



UNIVERSITY OF AGDER

Managing Change When Implementing a New Project Management Methodology

A Constructive Approach to Change Management

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For the Master's Degree in
Industrial Economics and Technology Management

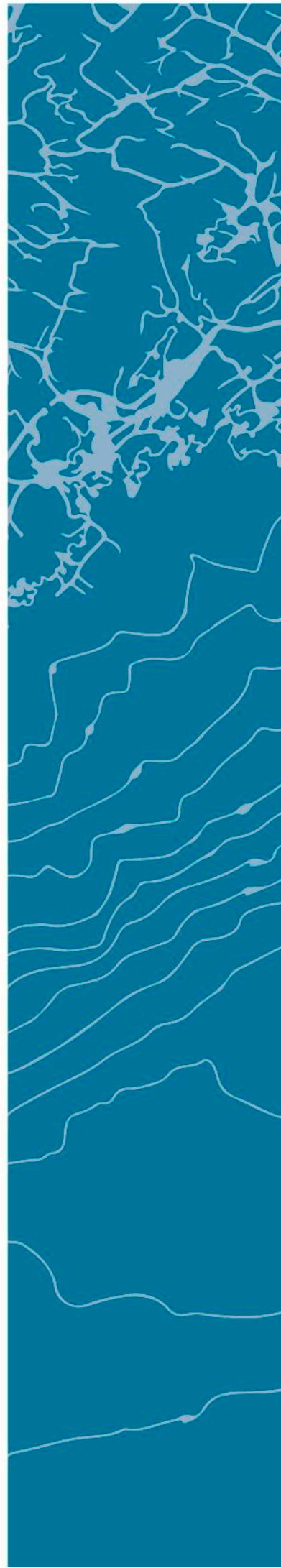
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I. PREFACE

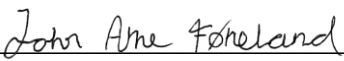
This master thesis was prepared in the spring of 2018 and is the final assignment of the Master's Degree in Industrial Economics and Technology Management at the University of Agder.

The thesis is written in cooperation with Sweco Norway. We seek with our study to create a framework for change for Sweco's implementation of a new project management methodology.

We wish to thank Sweco for allowing us this opportunity, and their willingness to spend time for our research. Thanks to the employees at Sweco who took time to let us interview them. We wish to thank our liaison at Sweco especially, Martin Amdal, who helped us get started, supplied the information we needed and booked the interviews with employees in Sweco, from both the Sweco offices in Oslo and Bergen.

We would also like to give a special thanks to our supervisor, Magnus Mikael Hellström, who has been extraordinarily helpful. He has shown great enthusiasm to help us since the beginning of our study and continually provided us with suggestions for improvements to our thesis.

Grimstad, 1. June 2018



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II. SUMMARY

Standardisation of project management seems to become more significant for several actors in the construction industry. Current models for project execution do not make enough effort to utilise expertise and experience to make the product better and the price lower, and grant few incentives to use new technology (Statens Vegvesen, 2017).

An initiative by employees in Sweco Norway has resulted in the creation of a new project management methodology, which they believe will enable them to execute their projects in a more structured and standardised manner. The new methodology is a toolbox consisting of ten tools, amassed from best practices for project management at Sweco's various locations in Scandinavia. As no standardised way of executing projects have ever existed at Sweco, project leaders have approached project management based on individual preferences, resulting in various approaches. Our thesis seeks to answer how the new project management methodology can successfully be implemented, as change efforts often fail. Thus, our research question is:

How could Sweco's new project management methodology be implemented?

The Constructive *Research Approach* is chosen for the methodological framework for our thesis. It is a research approach that seeks to develop *constructions* or *solutions* that will solve a practical problem (Lukka, 2003). Our construct to solve Sweco's practical problem will be a model, consisting of phases and recommendations tailored for Sweco's specific implementation. Data is gathered from semi-structured interviews in two of Sweco's locations, Oslo and Bergen. Two main groups were interviewed: initiators and future users of the new methodology. To form a construct and answer the central research question, the following sub-questions have been formed:

- *Why is this change needed?*
- *What could inhibit the change?*
- *How should Sweco strategise for this change?*

The first sub-question is answered through an analysis of the interviews. We have addressed the most reoccurring needs and themes throughout the interviews, both for initiators and users. The interviewees were questioned about their own and Sweco's needs for improvements to their project management. It became evident that they believe, or hope, that this change will earn them benefits in several areas linked to standardisation, processes, customers, cooperation, results, progress and

avoiding risk. This change is said to hopefully enable everyone to “speak the same language” and allow the customer better transparency throughout the project lifetime.

For the second sub-question, the interviewees were asked questions about opposition to the change initiative. Our questions were based on a theoretical framework for resistance, which enabled us to categorise the kinds of resistance and later pick a suitable approach to deal with the resistance. The most significant concern of what could inhibit the change initiative was found to be resource allocation. Several wondered how they will be able to adapt to the new methodology in their already demanding schedules.

The third sub-question, how to strategise for the change, is answered with a framework for analysing change. In this framework, four factors are evaluated: kind and amount of resistance, the relationship of power between resisters and initiators, knowledge about what changes are needed, and the stakes involved. The evaluation of these factors suggests in our analysis a slow approach to the change. It will require involvement and participation of others and will attempt to educate the employees in the ways they need. Half of the interviewed users also said they would be more likely to use the methodology if they are required to.

The sub-questions, along with a synthesis of theoretical models for change management, has enabled us to create a construct for Sweco as guidance in their implementation process. The construct, seen below, consists of seven phases that we encourage Sweco to utilise.

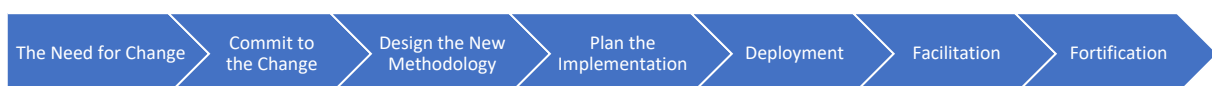


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1 INTRODUCTION

Change management has increasingly become more prevalent, and organisations are gradually developing strategies and procedures to handle organisational change. In today's society, we require changes to happen actively, in a planned manner (Jacobsen, 2004). Thus, to adapt to changing circumstances, staying competitive and persevere with technological advancements, competence and knowledge of change management are needed (Jacobsen, 2004).

1.1 Background

Sweco, a consultancy engineering organisation in construction, is on the verge to change their practices and implement a new project management methodology which they believe will enable them to manage projects in a more organised and standardised manner. The new methodology is based on best practices of management within the organisation from different offices throughout Scandinavia. It is named *Sweco's Design Methodology*¹, and it is meant to serve as their project model in concurrency with their already existing model for project governance. Their current project execution practices are characterised by being too open and dependent on the preferences of the individual manager, hence resulting in various approaches. Our goal is to provide Sweco with a framework for how this change should be implemented.

A standardisation of practices for project execution is not only relevant for Sweco, but it also seems to be an ongoing trend in other areas of the industry as well. According to Statens Vegvesen² (2017), the construction industry is collected in their desire for new research on how projects can be planned, executed and organised. They argue that current models do not make enough effort to utilise expertise and experience to make the product better, the price lower, or to ensure more efficient construction. They are also not good enough to ensure innovation and facilitate new technology.

1.2 Research Question

This study intends to aid Sweco in the implementation of their design methodology. Before change efforts can be implemented, it may be necessary to understand why this specific change is needed, beyond just doing what rest of the industry does (Kotter, 1996). Also, knowledge and competence

¹ Translated by authors from "*Swecos prosjekteringsmetodikk*"

² The Norwegian government's agency for planning, constructing and maintenance of roads in Norway

in change management are essential, to better handle changes (Jacobsen, 2004). Thus, the following research question was formulated to assist Sweco in their change effort:

RQ – How could Sweco’s new project management methodology be implemented?

A combination of existing theories could answer the research question. However, generalised methods to approach a change is often not adequate for any given change initiative (Anderson & Anderson, 2010; Jacobsen, 2004). Thus, an approach to Sweco’s change must be specified to their needs and culture. The following sub-questions will try to clarify precisely this:

RQ₁ – Why is this change needed?

RQ₂ – What could inhibit the change?

RQ₃ – How should Sweco strategise for this change?

By answering these questions, a culmination of an approach to implementing Sweco’s new methodology can be realised. For RQ₁, it is necessary to know why a change is needed, to ensure that others can understand it as well, or help them understand it earlier. It is natural for changes to meet some form of resistance to any change. Thus, for RQ₂, we want to investigate what could bring discontent to Sweco’s change initiative and inhibit its implementation. RQ₃ seeks to set a strategy for this specific change. A framework consisting of four factors is used to determine how Sweco should approach the change regarding speed and involvement of others. An implementation strategy would also include a plan for communication and education. The sub-questions are used to guide the discussion into the formation of our solution.

1.3 Limitations of the Thesis

Specific changes or proposals to their methodology, project model or project governance model will not be given, nor will a detailed schedule of activities for the implementation be given. The research will only be conducted internally at Sweco, with internal informants. Our approach to the implementation of Sweco’s change will also not be tested or validated by the organisation. An elaboration of the limitations concerning the methodology is given in chapter 3.6.

1.4 Thesis Structure

Chapter 2, Applied Theories, will present a set of theories concerning change management, along with terminology related to Sweco’s change effort. We have chosen theory that will enable us to conclude how the change should be approached and implemented. Chapter 3, Methodology, presents a framework for our study, and why the chosen research approach, constructive research,

is favoured. Additionally, it explains how the study has gathered information. Chapter 4, Findings, presents our results from the interviews, accumulated with the assistance of the analysis software NVivo. Chapter 5, Discussion, pursue to connect and apply theory with empirical data, ultimately resulting in our construct, a model that structures the change effort implementation. We conclude this thesis by presenting the theoretical contributions the construct yields, the managerial implications of our construct and unanswered questions which results in future research.

2 APPLIED THEORIES

Theoretical literature is reviewed to get an understanding of change. Models for change management will be presented and will be used to guide the change effort at hand further as it moves towards the deployment stage. Resistance to change should be avoided, thus, theoretical frameworks to analyse it is of value. Then terminology on what Sweco is about to implement is given. Lastly, a synthesis to form a combination of appropriate theories.

