Thinking mentioned important. Whereby I find the first and the third most important (user focus/experimentation). I give the user focus a four, the problem framing a three and the experimentation a four.
- And experimentation and framing are exactly what I mean with my iterative, agile, and goal-focused approach, in which one is constantly open to change. Kotter's model sounds coherent, but not very modern, and the Design Thinking elements mentioned bring a modern addition with a focus on the IT context as well.

- Design Thinking is very, very IT contextual and can be applied to it very well.
- In my opinion, Kotter's model is rather old-fashioned and not IT-related. The Design Thinking elements, on the other hand, are very modern, which can result in a certain tension if one wants to apply both at the same time, and by enriching it with these new elements, Kotter's model could be transferred into today's time and especially into the IT context.
- I would frame the problem and experimentation. I would include the redefinition, the adaptation to changing circumstances, the not being stuck with the first best solution and regarding experimentation, the permanent application, the learning from it, the feedback loop, I would definitely include all of that in my change approach.
- Problem framing and experimentation go together for me.
- Elements such as "User Focus" should not be understood as a step. User Focus should also be understood as feedback, people should be asked constantly, you should get feedback or different opinions from as many and different people as possible. One should simply incorporate many perspectives. I miss these things in Kotter's model. This top-down approach without getting the opinion of the people affected is to be criticized and that not so much attention is paid to the operational level or the impact of the change at the operational level is incorporated into the course of the change project.
- The chronological or the concrete adherence to the sequence is to be eliminated from the model. There is no sequence, not even with the repetition of individual steps. Especially elements like communication/user focus happen permanently.
- The focus should be on the reaction, with the application of the steps of the model, to a changed situation. One is confronted with a changed situation and must then select the correct steps from the model. It is to be decided, what is to be done then concretely. Is it time again for a new communication? Do I need to change my goals? Do I have to emphasize the urgency again? Maybe I have achieved short term goals in the meantime, and I can build on the change that has resulted. You can ask yourself such questions at any time, if appropriate.
- At the right moment, each of these Kotter's steps can be the right tool. In my opinion, however, not chronologically in a certain order. Especially in the IT context, there should be a special awareness for the current situation, one should be agile and react according to the situation.

▪ **Interview-Transcript // Expert ID2**

Organisation	Years of Experience	Position	Date	Interview Duration (approx., minutes)
WTS Global	11	Senior Manager	02.03.23	45

Part A

1. Establishing a Sense of Urgency

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
			X		

- I think it's more important that key decision-makers understand the urgency, those who can drive the project internally. If you don't do the latter, the project is actually doomed to failure in my opinion. The affected employees usually understand the urgency because they know their department best, but usually no one wants to experience the effort of change and bear the initial extra work, which also occurs in an IT/digitization project. There will always be employees who, for example, are against a new solution and protest, regardless of how well you try to involve everyone in the project and explain it. Therefore, my opinion is that you can save most of the time for this step, because you will never reach/convince everyone, no matter how hard you try.

2. Creating the Guiding Coalition

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- This point is very important. All important project participants must be well informed and integrated into the project or pulled onto their own side so that they, as part of the change management team, can act as multipliers in their respective departments and communicate all the benefits and background to the project to their respective target group in the company. This is the only way to successfully drive the project forward.

3. Developing a Vision and Strategy

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- In terms of IT/digitization, the goals derived from the vision must remain flexible, i.e., they must be adapted to changing framework conditions. A vision is good as a directional guide, but I think there are more important points in the implementation of a change project in the IT context.

4. Communicating the Change Vision

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- I consider correct communication to be extremely important. Here, however, I would apply full communication again to strategically important people in the company. In my opinion, not every end user of a new system needs to know every detail about the project; it is more important that they are informed to the extent that they can use the system appropriately. It is therefore particularly important that the multipliers, who have to introduce the system in their respective departments and answer any questions that arise from their employees, are well informed. For these central figures, it is impossible

to communicate too much. The fact that they are well informed at all times and can get rid of their doubts is of great importance for a successful project.

5. Empowering Employees for Broad-Based Action

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- I also think it's important to create obstacles by making the old process step unattractive, this way you push employees to go the new digitized process or use the new system.

6. Generating Short-Term Wins

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- More important than "short term wins" is to have a suitable project structure and to have good motivated, fully integrated project managers to lead the project to a successful conclusion, who can fully take care of the IT project and not just on the side. Otherwise, in my opinion, large projects cannot be brought to a successful conclusion. So you need a full-time project manager who is present at all meetings and has an overview of open issues. So a project manager who drives and motivates everyone involved to deliver their results and someone who reminds them of existing deadlines. Having someone who fully cares about and solves current and future problems. So, in my opinion, a good project structure and available project managers, i.e. good project management, are more important than "short term wins". The danger with "short term wins" is that you lose sight of the big end goal and you don't make significant progress because you have too many small insignificant steps.

7. Consolidating Gains and Producing More Change

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- Steady progress is very important in a project, but it must be more important to constantly question your work and progress so that you ultimately pay attention to all important information or processes. Especially in the IT context, preliminary processes and data must always be correct so that the final result is satisfactory. This honesty and thoroughness in one's own work is more important than blindly driving the project forward and ending up with an unusable result that is of no use to anyone. Constant progress is therefore important, but only if everything goes as planned, i.e. no progress at any price and no concealment of errors for the sake of supposed progress. Do not force progress at any price. In contrast to what Kotter emphasizes, the initial goal must not be lost sight of, since the general conditions in the IT context can change quickly. Losing sight of the initial goal can therefore sometimes be advantageous for the IT project.

8. Anchoring New Approaches in the Culture

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
				X	

- I find this step has little relation to IT projects, as technical possibilities can practically force the use of new digital solutions. At this point, I have a somewhat more radical approach and find that addressing the corporate culture would mean too much effort.

Part B

1. How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?

- I am a proponent of the KISS approach (Keep it simple, stupid), which is all about eliminating complexity in a project as much as possible for everyone involved. In a project, I would first define the goal and then determine what I need to achieve it. In the IT context in particular, data also plays a special role. So I would determine where to get relevant data, then I would evaluate and process the data. Basically I would try to keep everything as simple as possible, if necessary I would adapt pre-processes and always use transparent data to simplify the work for the end users. Likewise, I would eliminate already existing but very complicated processes as well as all possible redundancies if I could, so that in the end you only find relevant data and processes.

2. How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you, if you think a chronological order makes sense, change the order of some steps or repeat any steps throughout the model?

- I would remove step 8 from the model. What I would add would be the realization of a kind of feasibility study before the actual start of a project, in which one goes through the planned project before the start and already identifies the so-called pain points in advance. In such a "pre-project" one would, as far as possible, go through the planned steps and thus remove any bad ideas and approaches from the project plan. The goal is to identify everything that can be found out in advance and that prevents the project from progressing. This can also include obtaining feedback from all stakeholders in advance and checking how high their acceptance of the project is. If key decision-makers have doubts about the project in advance, then no further resources should be spent on moving the project forward, as the chances of success are low. Feedback should be critically analyzed and the reasons for rejection investigated. Probably in such a case it can also be that one has chosen the wrong system and the digital solution is not the right one, therefore one should examine such things more exactly before beginning a project, in order not to have a solution at the end, which is unsuitable and is not used.
- I would also not want to set an order for the steps from the model, but rather put the steps in a "toolbox" that you use accordingly depending on the starting point and situation.

3. How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information

User Focus/Diversity

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
			X		

Problem Framing

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

Experimentation

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
			X		

- User Focus I give a one, because from my experience you can never completely satisfy the user. Of course, you have to find compromises and make sure that the user uses the tool in the end, but you should not put all your resources into the user focus. The fact that the user has to familiarize himself with the tool cannot be completely taken away from him. You can't please everyone, but you should try to please most people.
- I give problem framing a four, because it fits ideally into my idea of the preliminary project. That one first checks whether the apparent problem really exists as it is communicated.
- In my opinion, the experimentation step only works for processes that are not critical for the functioning of the company, otherwise I think it is good that, for example, key users familiarize themselves with new solutions and find their own solutions and, especially important, give feedback for the actual project. From my experience, experimentation only works in very small companies where the employees are very "committed" and technically skilled, so that valuable feedback can also be given. However, these key users would first have to be identified, since not every employee is suitable as a key user for experimentation. In practice, however, the employees usually do not have sufficient capacity/technical skills to act as development partners on an equal footing.
- I would include all three elements in the "toolbox."

▪ Interview-Transcript // Expert ID3

Organisation	Years of Experience	Position	Date	Interview Duration (approx., minutes)
WTS Global	10	Senior Manager	08.03.23	75

Part A

1. Establishing a Sense of Urgency

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- At the level where the IT change project has the greatest impact, i.e., at the user level, a certain urgency must be conveyed. This point is important for the group of people who have to use a newly introduced system against their initial will.

2. Creating the Guiding Coalition

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- I find this step quite important, because when executing an IT change project, I depend on finding supporters internally in the company, be it on the management level or on the user level. Especially on the management level, as these people help to drive such projects forward and to realize them in the first place. Without support at this level, it is usually difficult to implement such change projects. Since most employees support and follow the manager in his opinion and plans, it is especially important to convince these influential people of the project.

3. Developing a Vision and Strategy

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- It is important because the employee concerned must understand why a particular IT project has to be carried out. You have to be able to plausibly communicate to the employee how the project fits into the overarching digitization strategy so that he or she is convinced and actively participates. With digitization topics, it is also particularly important to emphasize that everyone remains relevant and important in their function and that their work does not disappear. By explaining the vision, the employee is therefore not afraid of digitalization and is motivated and aware of the context and goal of the projects.

4. Communicating the Change Vision

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- Communication is something very subjective. Everyone feels differently about communication and often has different preferences about the right way to communicate. Some prefer face-to-face communication, while others prefer to be informed/contacted by email. Depending on the subject matter/project size/participants, this point can be more or less important, but in general I consider communication to be important.

5. Empowering Employees for Broad-Based Action

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- The topic is important. I once had a customer whose employees had a hard time with a new IT solution. For this customer, we held workshops and training sessions and presented the employees with new job and career perspectives, thus expanding their

digital skills. In this case, the lack of skills was actually an obstacle to the success of the project.

6. Generating Short-Term Wins

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- A very important point, especially for large projects, which may not be too popular with the employees themselves at the beginning. So you often have a lot of people who don't recognize the benefit or the sense of a project at the beginning of such a project. In such cases it is then especially important to generate successes quickly in order to motivate other employees and to show that changes are possible. I think this point is important, regardless of whether it is an IT project or any other project, that short-term successes are generated. In a system rollout, the introduction in one company or in one country of a group could send positive signals to the other companies that still have to do the rollout. Short-term successes are simply necessary in larger projects that take a long time, so that the affected employees can work towards a concrete partial goal.

7. Consolidating Gains and Producing More Change

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- This step is important, because in a larger project, after certain partial successes, the motivation tends to wane. Therefore, it is important to continue working constantly.

8. Anchoring New Approaches in the Culture

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- This step is important for IT or other projects that particularly affect the entire company. Particularly in the case of large, formative projects with a large number of changes, it is important that this is also reflected in the corporate culture in some way. In the IT context, this could be ERP projects, for example, in which all existing company processes and all work steps are subjected to a change, in which case, in my opinion, something must also change in the prevailing culture.

Part B

1. How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?

- What is very important to me in the implementation of IT projects is to regularly inform and bring together all relevant project participants, i.e. consistent stakeholder management, so that everyone involved is at the same level of knowledge. This is particularly important because project success in the IT sector relies heavily on the

stakeholders being motivated, informed and actively involved throughout the entire duration of the project.

2. How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you, if you think a chronological order makes sense, change the order of some steps or repeat any steps throughout the model?

- The topic of communication, for example, does not occur only once in the course of a change project in the IT sector. Many steps are needed more often and must be repeated in the course of a project. I would not define a sequence and place all steps in a "toolbox" that you can continually fall back on as soon as there is a need.
- If I had to remove one step from the model, it would be step 8. At this point, however, it must be said that it depends on the project itself. Large projects that change fundamental things or ways of working in a company often also have an impact on the corporate culture. In the IT context, for example, it could be projects that digitize all work that was previously analog. In regular IT projects, however, this step could be eliminated.
- I would add the step stakeholder management. Maybe not as a single step, because it plays a role in many places, but as an important element to be considered from the beginning to the end of the project, at every step executed. As the basic framework of a project, so to speak. Because especially during a project you have to make sure that you react quickly to the feedback you get from the parties involved and incorporate it into your work.

3. How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information

User Focus/Diversity

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

Problem Framing

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
			X		

Experimentation

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
			X		

- I would put all three of the above elements of Design Thinking in the "toolbox" and use them as needed, as there may be situations where all three can be important.

▪ **Interview-Transcript // Expert ID4**

Organisation	Years of Experience	Position	Date	Interview Duration (approx., minutes)
Greenfield Finance	9	Senior Manager	09.02.23	65

Part A

1. Establishing a Sense of Urgency

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- After all, the urgency arises from external influences, i.e. either environmental requirements, in my case the digitization of the control function through new regulation or legislation. Generally speaking, technological trends must also be taken into account. For example, if there is no longer any technical support for a legacy system in the future or because a license expires for a certain system or application in the IT context. It is particularly important to place the issue of urgency with decision-makers. By decision-makers, I mean owners, CEOs and managing directors. This means that everyone at the highest level of responsibility must be involved, precisely because IT projects do not just affect individual areas or departments, but usually the entire company with all its stakeholders. In essence, it's about developing this sense of urgency among stakeholders, and asking yourself what will actually happen if everything stays the way it is. Could you lose customers, for example, or will you meet all compliance requirements in the future, will you get new employees, etc.?

2. Creating the Guiding Coalition

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- I would actually relate this a bit to my area. It is always the case that the tax and accounting departments are highly dependent on IT or digitization initiatives, but at the same time there is a lack of IT expertise to implement them or they fail. It can be observed that IT trends are often recognized, but the tax departments then find it difficult to cooperate with the corresponding IT resources (computer scientists, business IT specialists). Here, there are often difficulties in communicating the requirements to the IT department so that they can be implemented. The difficulty here is to define the implications of the tax requirements for the entire company, so that in the end you do not have to constantly make corrections. The correct composition of the team is particularly important in such projects. In IT projects, it is often the case that project management is the responsibility of IT. I think demand management is particularly important when putting together a project team. This means that all the areas involved, i.e. all the stakeholders and contacts from the various departments are involved (such as key users), who represent their specialist interests and requirements to IT. This is relevant for small projects as well as for a larger project portfolio management. Of course, someone must always have responsibility for the project. At the same time, however, it is also important to actively involve the relevant stakeholders who set the requirements in the project so that they can place their requirements for a new system or a new system landscape in the IT environment in the sense of demand management.

- The differentiation between operational and strategic intervention by leaders is also an important point to remember. Top management is indeed not as influential operationally, but that makes stakeholder engagement all the more important.

3. Developing a Vision and Strategy

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- For me, this topic raises the question - and I have already thought about this in the past - of whether a company's entire vision and IT strategy is still purposeful in this age of digital transformation. In my opinion, there should be neither a separate digitization strategy nor a separate data strategy; the topics must be characterized by maximum agility, because things are constantly changing in the technical area.
- I think it makes sense that there are roadmaps for the implementation of the individual topics. A good vision or corporate strategy already includes the topic of IT strategy and digital transformation. The framework conditions and direction should be known, and there should be a certain degree of flexibility for the remaining elements (infrastructure, equipment).

4. Communicating the Change Vision

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- The topic of change management is often doomed to failure. That's why the new C-level has been created in the IT environment, such as the CDO (Chief Digital Officer), to better address this topic in the IT context. The topic itself is ultimately a psychological one. The fear of change is a very central point in this topic. The fear of no longer being relevant or of having to retrain, of earning less money.
- In this case, the task of the executives/change team or the CDO is to gain trust. For example, by offering a job guarantee or further training opportunities in the digital field. Once this trust has been established, the content can be addressed and the opportunities offered by the change emphasized. Our working world is changing, and this is particularly evident in IT or digital transformation. The pandemic ensured that we experienced a complete change in the working world. Trust had to be built up in the whole topic of remote working, e-learning, and at the same time, I think we have also seen that trust has also arisen from the employer towards the employee, because we have seen that employees can also be productive from home.
- In my opinion, this is the most important point. If you don't communicate in the right way, then the employees concerned don't feel like working on the project and try to convince others of their opinion. The best strategy won't help if you don't communicate properly.

5. Empowering Employees for Broad-Based Action

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- I actually find this question very difficult to answer, because it's very individual. It simply depends on the company and also on how digitally mature a company is in terms of management and employees. If the employees are only IT nerds, then digital projects work better than with employees who refuse to deal with this topic. But this also affects the entire organization, culture and, of course, the processes lived in the company. All of this has a major influence on whether and how the necessary change is communicated in IT processes, so that I can motivate my employees and remove obstacles.
- I give this step a two because it is very individual. For some companies, you could also give this a four, and for others, only a one.

6. Generating Short-Term Wins

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- In every good project, including an IT project, certain milestones are defined, because there is often a steering committee to which you have to answer, regardless of whether you are following a classic project approach (waterfall model) or an agile approach. Results have to be delivered and usually by a certain point in time, which is why short term wins are also part of an IT project.
- The short term wins should be more progress tied. If it is an internal project, it is of course more progress bound. If it's an external project, it's always both deadline and progress bound. The time component also plays a role in internal projects.
- While it is important to move forward, the points beforehand, such as team composition, etc., should at best ensure that point six works. Point six is important, but the basis is created beforehand.

7. Consolidating Gains and Producing More Change

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- IT projects are usually a rolling process. After the project has been implemented, employees are trained if necessary so that they become more and more involved in the changes. As use of the new system or application progresses, new use cases, issues and situations arise that were not previously considered, so that the IT project continues internally for quite some time after implementation or keeps the affected employees and departments busy.
- Every step forward is positive in the IT context, so that even if the overall goals are not achieved, this does not necessarily have to be viewed negatively. If, for example, only

70 of 100 processes have been digitized, then that is a good result. But it depends on the given context.

8. Anchoring New Approaches in the Culture

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- Plays a subordinate role in the IT context. To have effective IT projects, you only need to integrate them into the prevailing system landscape and not into the culture. Accompanying processes may need to be adapted. In a company that invests heavily in IT projects and has a digital vision, you simply have to assume that the prevailing culture and the people have an affinity for digital.

Part B

1. How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?

- As a consultant, I mainly deal with customer projects. This means that I am the consultant who looks at things from the outside and asks how the customer can be supported in concrete terms. Our basic approach is to organize a workshop in which we take stock of the existing IT and data structure. We take all the requirements regarding the IT project and look at the system landscape and identify with the customer which areas need to be changed and where there are potential opportunities for optimization. But we also look at where risks might be located in the overall context and where compliance violations might occur. Of course, many different factors play a role in this analysis. For example, whether there is already a compliance management system in place with regard to IT or whether an audit of the system has already taken place and whether something was found to be lacking in this context, so that it is already clear what needs to be changed in the future. Such things play a role in the analysis and the task is then to work out a target picture and to record all the requirements that result from this. At the same time, all the stakeholders involved are informed and brought up to speed. The next step would be to develop an implementation concept. After coordination with the customer, the concept would then be operationalized and possible project milestones derived. That would be our basic approach to IT projects. It should be mentioned that process analysis is not only about recording the ACTUAL processes, but also about defining the TARGET processes. And in this context, the topic of change management naturally plays a corresponding role for the first time. All the stakeholders involved in the new processes come together and take a concrete look at who is involved in which project, who has which task, and how it should work in the future. Of course, this has the advantage that everyone involved in the process is heard, and a person from each department involved is present at the relevant meetings, so that everyone affected by the new process can contribute their requirements to the IT project in the course of the aforementioned demand management, also with regard to change management. This can also involve non-technical departments such as sales or marketing. In this way, everyone is heard and can explain their point of view. In this way, each person in charge of an affected department who is involved in this process acts as a multiplier in the direction of his or her team and informs the remaining employees in the department who were not

present about the new IT project and its benefits, but also about compliance requirements or a change in legislation.

2. How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you, if you think a chronological order makes sense, change the order of some steps or repeat any steps throughout the model?