2.1 Change as a Phenomenon

Organisational change is not easy (Beer & Nohria, 2000; Kotter & Schlesinger, 1989; Wang, Lim, & Kamardeen, 2013), which is often accompanied by low success rates (Smith, 2002). Change is a requirement for success, and especially going forward as the speed and complexity of change only increases due to technology and other drivers for change (Anderson & Anderson, 2010). The very nature of change itself has moved towards being more open-ended and complex, as opposed to being accessible to manage (Anderson & Anderson, 2010).

External business drivers take time to set in. Once they have affected the bottom line of the company, change is needed immediately. In some cases it is already too late, the internal change should have started much sooner.

— Hiatt and Creasey (2012, p. 138)

Most failures that occur when initiating a change happen because the entire process is rushed (Beer & Nohria, 2000). Failure can occur when allocating insufficient time to initiate a change or even when having too much of it (Kotter, 1995). Other causes of failure may occur when choosing an approach to change that is not customised for a specific change initiative, or merely assuming resistance from employees will be non-existent (Kotter & Schlesinger, 1989). As changes often have such low success rates (Smith, 2002), change management becomes imperative to the success of any business in a marketplace that continuously grows and evolves (Godnem By, 2005).

2.1.1 Change Management

Jacobsen (2004) defines change as a process, consisting of actions that should bring an organisation from one point to another. Hiatt and Creasey (2012) define change management as the “application of processes and tools to manage the people side of change from a current state to a new future state so that the desired results of the change (and expected return on investment) are achieved” (p. 9). Moran and Brightman (2000), on the other hand, define change management as “the process of continually renewing an organisation's direction, structure, and capabilities to serve the ever-

changing needs of external and internal customers” (p. 66). Hiatt and Creasey (2012) state that improving communication, resistance management and employee coaching is not the goal itself with change management, albeit critical for any change initiative. The primary objective of change management is increasing the “probability that the future state is realized” (Hiatt & Creasey, 2012, p. 9).

Nickols (2016, pp. 1-3) presents change management in four perspectives; (1) managing change; (2) professional practice; (3) body of knowledge; and (4) control mechanism. **Managing change** is further categorised as both managing planned change (e.g., new methods, processes) as well as managing as a response to external changes that the organisation does not have any control over (e.g., politics, economy). **Professional practice** is the use of external consultants that specialises in change management. Some help the client *manage* changes; some help the client *make* changes. The **body of knowledge** are the models, frameworks, knowledge, tools and information that exists to guide the management of a change initiative. The **control mechanism** is the requirements and necessities needed that must be fulfilled.

The current state has tremendous holding power, and the possibility of losing what we have grown accustomed to (and comfortable with) creates worry and uncertainty. The future state of workplace changes is often unknown or ill-defined, and this creates fear about what lies ahead.

— Hiatt and Creasey (2012, p. 20)

When people prefer the current state over what lies ahead, change management becomes management of people as opposed to the management of change itself (Hiatt & Creasey, 2012; Moran & Brightman, 2000). According to Moran and Brightman (2000), the most influential drivers of work behaviour that a change can affect is purpose, identity and mastery. The outcome of a change must align with peoples’ purpose for working in an organisation (Moran & Brightman, 2000; Nickols, 2016). Likewise, changes concerning the identity of people may cause instability, just as people must feel that they can master what the change requires (Moran & Brightman, 2000).

2.1.2 *Kinds of Change*

How change affects people may vary with the kind of change it is. To manage change or people, the kinds of change must be understood (Anderson & Anderson, 2010). **Continuous change** is defined as a change that can incrementally transform an organisation through time (Balogun & Hailey, 2008). Such changes are more easily managed, have higher success rates and less disruption (Luecke, 2003). **Discontinuous changes**, on the other hand, are subtle changes happening

infrequently (D'Ortenzio, 2012). They are often caused by rapid changes from internal or external causes (Luecke, 2003) and can be synonymous with **radical change** (Burnes, 2004b; D'Ortenzio, 2012). Burnes (2004b) presents a change continuum of **operational change** and **strategic change**: the former is small-scale change or the change that naturally occurs during operation, akin to continuous change; the latter is a substantial and significant change, akin to discontinuous or radical change.

Developmental, transitional and transformational change are three kinds of changes, constructed by Anderson and Anderson (2010), seen in Table 2-1. They assert that leaders must know the kind a change is, before managing its implementation (Anderson & Anderson, 2010).

Table 2-1: Simplified Matrix of Three Kinds of Change by Anderson and Anderson (2010, p. 33)

<i>Kind of change</i>	<i>Motivation</i>	<i>Clarity of outcome</i>	<i>Goals</i>	<i>Focus</i>	<i>Requirements to the individual</i>	<i>How to change</i>
<i>Developmental</i>	<i>Improvement</i>	<i>High</i>	<i>Improving</i>	<i>To do better</i>	<i>Low</i>	<i>Training, skill development, communication</i>
<i>Transitional</i>	<i>Fix a problem</i>	<i>High</i>	<i>Redesign</i>	<i>Structures, technology, work practices</i>	<i>Medium</i>	<i>Controlled process, support, defined timeline</i>
<i>Transformational</i>	<i>Survival</i>	<i>Low</i>	<i>Complete overhaul</i>	<i>Requires shift in mindset, behaviour, culture</i>	<i>Very high</i>	<i>Conscious process design and facilitation, high involvement</i>

Developmental change (Anderson & Anderson, 2010) is when existing skills, techniques, processes are improved. Often, this is done when they do not fulfil current or future needs. This is the simplest kind of change when compared to the remaining two. However, such changes can still be significant and challenging. It requires training, skill development and communication.

Transitional change (Anderson & Anderson, 2010) is replacing a process entirely, as opposed to improving what is already there. If employees are not manageable during this kind of change, it may be due to insufficient skills, not understanding the change, not seeing the benefits, inertia, poor implementation, fear of insufficient skills or not enough support. The organisational and human areas are the most critical when initiating a transitional change, but it can be dealt with

effectively if the right strategy is used. Such strategies include a well-communicated reason for the change, involving employees in designing and implementation, support when initiating the change, and adequate integration time (Anderson & Anderson, 2010, p. 38).

Transformational change (Anderson & Anderson, 2010) is the most complicated kind of change. If a change process needs to begin before the goal is defined, or if the behaviour of the people and the organisational culture must be dramatically changed, the change is likely to be a transformational change. If the goal is not entirely defined before implementation, a mismatch between the needs of the environment and the organisation creates a wake-up call, followed by chaos. A significant breakthrough in the organisational culture and human capabilities is needed to even discover the state that can replace the current processes. When dealing with transformational change, amidst all the chaos, the human dynamic is more challenging than in transitional change. The human dynamic may also influence a change effort's success, or lack thereof if too many people resist the change.

2.2 Resistance to Change

According to Pardo del Val and Martínez Fuentes (2003), resistance to change can slow down and obstruct change, and increase associated costs. It can also be the result of inertia or trying to “keep the status quo” (p. 5) in a work environment. Lawrence (1969) refers to resistance to change as “one of the most baffling and recalcitrant problems which business executives face” (p. 49). Klein (1984) refer to it as “negative [attitudes] not only toward proposed changes in management style but also toward the process of change itself” (p. 5). In cases where those not initiating the change pose a better understanding of the change and its bearings, then resistance is undoubtedly good for the organisation (Kotter & Schlesinger, 1989; Pardo del Val & Martínez Fuentes, 2003).

As mentioned in chapter 2.1.1, change management is about the management of people (Moran & Brightman, 2000). With people being the cause of resistance, Kotter and Schlesinger (1989) present strategies for the management of people to avoid resistance. However, Kotter and Schlesinger (1989) argue that the forms of resistance must be known before being able to diagnose the resistance to a change.

2.2.1 *Kinds of Resistance*

Most companies experience a moderate change at least once a year, and a significant change every third to every fifth year (Allen, 1978). However, these changes often fail, as several managers choose a one-size-fits-all approach for the implementation procedure (Kotter & Schlesinger, 1989).

To successfully lead a change, Kotter and Schlesinger (1989) recommend diagnosing the kind of expected resistance and adapt the change strategy to the situation.

Kotter and Schlesinger (1989) identify four significant kinds of resistance: parochial self-interest, misunderstanding and lack of trust, different assessments and low tolerance for change. **Parochial self-interest** is when people with a narrower view put their self-interest before the organisation, and **misunderstanding and lack of trust** occur when employees fear the change may cost them more than they gain. **Different assessments** from employees are based on different information access, and **low tolerance for change** is common, despite employees sometimes knowing that the change is for the greater good. Low tolerance for a change can occur as employees fear they are not able to develop the new skills that are required.

2.2.2 *Managing Resistance*

After knowing the kinds of resistance that occur, it can be managed. To successfully manage a change in the desired direction, it could be helpful to understand how one should proceed in different situations and contexts. Thus, Kotter and Schlesinger (1989, pp. 5-8) describe six methods for managing resistance towards a change:

Education and communication is the most common method to educate and communicate change initiatives so that employees can more easily understand why a change is needed. If resistance is based on misinformation or even no information at all, this approach can be beneficial, albeit time-consuming.

Participation and involvement of employees while designing and implementing the change may reduce resistance, as those involved can voice their opinions and concerns continuously as opposed to when it is too late. However, it can be immensely time consuming, and it may not be a preferred approach when a change needs to happen immediately.

Facilitating and supporting employees can be beneficial when fear and anxiety is an issue. This can be done by training employees in the new skills required, providing emotional support or facilitate to relieve tension from those in need. However, it can be time-consuming and expensive, and still fail.

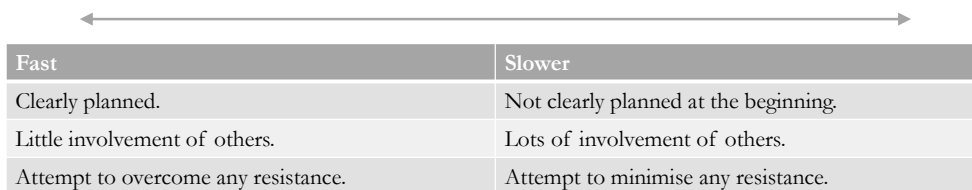
Negotiations and agreements can incentivise employees to accept a change (e.g., higher wages, better benefits). This method can be beneficial if a change negatively impacts employees. However, it can be expensive and can open for the possibility of extortion.

Manipulation and co-optation is the involvement of individual resisters in designing and implementing a change, however, not for the sake of advice or involvement, but for the endorsement of the change initiative so that other resisters agree to a change. The method is inexpensive, but employees may feel deceived and it may result in a profoundly adverse outcome.

Explicit and implicit coercion to force employees to accept a change. Employees losing their jobs or promotion opportunities could be an approach. If time is of the essence and if the result for employees is not beneficial for them regardless of the method used, this may be the last option.

2.2.3 Choosing a Strategy

Another measure to handle resistance to change is to develop an implementation strategy that suits the change. Kotter and Schlesinger (1989) have created a model, a *strategic continuum*, with a Y-axis where quick organisational change is on the left and a slower paced change on the right, seen in Figure 2-1.



Fast	Slower
Clearly planned.	Not clearly planned at the beginning.
Little involvement of others.	Lots of involvement of others.
Attempt to overcome any resistance.	Attempt to minimise any resistance.

Figure 2-1: Strategic Continuum Model, Adapted from Kotter and Schlesinger (1989, p. 8).

To strategically place a change initiative on Kotter and Schlesinger's (1989, p. 9) continuum, four factors must be known: the kind and extent of the resistance; the power dynamic between the initiators and resisters; who possess the most accurate information of what is needed for the change; and the repercussions of succeeding or failing.

2.3 Change Management Models

Change management has become increasingly popular since the middle of the twentieth century and has earned its place as an essential skill for managers (Tudor, 2014). Nevertheless, almost seventy percent of change initiatives fail (Beer & Nohria, 2000, p. 88; Smith, 2002, p. 27). Changes are complex processes that require careful exploration (Lewin, 1947). Additionally, no method to implement a change is consistently perfect (Anderson & Anderson, 2010; Jacobsen, 2004). One of the four perspectives of change management, as presented in chapter 2.1.1, is the "body of knowledge" (Nickols, 2016, pp. 2-3), which is the use of models and other tools to manage change. Change management models are useful for moving from the current to the ideal state, often through a series of steps (Anderson & Anderson, 2010). However, these steps are rarely as linear

as they initially appear to be (Biech, 2007). As no single method to implement change is perfect, four well-known change management models will be introduced to highlight the essence of such models.

2.3.1 Lewin's Three-Stage Model of Change

Lewin (1947) believed that the stability of human behaviour is based on equilibrium, in a complex field of restraining forces (i.e., keeping the current state) and driving forces (i.e., pushing in the direction of a change) that pulls in each direction (Burnes, 2004a). Lewin is considered the intellectual father in theories such as applied behavioural science, action-based research and planned change (Burnes, 2004a). According to Lewin (1947), a successful change project involves three steps: unfreezing, moving and freezing. To unlearn old habits and learn new ones, the equilibrium needs to be destabilised (unfrozen) to alter it (moving) and then stabilise it (freeze) to ensure success in a change, illustrated in Figure 2-2. It is challenging to assume or predict the outcome of a planned change due to its complexity with the forces involved. Thus, Burnes (2004a) proposes that evaluating and learning all options of the forces on a trial and error basis is of value.

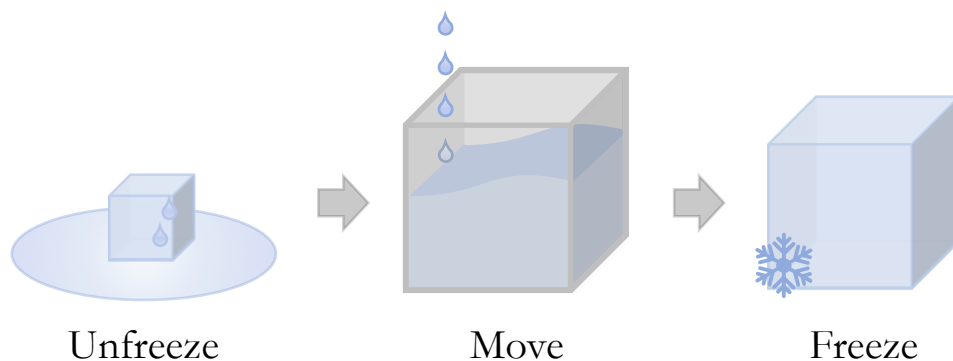


Figure 2-2: Three-Stage Model of Change, Based on Lewin (1947).

According to D'Ortenzio (2012), Lewin's model has been criticised for being too "simplistic and mechanistic" (p. 34) when organisational change is continuous and open-ended; promoting a "top-down, management-driven approach to change and ignores situations requiring bottom-up change" (p. 34); and only being beneficial for incremental change (see continuous change in chapter 2.1.2), not transformational change.

2.3.2 Kotter's Eight-Step Model of Change

Kotter's (1995) eight-step model (see Figure 2-3) is widely known within the field of change management, as Kotter's (1996) book on the same subject currently, as of May 2018, have more than eleven thousand citations on Google Scholar. The book is considered to be "the seminal work

in the field of change management” (Aiken & Keller, 2009, p. 1), and hundreds of researchers refer to Kotter’s publications when discussing change management (Appelbaum, Habashy, Malo, & Shafiq, 2012). Kotter’s eight-step model is based on observations of more than one hundred different companies, large and small, in the United States and other parts of the world, who are trying to change themselves to compete in the market (Kotter, 1995). The model portions the change in eight steps, where each step must be fully completed before advancing to the next. Kotter (1995) emphasises that far too many managers do not realise that change is not an event, but a process and that skipping steps or making critical mistakes in any of the phases can have devastating results.

The most general lesson to be learned from the more successful cases is that the change process goes through a series of phases that, in total, usually require a considerable length of time. Skipping steps creates only the illusion of speed and never produces a satisfying result.

— Kotter (1995, p. 5)

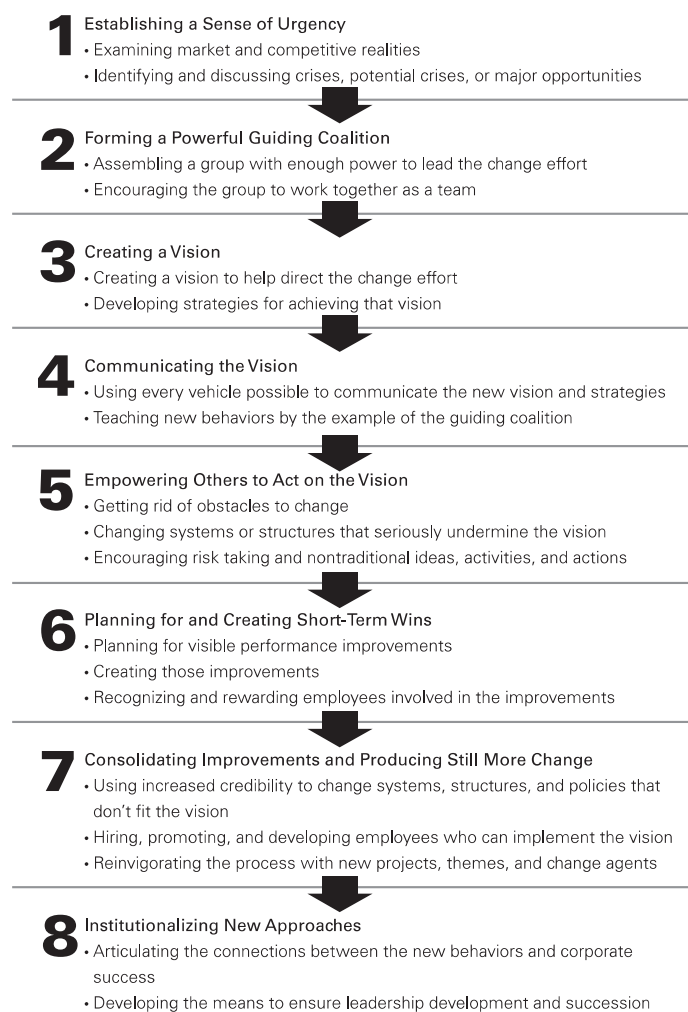


Figure 2-3: Eight-Step Model, Retrieved from Kotter (1995, p. 5)

Kotter's model is widespread due to its direct and practical approach, yet criticised for being too rigid and some steps being irrelevant or not possible to accomplish in some contexts (Appelbaum et al., 2012). In cases where the change is irreversible, step 7 and 8 may not be relevant. Some have criticised the model for focusing on prearranged steps when some organisations would prefer evolving change processes based on their own organisational culture (Agbata, 2013). Additionally, the model is criticised for being top-down oriented, making it hard for inputs from lower parts of the organisation (Kavanagh, 2004).

2.3.3 Hiatt's ADKAR Model

The ADKAR model is a goal-oriented change management model, first published by the Prosci foundation in 1998 (Oztemel & Ayhan, 2008). It is used to guide people and organisations through the process of change. It was created by Hiatt (2006), who investigated the change patterns of more than seven hundred companies (Wang et al., 2013). The ADKAR model's name is an acronym that represents five objectives an individual must achieve for a change to be successful (Hiatt & Creasey, 2012), seen in Figure 2-4. The objectives are (Hiatt & Creasey, 2012, pp. 34-35): **awareness** of the need to change; **desire** to individually participate in and support the change; **knowledge** about how to change; **ability** to implement new skills and behaviours; and **reinforcement** to keep the change in place. When assessing the ability to change, each block will be rated between 1 and 5; any block with a score of 3 or lower is known as a barrier point (Hiatt & Creasey, 2012). This assessment enables the user to identify obstacles and determine the level of readiness among the employees (Kazmi & Naarananoja, 2017).

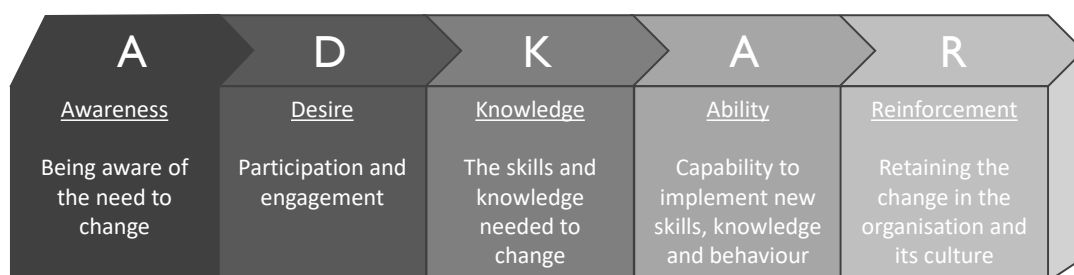


Figure 2-4: ADKAR Model, Based on Hiatt and Creasey (2012).