- We have eight points in the model. But I would say that points one and two are the basic setup, the basic structure, and points three to six, and possibly seven, describe the operational implementation. Not every step has to be applied or worked out for every project, for many projects it is sufficient to use decisions that have already been made, for example, not every project needs its own vision. Nevertheless, separate goals should be defined for each project. I have classified point four as the most important in IT projects, because it is very important to communicate to everyone that the IT project offers an opportunity for the company and the employees. However, depending on the facts at hand, different steps may be of greater importance. For example, if it is clear that a company is facing many obstacles, then this step is of greater importance than all the others. In this case, even the other points should be aligned, e.g. the team composition should be aligned (e.g. selection of certain experts/influential persons who can remove obstacles). Depending on the circumstances, I would adjust the model in one or the other point as mentioned above.
- I would see the model as a toolbox/toolkit where you draw on different elements depending on the facts/initial situation. I would not see a strict order.
- I would also decide which point to delete on an individual basis, depending on the initial situation. Basically, however, I would say that point eight does not quite fit into the IT context.

3. How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information

User Focus/Diversity

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

Problem Framing

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

Experimentation

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- I find the topic of experimentation highly exciting, but in my opinion, it only works if you are an IT company or IT service provider that sells its own IT products. Other companies would not want to or be able to pay for this experimentation.

- I think the three elements are all good, because in the end that's what an IT/IT change project is all about. If User doesn't work with the newly implemented system, the project has failed. Experimentation I would rank as the weakest item, I give this item a two because although it is a very good step, it is not applicable to all companies. I give the problem framing a four and the user focus a three.
- I would also integrate the three elements into the toolbox.

▪ **Interview-Transcript // Expert ID5**

Organisation	Years of Experience	Position	Date	Interview (approx., minutes)	Duration
Carpe Viam	30	CEO	11.04.23	40	

Part A

1. Establishing a Sense of Urgency

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- Urgency is a very important topic, because anything that is not considered urgent does not make it onto the agenda. The unfavorable thing in the context of IT projects is often that the actual top management does not have these projects on the agenda as urgent and is happy to hand over these topics directly to a CIO, ideally already sitting on the board, or to the IT department. However, placing these projects outside of top management is often the first step in the failure of such projects. I have experienced often enough that everyone seems to know that the issues are urgent, but nothing happens.

2. Creating the Guiding Coalition

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- Forming a jointly aligned management team is an important success factor in the context of IT projects. Experience shows that this point plays an even greater role in administrations, which are often politically colored, than in classic large corporations. In my opinion, disagreement, also for political reasons, is one of the main reasons why IT projects progress so slowly there. Often, everyone finds their own isolated solution. Unfortunately, it is too often a matter of ego and individual interests, and not only political issues lead to disagreements, but also elementary things like sympathy and antipathy. There is a method for exactly such cases, the identification of the so-called "Must-Win-Battles", with which management teams can align themselves together. This method is also often the first step in growth projects, which are known to affect the entire company. If initially the question is asked very specifically what the organization must do in order to survive in the long term, the right points are often reached very objectively and existing animosities can then also be resolved. However, such questions must be approached very consciously. Unfortunately, there is often a certain inhibition to get together in a room and go through the relevant issues.

3. Developing a Vision and Strategy

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- In my view, we have far too few visions today in the sense of ideas for a better future. A better future in the sense of a future in which everyone benefits, not just a few stakeholders or shareholders, but everyone involved, including the entire environment. One must not be put off by the term vision. To come back to the administration, there it is also about the citizens and the future of the location. In a company, the topic of visions is often about the future of the company. In the IT context, it is of course basically good to have a vision, but in my opinion it would also be sufficient to have a certain strategic idea of the future. It is often not necessary to have a definitive vision at the beginning because, especially in IT projects, a lot is decided along the way and only manifests itself over time. In principle, a vision is important, but one should also be aware that the complete vision will only develop over time.

4. Communicating the Change Vision

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- Communication is a big issue in all change processes, regardless of whether it's a project in the digital/IT context or outside of it. Unfortunately, however, the topic is massively neglected. In my opinion, top management often underestimates how important constant communication is for project success. Even though it is basically a task of top management, the important role of cross-departmental managers should also be mentioned at this point. They should act as change agents within their sphere of influence, and this is a very important success factor in IT projects. I think it is extremely important to implement the role of the change agent and to use it in the change process, especially in IT projects. In this way, top management is able to transfer part of the communication burden to the change agents and thus relieve themselves somewhat. However, the transfer of tasks of this kind and the corresponding organization must be formal, so that a certain structure is in place. At best, an appropriate project office is available to the change agents. If the role of the change agents is not organized appropriately, they often act in a haphazard manner and contribute little to the success of the project. Basically, I can only advise all top managers to create an appropriate communication plan and, above all, to become active themselves in the area of communication. At this point, I would like to quote the following beautiful saying from storytelling: "The entrepreneur speaks for himself".

5. Empowering Employees for Broad-Based Action

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- On this point, the use of change agents can help a lot. According to the iceberg of ignorance, top management typically knows only 4 percent of the problems in the company. Middle management already knows a bit more and the workforce sees the problems every day. At this point, the issue of communication is also of great importance, because a certain permeability of communication or a transport of information in an organization from the lower hierarchical level to the upper and vice

versa is enormously important. It is important to remember that employees are on the front line and know best about the current status of processes and projects. It is primarily the employees who know what works and what doesn't and therefore they are also the ones who can say where there is potential for optimization. A big mistake that often happens in IT projects is that existing, poor processes are surveyed and immediately digitized. This approach often impairs the success of such projects. Ideally, a comprehensive analysis of the relevant processes should take place after the survey in order to determine where things can be improved and what the employees affected by the change need for the project to be successful. In this way, it is more likely that the corresponding IT project will be implemented successfully. This is also because the employees are valued and realize that their input, in the form of expressed feedback and wishes, is taken into account in the implementation. This is precisely where change agents can act as a mouthpiece for the workforce and make an important contribution to the success of the project. After all, if communication with the company's base, the employees, does not work, the IT project will be implemented, but the long-term results will always fall short of expectations. So if you don't analyze in advance and during the project what is standing in the way of the project's success, the topic of digitization will not work.

6. Generating Short-Term Wins

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- The short-term gains are very important to keep employee motivation high. An IT project is typically not a fast-moving project that can be completed in three or six months; rather, it often involves a comprehensive transformation that extends over a longer period of time. In this respect, it is always important in such projects to celebrate successes along the way. Here, too, there is a close connection to correct communication, because what has already been achieved is quickly taken for granted again and then forgotten. Even if I do not consider this point critical for success, it is still important to have it on the agenda. It is very important to use the so-called "short-term wins" as well as the "short-term failures" for the purpose of change, possibly with the involvement of change agents, in both positive and negative ways, because you can also learn a lot from mistakes for current and future projects.

7. Consolidating Gains and Producing More Change

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- It is very important to keep building on what you have achieved. In practice, I often see that a project is initiated, but over time it is forgotten. So then it is only a matter of time until the momentum is lost. Continuity and staying power are very important. However, these attributes seem to be somewhat out of fashion in our digital and short-term attention-driven world. Sweat and tears are often part of the process and ensuring this very continuity is a very important leadership and communication task. This point should be self-evident in projects of any kind and, if applied correctly, can also strengthen the ability to change and the agility of the company in the long term. Here

again, change agents can help, because if they are appropriately empowered and integrated into the organization, the competencies that are important for this point can be built up on a large scale and anchored in the company. After all, an appropriate team is often better able to maintain the momentum required at this point than a single employee.

8. Anchoring New Approaches in the Culture

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- If done well, an IT project or process, or the topic of digitization in general, can change the entire culture of the company. However, this often requires internal multipliers such as change agents, since the classic top-down approach is often not very effective. It should be mentioned that executives can also act as change agents. I like to remember a large IT project at a real estate manager where there was a great sense of urgency. In this project we used change agents and in about 12-18 months managed to establish a change down to the lower levels of the company. Among other things, the IT competence of the employees was expanded and they were thoroughly informed about the purpose and background of the project, so that the concrete advantages for their daily work became apparent. A fundamental success factor at this point is to empower employees, via change agents or managers. Not least because a new mindset is often created merely through new competencies. It is at least as important to model fault tolerance to employees, because punishing every mistake in such a change process inhibits the likelihood of success of any project. In conclusion, it is not for nothing that "culture eats strategy for breakfast". Because at the end of the day culture is not as abstract as you might think, it is the way people think and act. I think the reason many struggle with the topic of culture is that no one really knows how to properly approach this seemingly abstract topic. Often, the challenge is not in surveying the prevailing culture, but in actually changing it. From my experience, change in this area mainly succeeds through adapted processes, such as communication processes and leadership processes, but also through an appropriate error culture and the teaching of relevant skills. In this way, you can make the topic of culture more factual and tangible, because this is the only way to convince critical managers of this extremely important topic and it becomes clear how this can make a difference in the organization.

Part B

1. How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?

- At the beginning of a change project, I would determine whether the project in question is critical to success or is counted among the so-called "must-win battles" and whether there is agreement among top management in this regard. If this is not the case and if there are high risks and obstacles to implementation, it would make sense to ensure that there is agreement before the project begins and, with a view to the project's probability of success, to remove the obstacles. I would therefore first ensure that the project is a priority for top management and consequently receives the appropriate attention. Subsequently, I would want to ensure a common strategic alignment around the leadership issues and set up a good team, including change agents. These change agents should be selected based on certain criteria, such as internal recognition and

communication skills. It is at least as important to empower the change agents, especially in the area of change but also in the areas of communication, emotions and personality types, so that the change agents can actually bring about change in exchange with the employees. It is also important that top management provides an appropriate framework for the project and accompanies it with communications. The framework should also include the areas of control, error culture and trust, so that a development process that serves the success of the project also takes place at these levels. In this way, it is more likely that the cultural elements already mentioned will be anchored in the company and that the vision and strategy will be adapted to such an extent that the probability of success of current and future IT and digitization projects will be increased. Perhaps the IT project will even provide an opportunity to renew the company and move it into entirely new spheres in terms of shaping the future and growth.

2. How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you, if you think a chronological order makes sense, change the order of some steps or repeat any steps throughout the model?

- One recommendation would be, as a supplement, to actually think about empowered change agents. Change agents do not necessarily have to be new employees, but can also be drawn from the existing organization. A good project manager, for example, could lead the change agents' project office. Regarding the sequence of the individual steps, change is, in my opinion, always an iterative process in which many steps have to take place more than once. It is an illusion that once you go through the model steps and a change occurs. In general, I think a method toolbox is important, whereby I would see Kotter's steps as one of many components. I would add the correct handling of comfort zones, emotions (emotion management), power and powerlessness. On the topic of emotions, it is important to know how to use them for positive action. When it comes to powerlessness, for example, it is elementary to know how to find your way out of this state. It can also be important to be able to identify different personality and stress types in order to be able to work together in the best possible way. A further complementary element could be change coaching, in order to be able to reflect on the top management level in the sense of change and to expand competencies on a non-technical level. Change coaching is mainly about releasing inner, already existing resources in people. The latter has a direct positive effect on the culture and ultimately also on the upcoming change itself. Finally, I would like to mention here that I see the topic of communication as an accompanying element to every step of the model, from the beginning to the end of the project.

3. How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information

User Focus/Diversity

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

Problem Framing

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

Experimentation

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- Even though user focus is important, the current trend in companies is too much in the direction of empathy and harmony. Of course, you need a line on this topic in order not to lose the employees, but I would still classify this point as less important compared to the others.
- According to my experience, problem framing is a very important topic, because many companies do not know at the beginning which problems they actually want to solve. Often, not even top management agrees on the problem at hand, so it is of central importance to define the actual problem at the beginning. Otherwise, all further efforts are obsolete and you may be marching in the wrong direction.
- Everyone knows that change goes hand in hand with mistakes, and although it is written everywhere, no one seems to want to accept it. In my view, experimentation has a very high priority and must be planned for from the very beginning. Not least because companies often enter new territory with new IT projects. The fact that things will go wrong is clear from the start and should therefore be taken into account in the initial planning. Ideally, this fault tolerance should also be incorporated into the corporate culture to some extent. If experimentation, which as we all know costs money and time, is not taken into account in the initial project planning for the same reasons, this must be described as a planning error. Changes are always accompanied by errors.

▪ **Interview-Transcript // Expert ID6**

Organisation	Years of Experience	Position	Date	Interview Duration (approx., minutes)
Janus Insights LLC	20	Certified Change Management Professional (CCMP)	02.04.23	40

Part A

1. Establishing a Sense of Urgency

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- I do want to say something to overall. Kotter's model, his eight steps, was designed at an organizational change level. It was designed in concepts and viewpoint of individual humans and people, in interactions and all of the levels of various stakeholders and sponsors, et cetera. And what would have to happen for an organizational change to occur? In this case you're trying to bring in, and that's why you may see some discrepancies: the application of Kotter steps into a project level whenever you move

from an organizational enterprise level to a portfolio level, to a program level, all the way down to a project level. Yes, there is some similarities, but there's also divergences. And so now, with that painting of the picture, I'm going to have to answer your questions all the way down on a project level, and they won't be the same answers as if you were interviewing me for an enterprise level or a portfolio level or even a program with multiple projects underneath it.

- That's very important. Anybody who has come up with a model, it's important that we understand, because otherwise we get things like you know, the change model, the curves of the various grief counselors from Kubler Ross, which was trying to be applied to all individuals when change, when she wrote it for people who were dying right. That is not the same context as an organizational change and nor is it even the right viewpoint. So you get a misapplication through the field if you don't understand what the author who created the model was for. So I just want to set that stage.

- And when we get down into the other models, one would suggest an IT- project, and I have an answer for you, because now I'm talking to you from IT- projects. Your timing is impeccable, because I'm living a very deep IT-project at project level right now. So I'll be good context. So the first: don't create this urgency any particular human. For any person to make changes in what they need. There has to be a sense of it's time to change and that has to come from people that they trust to change period in technology. We are asking them and it depends on what we're changing in technology. In this case, the IT- project that I'm on right now is a transformational change, a merger where a very large oil and gas company has bought a smaller alternative energy company, very small in comparison, 300 people compared to 90.000 people, and is moving that company underneath their portfolio of alternative energy. Okay, so now for a person, a sense of urgency and announcements made. It's time to change. You've been bought. That's a sense of urgency across the boards. The technology piece, though, we're going to onboard you through technology that one is like "Ok good, I've been bought". Most of that urgency had to be created right there. The fact that technology is being utilized right. That's just one step in their minds. That's just one piece they have to live through. So the sense of urgency in this case here is created outside of the IT- project. It is not created inside of the IT-project and its very much has to be done at an enterprise or a division level. It cannot be done inside a specific project or it'll create too much noise in the wrong direction and disperse the project formation.

- Urgency must come from an higher level and be part of an overall project of what's happening, because the whole reason you're doing an IT-project is that there is some change that needs to happen business wise. There's some values to be achieved which are not being achieved and therefore it, and technology usually fundamentally, is one aspect of achieving that value. Now, if you were to put it on a scale, of the importance of technology depends on the project that one is, it depends what is the value? What are we trying to achieve? In this case technology, maybe way up here or depending on what we're trying to achieve? The technology is over here on importance most of the time, just changing every. I've never really run into an IT-project of which isn't lined with something else of what they're trying to change. And it's just you know, like other than this. Here's where I've run into it. I've actually run into it, where a software that we've been using and I've gotten comfortable with goes away, there's no support for it and it violates cyber security rules or the company dissolve. So then it's an announcement: "I'm so sorry, you know you loved this, but we can no longer do it because it isn't support it. With cyber security, we're going to have to start doing this right". Right then becomes just purely IT and it's not linked to anything else, because you can't no longer can utilize this technology, in which case there's no urgency that needs to be. In fact, if you make it too urgent, you're distracting me. You're telling me

I can't use it all right. I'll get comfortable with it. Show me how to use the other one right. It's kind of like "Okay, fine, what am I going to do? I can't argue that". That's the only time I've had IT by itself, at 100% of itself as a project. It's fairly important, but fundamentally it's got to come from a higher level of whatever the business picture that's wanted.

2. Creating the Guiding Coalition

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- So in this case here coalition is by definition a group of people who have come together to accomplish something and they all have some vested interest or aspect of to it, and they also usually have some form of authority or some aspect to them where people either listen to them or they have a chart on the organization, in which case they need to participate in it, in general, and that's how I'm defining coalition in this case of it. Absolutely, we're dealing with people who have to change something with their technology and one they need to hear about it at an enterprise level and second, their management needs to have bought in that they're changing their data day activities and a lot of times the coalition is a combination of both management level right, direct supervisors as well as senior management. So the coalition has a lot more influence on the direction of the project. Right in this case, even your sponsorship. You know your exact sponsors or you're you know, they are called different things. They're called different steering committees right, they have different names for them. Those are an aspect of coalition. So if we're talking about more of an executive coalition, vital, very important number four. If we're talking more of an everyday management and sponsors to me when it comes to actually getting it changed, that one is very important too. It's a four. Initially, though. Initially, if I go and try to organize at this level without first getting the clearance I need at this level a lot of times, my management supervisor level starts high in involvement and very quickly drops down, and then I have a problem where I have to undo something before I can get their involvement again and it's a lot harder. I'm going against friction. So the timing of this matters. So yes, to answer your question, I think I gave you some numbers there, but but also I would have to say the timing of it matters on an IT-project. Sometimes it's too soon to engage certain people in the coalition.
- What else is going on? Let's say, this Manager who is key in your coalition is undergoing massive other change and has no band with for you, no attention for it. In this case, doing this, trying to make this change on it, acts like a flynt biting at him right. So your timing is important. It doesn't mean this person doesn't need to be involved, but a lot of time build a guiding coalition, what's missing from that is in relationship to the whole change, portfolio sequencing and timing in the organization. Otherwise you're going to constantly run into the unavailability of this person. They're saturated in different directions.
- I gave it a four for both sides. In this case, timing is vital. It's a four, but it's got to be against the portfolio and the prioritisation of the company.

3. Developing a Vision and Strategy

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion

X					
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- For anybody to change. They have to know why, why now, what happens if I don't. If that change is not linked to some strategy or future state vision depending on the project, then I can't get that answer for the person which is the first step. Let's say, it's the project where this software system is no longer being supported and is outside and you have to go on to teams instead of whatever. But let's say, something happens with slack or some other messaging program and I can't use it any more. I don't need a vision for that one, do you see? I need no organizational vision for that project.
- In this case, like that example, that's an operational example. It is still a project, but it fits into what the purpose of it is, it fits into the whole, what it is supposed to supply. That's why, when you say IT-project by itself, you have to distinguish between something brand new or operational day work. You have IT-projects that are operational and you have IT-projects that are strategic change. So that's the other delineation you may need.
- Classification: On enterprise/organizational level a four and on project level a one.

4. Communicating the Change Vision

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- Communicate the change vision. I give a four for the organizational level right off the bat. What I have to communicate on just strictly IT-projects is what's the result that it's trying to achieve, not the change vision, the result, to achieve in the real world. I still have to communicate a vision. One is either the result in the real world or one is the organizational strategy. I have to tell the story.
- I believe that you have to communicate the same message five to seven times, in five to seven different ways and on different channels. I can never say one is done. Email, we already know, statistically, is about seven percent effective. So why would one think I sent the email? It's good enough right now. That's one channel. You did it once. Now you have to go all the way up to seven times right in different channels. So that's one of them. Personal communication, hands down, is always best. Everything else is far less important and effective. If you take the lower half of the scale, all the other forms of communication fall within the lower half compared to personal communication and something that's complicated, as which is why you're saying you know town halls in person and open sessions are still so much more effective than email. In IT-projects it is important that the shared information can be found again. Here a typical way is to have a sharepoint site where you have post information. Without that, people get their answers but then still have more questions about it. There's no lasting piece. With regard to transparency, sometimes you can only get as transparent as you can. There are sometimes rules and of various different firewalls of different sorts, but it doesn't mean that you're not being transparent, it's just that you cannot share certain pieces of it. Appropriate communication is key, but what you think is appropriate is different from what I think is appropriate. Depending on the project, the definition of appropriate changes too.

5. Empowering Employees for Broad-Based Action

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion

X					
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- Hands down, that's all we do. It doesn't matter what level we're at on an IT- project. If you could do a five on this one, this is what we do all the time.
- That is the job is constantly being on enough communication lines, having a good enough relationship, enough of a safe space, enough hearing and prioritizing which obstacles to remove, first right and then constantly shaking, you know, going up and down and up and down, doing work along this, removing obstacles. This one here is the job, this one, you know, and they'll do different obstacles. The executives are removing a different kind of obstacle than metal managers, then supervisors there.