The ADKAR change model, according to Hiatt (2006), was founded on two fundamental ideas: (1) it is a person who changes, not an organisation; (2) successful change occurs when individual change matches the stages of organisational change. Warrilov (2009) argues that there are some weaknesses in the ADKAR model, as it fails to classify roles and functions of leadership and management.

2.3.4 Anderson and Anderson's Change Process Model

The change model developed by Anderson and Anderson (2010), seen below in Figure 2-5, is a comprehensive model designed for transformational change; however, it is tailorable for all kinds of change, such as developmental and transitional change. The model consists of nine phases that each fit into one of three categories: the upstream, midstream and downstream stage (Anderson & Anderson, 2010). During the upstream stage, foundations for success is set; during the midstream stage, the design is developed; and during the downstream stage, implementation is made. Unlike Kotter's model of change, where the order and degree of achievement in every single step matter, Anderson and Anderson's (2010) model is more of a thinking discipline than a project management methodology. That means that phases may flow into each other and be combined as it best suits the user and their circumstances (Anderson & Anderson, 2010). This non-linear approach has been proven successful in practice (Tudor, 2014).

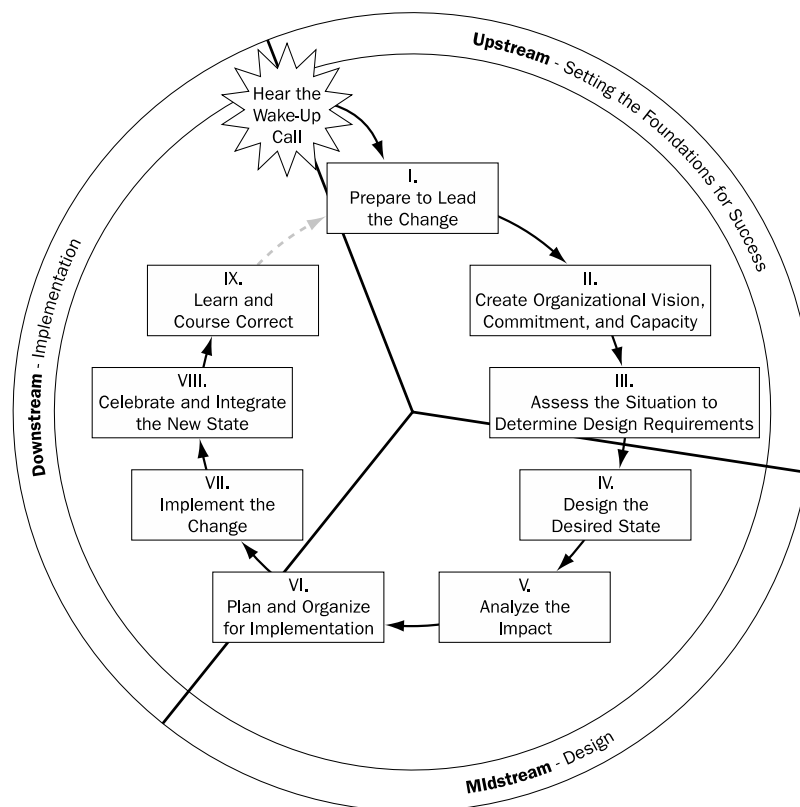


Figure 2-5: Change Process Model, Retrieved from Anderson and Anderson (2010, p. 172).

2.4 Terminology

This subchapter will define some terminology which is necessary understand the implications of the Sweco's upcoming change. Organisations often create their own project models, project governance frameworks and project execution models, and they often have their own

understanding what the terms mean to them (Bråthen, Flyen, Moland, Moum, & Skinnarland, 2016). These models, or guidelines, are made to standardise the way their projects are executed, secure exchange of experiences, promote a shared development of knowledge and to enable transparency for those involved in the project (Rolstadås, 2004).

A project model describes the shared patterns for how all projects in an organisation are executed (Klakegg, 2017). The project model does not include contracts, as contracts are part of the individual project (Klakegg, 2017). According to Rolstadås (2004), a project model should give guidance on how different kinds of projects are to be executed; prompt insight to the individual worker on what should be done, where and to which times; and ensure that the participants have a shared understanding on the project progress at all times.

A project execution model³ (PEM) builds upon the project model, according to Klakegg (2017). Thus, for each project, there exists a custom project execution model based on the inputs such as tools, methods or guidelines granted by the project model. As the project execution model is tailored to each project, it includes the contracts and agreements signed by the parties involved (Klakegg, 2017). Meland (2000) defines a project execution model in a construction project as the contracts and preparatory work between the parties involved. A set of possible PEMs emerge by combining contracts, compensation forms, contracting strategies and organisational models. Moreover, the choice of a PEM can influence the design quality (Meland, 2000).

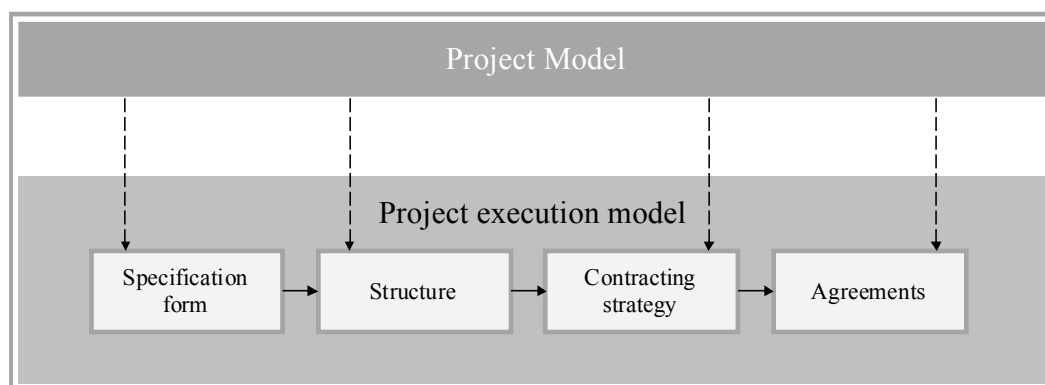


Figure 2-6: Project Model with a Project Execution Model, Adapted from Klakegg (2017).

Figure 2-6 illustrates the relationship between a project model and a project execution model. The project model is overarching to the project execution model, as it sets the framework for projects. According to Klakegg (2017, pp. 443-444) a PEM contains: **specification form**, how results are described; **structure**, describing the breakdown of tasks and the structure of the construction form

³ Translated by authors from “gjennomføringsmodell”

and contracts; **contracting strategy**, describes the steps to get all the relevant parties needed for completion of the project; **agreements**, the kinds of contracts, the risk and responsibilities between parties involved.


Project governance⁴ covers three dimensions: strategy setting, portfolio management and management on individual project level (Aarøy & Frislie, 2017). Relevant for our thesis and in the case of Sweco's implementation is the third dimension, management on the individual project level. The third dimension concerns the framework of decisions and strategies, which clearly defines a specific project's guidelines and procedures. An organisation's strategic goals must also be present in each project. It is the project manager's task to make sure that the project will fulfil the organisation's upper-level strategic goals (Aarøy & Frislie, 2017).

2.5 Synthesis

Those undertaking a change effort can benefit in understanding the commonalities of different change models, as models can be combined to fit the environment of an organisation (Brisson-Banks, 2010). All of the presented models for change have their advantages and disadvantages (see chapter 5.6.1). Thus, we have created a synthesis that may be relevant for Sweco's implementation, seen in Table 2-2.

⁴ Translated by Aarøy and Frislie (2017) from "prosjekteierstyring"

Table 2-2: Similarities of Steps in Different Change Management Models.

<i>Lewin's (1947)</i> 3-step model	<i>Hiatt's (2006)</i> ADKAR model	<i>Kotter's (1995)</i> 8-step model	<i>Anderson and Anderson's (2010)</i> Change Process Model
<i>Unfreeze</i>	<i>Awareness</i>	1. Establishing a Sense of Urgency	Wake-up call
	<i>Desire</i>	2. Forming a Powerful Guiding Coalition	1. Prepare to Lead the Change 2. Create Organizational Vision, Commitment, and Capacity
	<i>Knowledge</i>	3. Creating a Vision	3. Assess the Situation to Determine Design Requirements 4. Design the Desired State 5. Analyse the Impact 6. Plan and Organize for Implementation
<i>Moving</i>	<i>Ability</i>	4. Communicating the Vision 5. Empowering Others to Act on the Vision	7. Implement the Change
<i>Freezing</i>	<i>Reinforcement</i>	6. Planning for and Creating Short-Term Wins	8. Celebrate and Integrate the New State
		7. Consolidating Improvements and Producing Still More Change 8. Institutionalizing New Approaches	7. Learn and Course Correct

The models are aligned horizontally for comparison and to discover commonalities. The arrows in the first column mean that Lewin's *unfreeze* step applies to ADKAR's *awareness*, *desire* and *knowledge* steps. Each row in Table 2-2 represents a set of similarities from the different steps in the columns.

3 METHODOLOGY

In this chapter, the context for the thesis will first be presented. The research design will be discussed and how it can solve the research question. Then, the chosen approach, which is constructive research, is described, and more importantly, explained why it was chosen. How data was collated at Sweco and analysed will be presented. Lastly, limitations regarding the methodology will be given.

3.1 The Context of the Thesis

This thesis is written on behalf of Sweco, which have approved a designated liaison to ensure sufficient data collection and other necessities needed to facilitate the execution of the study. Sweco is a consultancy firm in the construction industry, and their disciplines are in architecture and engineering. Every year, Sweco performs ten thousands of projects in more than seventy countries all over the world (Sweco, 2017). One of the most significant projects for Sweco Norway at the time of writing is the light rail project in Bergen, connecting the city to Flesland Airport. This project is considered to be highly interdisciplinary.

Our thesis was driven by Sweco's interest in the implementation of a new methodology, as they previously have never had a standardised way explicitly detailing which tools to use, how to use them, and how to proceed in the best manner. Sweco's design methodology is a toolbox consisting of ten tools that will take any project through planning and execution. The tools are based on best-practices from Sweco in Norway, Sweden and Finland.

A standardisation like this has not yet been made, perhaps because Sweco Norway consists of a large number of acquired companies that are established in thirty different offices and locations around the country. Another reason is due to the construction industry being characterised by more variation and less rigorous demands than certain industries (e.g., the oil and gas industry). However, the trend in the construction industry seems to move towards standardised models for project execution, but not everyone is there yet. Sweco believes that a standardised solution to how their projects are approached, planned and executed will give them benefits in several areas.

3.2 Research Design

The Constructive Research Approach is the chosen approach to solve our research questions. The result will be a model or a *construct* that is created to aid Sweco in implementing their new project management methodology. The approach will be further defined, and the choice will be justified in chapter 3.3. The construct will aim to solve the research question:

RQ – How could Sweco’s new project management methodology be implemented?

Theoretical and empirical data is collected and combined to give advice Sweco for how they could implement the new methodology in their project model. It is a normative approach, in that it “describes how organisations should be structured and managed” (Easterby-Smith, Thorpe, & Jackson, 2015, p. 338). However, to be able to present a solution to this research question and create a working construct, some sub-questions have been defined:

RQ₁ – Why is this change needed?

RQ₂ – What could inhibit the change?

RQ₃ – How should Sweco strategise for this change?

For *RQ₁* and *RQ₂*, many employees at Sweco were asked what they would like from the new methodology and what they would desist from it (Hodkinson, 2008). However, *RQ₂* is more difficult for users of Sweco’s methodology to understand at this point, as it has not been released yet. However, their answers still have merit, as they have experienced previous implementation attempts. As the empirical data from Sweco is self-evident (i.e., the results are what they are), *RQ₁* and *RQ₂* is therefore inductive research. A collated result of their needs is given, which shows reoccurring elements that both users and initiators want from the methodology. Likewise, what resistance may occur is collated. *RQ₃* will need a more normative approach, as with the primary research question. This is because there is no definitive answer, only an approximation of what could be a good strategy. This sub-question entails communication and education aspects, as well as how the implementation process could proceed.

The relevancy of the sub-questions lies in that it is necessary to know why the change should occur, what can cause opposition to it and having a clear strategy to be able to implement Sweco’s change initiative. The answers will be used for the construct, which, in a constructive method, is used to express how to perform a given task, such as implementing a change.

3.3 The Constructive Research Approach

As stated above, the Constructive Research Approach is the chosen methodology for the research in this thesis. Why it was chosen will be presented in chapter 3.3.1. Constructivism serves several purposes in different research fields, and fits project management disciplines especially, due to it being a field with both applied and practical research (Oyegoke, 2011). According to Oyegoke (2011), the approach is a problem-solving method that requires research tools. The question-driven

research design can connect empirical data to the research question, which, lastly, results in the conclusion to the initial problem (Oyegoke, 2011).

The approach aims to produce solutions to practical and theoretical problems (Kasanen, Lukka, & Siitonen, 1993; Oyegoke, 2011). Problems should be solved through the construction of *artefacts* or *constructs*, which can be models, diagrams, plans or organisation structures with the purpose of solving problems encountered in the real world (Lukka, 2003). See Figure 3-1 for the main elements of the approach.

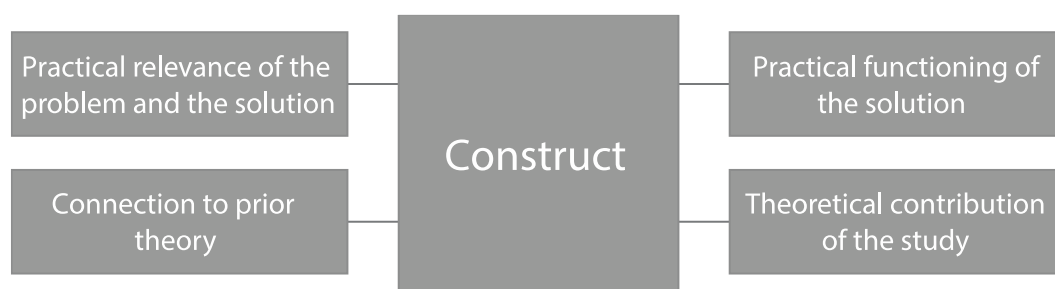


Figure 3-1: *The Constructive Research Approach, Adapted from Lukka (2003).*

Lukka (2003) also states that the construct should ultimately contribute “to the theory of the discipline in which it is applied” (p. 1). However, in order to adhere to the approach wholly, six core features of the approach must be fulfilled, according to Lukka (2003): (1) the study should focus on a real-world problem; (2) an innovative construction should be produced, to solve the aforementioned problem; (3) an attempt of implementation is needed to test for applicability; (4) close involvement and cooperation between the researcher(s) and practitioner(s) is expected; (5) must have a relevancy to existing theoretical knowledge; and (6) empirical findings must be reflective towards theory. See chapter 3.3.2 for how these challenges were solved.

There are disadvantages and challenges to this approach. If the initial problem is not as significant as initially presented by the target company, the commitment from the target company may be reduced, according to Lukka (2003). Thus, continuous contact is crucial for the success of the research (Lukka, 2003).

3.3.1 Approach Justification

The Constructive Research Approach is a suitable approach for this thesis because our goal is to deliver a model (i.e., a construct) for how Sweco could implement their new methodology successfully. Oyegoke (2011) states that the approach “often results in new knowledge in the form of normative applications” (p. 578), which is undoubtedly the end goal to Sweco: to implement

their new methodology for real-world usage successfully. This “normative application” is what the research question can be solved with, as mentioned in chapter 3.2, Research Design.

The research into Sweco’s change effort is in line with Lukka’s (2003) five of the six aforementioned core features, as it is (1) a “real-world problem”; (2) the suggested implementation model will be our construct to help alleviate Sweco’s concerns; (4) close cooperation occurred due to Sweco’s ambitions for the change; (5) is linked to prior theoretical knowledge; (6) lastly, the empirical findings have a relation towards the applied theories in chapter 2.

As all of the core features in Lukka’s (2003) fit the research into Sweco’s change effort, except the third (3) feature, this method is the preferred choice. Regarding this third feature, an implementation, even small-scale, is beyond the scope of this thesis (see chapter 3.6, Limitations of the Methodology). Thus, the construct is passed onto Sweco to test its applicability.

3.3.2 *The Processes of the Study*

Lukka (2003, pp. 3-6) presents a seven-step process to constructive research. These formed the basis of how our study was conducted. An elaboration of how the steps were handled to solve our research questions is given below each step:

1. *“Practically relevant problem, which also has potential for theoretical contribution”* (p. 3)

The implementation of the new project management methodology was relevant as the implementation was still on-going and was moving towards deployment in Sweco Norway. Because such a methodology was new to Sweco, research on the subject of implementation is crucial, especially from a third party not affiliated with them. Thus, it is relevant for them, and for other organisations undertaking the same kind of change. Similar kinds of changes can have certain use of the construct presented in this thesis. However, why this methodology should be implemented, and some of the resistance that may occur from it may be specific to this change.

2. *“Examine the potential for long-term research co-operation with the target organisation”* (p. 3)

Due to the nature of the research and the need for a solution, cooperation was a non-issue for both parties. Long-term, beyond the scope of this master’s thesis, did not occur.

3. *“Obtain deep understanding of the topic area both practically and theoretically”* (p. 4)

Practical understanding of the change effort was achieved through multiple interviews (see chapter 3.4, Data Collection). Both users and initiators of the methodology were interviewed. Theoretical understanding of the study was used in both preparations for the interviews and for the construct.

4. *“Innovate a solution idea and develop a problem-solving construction, which also has potential for theoretical contribution”* (p. 4)

The solution is based on theoretical and empirical understanding of the topic, tailored for Sweco’s specific change effort. A strategy and model for implementation has been constructed. Parts of the construct can, perhaps, be used elsewhere. The concerns of interviewed users that have shaped the construct could especially have a potential to contribute theoretically.

The remaining processes of the approach concern results and usage of the construct. That is not possible to address, as the thesis is limited to only delivering a construct. See chapter 3.6 for limitations.

3.4 Data Collection

Empirical data was collected through semi-structured interviews and documents supplied by Sweco. The documents were presentations and documentation on the project management methodology and what it contained. Semi-structured interviews are when follow-up questions are asked, as opposed to fully adhering to an interview guide (Easterby-Smith et al., 2015). By asking follow-up questions, previously unknown areas could be discovered, and it becomes more of a conversation with the interviewee. Closed-ended questions would have been too rigid and unnatural in this context and would cause less flow during the interviews.

Two main groups of employees at Sweco were chosen for interviews, initiators of the project management methodology and future users of it, see Table 3-1. There were fewer initiators to interview than there were users. Thus, they are less represented. Because users were chosen in conjunction with the liaison at Sweco, selection bias could occur, in that users that are naturally favourable of the methodology would be chosen. However, many of the users were invited with the notion that some would cancel or decline due to time restrictions. By inviting several, a fair and

unbiased group of people would, hopefully, be able to express their opinions. Users of different age groups were also invited.

Table 3-1: Interviewees at Sweco.

Role	Date (2018)	Location	Length (minutes)
Initiator	6 March	Oslo	65
Initiator	7 March	Oslo	55
Initiator	6 March	Oslo	43
Initiator	7 March	Oslo	37
User	6 March	Oslo	42
User	6 March	Oslo	31
User	7 March	Oslo	30
User	15 March	Bergen	44
User	14 March	Bergen	35
User	15 March	Bergen	33
User	14 March	Bergen	32
User	15 March	Bergen	31

The initiators were essential to understanding the management aspect of the change effort. The users of the methodology are essential as they can potentially hinder the implementation if they do not see the value of the change, as seen in chapter 2.2. They also provided insights into how the project management methodology should be presented and communicated. It is not given that they shared the opinions of every future user of the methodology at Sweco. However, their collated thoughts can give valuable information when the change effort is being introduced to its user.

The length of the interviews varied between the two roles but was mostly consistent when looking at interviewees in each role separately. The timeframe between all interviews was short to avoid some of the interviewees having newer information than others. All interviewees were given the interview guide to prepare in advance. When new informants were not producing new information (i.e., data saturation), the need for more informants was reduced.

The interview guide was customised for the two groups (see Appendix A and Appendix B). The changes were how questions were worded, but some additional questions were asked to the initiators that concerned the implementation processes, and the motivation and origin of the methodology. The interview guide was categorised based on themes, such as questions regarding implementation or mapping the need for such a methodology. Applied theory structured parts the interview guide (e.g., Beer & Nohria, 2000; Kotter, 1995; Kotter & Schlesinger, 1989).

3.5 Analysis and Inference

The empirical analysis was fulfilled with the help of the program NVivo. It was used to categorise (code) transcribed interviews (sources) into categories (nodes) and then analyse it (cases) (Bazeley & Jackson, 2013; Welsh, 2002). Coding is the identification of themes, issues, characteristics in transcriptions and giving it a label or a code as an abstract view of objects (Bazeley & Jackson, 2013; Eriksson & Kovalainen, 2015). Nodes are for categorising content or themes from the sources in NVivo (Bazeley & Jackson, 2013). Cases unite sources of data together, depending on the chosen structure (Bazeley & Jackson, 2013).