6. Generating Short-Term Wins

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- This we need for the moral of the team itself. The team's moral also has to be kept up because, for example, one of the projects I'm on right now moves so quickly, with so many changes, and there are so many meetings with so many layers of technical aspects of it, of which not everybody knows and understands. When you generate the short wins, it gives you the energy to go on. All right, and this one, I feel, is strategic to the team itself. Who has to go through months and months of slogging through the technical as well as bringing what people need to come in, shape it depending on what's happening. Is the other aspect of this one, to stay afloat, to keep having money flowing, to add more resources if you need it. Executives get hit with so much more bad news than they get good news, that you have to give them constant success stories, so that they feel like we're doing something. It'll get there. This one is vital just because otherwise the team disintegrates and the executive stop paying attention. They need to be able to say here's what we're doing in the real world, here is how successful we're being. Otherwise, you lose your people. You lose them in their roles.
- I want to talk about the last sentence (performance measurement methods). This is important. I've just spent my last year and a half working through my own research on this. Performance measurement methods should be best at best, should be used to provide data based evidence of positive developments (KPIs etc.). That is the most critical statement out of anything he's got here. And here's why, there's a big difference in measuring and talking winds of results in the real world, that can be substantiated with data, versus, actions done. Simply tracking activity is overrated and useless . You get so lost in the noise and the amount of time it takes up and energy of the KPIs that measure activities when factually, as a person, your To-Do-List just keeps getting longer and longer. We are dispersing our executives, giving them a ton of KPIs that don't really measure the world and were forcing our team down a path towards activities. Equal success, not results. And so that piece, that last sentence, out of everything, is key to achieving what it is Kotter intended in the first place.
- I can tell you that what we're doing to our executives and to our teams is again, we are shaping, perverted this last line (Performance measurement methods), providing data based positive things, because, what Kotter, didn't talk about is the difference between results versus actions and right now, for example, in change management, how much time and attention I put on one step or a gap I see, is all dependent on the result I want out of it. The change management principle or methodology of whatever on the plan

may say "Use this, do all of this, so that you get this result". But every team I go to has a different culture, has a different group of people, has different gaps. Depending on that gap, I only really need to do this much because frankly, this is a bigger gap. If I'm measuring against the result I want, I can make that determination and change and pivot which direction I go into, as to how much work I put in. If I'm measuring against KPIs or actions, I am forced to do all of this, so I can check the boxes and then all my attention, my rewards, my compensation, my bonus are all tied into this, when that is not factually what needs to happen. This point should have been broken up. If I had anything to say to Kotter, I would say, you need to break this one up into its own step, because it's circumventing and getting in the way of some of your other steps.

- Data and the way it's put together can still distract. It, can still put an executive's attention on a checklist of things instead of the end results, and what we want is we want to enable them. We're trying to bring organizations up into the next evolution, and that's an evolution. We get rid of a lot of our hierarchy, we get rid of a lot of this stuff and we have the ability to say, to get that pink flower that I want. I only really need to do this and I can get it. I think I answered your question on an organizational level it needs to be a four and on an individual project level that one gets rough because they're using their azure DevOps and list of targets and scrums and backlogs as their statistics, which focuses them into activities and less into the results.
- As a change manager I have to focus on the result and less on the control method. If I'm a developer, well then I don't get a result until I'm done with the 200 activities. But as a change manager, humans are far more complex. You and I could chat and in 20 minutes I could get the result I need, where it may take me two months for another person and 10 chats before I get them to where I need their heart and head. Because of the infinite number of variables in a human, I cannot be focused, and this is where IT-Projects go off, go wrong, when it comes to change management. You cannot be focused on just a-list of activities without the real importance being the measure of the results.

7. Consolidating Gains and Producing More Change

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
			X		

- This is enterprise level. This is taken from the context of, if an IT-project was putting this in, its now in, and from that you now want to build on it and on the other aspects of what you were trying to achieve, business wise. That is why I would say that the way this is written here, it's not important to an IT-project, because we're not doing this. An IT-project at project level is creating a change. What Kotter is saying here is now build on that change as one of many changes you're making to get your business value. People that are in the technology world think their whole world is IT, and that's it. The world is not all IT and so technology usually is always just one workstream or aspect amongst the biggest change.

8. Anchoring New Approaches in the Culture

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- If we define culture as the way things are done around here right now, and I say right now, because you have to put a time in place when it comes to culture definition,

because it will change on you. And if the way things are done around here right now is, we use Slack, for example, as a way to communicate, and all our apps are linked to that and everybody loves Slack etc. . And now somebody's coming in and saying, we just bought you, you have to use Microsoft, you're going to Microsoft Teams and Slack is going away and you have to use PCs too. Get rid of your Macs. In this case we're talking about a major conflict. IT-projects into the culture aspect of it. If I have to create changes with technology. that is going to change the way things are done around here. No matter what, when I change technology, I am impinging on somebody's behavior and the behaviors accumulate, do impact culture. It depends on which direction you look at this for me to answer this question.

- Technology being one aspect of ways of behaving is going to create a-type of culture. So you don't have a choice. The technologies are going to impact culture one way or another. So this idea of successfully anchoring them into culture, it's almost the other way around with IT-projects whereby we do them, if they get used, then, and I say, if they get used, because this is where a lot of times you can build something and it doesn't get used. If they're used, then to that degree, culture is shifting that direction. I believe that culture is a far more complicated thing than what I just said and it has a lot more nuances. I also believe that IT-project should be designed around what's going to most help that culture produce the result you want, whatever the business value it is. Let's take my example: In my particular alternative energy company it's very much an entrepreneurial startup type mentality. Everybody is using Macs, it's all part of their culture. They use slack etc., now here comes this big giant who's all Microsoft, all PCs, and in fact it's the rule, that you have to get on Microsoft. We can't do Macs unless you're a developer. Oh my gosh, the question becomes: What culture do you want in this company by the time you're done changing all the technology. I have to know that, then I have to work with the culture just to get whatever technology adopted, and then a new culture would be created.
- The most simple definition I could ever come up with when I was teaching against culture, out of all the culture, texts and tones that exists, is fundamentally the way things are done.
- This is like the company reward system, as an example. If I am being bonused or compensated to achieve some result which requires that a technology change happen, then, all of a sudden, there's a lot more interest in making that technology change happen, if the technology changes are beating up against a system that rewards and compensated people to do this, that has nothing to do with technology and in fact the way they've figured out to do this and be successful is using a different technology. And then I'm coming and saying you've got to come over and move over to my technology. Forget it. I won't even get the project successfully done. That's what take years. This embed changes into culture, both ways on it, but I would almost reward it, is to design the technology to advance the culture you want in the company and then embedded. That's how I would reward that step in order to make this effective for IT and digitization projects and then which case, if it was rewarded that way, it's a four.

Part B

1. How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?

- There are two methodologies. First of all, because Kotter's steps are designed the way he's designed them for organizational overall, the concepts are still very applicable. Is

it what I would use by itself for an agile project or technology project? The answer is very much no. I largely rely on agile change management. This is what our whole bread and butter is, is how to do change management on technology projects. So I use concepts from this very much where she has basically taken the manifesto, the agile manifesto and various concepts from that, and blended it into an approach in which case you can use and sprint cycles etc. of pieces her. The way she has designed this, though, is very much using lean change management.

- Meaning, in which case you're taking concepts of lean and you're pulling from the ideas and the mentalities and the ways of pivoting and you're putting them into an agile framework in order to implement the change. I'm using pieces from each of those three subjects that we've chatted through. Also, what am I using fundamentally depends on, it's hard, I've been doing this for so long, it's in my DNA. I'm pulling from so many methodologies, it depends on who I am talking to and what is needed. The methodology I always use, just fundamental, it just naturally rolls out of me. I wouldn't be able to separate it from my DNA if I tried. It's the ADKAR. But in agile projects you don't only have to deal with people. You're dealing with technology, and so I use principles from each of these subjects.
- I have to say, because we're dealing with an infinite, and I mean it, when I say infinite number of variables, that is a human and in the human soul and mind. I have to take who am I talking to right now? What really is the scope of the project and what do I need to pull from that is their biggest barrier from achieving whatever the result is that they're paying me to achieve.
- Which is why I don't believe you can just have one model. Each model was designed with an author who had a specific story in mind in which to solve.
- On my current project, moving on to certain technology is a regulatory compliance point which will cost the company multibillions if a company does not comply. Therefore, a very more rigid process has been designed in phases that match the phases of the execution of the project, with exact deliverables of certain change management under each of the nine phases right and at least minimumly those have to be done. How you execute each one of those needs all of this information. But doing the steps of each one was created so that one who could still achieve the results but make the regulatory and the IT-people who are very used to -"done, not done, done, not done" - that's the way they're wired. You couldn't unwire them if you tried. So when I'm on talking to my technical projects, I very much have to be on these deliverables. When I'm talking to my sponsors, I very much have to be a different concept. Depending on which group I'm talking to or individual, is how I'm having to adjust my approach in the conversations of the sessions.

2. How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you, if you think a chronological order makes sense, change the order of some steps or repeat any steps throughout the model?

- I don't disagree with your experts (putting all the steps in a toolbox). I would also say that Kotter never intended his model to be linear. If you read his words carefully and I've read them very carefully, he said that there is cyclic approaches. There is some cyclic aspects, just like even in ADKAR. You can move down awareness and desire and you can get to the training point and then the person goes - "no, I'm out of here. I did not know it would be this difficult" - boom, you're back to desire or you're moving into coaching and they're like -"I really didn't understand that"- boom, you're back to knowledge. All of these models can't operate because a human doesn't operate in a linear fashion of just "A, B, C without never going back to A". We cycle, we are dynamic.

We're in flux. So Kotter's intention too was providing his steps, but he also stated somewhere in there right of the fluctuations that can occur. So your experts said it in another way: Start with urgency, but I have to tell you, you won't even be put into a project unless there was already a sense of urgency. You wouldn't have been hired as a change manager. So somebody's created already a sense of urgency and they even said you needed a change manager. So you go to wherever you need and you bring in what you need, depending the gap, but Kotter's model is wholly insufficient for IT-projects.

- He didn't design his model just for IT-projects. He didn't design it for project-level.

3. How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information

User Focus/Diversity

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

Problem Framing

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

Experimentation

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- Experimentation by far is the most important thing on any of this. All changes are fundamentally an experiment. We think that, if we change this we'll get this business result. No one knows for sure. So experimentation and so forth is number one important point. So if everybody agrees it is an experiment, they operate differently, they think differently and they talk differently. So of all of this they will themselves frame the problem differently. They themselves will voice their own opinion and diverse thoughts differently as soon as you've set it up and made it a safe space that this can't be an experiment.
- By the way, I mean I just generalized it but fundamentally, this is where I run across the biggest problem: Is that there's this assumption that we do, we create this IT-change, then it's going to magically save the world. You don't know that, you may get three quarters of the way through and find out that you can't even do it, like in other words, if we don't just keep it as an experiment, people operate and focus and prioritize differently than if we think, whatever the change is, it could be it or otherwise, is anything other than an experiment. So I would say, on all of these things, experimentation is a four, problem framing is a three, user focus and diversity is a two.

▪ Interview-Transcript // Expert ID7

Organisation	Years of Experience	Position	Date	Interview Duration (approx., minutes)
CEO Venture Wizards	7	CEO	04.04.23	40

Part A

1. Establishing a Sense of Urgency

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- You need the support of the stakeholders, because if the management (C-level, head of, etc.) does not play along and sticks to its current goals, then it is of little use if the employees at the lower levels of the hierarchy try to initiate a change. Especially in smaller companies, you often have to fight against the mindset that everything should stay the way it is because you have always done it that way. For these reasons, action is often only taken when it is actually already too late. However, due to the pandemic situation in particular, it should be noted that, especially in the context of IT/digitization projects, there is a greater sensitivity for these topics and projects than in the past and it is therefore easier to create a sense of urgency in management.

2. Creating the Guiding Coalition

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- Just because an urgency has been identified does not mean that anything will change. The larger the organization in which the change is to take place, the more key players at higher levels must be involved and the more resources are needed. When it comes to digitization, it is important that parts of the "Guiding Coalition" are open to new topics and really want to invest in them and not just take up these topics to present themselves as "modern" to the outside world. This is important because major digitization projects are often accompanied by change at the organizational level. Since this is always associated with costs, you need responsible persons in the "Guiding Coalition" who provide sufficient budget.

3. Developing a Vision and Strategy

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- After doing a status quo analysis and determining the urgency that something needs to change, you obviously need to know where you want to go or what the larger goal is in a specific time context. It is important to define smaller milestones in line with the upper goal in order to achieve the larger vision or goal. However, in IT/digitization it is usually not even worth choosing a longer planning period because the technology, market and competition change very quickly. A vision and goals are important, but in

this context they must also be agile and adaptable. One should always adapt the vision to influencing factors such as customer needs, technology, market or competitors. However, it is very important that you always remain true to yourself as a company and do not have to jump on every technology trend, as this can quickly backfire. You should only invest in a new technology if the specific use case makes sense for your own company. The new technology must always fit the vision of the company, the knowledge of the employees, the structure and the business case.

4. Communicating the Change Vision

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- Communication is very important because everyone in the company, from the lower to the higher levels of the hierarchy, needs to understand why they are doing the activities they are doing and what the vision and goals are behind it. Otherwise, you sometimes have the problem that employees are working in different directions or that there is a lack of motivation because they don't know what their work is supposed to accomplish. When the larger vision is known, experience shows that employees work more efficiently and can offer more to the company. This can be guaranteed through proper communication and feedback. It is always important to be able to explain the reason for changes, goals and vision and to explain the possible consequence if certain things are not done.

5. Empowering Employees for Broad-Based Action

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- It is important that the existing project management or product development framework fits the change. You have to be flexible and adapt your way of working, especially in the area of digitization. In the area of development, we have also often shortened the sprint duration in order to solve problems and also integrated customer feedback more strongly. Depending on the problem, you have to act quickly so that the project can be implemented successfully.

6. Generating Short-Term Wins

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- It is important because it contributes significantly to the morale. In our company, we also try to provide each department with milestones on the way to the company's goal, which gives us the opportunity to give responsibility to employees at lower levels of the hierarchy. In this way, management acts more as a sparring partner for the individual departments and can hand over responsibility. This is especially important in larger companies where there is not a strong sense of ownership among employees. In this way, employees feel noticed and have the feeling that they can contribute to the company's success. The challenge here, of course, is to get employees to develop a personal interest in the company's success. This is easy, of course, if the existing employees identify with the product or service and the company itself and, above all, enjoy working for the company. To keep our employees motivated, we also rely on company-wide communication of minor successes so that employees who have

achieved something important feel seen, praised and valued. A variation of this is our "win-of-the-day" channel, where each employee can share their biggest success of the day.

7. Consolidating Gains and Producing More Change

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

- This point is not unimportant, as you can plan everything well in advance, but the implementation itself can be another big challenge. To ensure that our employees deliver consistent performance, we also rely on good communication of our vision and corporate goal, and on good justification of why we do the things we do. This ensures that motivation does not wane even after important milestones have been reached, and that no one rests on their laurels when it comes to long-term projects.

8. Anchoring New Approaches in the Culture

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

- For digital projects, I find this point very important because the entire product development process has to be adapted to the digital context, and this changed way of working naturally has a major impact on the culture. A certain openness must be present, as well as a flexibility to constantly adapt to changing needs. This mindset must be represented throughout the organization and must therefore become part of the corporate culture. If the culture in the digital context does not change permanently, there is a constant risk that behaviors will revert to "analog" patterns after a digital project has been completed.

Part B

1. How would you design an ideal approach to a change in the context of IT/digitalization projects and what are the most important elements (success factors) for you in this context?

- First of all, I would conduct a status quo analysis to initially determine the starting position, what the specific problem is and what needs to be changed. Subsequently, I would define the goal and in which timeframe I want to achieve this, i.e. set the schedule. I would define milestones and KPIs so that the project success is measurable. I would define the requirements and set up an initial plan, in which I would determine which human resources I need for my project, which competencies are required. Then you have to see whether the required employees are available internally or whether you have to hire new employees. In the further course, internal communication is an important point, everyone involved must know what the goal is and why. Above all, the working methods to be used must also be mentioned. It is also important in digital projects to involve all stakeholders in the process to get important feedback for the development, realization or implementation. When you integrate stakeholders into milestone planning, you can respond much better to changing requirements. It is also important to get feedback from the management level, to be always up to date about the project and the way of working and to see where something could be improved. These two feedback levels, internal and external, are very

important. It is important to always stay close to the stakeholders and the technical aspects, so that you don't drift too far away from the essentials.

2. How would you adapt Kotter's model for IT/digitalization projects? Which steps would you add/remove? Would you, if you think a chronological order makes sense, change the order of some steps or repeat any steps throughout the model?

- In the digital context, it is important to always remain adaptable. I would add the two feedback levels, internal and external, as well as stakeholder management adapted to the digital context, where it makes sense to integrate the end user into the development, implementation or execution in order to create the best possible result that perfectly matches the requirements. These two additions are a good way to make sure that you are still on track with the previously defined requirements and that you are going in the right direction. Basically, I go along with the toolbox principle that you fall back on the steps you need depending on your needs and situation, although logically you could not start with every step from Kotter's model.

3. How important do you consider the following core elements of Design Thinking to be during a change intention in the context of IT/digitalization projects? What is your opinion? Please note the additional information

User Focus/Diversity

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
X					

Problem Framing

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
	X				

Experimentation

Very important (4)	Fairly important (3)	Important (2)	Slightly important (1)	Not at all important (0)	No Opinion
		X			

- Problem framing: Without a precise definition of the problem, you cannot sell a digital product on the market. The problem must be clear in order to communicate the benefits of the solution to the market. Experimentation: At the beginning of a digital product development, a lot of experimentation is needed, as the MVP can go in different directions. After a certain point, however, a certain direction manifests itself and you only do smaller experiments. However, in the context of changing customer requirements, you should always try to create a better product for the customer through experimentation and never try to rest on the already existing product. In this process, I like to conduct interviews where I show the development progress and record the remaining requirements. On the other hand, I also like to conduct quantitative testing in the analytics area to find out where things can be improved. These two methods have proven themselves and I would also count them as experimentation. And there you have to develop a certain joy of experimentation, especially in the digital context.

However, it's also important not to invest too much time and money in experimentation, because in experimentation it's primarily important to make sure that you're going in the right direction, the direction that the end user wants, and that you're not wasting resources and that at the end of the project all stakeholders are satisfied. But for experimentation, budget really needs to be made available first as well. I would include all three elements in the toolbox.

Appendix C

MAXQDA Coding Results

Step 1: Establishing a Sense of Urgency

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Step 1: Establishing a Sense of Urgency	Leonardo	3183	12,88
Expert_ID2	Step 1: Establishing a Sense of Urgency	Leonardo	764	7,09
Expert_ID3	Step 1: Establishing a Sense of Urgency	Leonardo	244	3,01
Expert_ID4	Step 1: Establishing a Sense of Urgency	Leonardo	1091	7,11
Expert_ID5	Step 1: Establishing a Sense of Urgency	Leonardo	605	3,40
Expert_ID6	Step 1: Establishing a Sense of Urgency	Leonardo	5203	17,51
Expert_ID7	Step 1: Establishing a Sense of Urgency	Leonardo	778	6,26

- I think the first step is important, because the change itself is not an operational goal of the company; it only changes the way things are done. This means that the employees in the operational area, and certainly not in the strategic area, will not be aware that some changes have to be made at all, and that is why this feeling has to be created artificially. Unless it is a matter of facts that are obvious. But this is rarely the case with IT projects. On the contrary, I would say that in IT projects the change is more likely to be what the user doesn't want, because everyone likes to keep their IT landscape the same and leave everything as it is.
- My impression is that change is not driven by itself because, as I experience in my current projects, change is always perceived as bad. Everything is supposed to be kept exactly as it is. I sometimes get queries whose only justification is: "Yes, but it wasn't like that in the past".
- You have to do a lot of convincing when you introduce a change. Especially if the last change was made a long time ago. If, on the other hand, you are in a "constant change environment", then it is probably different. Then I would say the necessity of the step changes, i.e. the Urgency of Creating a sense of Urgency. This is not so urgent in such an environment. So there's no need to put that pressure on people if things are changing all the time anyway and people are already used to a certain rhythm of change. If you have a team or an organization where things are constantly changing, then yes, the change itself is what I just excluded, operationally, in itself, is important. What I mean by that is that if you're a chocolate maker, you make chocolate. You don't sell change. And if there was a company that was selling change, yes, people there would probably be much more open

to change in their own context. But for very few companies, dealing professionally with change contexts is the order of the day.

- According to my experience, this step is absolutely right and important. In the area of taxes, there is also the fact that tax law is so sluggish when it comes to changes, which means that the affected organizations and employees can even argue with the law in themselves to justify their lack of change, according to the motto, "tax law has not changed, why should I change something in my IT landscape or in IT in the tax context". You have to overcome this resistance and for this the first step "Create a sense of urgency" is particularly important. Perhaps a word on how to create the urgency mentioned in the first step: In my case, the Urgency is definitely rights-based and thus often in my favor. You therefore have the law on your side when it comes to initiating and executing a change project. The applicable law and its implications are the biggest driver here, for example approaching deadlines/statutes of limitation, impending tax penalties and the like which virtually force changes.
- And otherwise, of course, the urgency and motivation to change quickly can be generated with company metrics, such as looking at current costs, and emphasizing that the change can avoid future insolvency or job cuts.

Code: • Step 1: Establishing a Sense of Urgency
Expert_ID1

- I think it's more important that key decision-makers understand the urgency, those who can drive the project internally. If you don't do the latter, the project is actually doomed to failure in my opinion. The affected employees usually understand the urgency because they know their department best, but usually no one wants to experience the effort of change and bear the initial extra work, which also occurs in an IT/digitization project. There will always be employees who, for example, are against a new solution and protest, regardless of how well you try to involve everyone in the project and explain it. Therefore, my opinion is that you can save most of the time for this step, because you will never reach/convince everyone, no matter how hard you try.

Code: • Step 1: Establishing a Sense of Urgency
Expert_ID2

- At the level where the IT change project has the greatest impact, i.e., at the user level, a certain urgency must be conveyed. This point is important for the group of people who have to use a newly introduced system against their initial will.

Code: • Step 1: Establishing a Sense of Urgency
Expert_ID3

- After all, the urgency arises from external influences, i.e. either environmental requirements, in my case the digitization of the control function through new regulation or legislation. Generally speaking, technological trends must also be taken into account. For example, if there is no longer any technical support for a legacy system in the future or because a license expires for a certain system or application in the IT context. It is particularly important to place the issue of urgency with decision-makers. By decision-makers, I mean owners, CEOs and managing directors. This means that everyone at the highest level of responsibility must be involved, precisely because IT projects do not just affect individual areas or departments, but usually the entire company with all its stakeholders. In essence, it's about developing this sense of urgency among stakeholders,

and asking yourself what will actually happen if everything stays the way it is. Could you lose customers, for example, or will you meet all compliance requirements in the future, will you get new employees, etc.

Code: • Step 1: Establishing a Sense of Urgency Weight score: 0
Expert_ID4

- Urgency is a very important topic, because anything that is not considered urgent does not make it onto the agenda. The unfavorable thing in the context of IT projects is often that the actual top management does not have these projects on the agenda as urgent and is happy to hand over these topics directly to a CIO, ideally already sitting on the board, or to the IT department. However, placing these projects outside of top management is often the first step in the failure of such projects. I have experienced often enough that everyone seems to know that the issues are urgent, but nothing happens.

Code: • Step 1: Establishing a Sense of Urgency
Expert_ID5

- I do want to say something to overall. Kotter's model, his eight steps, was designed at an organizational change level. It was designed in concepts and viewpoint of individual humans and people, in interactions and all of the levels of various stakeholders and sponsors, et cetera. And what would have to happen for an organizational change to occur? In this case you're trying to bring in, and that's why you may see some discrepancies: the application of Kotter steps into a project level whenever you move from an organizational enterprise level to a portfolio level, to a program level, all the way down to a project level. Yes, there is some similarities, but there's also divergences. And so now, with that painting of the picture, I'm going to have to answer your questions all the way down on a project level, and they won't be the same answers as if you were interviewing me for an enterprise level or a portfolio level or even a program with multiple projects underneath it.
- That's very important. Anybody who has come up with a model, it's important that we understand, because otherwise we get things like you know, the change model, the curves of the various grief counselors from Kubler Ross, which was trying to be applied to all individuals when change, when she wrote it for people who were dying right. That is not the same context as an organizational change and nor is it even the right viewpoint. So you get a misapplication through the field if you don't understand what the author who created the model was for. So I just want to set that stage.
- And when we get down into the other models, one would suggest an IT- project, and I have an answer for you, because now I'm talking to you from IT- projects. Your timing is impeccable, because I'm living a very deep IT-project at project level right now. So I'll be good context. So the first: don't create this urgency any particular human. For any person to make changes in what they need. There has to be a sense of it's time to change and that has to come from people that they trust to change period in technology. We are asking them and it depends on what we're changing in technology. In this case, the IT- project that I'm on right now is a transformational change, a merger where a very large oil and gas company has bought a smaller alternative energy company, very small in comparison, 300 people compared to 90.000 people, and is moving that company underneath their portfolio of alternative energy. Okay, so now for a person, a sense of urgency and announcements made. It's time to change. You've been bought. That's a sense of urgency across the boards. The technology piece, though, we're going to onboard you through technology that one is like "Ok good, I've been bought". Most of that urgency had to be created right there. The fact that technology is being utilized right. That's just one step in their minds. That's

just one piece they have to live through. So the sense of urgency in this case here is created outside of the IT- project. It is not created inside of the IT-project and its very much has to be done at an enterprise or a division level. It cannot be done inside a specific project or it'll create too much noise in the wrong direction and disperse the project formation.

- Urgency must come from an higher level and be part of an overall project of what's happening, because the whole reason you're doing an IT-project is that there is some change that needs to happen business wise. There's some values to be achieved which are not being achieved and therefore it, and technology usually fundamentally, is one aspect of achieving that value. Now, if you were to put it on a scale, of the importance of technology depends on the project that one is, it depends what is the value? What are we trying to achieve? In this case technology, maybe way up here or depending on what we're trying to achieve? The technology is over here on importance most of the time, just changing every. I've never really run into an IT-project of which isn't lined with something else of what they're trying to change. And it's just you know, like other than this. Here's where I've run into it. I've actually run into it, where a software that we've been using and I've gotten comfortable with goes away, there's no support for it and it violates cyber security rules or the company dissolve. So then it's an announcement: "I'm so sorry, you know you loved this, but we can no longer do it because it isn't support it. With cyber security, we're going to have to start doing this right". Right then becomes just purely IT and it's not linked to anything else, because you can't no longer can utilize this technology, in which case there's no urgency that needs to be. In fact, if you make it too urgent, you're distracting me. You're telling me I can't use it all right. I'll get comfortable with it. Show me how to use the other one right. It's kind of like "Okay, fine, what am I going to do? I can't argue that". That's the only time I've had IT by itself, at 100% of itself as a project. It's fairly important, but fundamentally it's got to come from a higher level of whatever the business picture that's wanted.

Code: • Step 1: Establishing a Sense of Urgency
Expert_ID6

- You need the support of the stakeholders, because if the management (C-level, head of, etc.) does not play along and sticks to its current goals, then it is of little use if the employees at the lower levels of the hierarchy try to initiate a change. Especially in smaller companies, you often have to fight against the mindset that everything should stay the way it is because you have always done it that way. For these reasons, action is often only taken when it is actually already too late. However, due to the pandemic situation in particular, it should be noted that, especially in the context of IT/digitization projects, there is a greater sensitivity for these topics and projects than in the past and it is therefore easier to create a sense of urgency in management.

Code: • Step 1: Establishing a Sense of Urgency
Expert_ID7

Step 2: Creating the Guiding Coalition

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Step 2: Creating the Guiding Coalition	Leonardo	2067	8,37
Expert_ID2	Step 2: Creating the Guiding Coalition	Leonardo	432	4,01
Expert_ID3	Step 2: Creating the Guiding Coalition	Leonardo	564	6,97
Expert_ID4	Step 2: Creating the Guiding Coalition	Leonardo	1638	10,67
Expert_ID5	Step 2: Creating the Guiding Coalition	Leonardo	1278	7,17
Expert_ID6	Step 2: Creating the Guiding Coalition	Leonardo	2808	9,45
Expert_ID7	Step 2: Creating the Guiding Coalition	Leonardo	718	5,78

- Kotter would probably like to imply at this point that the higher the rank of the people involved in the guiding coalition, the better. On an operational level, I consider the involvement of influential management to be less important in the IT environment, at least in my experience of user-oriented IT. This may possibly be different if I want to tackle deep cybersecurity issues. In that context, there may be people involved where that kind of pressure/push from the top may be greater and more meaningful. In my context, I deal with factual people and they actually know best what their job is and would not take anyone seriously who arrives at C-level and wants to try to explain how to do their job. That is, in my environment, influential project stakeholders are less important because these people have little influence on day-to-day operations. In terms of content, they therefore have a limited effect, but they can be important at the end of the project in the role of motivator/pusher and to remove major obstacles out of the way and, of course, serve as a point of contact for other influential managers involved in the change context. A certain seniority is therefore important to convince those affected by the change to communicate it correctly. In summary, we can say and differentiate that the added value of senior managers in projects is more strategic than operational. However, it depends on the type of projects, for example, the presence in projects that affect the IT architecture and are therefore important for the entire company, can show a greater need for senior managers. However, the most influential and important people in an IT project are usually the users or their representatives. The people who have a concrete relation to the IT solution and the operational context. Key users could possibly be cited here.
- If by influential people, you mean people who have a high level of influence on the employees affected by the change, then of course that is "nice to have".
- The first two points of the model are somewhat antiquated.

Code: • Step 2: Creating the Guiding Coalition

Expert_ID1

- This point is very important. All important project participants must be well informed and integrated into the project or pulled onto their own side so that they, as part of the change management team, can act as multipliers in their respective departments and communicate all the benefits and background to the project to their respective target group in the company. This is the only way to successfully drive the project forward.

Code: • Step 2: Creating the Guiding Coalition

Expert_ID2

- I find this step quite important, because when executing an IT change project, I depend on finding supporters internally in the company, be it on the management level or on the user level. Especially on the management level, as these people help to drive such projects forward and to realize them in the first place. Without support at this level, it is usually difficult to implement such change projects. Since most employees support and follow the manager in his opinion and plans, it is especially important to convince these influential people of the project.

Code: • Step 2: Creating the Guiding Coalition

Expert_ID3

- I would actually relate this a bit to my area. It is always the case that the tax and accounting departments are highly dependent on IT or digitization initiatives, but at the same time there is a lack of IT expertise to implement them or they fail. It can be observed that IT trends are often recognized, but the tax departments then find it difficult to cooperate with the corresponding IT resources (computer scientists, business IT specialists). Here, there are often difficulties in communicating the requirements to the IT department so that they can be implemented. The difficulty here is to define the implications of the tax requirements for the entire company, so that in the end you do not have to constantly make corrections. The correct composition of the team is particularly important in such projects. In IT projects, it is often the case that project management is the responsibility of IT. I think demand management is particularly important when putting together a project team. This means that all the areas involved, i.e. all the stakeholders and contacts from the various departments are involved (such as key users), who represent their specialist interests and requirements to IT. This is relevant for small projects as well as for a larger project portfolio management. Of course, someone must always have responsibility for the project. At the same time, however, it is also important to actively involve the relevant stakeholders who set the requirements in the project so that they can place their requirements for a new system or a new system landscape in the IT environment in the sense of demand management.

Code: • Step 2: Creating the Guiding Coalition

Expert_ID4

- Forming a jointly aligned management team is an important success factor in the context of IT projects. Experience shows that this point plays an even greater role in administrations, which are often politically colored, than in classic large corporations. In my opinion, disagreement, also for political reasons, is one of the main reasons why IT projects progress so slowly there. Often, everyone finds their own isolated solution. Unfortunately, it is too often a matter of ego and individual interests, and not only political issues lead to disagreements, but also elementary things like sympathy and antipathy. There is a method for exactly such cases, the identification of the so-called "Must-Win-Battles", with which management teams can align themselves together. This method is also often the first step in growth projects, which are known to affect the entire company. If initially the question is asked very specifically what the organization must do in order to survive in the long term, the right points are often reached very objectively and existing animosities can then also be resolved. However, such questions must be approached very consciously. Unfortunately, there is often a certain inhibition to get together in a room and go through the relevant issues.

Code: • Step 2: Creating the Guiding Coalition
Expert_ID5

- So in this case here coalition is by definition a group of people who have come together to accomplish something and they all have some vested interest or aspect of to it, and they also usually have some form of authority or some vested interest to them where people either listen to them or they have a chart on the organization, in which case they need to participate in it, in general, and that's how I'm defining coalition in this case of it. Absolutely, we're dealing with people who have to change something with their technology and one they need to hear about it at an enterprise level and second, their management needs to have bought in that they're changing their data day activities and a lot of times the coalition is a combination of both management level right, direct supervisors as well as senior management. So the coalition has a lot more influence on the direction of the project. Right in this case, even your sponsorship. You know your exact sponsors or you're you know, they are called different things. They're called different steering committees right, they have different names for them. Those are an aspect of coalition. So if we're talking about more of an executive coalition, vital, very important number four. If we're talking more of an everyday management and sponsors to me when it comes to actually getting it changed, that one is very important too. It's a four. Initially, though. Initially, if I go and try to organize at this level without first getting the clearance I need at this level a lot of times, my management supervisor level starts high in involvement and very quickly drops down, and then I have a problem where I have to undo something before I can get their involvement again and it's a lot harder. I'm going against friction. So the timing of this matters. So yes, to answer your question, I think I gave you some numbers there, but but also I would have to say the timing of it matters on an IT-project. Sometimes it's too soon to engage certain people in the coalition.
- What else is going on? Let's say, this Manager who is key in your coalition is undergoing massive other change and has no bandwidth for you, no attention for it. In this case, doing this, trying to make this change on it, acts like a flynt biting at him right. So your timing is important. It doesn't mean this person doesn't need to be involved, but a lot of time build a guiding coalition, what's missing from that is in relationship to the whole change, portfolio sequencing and timing in the organization. Otherwise you're going to constantly run into the unavailability of this person. They're saturated in different directions.
- I gave it a four for both sides. In this case, timing is vital. It's a four, but it's got to be against the portfolio and the prioritisation of the company.

Code: • Step 2: Creating the Guiding Coalition
Expert_ID6

- Just because an urgency has been identified does not mean that anything will change. The larger the organization in which the change is to take place, the more key players at higher levels must be involved and the more resources are needed. When it comes to digitization, it is important that parts of the "Guiding Coalition" are open to new topics and really want to invest in them and not just take up these topics to present themselves as "modern" to the outside world. This is important because major digitization projects are often accompanied by change at the organizational level. Since this is always associated with costs, you need responsible persons in the "Guiding Coalition" who provide sufficient budget.

Code: • Step 2: Creating the Guiding Coalition
Expert_ID7

Step 3: Developing a Vision and Strategy

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Step 3: Developing a Vision and Strategy	Leonardo	2998	12,13
Expert_ID2	Step 3: Developing a Vision and Strategy	Leonardo	291	2,70
Expert_ID3	Step 3: Developing a Vision and Strategy	Leonardo	621	7,67
Expert_ID4	Step 3: Developing a Vision and Strategy	Leonardo	788	5,13
Expert_ID5	Step 3: Developing a Vision and Strategy	Leonardo	941	5,28
Expert_ID6	Step 3: Developing a Vision and Strategy	Leonardo	1107	3,73
Expert_ID7	Step 3: Developing a Vision and Strategy	Leonardo	1082	8,71

- So in the IT context, creating a vision is probably still very easy. First, to have a vision and second, to communicate it, because the changes in an IT environment are very tangible. That's the case because changes are very tangible for everyone involved. For example, when introducing a more resilient IT structure or a new tool, everyone can relate to it. It may be different with social change topics, for example in the area of inclusion. IT topics, on the other hand, can be grasped; everyone can imagine something about them. For these reasons, the creation of a vision in the IT context is less difficult.
- In my personal experience, I have seen how important this is, but I have also seen how difficult it is to keep the goal constant or the same. In my experience, the longer a project goes on, the more likely it is that the original goal will change and become a moving target, so to speak.
- Even if the goal expressed in the vision becomes a moving target, it can still remain realistic and achievable, that does not contradict itself. Also, just because of the adjustments, it remains understandable them still. The more the target changes, the less specific the original vision. So if, for example, requirements are added, you have to adjust the vision again and again, in the way you think you can implement it.
- By turning the vision or the goal proclaimed in the vision into a moving target, the concreteness of the goal/vision suffers.
- Although I have these three points (comprehensible/realistic/specific), it needs to be flexible. Compressible Realistic and Pacific. Despite these three points, which actually live from the fact that the goal is once fixed and I then only carry it out, I must ensure that I remain flexible and can also react to changing conditions.
- In the IT context, the vision and the goals derived from it are particularly formalized (blueprints, concepts).
- You then derive requirements from the blueprint and technical requirements from the requirements.
- From coarse to fine, but that is no longer modern with the current agile approach, but somewhere in the middle lies the truth. Of course, you need the reliability of a fixed goal. The goal should not change, if possible, so that people are clear about it. The goal of change. What can constantly change, on the other hand, is how you go about it and that

you also address changing conditions in the way you do it. I am personally a friend of this change. In the past, everything was set in stone, very fixed. At the beginning of the project, a blueprint was written, then requirements were derived from it, which were then implemented. And if the entire process took three years, then you just have an implementation that is based on a three-year-old goal, i.e. it is no longer up to date.

- In my opinion, the best approach lies somewhere between the agile and the classic waterfall model. You need an initial goal, but agility is also important to adapt it to changing circumstances.

Code: ● Step 3: Developing a Vision and Strategy
Expert_ID1

- In terms of IT/digitization, the goals derived from the vision must remain flexible, i.e., they must be adapted to changing framework conditions. A vision is good as a directional guide, but I think there are more important points in the implementation of a change project in the IT context.

Code: ● Step 3: Developing a Vision and Strategy
Expert_ID2

- It is important because the employee concerned must understand why a particular IT project has to be carried out. You have to be able to plausibly communicate to the employee how the project fits into the overarching digitization strategy so that he or she is convinced and actively participates. With digitization topics, it is also particularly important to emphasize that everyone remains relevant and important in their function and that their work does not disappear. By explaining the vision, the employee is therefore not afraid of digitalization and is motivated and aware of the context and goal of the projects.

Code: ● Step 3: Developing a Vision and Strategy
Expert_ID3

- For me, this topic raises the question - and I have already thought about this in the past - of whether a company's entire vision and IT strategy is still purposeful in this age of digital transformation. In my opinion, there should be neither a separate digitization strategy nor a separate data strategy; the topics must be characterized by maximum agility, because things are constantly changing in the technical area.
- I think it makes sense that there are roadmaps for the implementation of the individual topics. A good vision or corporate strategy already includes the topic of IT strategy and digital transformation. The framework conditions and direction should be known, and there should be a certain degree of flexibility for the remaining elements (infrastructure, equipment).

Code: ● Step 3: Developing a Vision and Strategy
Expert_ID4

- In my view, we have far too few visions today in the sense of ideas for a better future. A better future in the sense of a future in which everyone benefits, not just a few stakeholders or shareholders, but everyone involved, including the entire environment. One must not be put off by the term vision. To come back to the administration, there it is also about the citizens and the future of the location. In a company, the topic of visions is often about the future of the company. In the IT context, it is of course basically good to have a vision, but

in my opinion it would also be sufficient to have a certain strategic idea of the future. It is often not necessary to have a definitive vision at the beginning because, especially in IT projects, a lot is decided along the way and only manifests itself over time. In principle, a vision is important, but one should also be aware that the complete vision will only develop over time.