Recordings and their transcriptions were imported to NVivo with timestamps when a new person started talking. By importing both, it was possible to search what interviewees said and listen to only that part of the interview for audial context, if necessary. Easier to read transcripts were also imported, which was then coded into nodes and cases.

3.5.1 Coding

Four parent nodes and several child nodes were created before coding, based on initial impressions from the interviews and the interview guide. During the coding process itself, additional nodes were added because they were deemed necessary or lacking in the original list of nodes. Those were efficiency, motivation, previous changes, description of the methodology and interdisciplinary work. The final nodes can be seen in Table 3-2. Node additions was discussed by both authors to ensure we both coded correctly. We also validated each other's' coding (see chapter 3.7.3).

The parent node *needs* was created to answer *RQ₁*. The second parent node, *implementation*, was created to answer *RQ₂* and *RQ₃*. The remaining two parent nodes, *Sweco* and *Other*, were created with the intention of gaining a context surrounding the change effort. When viewing a single node, all content is aggregated to one location for easier reading, as opposed to interchanging between transcripts. Aggregated data is also easier to analyse.

Table 3-2: Nodes in NVivo.

Parent	Child node
Needs	Efficiency
	Customer integration
	Results
	Standardising
	Interdisciplinary work
	Other needs
Implementation	Expectations to users/initiators/management
	Power ratio
	Motivation
	Resistance
	Learning/strategy
	Pilots
Sweco	Culture
	Previous changes
	Traditions
Other	Description of the methodology
	Business
	Citations
	Tools for change

Another method to analyse data was to use cases, where the chosen case structure were the interviewees. With case classifications, statistics could be added for each interviewee, see Table 3-3. By using cases, specific querying could be used to identify the differences in opinions for certain people (e.g., what are initiators' opinions about resistance compared to users?).

Table 3-3: Case Classification in NVivo.

Classification	Value
Name	Text
Age range	20-29, 30-39, 40-49, 50+
Number of years at Sweco	Number
Number of years in the industry	Number
Position	Text
Location	Text
Role in the change initiative	User/Initiator

3.5.2 Node Refinements

Upon coding completion, some further refinements were made to some nodes. The nodes were the parent node *needs*, and child nodes *resistance* and *learning/strategy*. As mentioned above, the nodes *needs*, *resistance* and *learning* was necessary for sub-questions to our research question. Further coding for further analysis was essential, as they all directly impacted the primary research questions.

All coded text was imported into Microsoft Excel, separated by the three nodes (i.e., needs, resistance and learning). Microsoft Excel was used to more easily sort the list based on filters, as opposed to only relying on NVivo. Welsh (2002) concludes in their study on NVivo as an analysing tool that the use of both manual and electronic tools for qualitative research is essential and can complement each other. Although Excel is an electronic tool, the work on the nodes is still considered manual in this context.

The following columns were made for the three nodes: citation (i.e., the coded text from each node), name (i.e., who said it), role (i.e., initiator or user), and lastly a theme for each citation. The resistance node also contained the kind of resistance for each citation (see Kotter & Schlesinger, 1989) and whether the resistance was based on the design of the methodology or the implementation of it (see chapter 4.3).

The citations in the lists were assigned themes. The assigned themes that were duplicates or resembled each other were merged. The merging was done for the sake of comparisons, more effortless reading and seeing how often each theme was discussed between the user and initiator roles. All citations in the themes were re-evaluated multiple times to see if they belonged to their given theme. The result can be viewed as summarised lists of the most discussed elements from the interviews, for each of the three nodes. See Table 4-2, Table 4-3, Table 4-5 for the nodes needs, resistance and learning, respectively.

3.6 Limitations of the Methodology

There will not be sufficient time nor resources to test the construct for Sweco, due to the nature of master's theses. Thus, the research ends at the point where we have constructed a model for implementation of the change effort at Sweco. That is because a full-scale implementation of this magnitude would have to be implemented in multiple projects and verified throughout their life-cycle. It will be Sweco's responsibility to ensure that the study will be carried out throughout their implementation phase. Thus, our study only includes the construct based on applied theory and

empirical findings through interviews. Not being able to test the construct is not in accordance with the chosen research approach. However, “single research project cannot solve all problems associated with a given study” (Oyegoke, 2011, p. 575).

3.7 Validity and Reliability

3.7.1 *Interview Guide Questions*

The interview guide was worded open-endedly to avoid ‘yes’ and ‘no’ answers. This caused some of the tables showing quantitative data (e.g., Table 4-1, Table 4-4) to give a slightly wrong impression if an occurrence had a low or medium frequency. If a theme in those tables had a low or medium frequency, it would not indicate the need or resistance as irrelevant. The interviewees may not have considered some of those topics as they were not asked about it explicitly. It could be argued that if many interviewees did not talk about a theme, it is not of relevance to the topic. However, that does not mean that those who did not mention a theme disagrees with it. If someone outright disagreed with a given theme, it is noted in the results.

Arguably, if the interviewees filled a questionnaire, more definitive results would be seen. However, with the qualitative interviews, more context can be seen from each answer on the topics. Being open-ended would also cause interviewees to discuss what they truly believed.

3.7.2 *Translations*

Citations presented in chapter 4 were translated from Norwegian and then reviewed by the respective interviewee that either accepted or rejected the translation. The quotes were reviewed to ensure that the meaning was not lost in translation, but also so the meaning was not lost during transcription.

3.7.3 *NVivo Coding*

We each coded six interviews in NVivo that we had transcribed too. This was because we were more familiar with the interviews we each transcribed. After coding was completed, we validated each other’s coding by reading the coded material. Some of the coded texts were either moved or removed, as needed. When further refinements to some nodes were done (see chapter 3.5.2), the new nodes were validated by both authors as well. Each source was also validated to ensure that they belonged in the correct nodes.

4 FINDINGS

In this chapter, the data collected through semi-structured interviews with employees at Sweco and other relevant parties will be presented. Some documentation on Sweco's design methodology will also be used. The interviewees were divided into two groups, initiators of the methodology and the future users of the methodology, with some different questions asked (see chapter 3.4, Data Collection). The future users of the methodology were interviewed with questions regarding how they want to experience and learn to use it, and what they want to gain from such a methodology (Appendix A); the initiators were interviewed with questions targeting their goals when making the methodology (see Appendix B). Hereinafter, all citations or referencing of either group will be denoted as user or initiator.

First, a simple introduction to the Sweco's new methodology is given, followed by data gathered from the interviews about the needs for such a methodology, resistance and finally implementation.

4.1 Sweco's Project Management Methodology

The new project management methodology that is to be implemented is an initiative formed due to the need of more standardised and unified practices. As this was a shared view amongst many, according to one of the initiators, the idea caught the attention of several employees. The idea resulted in Sweco's design methodology, a toolbox, meant to be used in concurrence with their already existing project governance. Together, Sweco's design methodology and the existing model for project governance form what is meant to function as their new and improved project model. Figure 4-1 illustrates how Sweco's new methodology corresponds with the existing project governance model.

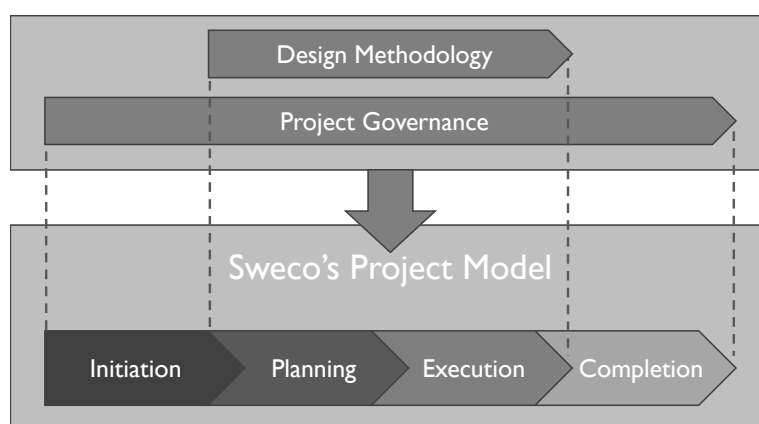


Figure 4-1: Sweco's Project Model.

The methodology consists of ten tools, based on best practices at Sweco at their different locations. It is developed by employees in Sweco and Metier, a firm with experience and knowledge within the field of business development. Pilot projects for using the methodology started in April 2018, and the methodology is supposed to be made available for all projects in Sweco by September 2018.

4.1.1 *Description of the Methodology*

The methodology is named Sweco's design methodology. However, what was called varied throughout the interviews. One of the initiators said that it must not be confused with a PEM (project execution model), although, that is what several referred to it as.

It is important to point out that it is not a project execution model, but a toolbox. We call it 'Sweco's Design Methodology'. It will give and contain little requirements to our ISO certification, but it will give ten tools to those who are managing an interdisciplinary project team.

— Initiator

The methodology is organised into two phases, planning and execution, as shown in Figure 4-2. Execution is further categorised into interdisciplinary cooperation and management. The ten tools will be available through an interactive website. This way, inputting data and reading outputs from the different tools will always be available to the users of the methodology, making the tools easily accessible.

We intended for it to work by having a model that is easily accessible. That is why we made a clickable online system. In this way, we have a modern system so that the younger employees want to use the methodology.