Code: ● Step 3: Developing a Vision and Strategy
Expert_ID5

- For anybody to change. They have to know why, why now, what happens if I don't. If that change is not linked to some strategy or future state vision depending on the project, then I can't get that answer for the person which is the first step. Let's say, it's the project where this software system is no longer being supported and is outside and you have to go on to teams instead of whatever. But let's say, something happens with slack or some other messaging program and I can't use it any more. I don't need a vision for that one, do you see? I need no organizational vision for that project.
- In this case, like that example, that's an operational example. It is still a project, but it fits into what the purpose of it is, it fits into the whole, what it is supposed to supply. That's why, when you say IT-project by itself, you have to distinguish between something brand new or operational day work. You have IT-projects that are operational and you have IT-projects that are strategic change. So that's the other delineation you may need.
- Classification: On enterprise/organizational level a four

Code: ● Step 3: Developing a Vision and Strategy
Expert_ID6

- After doing a status quo analysis and determining the urgency that something needs to change, you obviously need to know where you want to go or what the larger goal is in a specific time context. It is important to define smaller milestones in line with the upper goal in order to achieve the larger vision or goal. However, in IT/digitization it is usually not even worth choosing a longer planning period because the technology, market and competition change very quickly. A vision and goals are important, but in this context they must also be agile and adaptable. One should always adapt the vision to influencing factors such as customer needs, technology, market or competitors. However, it is very important that you always remain true to yourself as a company and do not have to jump on every technology trend, as this can quickly backfire. You should only invest in a new technology if the specific use case makes sense for your own company. The new technology must always fit the vision of the company, the knowledge of the employees, the structure and the business case.

Code: ● Step 3: Developing a Vision and Strategy
Expert_ID7

Step 4: Communicating the Change Vision

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Step 4: Communicating the Change Vision	Leonardo	2268	9,18
Expert_ID2	Step 4: Communicating the Change Vision	Leonardo	764	7,09
Expert_ID3	Step 4: Communicating the Change Vision	Leonardo	415	5,13
Expert_ID4	Step 4: Communicating the Change Vision	Leonardo	1421	9,26
Expert_ID5	Step 4: Communicating the Change Vision	Leonardo	1510	8,48
Expert_ID6	Step 4: Communicating the Change Vision	Leonardo	1986	6,68
Expert_ID7	Step 4: Communicating the Change Vision	Leonardo	776	6,25

- I am an absolute friend of this step and find it very important. The change should be communicated often, but there are two sides that need to be considered. One side is that the employees affected by the change, must be told in a repeated way what is specifically meant, so that it also becomes important how important this change is. That which is repeated frequently is important. In my IT context, but the changes I set in development, yes, the developers have to implement and in that context I often notice, even if I feel I've addressed things quite often, how often I repeat myself, but then I still often notice that they haven't understood. I agree that people often underestimate how much you have to communicate a change message. On the other hand, with the people who are affected by it and not the people who are changing it, so I'm mentioning two different groups of people here, with those who are affected by the change, I think you can also quickly make yourself unpopular with them. So I differentiate in the IT context the groups of those who have to implement the change technically, for example developers, and the group of people who are ultimately affected by the change. If the change affects me and I get too much information about it, for example by email, then it just annoys me. Here I would prefer that the right way and the right degree of communication would be chosen. So a serious, appreciative communication instead of spamming with irrelevant emails. I am also currently affected by a change and in my case I would rather sit in a conference once a month for a certain amount of time and feel that someone is taking serious time to explain the change to me in person in a structured way, instead of many emails on the subject. So communication is very important, but you have to be very careful that it is done properly. You lose the people affected by the change if you don't communicate properly and if you overload them with communication in the wrong way. Communicating at eye level, not from the top down, it's a point where you can get a lot wrong. Nevertheless, in the end, the execution of the necessary change is more important than the perfect execution, better to initiate the change with mistakes than no change at all.

Code: ● Step 4: Communicating the Change Vision

Expert_ID1

- I consider correct communication to be extremely important. Here, however, I would apply full communication again to strategically important people in the company. In my opinion, not every end user of a new system needs to know every detail about the project; it is more important that they are informed to the extent that they can use the system appropriately. It is therefore particularly important that the multipliers, who have to introduce the system in their respective departments and answer any questions that arise from their employees, are well informed. For these central figures, it is impossible to communicate too much. The

fact that they are well informed at all times and can get rid of their doubts is of great importance for a successful project.

Code: ● Step 4: Communicating the Change Vision
Expert_ID2,

- Communication is something very subjective. Everyone feels differently about communication and often has different preferences about the right way to communicate. Some prefer face-to-face communication, while others prefer to be informed/contacted by email. Depending on the subject matter/project size/participants, this point can be more or less important, but in general I consider communication to be important.

Code: ● Step 4: Communicating the Change Vision
Expert_ID3

- The topic of change management is often doomed to failure. That's why the new C-level has been created in the IT environment, such as the CDO (Chief Digital Officer), to better address this topic in the IT context. The topic itself is ultimately a psychological one. The fear of change is a very central point in this topic. The fear of no longer being relevant or of having to retrain, of earning less money.
- In this case, the task of the executives/change team or the CDO is to gain trust. For example, by offering a job guarantee or further training opportunities in the digital field. Once this trust has been established, the content can be addressed and the opportunities offered by the change emphasized. Our working world is changing, and this is particularly evident in IT or digital transformation. The pandemic ensured that we experienced a complete change in the working world. Trust had to be built up in the whole topic of remote working, e-learning, and at the same time, I think we have also seen that trust has also arisen from the employer towards the employee, because we have seen that employees can also be productive from home.
- In my opinion, this is the most important point. If you don't communicate in the right way, then the employees concerned don't feel like working on the project and try to convince others of their opinion. The best strategy won't help if you don't communicate properly.

Code: ● Step 4: Communicating the Change Vision
Expert_ID4

- Communication is a big issue in all change processes, regardless of whether it's a project in the digital/IT context or outside of it. Unfortunately, however, the topic is massively neglected. In my opinion, top management often underestimates how important constant communication is for project success. Even though it is basically a task of top management, the important role of cross-departmental managers should also be mentioned at this point. They should act as change agents within their sphere of influence, and this is a very important success factor in IT projects. I think it is extremely important to implement the role of the change agent and to use it in the change process, especially in IT projects. In this way, top management is able to transfer part of the communication burden to the change agents and thus relieve themselves somewhat. However, the transfer of tasks of this kind and the corresponding organization must be formal, so that a certain structure is in place. At best, an appropriate project office is available to the change agents. If the role of the change agents is not organized appropriately, they often act in a haphazard manner and contribute little to the success of the project. Basically, I can only advise all top managers to create an appropriate communication plan and, above all, to become active

themselves in the area of communication. At this point, I would like to quote the following beautiful saying from storytelling: "The entrepreneur speaks for himself".

Code: • Step 4: Communicating the Change Vision

Expert_ID5

- Communicate the change vision. I give a four for the organizational level right off the bat. What I have to communicate on just strictly IT-projects is what's the result that it's trying to achieve, not the change vision, the result, to achieve in the real world. I still have to communicate a vision. One is either the result in the real world or one is the organizational strategy. I have to tell the story.
- I believe that you have to communicate the same message five to seven times, in five to seven different ways and on different channels. I can never say one is done. Email, we already know, statistically, is about seven percent effective. So why would one think I sent the email? It's good enough right now. That's one channel. You did it once. Now you have to go all the way up to seven times right in different channels. So that's one of them. Personal communication, hands down, is always best. Everything else is far less important and effective . If you take the lower half of the scale, all the other forms of communication fall within the lower half compared to personal communication and something that's complicated, as which is why you're saying you know town halls in person and open sessions are still so much more effective than email. In IT-projects it is important that the shared information can be found again . Here a typical way is to have a sharepoint site where you have post information. Without that, people get their answers but then still have more questions about it. There's no lasting piece. With regard to transparency, sometimes you can only get as transparent as you can. There are sometimes rules and of various different firewalls of different sorts, but it doesn't mean that you're not being transparent, it's just that you cannot share certain pieces of it. Appropriate communication is key, but what you think is appropriate is different from what I think is appropriate. Depending on the project, the definition of appropriate changes too.

Code: • Step 4: Communicating the Change Vision

Expert_ID6

- Communication is very important because everyone in the company, from the lower to the higher levels of the hierarchy, needs to understand why they are doing the activities they are doing and what the vision and goals are behind it. Otherwise, you sometimes have the problem that employees are working in different directions or that there is a lack of motivation because they don't know what their work is supposed to accomplish. When the larger vision is known, experience shows that employees work more efficiently and can offer more to the company. This can be guaranteed through proper communication and feedback. It is always important to be able to explain the reason for changes, goals and vision and to explain the possible consequence if certain things are not done.

Code: • Step 4: Communicating the Change Vision

Expert_ID7

Step 5: Empowering Employees for Broad-Based Action

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Step 5: Empowering Employees for Broad-Based Action	Leonardo	1108	4,48
Expert_ID2	Step 5: Empowering Employees for Broad-Based Action	Leonardo	175	1,62
Expert_ID3	Step 5: Empowering Employees for Broad-Based Action	Leonardo	352	4,35
Expert_ID4	Step 5: Empowering Employees for Broad-Based Action	Leonardo	736	4,79
Expert_ID5	Step 5: Empowering Employees for Broad-Based Action	Leonardo	1967	11,04
Expert_ID6	Step 5: Empowering Employees for Broad-Based Action	Leonardo	654	2,20
Expert_ID7	Step 5: Empowering Employees for Broad-Based Action	Leonardo	457	3,68

- Removing obstacles moves the project forward. This is the operational part of the change. The change itself has to happen, quasi passively. What you can do is just remove obstacles in one direction and maybe even create new obstacles in the old direction. In the IT environment, such a step would logically be the shutdown of an old system. So create obstacles so that users do not use the old process anymore or it is very inconvenient/unattractive and with disadvantages to use the old system. These things are more than in other contexts, optimally possible in IT context. Making the old system/process unattractive would thus be the push factor and making the new system/process attractive/user-friendly would be the pull factor. You could also think of it as making it a barrier to getting the new system/process up and running if the old system/process is still good. At this point I see the core of the process as the object where obstacles have to be removed. Removing obstacles in the IT context also means user friendliness, creating help, onboarding processes, training materials, service hotline.

Code: • Step 5: Empowering Employees for Broad-Based Action
Expert_ID1

- I also think it's important to create obstacles by making the old process step unattractive, this way you push employees to go the new digitized process or use the new system.

Code: • Step 5: Empowering Employees for Broad-Based Action
Expert_ID2

- The topic is important. I once had a customer whose employees had a hard time with a new IT solution. For this customer, we held workshops and training sessions and presented the employees with new job and career perspectives, thus expanding their digital skills. In this case, the lack of skills was actually an obstacle to the success of the project.

Code: • Step 5: Empowering Employees for Broad-Based Action
Expert_ID3

- I actually find this question very difficult to answer, because it's very individual. It simply depends on the company and also on how digitally mature a company is in terms of management and employees. If the employees are only IT nerds, then digital projects work better than with employees who refuse to deal with this topic. But this also affects the entire organization, culture and, of course, the processes lived in the company. All of this has a major influence on whether and how the necessary change is communicated in IT processes, so that I can motivate my employees and remove obstacles.

- I give this step a two because it is very individual. For some companies, you could also give this a four, and for others, only a one.

Code: • Step 5: Empowering Employees for Broad-Based Action Weight score: 0
Expert_ID4, Pos. 22-23

- On this point, the use of change agents can help a lot. According to the iceberg of ignorance, top management typically knows only 4 percent of the problems in the company. Middle management already knows a bit more and the workforce sees the problems every day. At this point, the issue of communication is also of great importance, because a certain permeability of communication or a transport of information in an organization from the lower hierarchical level to the upper and vice versa is enormously important. It is important to remember that employees are on the front line and know best about the current status of processes and projects. It is primarily the employees who know what works and what doesn't and therefore they are also the ones who can say where there is potential for optimization. A big mistake that often happens in IT projects is that existing, poor processes are surveyed and immediately digitized. This approach often impairs the success of such projects. Ideally, a comprehensive analysis of the relevant processes should take place after the survey in order to determine where things can be improved and what the employees affected by the change need for the project to be successful. In this way, it is more likely that the corresponding IT project will be implemented successfully. This is also because the employees are valued and realize that their input, in the form of expressed feedback and wishes, is taken into account in the implementation. This is precisely where change agents can act as a mouthpiece for the workforce and make an important contribution to the success of the project. After all, if communication with the company's base, the employees, does not work, the IT project will be implemented, but the long-term results will always fall short of expectations. So if you don't analyze in advance and during the project what is standing in the way of the project's success, the topic of digitization will not work.

Code: • Step 5: Empowering Employees for Broad-Based Action
Expert_ID5

- Hands down, that's all we do. It doesn't matter what level we're at on an IT- project. If you could do a five on this one, this is what we do all the time.
- That is the job is constantly being on enough communication lines, having a good enough relationship, enough of a safe space, enough hearing and prioritizing which obstacles to remove, first right and then constantly shaking, you know, going up and down and up and down, doing work along this, removing obstacles. This one here is the job, this one, you know, and they'll do different obstacles. The executives are removing a different kind of obstacle than metal managers, then supervisors there.

Code: • Step 5: Empowering Employees for Broad-Based Action
Expert_ID6

- It is important that the existing project management or product development framework fits the change. You have to be flexible and adapt your way of working, especially in the area of digitization. In the area of development, we have also often shortened the sprint duration in order to solve problems and also integrated customer feedback more strongly. Depending on the problem, you have to act quickly so that the project can be implemented successfully.

Code: • Step 5: Empowering Employees for Broad-Based Action

Step 6: Generating Short-Term Wins

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Step 6: Generating Short-Term Wins	Leonardo	751	3,04
Expert_ID2	Step 6: Generating Short-Term Wins	Leonardo	986	9,15
Expert_ID3	Step 6: Generating Short-Term Wins	Leonardo	874	10,80
Expert_ID4	Step 6: Generating Short-Term Wins	Leonardo	841	5,48
Expert_ID5	Step 6: Generating Short-Term Wins	Leonardo	921	5,17
Expert_ID6	Step 6: Generating Short-Term Wins	Leonardo	5139	17,29
Expert_ID7	Step 6: Generating Short-Term Wins	Leonardo	1180	9,50

- Short wins, such as milestones, must not be ruined by linking them to a deadline that cannot be met, as this could create demotivation instead of motivation. Milestones should be progress/result related rather than deadline related, based on the actual progress level.
- Don't ruin the short-win by making it unattainable or unrealistic through overly ambitious timelines or targets.
- In the IT context, all this Scrum posturing with the user stories and the individual tickets and the features and the epics etc. is a manifestation of these short term wins. A breakdown of the entire project into manageable short term wins. Individual features of an epic can thus be described again as short-term wins, of the already existing short-term win (epic).

Code: • Step 6: Generating Short-Term Wins
Expert_ID1

- More important than "short term wins" is to have a suitable project structure and to have good motivated, fully integrated project managers to lead the project to a successful conclusion, who can fully take care of the IT project and not just on the side. Otherwise, in my opinion, large projects cannot be brought to a successful conclusion. So you need a full-time project manager who is present at all meetings and has an overview of open issues. So a project manager who drives and motivates everyone involved to deliver their results and someone who reminds them of existing deadlines. Having someone who fully cares about and solves current and future problems. So, in my opinion, a good project structure and available project managers, i.e. good project management, are more important than "short term wins". The danger with "short term wins" is that you lose sight of the big end goal and you don't make significant progress because you have too many small insignificant steps.

Code: • Step 6: Generating Short-Term Wins
Expert_ID2

- A very important point, especially for large projects, which may not be too popular with the employees themselves at the beginning. So you often have a lot of people who don't recognize the benefit or the sense of a project at the beginning of such a project. In such cases it is then especially important to generate successes quickly in order to motivate other employees and to show that changes are possible. I think this point is important,

regardless of whether it is an IT project or any other project, that short-term successes are generated. In a system rollout, the introduction in one company or in one country of a group could send positive signals to the other companies that still have to do the rollout. Short-term successes are simply necessary in larger projects that take a long time, so that the affected employees can work towards a concrete partial goal.

Code: • Step 6: Generating Short-Term Wins

Expert_ID3

- In every good project, including an IT project, certain milestones are defined, because there is often a steering committee to which you have to answer, regardless of whether you are following a classic project approach (waterfall model) or an agile approach. Results have to be delivered and usually by a certain point in time, which is why short term wins are also part of an IT project.
- The short term wins should be more progress tied. If it is an internal project, it is of course more progress bound. If it's an external project, it's always both deadline and progress bound. The time component also plays a role in internal projects.
- While it is important to move forward, the points beforehand, such as team composition, etc., should at best ensure that point six works. Point six is important, but the basis is created beforehand.

Code: • Step 6: Generating Short-Term Wins

Expert_ID4

- The short-term gains are very important to keep employee motivation high. An IT project is typically not a fast-moving project that can be completed in three or six months; rather, it often involves a comprehensive transformation that extends over a longer period of time. In this respect, it is always important in such projects to celebrate successes along the way. Here, too, there is a close connection to correct communication, because what has already been achieved is quickly taken for granted again and then forgotten. Even if I do not consider this point critical for success, it is still important to have it on the agenda. It is very important to use the so-called "short-term wins" as well as the "short-term failures" for the purpose of change, possibly with the involvement of change agents, in both positive and negative ways, because you can also learn a lot from mistakes for current and future projects.

Code: • Step 6: Generating Short-Term Wins

Expert_ID5

- This we need for the moral of the team itself. The team's moral also has to be kept up because, for example, one of the projects I'm on right now moves so quickly, with so many changes, and there are so many meetings with so many layers of technical aspects of it, of which not everybody knows and understands. When you generate the short wins, it gives you the energy to go on. All right, and this one, I feel, is strategic to the team itself. Who has to go through months and months of slogging through the technical as well as bringing what people need to come in, shape it depending on what's happening. Is the other aspect of this one, to stay afloat, to keep having money flowing, to add more resources if you need it. Executives get hit with so much more bad news than they get good news, that you have to give them constant success stories, so that they feel like we're doing something. It'll get there. This one is vital just because otherwise the team disintegrates and the executive stop paying attention. They need to be able to say here's what we're doing in the real world,

here is how successful we're being. Otherwise, you lose your people. You lose them in their roles.

- I want to talk about the last sentence (performance measurement methods). This is important. I've just spent my last year and a half working through my own research on this. Performance measurement methods should be best at best, should be used to provide data based evidence of positive developments (KPIs etc.). That is the most critical statement out of anything he's got here. And here's why, there's a big difference in measuring and talking winds of results in the real world, that can be substantiated with data, versus, actions done. Simply tracking activity is overrated and useless . You get so lost in the noise and the amount of time it takes up and energy of the KPIs that measure activities when factually, as a person, your To-Do-List just keeps getting longer and longer. We are dispersing our executives, giving them a ton of KPIs that don't really measure the world and were forcing our team down a path towards activities. Equal success, not results. And so that piece, that last sentence, out of everything, is key to achieving what it is Kotter intended in the first place.
- I can tell you that what we're doing to our executives and to our teams is again, we are shaping, perverted this last line (Performance measurement methods), providing data based positive things, because, what Kotter, didn't talk about is the difference between results versus actions and right now, for example, in change management, how much time and attention I put on one step or a gap I see, is all dependent on the result I want out of it. The change management principle or methodology of whatever on the plan may say "Use this, do all of this, so that you get this result". But every team I go to has a different culture, has a different group of people, has different gaps. Depending on that gap, I only really need to do this much because frankly, this is a bigger gap. If I'm measuring against the result I want, I can make that determination and change and pivot which direction I go into, as to how much work I put in. If I'm measuring against KPIs or actions, I am forced to do all of this, so I can check the boxes and then all my attention, my rewards, my compensation, my bonus are all tied into this, when that is not factually what needs to happen. This point should have been broken up. If I had anything to say to Kotter, I would say, you need to break this one up into its own step, because it's circumventing and getting in the way of some of your other steps.
- Data and the way it's put together can still distract. It, can still put an executive's attention on a checklist of things instead of the end results, and what we want is we want to enable them. We're trying to bring organizations up into the next evolution, and that's an evolution. We get rid of a lot of our hierarchy, we get rid of a lot of this stuff and we have the ability to say, to get that pink flower that I want. I only really need to do this and I can get it. I think I answered your question on an organizational level it needs to be a four and on an individual project level that one gets rough because they're using their azure DevOps and list of targets and scrums and backlogs as their statistics, which focuses them into activities and less into the results.
- As a change manager I have to focus on the result and less on the control method. If I'm a developer, well then I don't get a result until I'm done with the 200 activities. But as a change manager, humans are far more complex. You and I could chat and in 20 minutes I could get the result I need, where it may take me two months for another person and 10 chats before I get them to where I need their heart and head. Because of the infinite number of variables in a human, I cannot be focused, and this is where IT-Projects go off, go wrong, when it comes to change management. You cannot be focused on just a-list of activities without the real importance being the measure of the results.

Expert_ID6

- It is important because it contributes significantly to the morale. In our company, we also try to provide each department with milestones on the way to the company's goal, which gives us the opportunity to give responsibility to employees at lower levels of the hierarchy. In this way, management acts more as a sparring partner for the individual departments and can hand over responsibility. This is especially important in larger companies where there is not a strong sense of ownership among employees. In this way, employees feel noticed and have the feeling that they can contribute to the company's success. The challenge here, of course, is to get employees to develop a personal interest in the company's success. This is easy, of course, if the existing employees identify with the product or service and the company itself and, above all, enjoy working for the company. To keep our employees motivated, we also rely on company-wide communication of minor successes so that employees who have achieved something important feel seen, praised and valued. A variation of this is our "win-of-the-day" channel, where each employee can share their biggest success of the day.

Code: • Step 6: Generating Short-Term Wins

Expert_ID7

Step 7: Consolidating Gains and Producing More Change

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Step 7: Consolidating Gains and Producing More Change	Leonardo	1107	4,48
Expert_ID2	Step 7: Consolidating Gains and Producing More Change	Leonardo	958	8,89
Expert_ID3	Step 7: Consolidating Gains and Producing More Change	Leonardo	174	2,15
Expert_ID4	Step 7: Consolidating Gains and Producing More Change	Leonardo	734	4,78
Expert_ID5	Step 7: Consolidating Gains and Producing More Change	Leonardo	1043	5,85
Expert_ID6	Step 7: Consolidating Gains and Producing More Change	Leonardo	731	2,46
Expert_ID7	Step 7: Consolidating Gains and Producing More Change	Leonardo	491	3,95

- Firstly, in IT, every step forward is often 100% more than was originally expected. Especially because it's a fast-moving environment and it updates quickly, there's naturally a lot of pressure to do nothing at first. I don't think this step is so necessary, because every change is already good, even if you are too early in terms of changes. In the IT context, the goals are usually, in my experience in application development, very visible. Therefore, there is no danger that you will break them off prematurely. Actually there is not, because in application development for operational activities the results are very visible and tangible and you can even test them. And if the changes are not yet satisfactory, then the goal has not yet been achieved. That's one reason why I don't think this step is so important. And the other is that, as I mentioned before, you should maintain a certain agility. If the environment you are exposed to changes, then the goal should also be adjusted. But that applies to all contexts, whether IT or not. In my opinion, this point is least specific in the IT context.

Code: • Step 7: Consolidating Gains and Producing More Change

Expert_ID1

- Steady progress is very important in a project, but it must be more important to constantly question your work and progress so that you ultimately pay attention to all important information or processes. Especially in the IT context, preliminary processes and data must always be correct so that the final result is satisfactory. This honesty and thoroughness in one's own work is more important than blindly driving the project forward and ending up with an unusable result that is of no use to anyone. Constant progress is therefore important, but only if everything goes as planned, i.e. no progress at any price and no concealment of errors for the sake of supposed progress. Do not force progress at any price. In contrast to what Kotter emphasizes, the initial goal must not be lost sight of, since the general conditions in the IT context can change quickly. Losing sight of the initial goal can therefore sometimes be advantageous for the IT project.

Code: • Step 7: Consolidating Gains and Producing More Change
Expert_ID2

- This step is important, because in a larger project, after certain partial successes, the motivation tends to wane. Therefore, it is important to continue working constantly.

Code: • Step 7: Consolidating Gains and Producing More Change
Expert_ID3

- IT projects are usually a rolling process. After the project has been implemented, employees are trained if necessary so that they become more and more involved in the changes. As use of the new system or application progresses, new use cases, issues and situations arise that were not previously considered, so that the IT project continues internally for quite some time after implementation or keeps the affected employees and departments busy.
- Every step forward is positive in the IT context, so that even if the overall goals are not achieved, this does not necessarily have to be viewed negatively. If, for example, only 70 of 100 processes have been digitized, then that is a good result. But it depends on the given context.

Code: • Step 7: Consolidating Gains and Producing More Change
Expert_ID4

- It is very important to keep building on what you have achieved. In practice, I often see that a project is initiated, but over time it is forgotten. So then it is only a matter of time until the momentum is lost. Continuity and staying power are very important. However, these attributes seem to be somewhat out of fashion in our digital and short-term attention-driven world. Sweat and tears are often part of the process and ensuring this very continuity is a very important leadership and communication task. This point should be self-evident in projects of any kind and, if applied correctly, can also strengthen the ability to change and the agility of the company in the long term. Here again, change agents can help, because if they are appropriately empowered and integrated into the organization, the competencies that are important for this point can be built up on a large scale and anchored in the company. After all, an appropriate team is often better able to maintain the momentum required at this point than a single employee.

Code: • Step 7: Consolidating Gains and Producing More Change
Expert_ID5

- This is enterprise level. This is taken from the context of, if an IT-project was putting this in, its now in, and from that you now want to build on it and on the other aspects of what you

were trying to achieve, business wise. That is why I would say that the way this is written here, it's not important to an IT-project, because we're not doing this. An IT-project at project level is creating a change. What Kotter is saying here is now build on that change as one of many changes you're making to get your business value. People that are in the technology world think their whole world is IT, and that's it. The world is not all IT and so technology usually is always just one workstream or aspect amongst the biggest change.

Code: • Step 7: Consolidating Gains and Producing More Change
Expert_ID6

- This point is not unimportant, as you can plan everything well in advance, but the implementation itself can be another big challenge. To ensure that our employees deliver consistent performance, we also rely on good communication of our vision and corporate goal, and on good justification of why we do the things we do. This ensures that motivation does not wane even after important milestones have been reached, and that no one rests on their laurels when it comes to long-term projects.

Code: • Step 7: Consolidating Gains and Producing More Change
Expert_ID7

Step 8: Anchoring New Approaches in the Culture

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Step 8: Anchoring New Approaches in the Culture	Leonardo	563	2,28
Expert_ID2	Step 8: Anchoring New Approaches in the Culture	Leonardo	265	2,46
Expert_ID3	Step 8: Anchoring New Approaches in the Culture	Leonardo	490	6,05
Expert_ID4	Step 8: Anchoring New Approaches in the Culture	Leonardo	391	2,55
Expert_ID5	Step 8: Anchoring New Approaches in the Culture	Leonardo	2046	11,48
Expert_ID6	Step 8: Anchoring New Approaches in the Culture	Leonardo	3603	12,12
Expert_ID7	Step 8: Anchoring New Approaches in the Culture	Leonardo	622	5,01

- In the change environment, I consider this step to be fundamentally important. In the IT context, however, this step is not difficult compared to other contexts, because by shutting down the old system, one only has to take care of the accompanying processes. The step is therefore important, but not particularly applicable to the IT context, so individually not a step that is applicable to this context. If this step is not followed, then the project would fail, but it cannot be done at all. This step occurs inevitably and is unavoidable, thus a concomitant.

Code: • Step 8: Anchoring New Approaches in the Culture
Expert_ID1

- I find this step has little relation to IT projects, as technical possibilities can practically force the use of new digital solutions. At this point, I have a somewhat more radical approach and find that addressing the corporate culture would mean too much effort.

Code: • Step 8: Anchoring New Approaches in the Culture
Expert_ID2

- This step is important for IT or other projects that particularly affect the entire company. Particularly in the case of large, formative projects with a large number of changes, it is important that this is also reflected in the corporate culture in some way. In the IT context, this could be ERP projects, for example, in which all existing company processes and all work steps are subjected to a change, in which case, in my opinion, something must also change in the prevailing culture.

Code: • Step 8: Anchoring New Approaches in the Culture
Expert_ID3

- Plays a subordinate role in the IT context. To have effective IT projects, you only need to integrate them into the prevailing system landscape and not into the culture. Accompanying processes may need to be adapted. In a company that invests heavily in IT projects and has a digital vision, you simply have to assume that the prevailing culture and the people have an affinity for digital.

Code: • Step 8: Anchoring New Approaches in the Culture
Expert_ID4

- If done well, an IT project or process, or the topic of digitization in general, can change the entire culture of the company. However, this often requires internal multipliers such as change agents, since the classic top-down approach is often not very effective. It should be mentioned that executives can also act as change agents. I like to remember a large IT project at a real estate manager where there was a great sense of urgency. In this project we used change agents and in about 12-18 months managed to establish a change down to the lower levels of the company. Among other things, the IT competence of the employees was expanded and they were thoroughly informed about the purpose and background of the project, so that the concrete advantages for their daily work became apparent. A fundamental success factor at this point is to empower employees, via change agents or managers. Not least because a new mindset is often created merely through new competencies. It is at least as important to model fault tolerance to employees, because punishing every mistake in such a change process inhibits the likelihood of success of any project. In conclusion, it is not for nothing that "culture eats strategy for breakfast". Because at the end of the day culture is not as abstract as you might think, it is the way people think and act. I think the reason many struggle with the topic of culture is that no one really knows how to properly approach this seemingly abstract topic. Often, the challenge is not in surveying the prevailing culture, but in actually changing it. From my experience, change in this area mainly succeeds through adapted processes, such as communication processes and leadership processes, but also through an appropriate error culture and the teaching of relevant skills. In this way, you can make the topic of culture more factual and tangible, because this is the only way to convince critical managers of this extremely important topic and it becomes clear how this can make a difference in the organization.

Code: • Step 8: Anchoring New Approaches in the Culture
Expert_ID5

- If we define culture as the way things are done around here right now, and I say right now, because you have to put a time in place when it comes to culture definition, because it will change on you. And if the way things are done around here right now is, we use Slack, for example, as a way to communicate, and all our apps are linked to that and everybody loves Slack etc. . And now somebody's coming in and saying, we just bought you, you have to use Microsoft, you're going to Microsoft Teams and Slack is going away and you have to use PCs too. Get rid of your Macs. In this case we're talking about a major conflict. IT-projects into the culture aspect of it. If I have to create changes with technology. that is

going to change the way things are done around here. No matter what, when I change technology, I am impinging on somebody's behavior and the behaviors accumulate, do impact culture. It depends on which direction you look at this for me to answer this question.

- Technology being one aspect of ways of behaving is going to create a-type of culture. So you don't have a choice. The technologies are going to impact culture one way or another. So this idea of successfully anchoring them into culture, it's almost the other way around with IT-projects whereby we do them, if they get used, then, and I say, if they get used, because this is where a lot of times you can build something and it doesn't get used. If they're used, then to that degree, culture is shifting that direction. I believe that culture is a far more complicated thing than what I just said and it has a lot more nuances. I also believe that IT-project should be designed around what's going to most help that culture produce the result you want, whatever the business value it is. Let's take my example: In my particular alternative energy company it's very much an entrepreneurial startup type mentality. Everybody is using Macs, it's all part of their culture. They use slack etc., now here comes this big giant who's all Microsoft, all PCs, and in fact it's the rule, that you have to get on Microsoft. We can't do Macs unless you're a developer. Oh my gosh, the question becomes: What culture do you want in this company by the time you're done changing all the technology. I have to know that, then I have to work with the culture just to get whatever technology adopted, and then a new culture would be created.
- The most simple definition I could ever come up with when I was teaching against culture, out of all the culture, texts and tones that exists, is fundamentally the way things are done.
- This is like the company reward system, as an example. If I am being bonused or compensated to achieve some result which requires that a technology change happen, then, all of a sudden, there's a lot more interest in making that technology change happen, if the technology changes are beating up against a system that rewards and compensated people to do this, that has nothing to do with technology and in fact the way they've figured out to do this and be successful is using a different technology. And then I'm coming and saying you've got to come over and move over to my technology. Forget it. I won't even get the project successfully done. That's what take years. This embed changes into culture, both ways on it, but I would almost reward it, is to design the technology to advance the culture you want in the company and then embedded. That's how I would reward that step in order to make this effective for IT and digitization projects and then which case, if it was rewarded that way, it's a four.

Code: • Step 8: Anchoring New Approaches in the Culture
Expert_ID6

- For digital projects, I find this point very important because the entire product development process has to be adapted to the digital context, and this changed way of working naturally has a major impact on the culture. A certain openness must be present, as well as a flexibility to constantly adapt to changing needs. This mindset must be represented throughout the organization and must therefore become part of the corporate culture. If the culture in the digital context does not change permanently, there is a constant risk that behaviors will revert to "analog" patterns after a digital project has been completed.

Code: • Step 8: Anchoring New Approaches in the Culture
Expert_ID7

Experts' Individual Change Approach

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Experts' Individual Change Approach	Leonardo	1614	6,53
Expert_ID2	Experts' Individual Change Approach	Leonardo	773	7,17
Expert_ID3	Experts' Individual Change Approach	Leonardo	445	5,50
Expert_ID4	Experts' Individual Change Approach	Leonardo	2705	17,62
Expert_ID5	Experts' Individual Change Approach	Leonardo	1881	10,56
Expert_ID6	Experts' Individual Change Approach	Leonardo	3113	10,48
Expert_ID7	Experts' Individual Change Approach	Leonardo	1476	11,88

- Knowing the goal, I would say, is the first step. In my opinion, you don't even have to call it a "vision" in the IT context. I believe that the goal must be absolutely clear, as must the people involved in the change project. It is important at the operational level, regardless of the Guiding coalition, to put together a good team with the right people and to make the distribution of tasks clear.
- This team at the operational level should consist primarily of people who complement each other. Then I need the infrastructure. In addition, it must be clear beforehand, in my opinion, what technical conditions I can rely on and whether their technical capacity is sufficient or whether the technical infrastructure can cope with the planned technical intensity. That would be something that I would have to establish beforehand and then also maintain over the entire duration of the project. This is now a very operational aspect, but in my opinion very important. I would want to know in advance for sure that the technical infrastructure needed is in place for the changes I want to make. That's important to clarify in advance, because that's one thing that often has to be approved and funded in advance. Also, communication, even for merely strategic projects like IT security, is important. For example, in the case of a planned two-factor authentication, which would place an additional burden on the employees concerned, it would often be necessary to explain why this is so important, and perhaps it would also be necessary to scare people a little at this point to point out the dangers of hackers.

Code: • Experts' Individual Change Approach
Expert_ID1

- I am a proponent of the KISS approach (Keep it simple, stupid), which is all about eliminating complexity in a project as much as possible for everyone involved. In a project, I would first define the goal and then determine what I need to achieve it. In the IT context in particular, data also plays a special role. So I would determine where to get relevant data, then I would evaluate and process the data. Basically I would try to keep everything as simple as possible, if necessary I would adapt pre-processes and always use transparent data to simplify the work for the end users. Likewise, I would eliminate already existing but very complicated processes as well as all possible redundancies if I could, so that in the end you only find relevant data and processes.

Code: • Experts' Individual Change Approach
Expert_ID2

- What is very important to me in the implementation of IT projects is to regularly inform and bring together all relevant project participants, i.e. consistent stakeholder management, so that everyone involved is at the same level of knowledge. This is particularly important because project success in the IT sector relies heavily on the stakeholders being motivated, informed and actively involved throughout the entire duration of the project.

Code: • Experts' Individual Change Approach

Expert_ID3

- As a consultant, I mainly deal with customer projects. This means that I am the consultant who looks at things from the outside and asks how the customer can be supported in concrete terms. Our basic approach is to organize a workshop in which we take stock of the existing IT and data structure. We take all the requirements regarding the IT project and look at the system landscape and identify with the customer which areas need to be changed and where there are potential opportunities for optimization. But we also look at where risks might be located in the overall context and where compliance violations might occur. Of course, many different factors play a role in this analysis. For example, whether there is already a compliance management system in place with regard to IT or whether an audit of the system has already taken place and whether something was found to be lacking in this context, so that it is already clear what needs to be changed in the future. Such things play a role in the analysis and the task is then to work out a target picture and to record all the requirements that result from this. At the same time, all the stakeholders involved are informed and brought up to speed. The next step would be to develop an implementation concept. After coordination with the customer, the concept would then be operationalized and possible project milestones derived. That would be our basic approach to IT projects. It should be mentioned that process analysis is not only about recording the ACTUAL processes, but also about defining the TARGET processes. And in this context, the topic of change management naturally plays a corresponding role for the first time. All the stakeholders involved in the new processes come together and take a concrete look at who is involved in which project, who has which task, and how it should work in the future. Of course, this has the advantage that everyone involved in the process is heard, and a person from each department involved is present at the relevant meetings, so that everyone affected by the new process can contribute their requirements to the IT project in the course of the aforementioned demand management, also with regard to change management. This can also involve non-technical departments such as sales or marketing. In this way, everyone is heard and can explain their point of view. In this way, each person in charge of an affected department who is involved in this process acts as a multiplier in the direction of his or her team and informs the remaining employees in the department who were not present about the new IT project and its benefits, but also about compliance requirements or a change in legislation.

Code: • Experts' Individual Change Approach

Expert_ID4

- At the beginning of a change project, I would determine whether the project in question is critical to success or is counted among the so-called "must-win battles" and whether there is agreement among top management in this regard. If this is not the case and if there are high risks and obstacles to implementation, it would make sense to ensure that there is agreement before the project begins and, with a view to the project's probability of success, to remove the obstacles. I would therefore first ensure that the project is a priority for top management and consequently receives the appropriate attention. Subsequently, I would want to ensure a common strategic alignment around the leadership issues and set up a good team, including change agents. These change agents should be selected based on certain criteria, such as internal recognition and communication skills. It is at least as

important to empower the change agents, especially in the area of change but also in the areas of communication, emotions and personality types, so that the change agents can actually bring about change in exchange with the employees. It is also important that top management provides an appropriate framework for the project and accompanies it with communications. The framework should also include the areas of control, error culture and trust, so that a development process that serves the success of the project also takes place at these levels. In this way, it is more likely that the cultural elements already mentioned will be anchored in the company and that the vision and strategy will be adapted to such an extent that the probability of success of current and future IT and digitization projects will be increased. Perhaps the IT project will even provide an opportunity to renew the company and move it into entirely new spheres in terms of shaping the future and growth.

Code: • Experts' Individual Change Approach
Expert_ID5

- There are two methodologies. First of all, because Kotter's steps are designed the way he's designed them for organizational overall, the concepts are still very applicable. Is it what I would use by itself for an agile project or technology project? The answer is very much no. I largely rely on agile change management. This is what our whole bread and butter is, is how to do change management on technology projects. So I use concepts from this very much where she has basically taken the manifesto, the agile manifesto and various concepts from that, and blended it into an approach in which case you can use and sprint cycles etc. of pieces her. The way she has designed this, though, is very much using lean change management.
- Meaning, in which case you're taking concepts of lean and you're pulling from the ideas and the mentalities and the ways of pivoting and you're putting them into an agile framework in order to implement the change. I'm using pieces from each of those three subjects that we've chatted through. Also, what am I using fundamentally depends on, it's hard, I've been doing this for so long, it's in my DNA. I'm pulling from so many methodologies, it depends on who I am talking to and what is needed. The methodology I always use, just fundamental, it just naturally rolls out of me. I wouldn't be able to separate it from my DNA if I tried. It's the ADKAR. But in agile projects you don't only have to deal with people. You're dealing with technology, and so I use principles from each of these subjects.
- I have to say, because we're dealing with an infinite, and I mean it, when I say infinite number of variables, that is a human and in the human soul and mind. I have to take who am I talking to right now? What really is the scope of the project and what do I need to pull from that is their biggest barrier from achieving whatever the result is that they're paying me to achieve.
- Which is why I don't believe you can just have one model. Each model was designed with an author who had a specific story in mind in which to solve.
- On my current project, moving on to certain technology is a regulatory compliance point which will cost the company multibillions if a company does not comply. Therefore, a very more rigid process has been designed in phases that match the phases of the execution of the project, with exact deliverables of certain change management under each of the nine phases right and at least minimumly those have to be done. How you execute each one of those needs all of this information. But doing the steps of each one was created so that one who could still achieve the results but make the regulatory and the IT-people who are very used to -"done, not done, done, not done" - that's the way they're wired. You couldn't unwire them if you tried. So when I'm on talking to my technical projects, I very much have to be on these deliverables. When I'm talking to my sponsors, I very much have

to be a different concept. Depending on which group I'm talking to or individual, is how I'm having to adjust my approach in the conversations of the sessions.