— Initiator

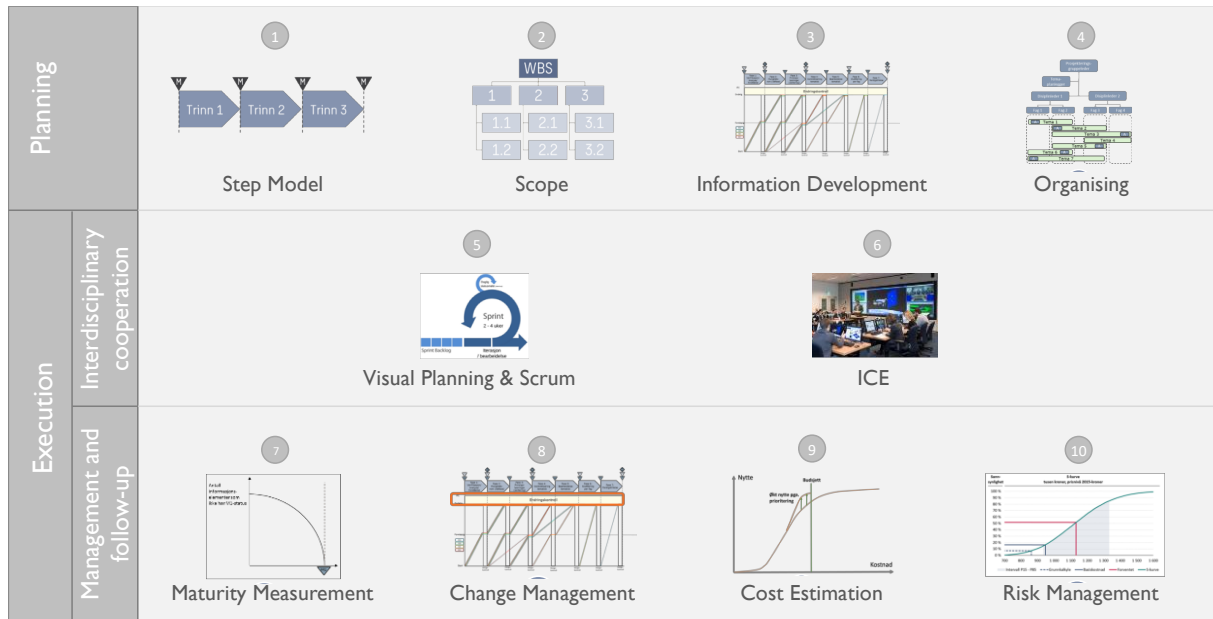


Figure 4-2: The Tools from Sweco's Design Methodology.

4.2 Desires for the new Methodology

The interviewees were asked questions regarding what they thought the methodology would help them or others with, what demands they have, and what needs should be addressed in such a methodology. Then, all stated needs were categorised into themes or nodes (see chapter 3.7.3, Analysis and Inference). The users stated their needs with little to no knowledge of the methodology itself, and the initiators stated problems they wanted to solve when making it. Table 4-1 presents the frequency of occurrence for each node, grouped by both groups and when they are combined. It is followed by a description of each node and its content.

Table 4-1: Frequency and Ratio of Occurrence from Initiators and Users' Needs.

Combined			Users only			Initiators only		
Node	Freq.	Ratio	Node	Freq.	Ratio	Node	Freq.	Ratio
Standardisation	34	27 %	Standardisation	26	36 %	Customers	13	25 %
Processes	27	22 %	Processes	14	19 %	Processes	13	25 %
Customers	20	16 %	Cooperation	11	15 %	Standardisation	8	16 %
Cooperation	16	13 %	Customers	7	10 %	Results	5	10 %
Results	12	10 %	Results	7	10 %	Cooperation	5	10 %
Progress	10	8 %	Progress	6	8 %	Progress	4	8 %
Risk	5	4 %	Risk	2	3 %	Risk	3	6 %
		100 %			100 %			100 %

4.2.1 Standardisation

Standardisation is the node with the highest frequency when combining both users and initiators. This was also the node with the highest frequency for users only. Users felt that standardisation, in this context, would help them to perform projects more consistently.

The likelihood that you forget or overlook something will be reduced. It is also useful for management to follow up projects, as it is much easier to follow up a portfolio of projects if they are managed more or less the same.

— User

Interviewed users said that having a standardised project management methodology that contains tools would be beneficial because then everyone would “speak the same language”. “One Sweco” was a recurring term, which was explained as one way to execute or one way to accomplish. The methodology is only strengthening that image. Project managers can more easily start a new project, and faster, as the methodology would have standardised templates which do not need to be remade for every project. One interviewee said that this would also benefit newer managers, as they are becoming younger and younger and less experience is required from them. However, some users said that many do not prefer too much standardisation.

The initiators of the change looked at the broader implications of standardisation, as well as many of the benefits that future users also saw. One initiator said that due to competition in costs and the growing complexity, standardisation was needed. This would lead to less chaos and more predictability, which was an overall theme in both groups. A standardised project management methodology would lead to less reliance on single employees. It would also lead to less reliance on having the necessary knowledge to fulfil projects, as processes and tools exist to guide both the experienced and the less experienced.

4.2.2 Processes

Both groups are interested in how to perform and manage projects better. Additionally, they want to have more manageable planning processes, as well as day-to-day activities and workflow. The initiators want to support project managers, but also those affected by the methodology indirectly. Some initiators also indicated that this methodology would be scalable to many project sizes but using the methodology in smaller projects may require more motivation from its users. The users explicitly questioned the scalability of the methodology. They worried if project scale would render the use of the methodology unnecessary or even hinder progress.

I wonder how the methodology should be customised for all project sizes that we have. I see that it is beneficial for large projects, but if you do not have an overly large project, how are you supposed to be able to execute projects in Sweco with this methodology?

— User

4.2.3 Customers

Due to the growing demand for complex projects and lower costs, the customer is vital for initiators. Less so for the users in general, albeit still important. The customers rank fourth for the users but rank first for the initiators. However, both groups agree on the advantages a transparent project management methodology can have for the customer. How to communicate and collaborate with the customer, as well as to how the customer can be integrated better into projects and contribute. The initiators also talked about their market position if Sweco does not have such a methodology in the future:

The market position could eventually become worse because many businesses have realised that methodologies for construction design are essential. Construction clients are also engaged by this and will in a higher degree ask what methodology you have.

— Initiator

4.2.4 Cooperation

Interviewees said that because Sweco offices throughout Norway consists of many acquired businesses, a standardised model may improve communication and collaboration between them. Another result, as mentioned from the standardisation aspect which affects collaboration, is having the same, shared language. Having the same vocabulary and knowing that everyone knows, at least partially, what you are talking about or working on saves time by not needing an explanation. This is especially beneficial when a project needs more people to finish:

It will be easier to get more people in your project because everyone knows how we operate them, and it is easier to collaborate between offices because everyone does it same. There are many arguments that this will make it better for us.

— User

Some users discussed the need for a project management methodology that is better suited for interdisciplinary project cooperation. However, this was not discussed extensively. However, all initiators explained the importance of interdisciplinary cooperation in the methodology.

4.2.5 Results

The future users of the methodology seem to value results in the form of performance and the quality of the product that is delivered to the customer, as opposed to economic results. Economic results are not something users do not want, but it is just valued differently than the initiators.

I think there has been too much focus on the results that we should get from a project, not the execution of it. I think many of our projects could have been more profitable if we had more focus on project management.

— User

Initiators seem to value both areas equally. They want to increase their competency and performance while being aware of the economic incentives.

There are significant economic incentives behind this. I also think that this model, or the tools that it contains will further define us as a company and how we execute projects.

— Initiator

4.2.6 Progress

Interviewees said progression becomes more transparent and accessible to follow, especially for the customers. By standardising, work is not forgotten or overlooked. It becomes clearer which phase you are in, and what needs to be completed.

4.2.7 Risk

The least discussed node during the interviews was what the methodology should do to minimise risk. Both users and initiators said that standardisation would cause fewer errors. Especially on more substantial projects would such standardisations be beneficial, as they are more prone to uncertainty.

A summary of these result has been formed into Table 4-2. The needs of users and initiators have been separated to see their differences, and a citation from the interviews are listed to give a context to the node.

Table 4-2: The Needs and Desires of Users and Initiators.

	Users' needs	Initiators' needs	The essence of each node
Standardisation	<ul style="list-style-type: none"> • “One Sweco” • Consensus • Overview • Predictability • Shared direction, tools, model & vocabulary • Templates • Better follow-up of multiple projects 	<ul style="list-style-type: none"> • Standardisation can facilitate demands for higher complexity, interdisciplinary work & lower costs • Less 'chaos' • Systematic • Less reliance on individual knowledge 	<p><i>The goal is Sweco's way of executing projects. A method so that we do not need to invent the 'gunpowder' for each project. So that we get a standardised way to do it, which also makes us more effective, that gives us greater security or a lesser degree of risk in the projects.</i></p> <p>— Initiator</p>
Processes	<ul style="list-style-type: none"> • Best practice • Workflow • Planning • Forget/overlook less • More efficient • Scalable 	<ul style="list-style-type: none"> • Better processes & management • Efficient planning & managing • Supporting project managers • Transparency 	<p><i>The model must be scalable to everything that we do so that the depth of complexity depends on the project and its size.</i></p> <p>— User</p>
Customers	<ul style="list-style-type: none"> • The customer can track progress • Easier for the customer to participate 	<ul style="list-style-type: none"> • Better/easier contribution • Handling customers • Intercommunication • Market position 	<p><i>It is easier for the customer to understand where they are in the process, and it is easier for the customer to understand where they should contribute. The process becomes more transparent.</i></p> <p>— Initiator</p>
Cooperation	<ul style="list-style-type: none"> • Communication • Defined roles • Easily add people to projects • Information flow • Inter-disciplines 	<ul style="list-style-type: none"> • Better control • Interdisciplinary groups • Interdisciplinary projects 	<p><i>Interdisciplinary construction design projects often consist of all professions that are needed for a building or a hospital. Sweco has never had such a description of how to do that systematically.</i></p> <p>— Initiator</p>
Results	<ul style="list-style-type: none"> • Better performance • Earning more • Quality assurance • Time/cost/progress 	<ul style="list-style-type: none"> • Better competing abilities • Economic goals • Higher competency 	<p><i>Given that this model is implemented in a good way, it will increase competency. I also think it is better to work on a project that has a defined methodology.</i></p> <p>— Initiator</p>
Progress	<ul style="list-style-type: none"> • Defined phases • Time management • Progress certainty • When to do what 	<ul style="list-style-type: none"> • Delivering correct tasks • Time management • Having answers on time 	<p><i>A methodology like this is essential to have the right steps at the right time, to deliver the right tasks, and have answers to the right questions at the right time.</i></p> <p>— Initiator</p>
Risk	<ul style="list-style-type: none"> • Less error • Fewer sources for errors 	<ul style="list-style-type: none"> • Higher security • Less risk 	<p><i>We believe that such a method and execution process will make us better suited to manage projects more effectively and with less risk.</i></p> <p>— Initiator</p>

4.3 Resistance to the Design and Implementation of the Methodology

Both the users and initiators of the methodology were asked questions about their own or other's possible resistance to the methodology. Both groups said they did not worry about Sweco's collective ability to implement and use the methodology successfully. However, most interviewees realised that there might be some risks and difficulties when they were asked about what could inhibit the use of the methodology.