Code: • Experts' Individual Change Approach
Expert_ID6

- First of all, I would conduct a status quo analysis to initially determine the starting position, what the specific problem is and what needs to be changed. Subsequently, I would define the goal and in which timeframe I want to achieve this, i.e. set the schedule. I would define milestones and KPIs so that the project success is measurable. I would define the requirements and set up an initial plan, in which I would determine which human resources I need for my project, which competencies are required. Then you have to see whether the required employees are available internally or whether you have to hire new employees. In the further course, internal communication is an important point, everyone involved must know what the goal is and why. Above all, the working methods to be used must also be mentioned. It is also important in digital projects to involve all stakeholders in the process to get important feedback for the development, realization or implementation. When you integrate stakeholders into milestone planning, you can respond much better to changing requirements. It is also important to get feedback from the management level, to be always up to date about the project and the way of working and to see where something could be improved. These two feedback levels, internal and external, are very important. It is important to always stay close to the stakeholders and the technical aspects, so that you don't drift too far away from the essentials.

Code: • Experts' Individual Change Approach
Expert_ID7

Experts' Model Adaptation Proposals

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Experts' Model Adaptation Proposals	Leonardo	3462	14,01
Expert_ID2	Experts' Model Adaptation Proposals	Leonardo	1394	12,93
Expert_ID3	Experts' Model Adaptation Proposals	Leonardo	1217	15,04
Expert_ID4	Experts' Model Adaptation Proposals	Leonardo	1514	9,86
Expert_ID5	Experts' Model Adaptation Proposals	Leonardo	1657	9,30
Expert_ID6	Experts' Model Adaptation Proposals	Leonardo	1468	4,94
Expert_ID7	Experts' Model Adaptation Proposals	Leonardo	744	5,99

- I would complement the model with the iterative, the possibility should be there to adapt everything to the circumstances at any time. Take small steps. Always check if what you have already done makes sense. If it works. Also, so that you leave the people who work daily on the technical implementation, the developers, too long alone. Personally, I would never let my developers work on something alone for a week, only to find out afterwards that their implementation is faulty. At that point, I like to have the daily exchange with the developers to talk together about the project, important points and the necessary requirements/tickets. The iterative, the regular exchange and repeated communication and explanation of the requirements is very important and I would like to add this point to the model. The iterative, the constant review of the current situation is important. That's a point where I would say, also owed to my experience in the IT context, that's part of my approach

and independently I would say that it's important. In the IT context, I would also call this a success factor.

- Steps seven and eight of the model are too unspecific for me. Although they are important from a general point of view, I would leave them out in the IT context because the application does not really make sense in this context. The first six steps of the model are much more important to me. Of the six steps, I would especially repeat communication over and over again, in a clear and appropriate way. Not at a specific point in the model but from the beginning to the end of the project. Care should be taken not to over-communicate the change issue.
- I would define the first step of the model differently. At this point, the employees affected by the change should not be frightened. This step has too negative a connotation for me, so I would change it. An urgency should definitely be communicated, but without the fear. Communicating urgency should be done in a cooperative and appreciative way and without threatening consequences, otherwise you lose people for the project. Or worse, you lose the good people.
- In my opinion, there should be no order in the application of the individual steps. All steps must be applied constantly, depending on the situation. If necessary, the steps must be applied permanently. Sometimes more, sometimes less.
- Not following an order should not mean starting with steps that don't make sense to begin with, such as "Generating short term wins". To stay with short term wins: After all, the name already implies that they have to happen multiple times and not just explicitly after the communication step. So I see continuity in the individual steps and targeted application depending on priority. For example, as already mentioned, the vision/goals should be permanently applied or adapted on an operational level. But also the vision step, for example, would not be chosen right at the beginning. So, in the IT context, I basically don't like the order suggested by Kotter, each step should be able to be applied flexibly and there should be a focus on agility. Each step can be important. Step seven and eight I would remove from the model as I said. The step of short-term-wins must be repeated permanently in any case, as this is the key of motivation for the employees concerned, short-term-wins should therefore take place/be planned constantly.
- So I would basically add the topic of iteration and agility.

Code: • [Experts' Model Adaptation Proposals](#)
Expert_ID1

- I would remove step 8 from the model. What I would add would be the realization of a kind of feasibility study before the actual start of a project, in which one goes through the planned project before the start and already identifies the so-called pain points in advance. In such a "pre-project" one would, as far as possible, go through the planned steps and thus remove any bad ideas and approaches from the project plan. The goal is to identify everything that can be found out in advance and that prevents the project from progressing. This can also include obtaining feedback from all stakeholders in advance and checking how high their acceptance of the project is. If key decision-makers have doubts about the project in advance, then no further resources should be spent on moving the project forward, as the chances of success are low. Feedback should be critically analyzed and the reasons for rejection investigated. Probably in such a case it can also be that one has chosen the wrong system and the digital solution is not the right one, therefore one should examine such things more exactly before beginning a project, in order not to have a solution at the end, which is unsuitable and is not used.

- I would also not want to set an order for the steps from the model, but rather put the steps in a "toolbox" that you use accordingly depending on the starting point and situation.

Code: • Experts' Model Adaptation Proposals

Expert_ID2

- The topic of communication, for example, does not occur only once in the course of a change project in the IT sector. Many steps are needed more often and must be repeated in the course of a project. I would not define a sequence and place all steps in a "toolbox" that you can continually fall back on as soon as there is a need.
- If I had to remove one step from the model, it would be step 8. At this point, however, it must be said that it depends on the project itself. Large projects that change fundamental things or ways of working in a company often also have an impact on the corporate culture. In the IT context, for example, it could be projects that digitize all work that was previously analog. In regular IT projects, however, this step could be eliminated.
- I would add the step stakeholder management. Maybe not as a single step, because it plays a role in many places, but as an important element to be considered from the beginning to the end of the project, at every step executed. As the basic framework of a project, so to speak. Because especially during a project you have to make sure that you react quickly to the feedback you get from the parties involved and incorporate it into your work.

Code: • Experts' Model Adaptation Proposals

Expert_ID3

- We have eight points in the model. But I would say that points one and two are the basic setup, the basic structure, and points three to six, and possibly seven, describe the operational implementation. Not every step has to be applied or worked out for every project, for many projects it is sufficient to use decisions that have already been made, for example, not every project needs its own vision. Nevertheless, separate goals should be defined for each project. I have classified point four as the most important in IT projects, because it is very important to communicate to everyone that the IT project offers an opportunity for the company and the employees. However, depending on the facts at hand, different steps may be of greater importance. For example, if it is clear that a company is facing many obstacles, then this step is of greater importance than all the others. In this case, even the other points should be aligned, e.g. the team composition should be aligned (e.g. selection of certain experts/influential persons who can remove obstacles). Depending on the circumstances, I would adjust the model in one or the other point as mentioned above.
- I would see the model as a toolbox/toolkit where you draw on different elements depending on the facts/initial situation. I would not see a strict order.
- I would also decide which point to delete on an individual basis, depending on the initial situation. Basically, however, I would say that point eight does not quite fit into the IT context.

Code: • Experts' Model Adaptation Proposals

Expert_ID4

- One recommendation would be, as a supplement, to actually think about empowered change agents. Change agents do not necessarily have to be new employees, but can also be drawn from the existing organization. A good project manager, for example, could lead the

change agents' project office. Regarding the sequence of the individual steps, change is, in my opinion, always an iterative process in which many steps have to take place more than once. It is an illusion that once you go through the model steps and a change occurs. In general, I think a method toolbox is important, whereby I would see Kotter's steps as one of many components. I would add the correct handling of comfort zones, emotions (emotion management), power and powerlessness. On the topic of emotions, it is important to know how to use them for positive action. When it comes to powerlessness, for example, it is elementary to know how to find your way out of this state. It can also be important to be able to identify different personality and stress types in order to be able to work together in the best possible way. A further complementary element could be change coaching, in order to be able to reflect on the top management level in the sense of change and to expand competencies on a non-technical level. Change coaching is mainly about releasing inner, already existing resources in people. The latter has a direct positive effect on the culture and ultimately also on the upcoming change itself. Finally, I would like to mention here that I see the topic of communication as an accompanying element to every step of the model, from the beginning to the end of the project.

Code: ● Experts' Model Adaptation Proposals

Expert_ID5

- I don't disagree with your experts (putting all the steps in a toolbox). I would also say that Kotter never intended his model to be linear. If you read his words carefully and I've read them very carefully, he said that there is cyclic approaches. There is some cyclic aspects, just like even in ADKAR. You can move down awareness and desire and you can get to the training point and then the person goes - "no, I'm out of here. I did not know it would be this difficult" - boom, you're back to desire or you're moving into coaching and they're like - "I really didn't understand that" - boom, you're back to knowledge. All of these models can't operate because a human doesn't operate in a linear fashion of just "A, B, C without never going back to A". We cycle, we are dynamic. We're in flux. So Kotter's intention too was providing his steps, but he also stated somewhere in there right of the fluctuations that can occur. So your experts said it in another way: Start with urgency, but I have to tell you, you won't even be put into a project unless there was already a sense of urgency. You wouldn't have been hired as a change manager. So somebody's created already a sense of urgency and they even said you needed a change manager. So you go to wherever you need and you bring in what you need, depending the gap, but Kotter's model is wholly insufficient for IT-projects.
- He didn't design his model just for IT-projects. He didn't design it for project-level.

Code: ● Experts' Model Adaptation Proposals

Expert_ID6

- In the digital context, it is important to always remain adaptable. I would add the two feedback levels, internal and external, as well as stakeholder management adapted to the digital context, where it makes sense to integrate the end user into the development, implementation or execution in order to create the best possible result that perfectly matches the requirements. These two additions are a good way to make sure that you are still on track with the previously defined requirements and that you are going in the right direction. Basically, I go along with the toolbox principle that you fall back on the steps you need depending on your needs and situation, although logically you could not start with every step from Kotter's model.

Code: ● Experts' Model Adaptation Proposals

Expert_ID7

Experts' Design Thinking Consideration

Document name	Code	Created by	Area	Coverage %
Expert_ID1	Experts' Design Thinking Consideration	Leonardo	3057	12,37
Expert_ID2	Experts' Design Thinking Consideration	Leonardo	1443	13,39
Expert_ID3	Experts' Design Thinking Consideration	Leonardo	164	2,03
Expert_ID4	Experts' Design Thinking Consideration	Leonardo	710	4,63
Expert_ID5	Experts' Design Thinking Consideration	Leonardo	1447	8,12
Expert_ID6	Experts' Design Thinking Consideration	Leonardo	1303	4,38
Expert_ID7	Experts' Design Thinking Consideration	Leonardo	1569	12,63

- I find all the elements of Design Thinking mentioned important. Whereby I find the first and the third most important (user focus/experimentation). I give the user focus a four, the problem framing a three and the experimentation a four.
- And experimentation and framing are exactly what I mean with my iterative, agile, and goal-focused approach, in which one is constantly open to change. Kotter's model sounds coherent, but not very modern, and the Design Thinking elements mentioned bring a modern addition with a focus on the IT context as well.
- Design Thinking is very, very IT contextual and can be applied to it very well.
- In my opinion, Kotter's model is rather old-fashioned and not IT-related. The Design Thinking elements, on the other hand, are very modern, which can result in a certain tension if one wants to apply both at the same time, and by enriching it with these new elements, Kotter's model could be transferred into today's time and especially into the IT context.
- I would frame the problem and experimentation. I would include the redefinition, the adaptation to changing circumstances, the not being stuck with the first best solution and regarding experimentation, the permanent application, the learning from it, the feedback loop, I would definitely include all of that in my change approach.
- Problem framing and experimentation go together for me.
- Elements such as "User Focus" should not be understood as a step. User Focus should also be understood as feedback, people should be asked constantly, you should get feedback or different opinions from as many and different people as possible. One should simply incorporate many perspectives. I miss these things in Kotter's model. This top-down approach without getting the opinion of the people affected is to be criticized and that not so much attention is paid to the operational level or the impact of the change at the operational level is incorporated into the course of the change project.
- The chronological or the concrete adherence to the sequence is to be eliminated from the model. There is no sequence, not even with the repetition of individual steps. Especially elements like communication/user focus happen permanently.

- The focus should be on the reaction, with the application of the steps of the model, to a changed situation. One is confronted with a changed situation and must then select the correct steps from the model. It is to be decided, what is to be done then concretely. Is it time again for a new communication? Do I need to change my goals? Do I have to emphasize the urgency again? Maybe I have achieved short term goals in the meantime, and I can build on the change that has resulted. You can ask yourself such questions at any time, if appropriate.
- At the right moment, each of these Kotter's steps can be the right tool. In my opinion, however, not chronologically in a certain order. Especially in the IT context, there should be a special awareness for the current situation, one should be agile and react according to the situation.

Code: • Experts' Design Thinking Consideration
Expert_ID1

- User Focus I give a one, because from my experience you can never completely satisfy the user. Of course, you have to find compromises and make sure that the user uses the tool in the end, but you should not put all your resources into the user focus. The fact that the user has to familiarize himself with the tool cannot be completely taken away from him. You can't please everyone, but you should try to please most people.
- I give problem framing a four, because it fits ideally into my idea of the preliminary project. That one first checks whether the apparent problem really exists as it is communicated.
- In my opinion, the experimentation step only works for processes that are not critical for the functioning of the company, otherwise I think it is good that, for example, key users familiarize themselves with new solutions and find their own solutions and, especially important, give feedback for the actual project. From my experience, experimentation only works in very small companies where the employees are very "committed" and technically skilled, so that valuable feedback can also be given. However, these key users would first have to be identified, since not every employee is suitable as a key user for experimentation. In practice, however, the employees usually do not have sufficient capacity/technical skills to act as development partners on an equal footing.
- I would include all three elements in the "toolbox."

Code: • Experts' Design Thinking Consideration
Expert_ID2

- I would put all three of the above elements of Design Thinking in the "toolbox" and use them as needed, as there may be situations where all three can be important.

Code: • Experts' Design Thinking Consideration
Expert_ID3

- I find the topic of experimentation highly exciting, but in my opinion, it only works if you are an IT company or IT service provider that sells its own IT products. Other companies would not want to or be able to pay for this experimentation.
- I think the three elements are all good, because in the end that's what an IT/IT change project is all about. If User doesn't work with the newly implemented system, the project has failed. Experimentation I would rank as the weakest item, I give this item a two because although

it is a very good step, it is not applicable to all companies. I give the problem framing a four and the user focus a three.

- I would also integrate the three elements into the toolbox.

Code: • Experts' Design Thinking Consideration
Expert_ID4

- Even though user focus is important, the current trend in companies is too much in the direction of empathy and harmony. Of course, you need a line on this topic in order not to lose the employees, but I would still classify this point as less important compared to the others.
- According to my experience, problem framing is a very important topic, because many companies do not know at the beginning which problems they actually want to solve. Often, not even top management agrees on the problem at hand, so it is of central importance to define the actual problem at the beginning. Otherwise, all further efforts are obsolete and you may be marching in the wrong direction.
- Everyone knows that change goes hand in hand with mistakes, and although it is written everywhere, no one seems to want to accept it. In my view, experimentation has a very high priority and must be planned for from the very beginning. Not least because companies often enter new territory with new IT projects. The fact that things will go wrong is clear from the start and should therefore be taken into account in the initial planning. Ideally, this fault tolerance should also be incorporated into the corporate culture to some extent. If experimentation, which as we all know costs money and time, is not taken into account in the initial project planning for the same reasons, this must be described as a planning error. Changes are always accompanied by errors.

Code: • Experts' Design Thinking Consideration
Expert_ID5

- Experimentation by far is the most important thing on any of this. All changes are fundamentally an experiment. We think that, if we change this we'll get this business result. No one knows for sure. So experimentation and so forth is number one important point. So if everybody agrees it is an experiment, they operate differently, they think differently and they talk differently. So of all of this they will themselves frame the problem differently. They themselves will voice their own opinion and diverse thoughts differently as soon as you've set it up and made it a safe space that this can't be an experiment.
- By the way, I mean I just generalized it but fundamentally, this is where I run across the biggest problem: Is that there's this assumption that we do, we create this IT-change, then it's going to magically save the world. You don't know that, you may get three quarters of the way through and find out that you can't even do it, like in other words, if we don't just keep it as an experiment, people operate and focus and prioritize differently than if we think, whatever the change is, it could be it or otherwise, is anything other than an experiment. So I would say, on all of these things, experimentation is a four, problem framing is a three, user focus and diversity is a two.

Code: • Experts' Design Thinking Consideration
Expert_ID6

- Problem framing: Without a precise definition of the problem, you cannot sell a digital product on the market. The problem must be clear in order to communicate the benefits of the

solution to the market. Experimentation: At the beginning of a digital product development, a lot of experimentation is needed, as the MVP can go in different directions. After a certain point, however, a certain direction manifests itself and you only do smaller experiments. However, in the context of changing customer requirements, you should always try to create a better product for the customer through experimentation and never try to rest on the already existing product. In this process, I like to conduct interviews where I show the development progress and record the remaining requirements. On the other hand, I also like to conduct quantitative testing in the analytics area to find out where things can be improved. These two methods have proven themselves and I would also count them as experimentation. And there you have to develop a certain joy of experimentation, especially in the digital context. However, it's also important not to invest too much time and money in experimentation, because in experimentation it's primarily important to make sure that you're going in the right direction, the direction that the end user wants, and that you're not wasting resources and that at the end of the project all stakeholders are satisfied. But for experimentation, budget really needs to be made available first as well. I would include all three elements in the toolbox.

Code: ● Experts' Design Thinking Consideration

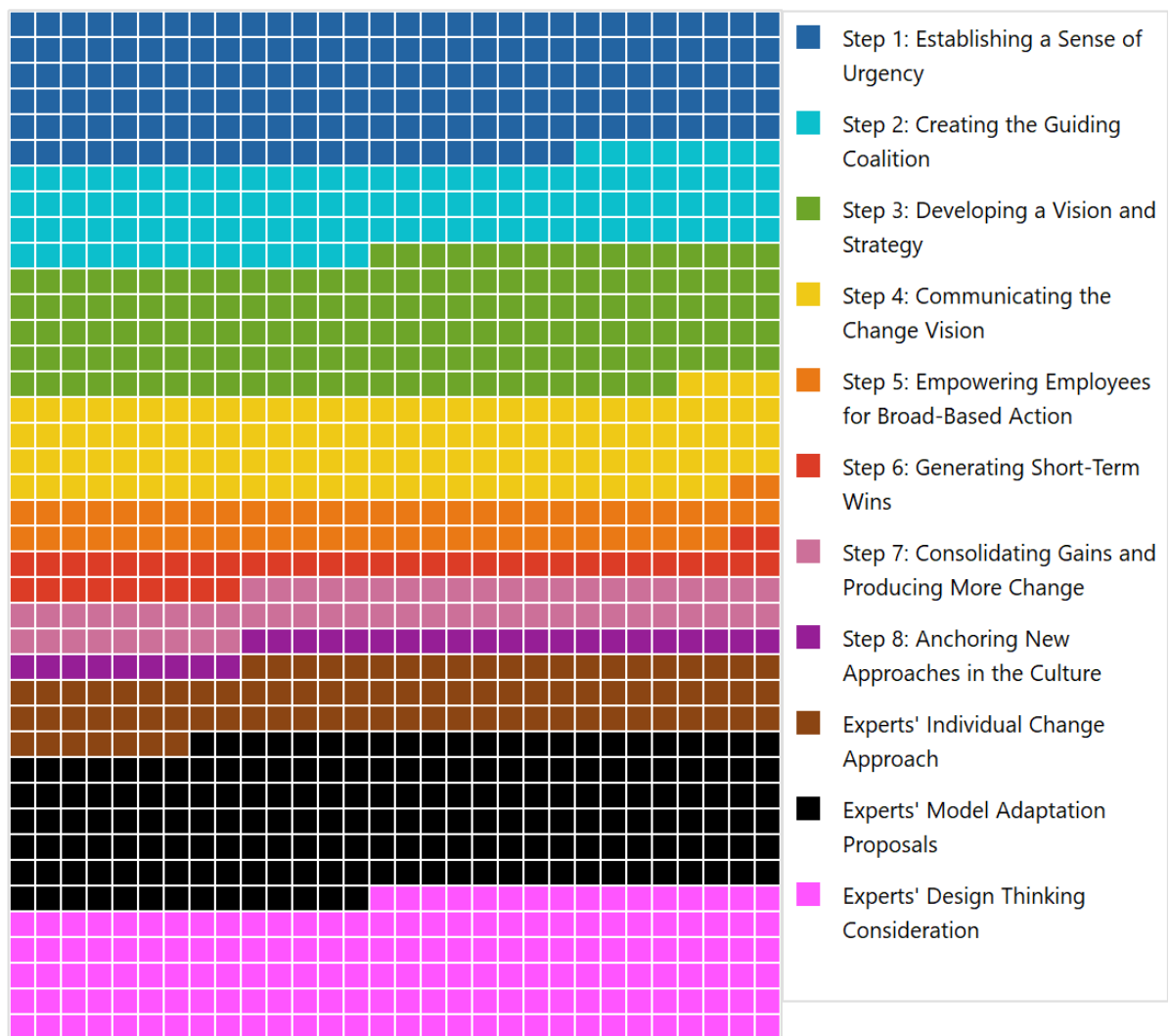
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Appendix D

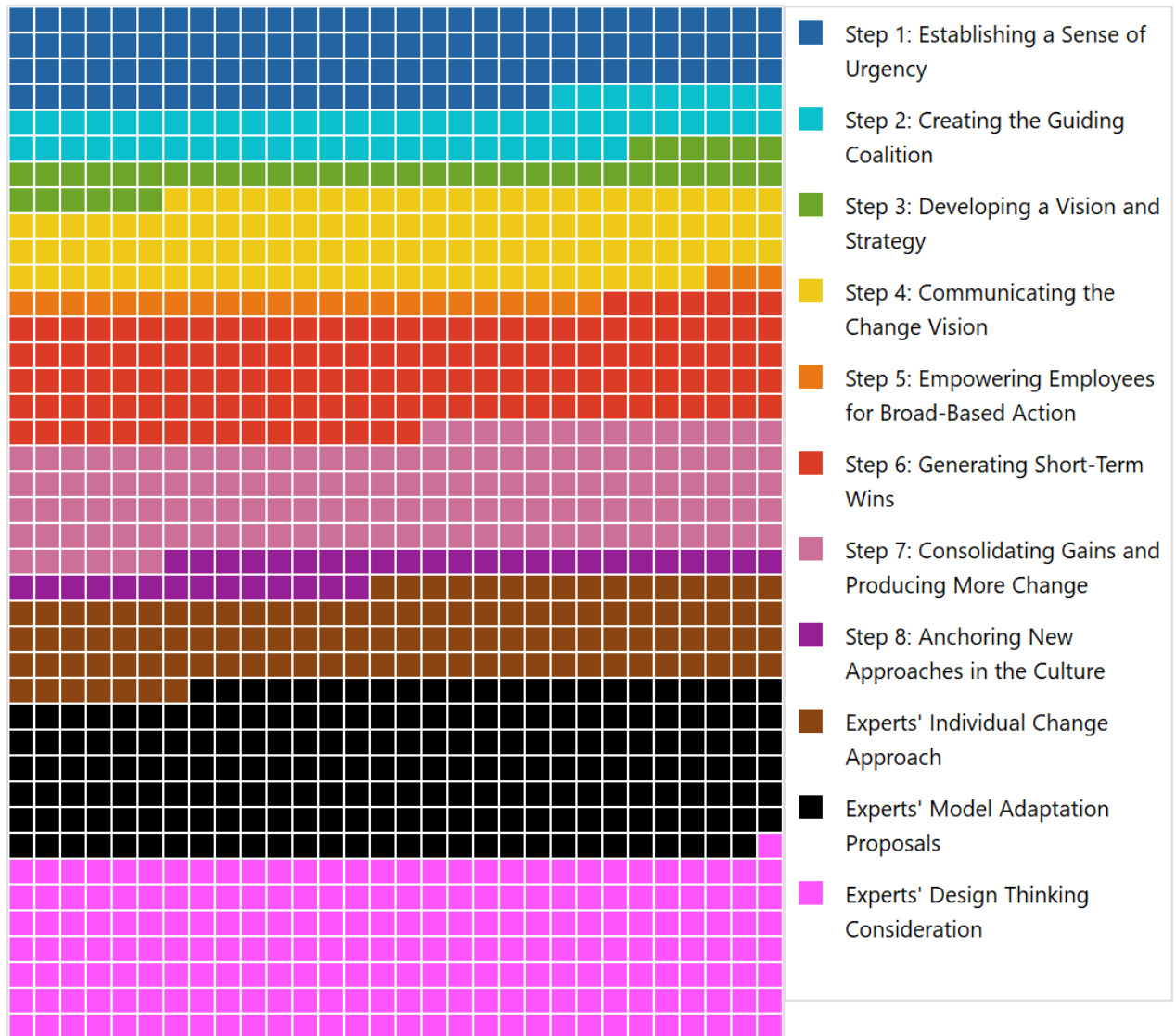
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The following charts show the proportion of the corresponding codes per expert, which makes it easier to understand what share it represents in the overall interview process.

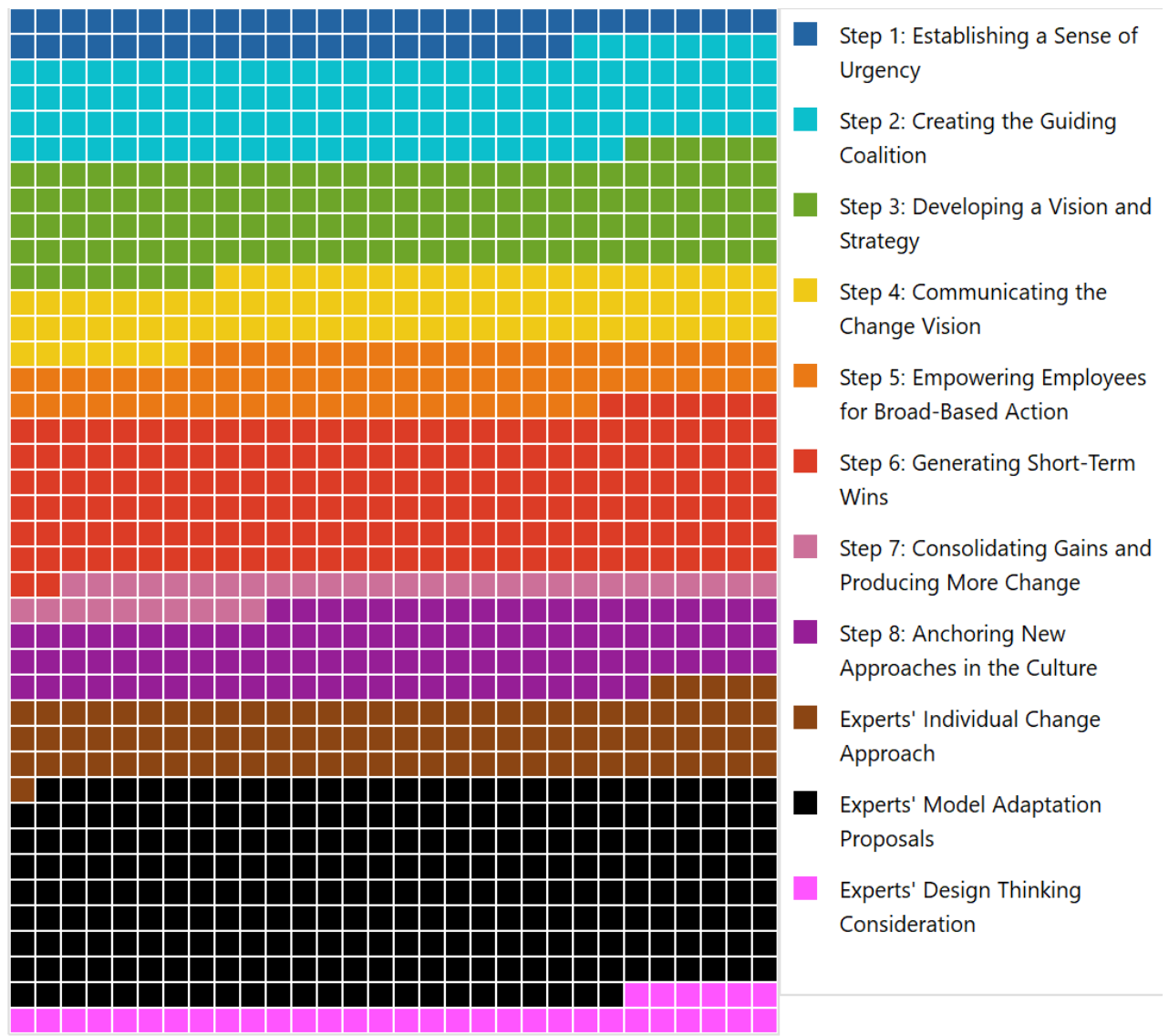
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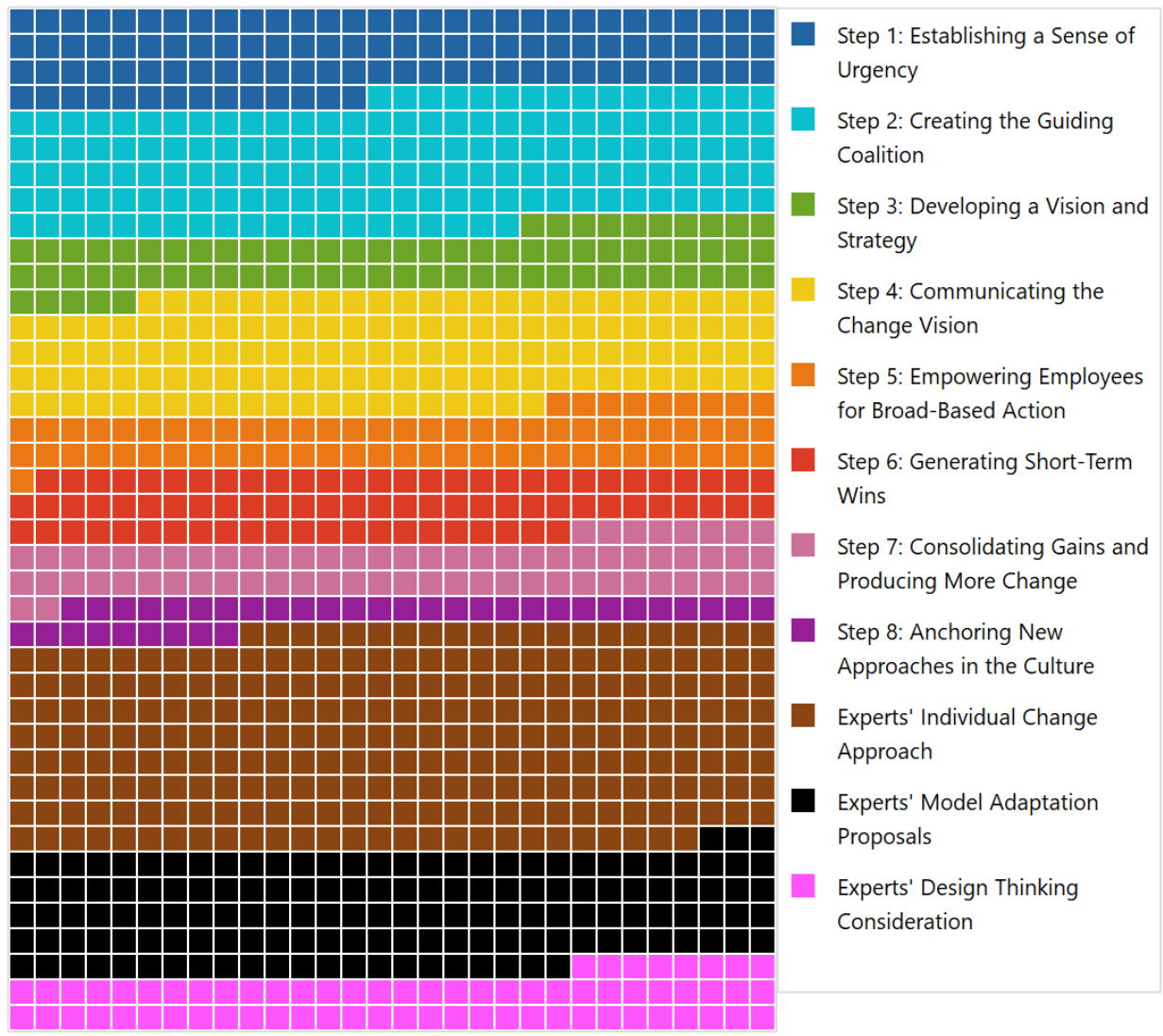
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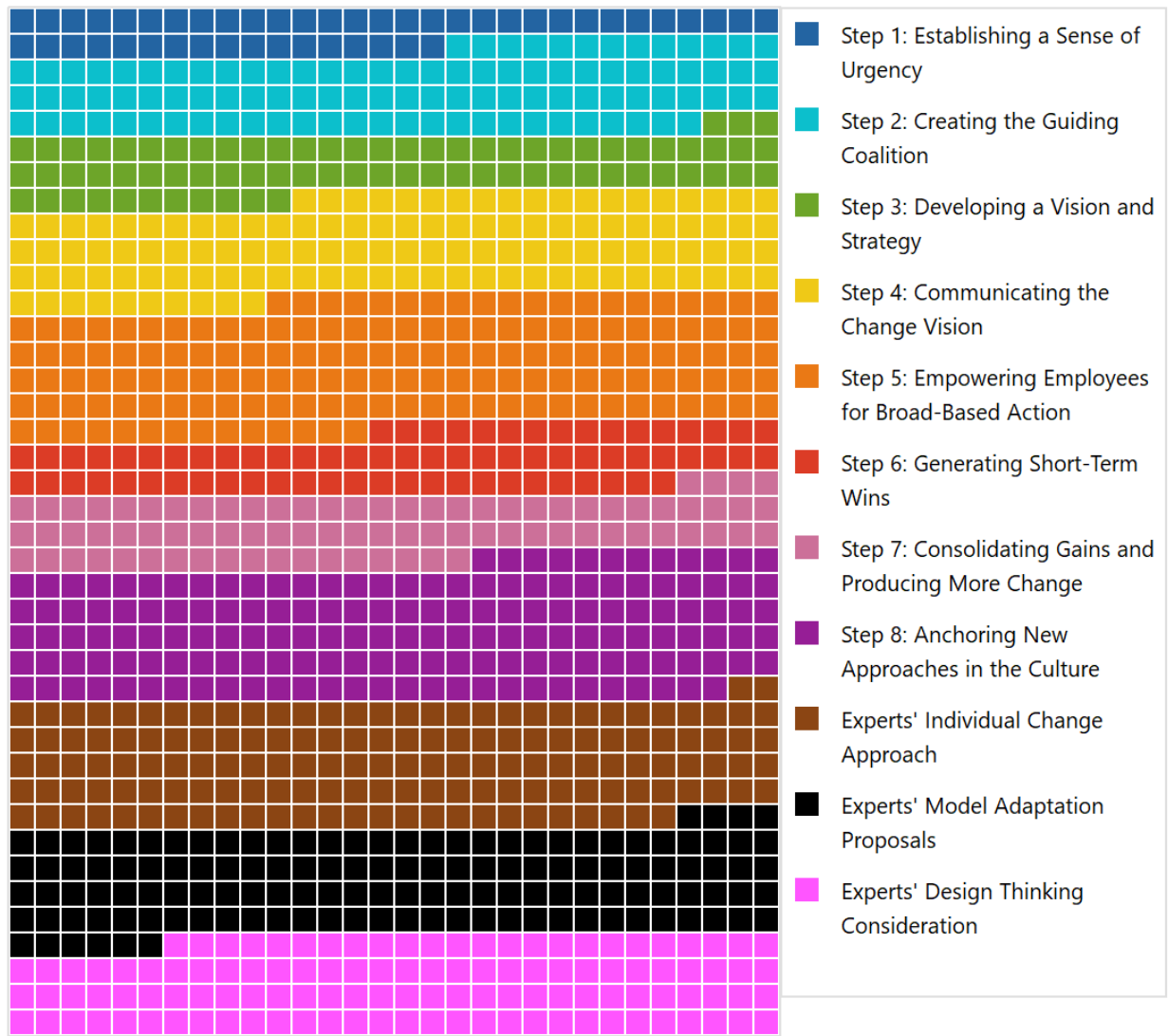
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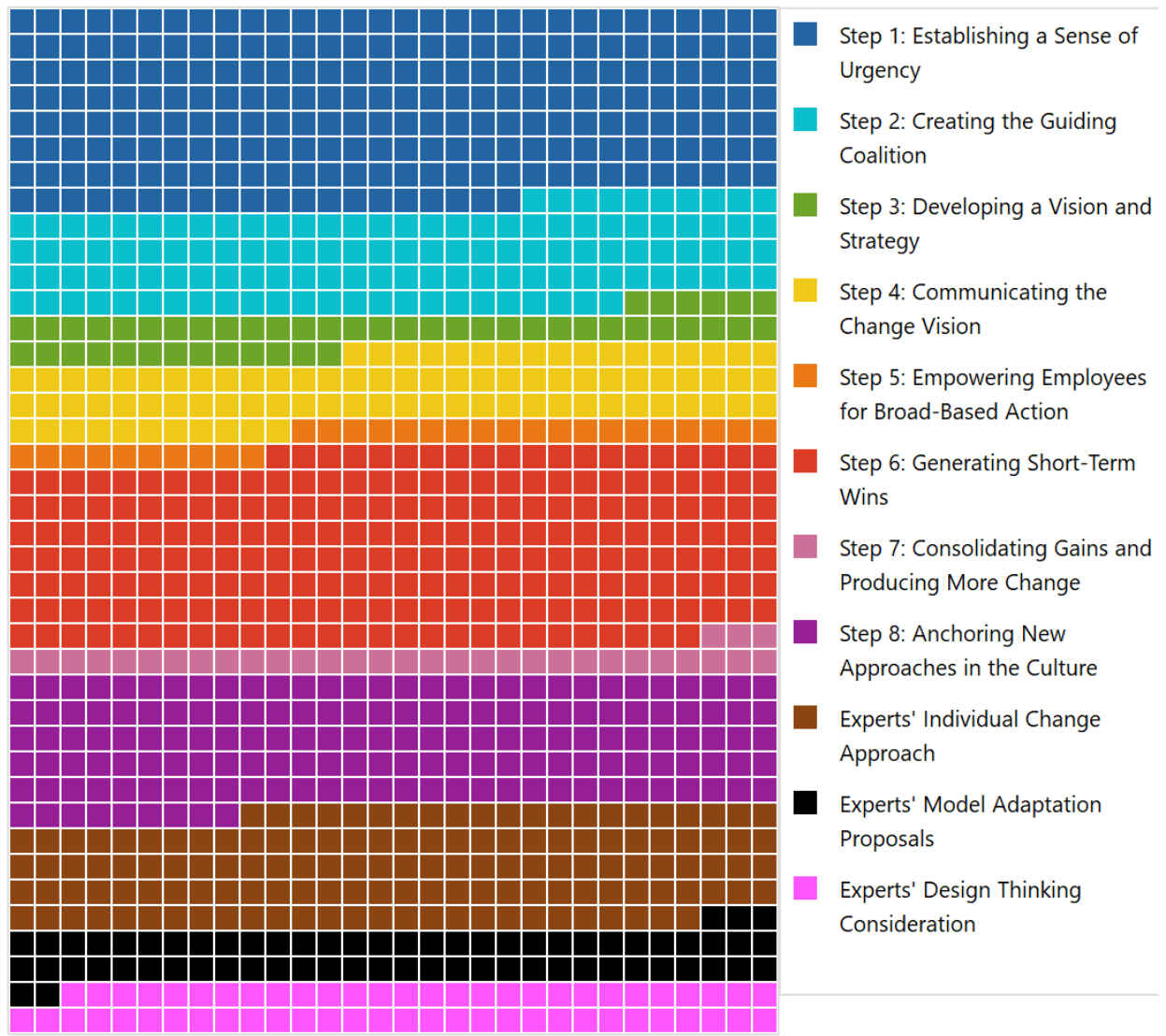
Expert ID4



Expert ID5



Expert ID6



Expert ID7