Potential resistance has been placed into two groups of resistance: *implementation resistance* and *design resistance*. Implementation resistance is resistance that may occur due to inefficient implementation strategies. Design resistance is resistance that is based on how Sweco's methodology truly works, or if it does not work, which may cause opposition. It can only be controlled with a well-designed product. It is worth mentioning that this is only potential resistance which is not guaranteed to occur, as it is difficult to assess what resistance will arise. This subchapter is divided into the two groups of resistance, resistance due to design and implementation, where each presents all of the resistance themes seen in Table 4-3.

Table 4-3: Resistance Due to Implementation and Design.

<i>Resistance Theme</i>	<i>Source of Resistance</i>	<i>Frequency</i>	<i>Ratio</i>
<i>Not enough time/resources</i>	Implementation	19	62 %
<i>Not seeing the value of it</i>	Implementation	7	
<i>Preferring what has been done for years</i>	Implementation	6	
<i>Not understanding the change</i>	Implementation	3	
<i>Doubting what is new</i>	Implementation	2	
<i>Not scalable</i>	Design	8	38 %
<i>Too rigid</i>	Design	7	
<i>Not fitting the work performed</i>	Design	3	
<i>Too many systems</i>	Design	3	
<i>Does not make the work more manageable</i>	Design	2	

4.3.1 Resistance Due to the Implementation

The source of resistance that was discussed the most was resistance due to implementation. The separation of resistance due to implementation was made to separate what is more controllable moving forward to the deployment of the methodology, as opposed to potential resistance due to the methodology design that has already been made.

Not having enough time and resources was the most discussed resistance theme. Both users and initiators talked about the time it takes to learn something new and to readjust to the change.

The users were especially worried about how they are to use and learn the methodology while being on a project that still requires the same time it did before.

I now have two projects. It is demanding, and I am often too busy as a consequence. If management does not force me to use it, despite knowing it is a good idea, I may not use it. Should I spend time on it now or should I spend the time to solve some of the tasks I did not have time for last week? Hence, it must be a requirement from management.

— User

Not seeing the value of the methodology was something users were more worried about than initiators, as the initiators know the methodology more intimately than the users. It is placed as an implementation source of resistance, given that it does not entail the methodology design itself. The users felt they had to understand why the methodology is good enough for them to know why they should start using it. If the methodology is “good enough” but employees at Sweco do not explicitly see its value, this resistance due to implementation may occur.

Preferring what has been done for years was something that was primarily aimed towards older employees who may have more of a challenge readjusting to something new. It may also be prevalent for younger employees but was hinted to be more towards the older end of the scale.

If someone has thirty years' worth of experience in design and engineering and continuing in that manner suits them, I think the aversion to learning new things is stronger whenever something new is introduced.

— User

4.3.2 Resistance Due to the Design

Resistance caused by design, or in this case, Sweco's design methodology, was the second and last source of resistance. This kind of resistance can be avoided by creating a design that fulfils all the needs of the users. If these are problems the methodology does not address, resistance during deployment can occur if not addressed.

The methodology not being scalable was the most discussed topic that concerns resistance to the design itself. This potential resistance was mostly raised by the users, who may not know enough about the methodology yet. However, the concern is nevertheless essential going forward. The concern regards the methodology's applicability to smaller projects. Despite containing useful tools, the methodology may contain too many tools for smaller projects, according to some

interviewees. Some explicitly questioned its applicability, stating it would be a disadvantage for smaller projects.

A too rigid methodology may cause resistance. The initiator who brought this forward stated that this resistance could occur, despite not being too rigid. The users questioned the standardisation aspect of the methodology, and that it is hard to standardise people. They also worried about extensive requirements to documentation.

Most of the resistance themes presented above can be seen in Table 4-4. This table shows what users, initiators and both combined, respectively, considered to be possible resistance for Sweco's change initiative.

Table 4-4: Resistance Themes

Combined			Users only			Initiators only		
Resistance Theme	Freq.	Ratio	Resistance Theme	Freq.	Ratio	Resistance Theme	Freq.	Ratio
<i>Not enough time/resources</i>	19	32 %	<i>Not enough time/resources</i>	11	26 %	<i>Not enough time/resources</i>	8	47 %
<i>Not scalable</i>	8	13 %	<i>Not scalable</i>	7	16 %	<i>Preferring what has been done for years</i>	2	12 %
<i>Not seeing the value of it</i>	7	12 %	<i>Not seeing the value of it</i>	6	14 %	<i>Doubting what is new</i>	2	12 %
<i>Preferring what has been done for years</i>	6	10 %	<i>Preferring what has been done for years</i>	4	9 %	<i>Not scalable</i>	1	6 %
<i>Too rigid</i>	7	12 %	<i>Too rigid</i>	6	14 %	<i>Not seeing the value of it</i>	1	6 %
<i>Not fitting the work performed</i>	3	5 %	<i>Too many systems</i>	3	7 %	<i>Too rigid</i>	1	6 %
<i>Not understanding the change</i>	3	5 %	<i>Not fitting the work performed</i>	2	5 %	<i>Not fitting the work performed</i>	1	6 %
<i>Too many systems</i>	3	5 %	<i>Not understanding the change</i>	2	5 %	<i>Not understanding the change</i>	1	6 %
<i>Does not make the work more manageable</i>	2	3 %	<i>Does not make the work more manageable</i>	2	5 %	<i>Does not make the work more manageable</i>	0	0 %
<i>Doubting what is new</i>	2	3 %	<i>Doubting what is new</i>	0	0 %	<i>Too many systems</i>	0	0 %
		100 %			100 %			100 %

4.4 Implementation Preferences

Several suggestions were given by the users on how the project management methodology should be presented and implemented. The initiators, and also some users, talked about how change agents could be utilised, as well. Additionally, suggestions for how users would prefer to learn to use the methodology was discussed.

4.4.1 Communication

All change is demanding, but it becomes even more demanding if you think and communicate that this is an enormous change. Then it will be exceptionally demanding because then people raise their guards and become defensive.

— Initiator

An interviewee said that Sweco's ongoing change does not require a change in how work is performed but requires a change in how the work is structured. It is essential that the change is communicated as clearly as possible, as it should not be presented as something of high complexity. One user of the methodology said they wanted a quick, visual introduction to the methodology that only grasped the essence of it, before actively using the methodology. Interviewees felt that too detailed documents are not how it should be presented, as the message may disappear.

It must be communicated in different ways, and the most ordinary way to do it is by publishing it on the intranet and think it is then implemented, but that does not work.

— Initiator

Interviewees said that having a communication strategy is essential, as it will profoundly impact how they interpret the change. Some said that different employees require different information, depending on their role in projects. With some reluctant individuals that do not wish to use the methodology nor to understand it, a one-on-one conversation may be necessary.

4.4.2 Change Agents and Pilot Projects

Another tool that the initiators have planned for promoting the change to employees is the use of change agents and pilot projects. Change agents are a group of key people in different locations that are provided extra training and follow-up in this methodology. Some interviewed users said that having successful pilots to refer to would motivate them. Having change agents would also cause further motivation and a source for help to start using the methodology for themselves, according to some interviewees.

They are specifically chosen people because they are either positive or we know that they have a positive impact on the organisation. They should be torchbearers for their location. We often define pilot projects with support instances that causes the first projects to have a positive experience, which can later be used as success stories.

— Initiator

4.4.3 Education and Introduction Preferences

Various methods of implementation were suggested by the users, which have been collated into Table 4-5. In this table, each method can only have a maximum frequency of eight as there were only eight interviewed users. However, if a given method has two out of eight occurrences, it does not mean that six users explicitly stated they opposed that education method; they simply did not talk about it (see chapter 3.7.1)

Table 4-5: Education and Introduction of Sweco's Design Methodology.

Education and Introduction Methods	Users
Become familiar with it before using it	4 of 8
Being obligatory to use	4 of 8
Cannot only be theoretical learning	4 of 8
E-learning	4 of 8
Practical learning	4 of 8
Everyone must at least know of it	3 of 8
Exemplification of the methodology	2 of 8
Follow-up meetings	2 of 8

The overall result seen in above is that practical learning must be prioritised. Many wanted to have a theoretical introduction, but the extent of the introduction varied somewhat. Some also indicated the importance of customising the extent of learning according to individual needs. This way, everyone knows at least the essence of the project management methodology. Practical learning included test projects, workshops and working in groups. Whether the methodology should be mandatory was discussed by several, with varying opinions:

We work in a knowledge-based company, so forcing a change in an overwhelming manner does not work. For this to be a success, it must be perceived as a useful tool.

— Initiator

One of the initiators of the methodology said it should not be overwhelmingly forced upon its users. Instead, it must be perceived as a useful tool for them to want to use it. However, half of the interviewed users said the methodology should not be voluntary; instead, it must be a requirement for future projects, given that it performs satisfactorily. Not only so that others would have to use it, but also so that they individually would have to use it as well and be forced to learn it. Another initiator shared this opinion, as well. One user was more concerned about forcing this kind of change, as it could be more of a challenge to implement it.

5 DISCUSSION

Based on the constructive research approach chosen for this thesis, we aim to create a construct. The purpose of the construct is to aid Sweco in the implementation of their new project management methodology. This chapter will present a discussion on the themes used to form our construct. The sub-questions presented in the introduction will be used as a basis for this chapter. First, Sweco's needs and desires for the change is elaborated. This may give an understanding to why Sweco's change is needed and how it can be used. Secondly, the kind of change is diagnosed, followed by a discussion of the kinds of resistances, seeking to answer what could inhibit the change. Then, a discussion on how Sweco should strategise for the change follows. The answers to these sub-questions will form the basis for our construct, along with a discussion on models for change.

5.1 Users and Initiators' Desires for the New Methodology

When designing and implementing a change, one of many vital components for successful implementation of a change is making the change desirable to those whom it affects. Understanding the reasoning behind a change is a recurring theme in the four change management models introduced in chapter 2.3. It is also of importance in the formation of our construct. The change management model to Hiatt (2006) contains two relevant steps: awareness, or understanding the need for change; and the individual desire to embrace the change. Anderson and Anderson (2010): create a vision; and commitment and capacity. Having a vision for the change and being able to communicate it effortlessly is step three and four, respectively, in Kotter's (1995) change management model. Thus, any change must at some point define what the change entails and why it is needed.

Given that the views from users and initiators on what they want from such a methodology are considered inductive research (i.e., the results are what they are, see chapter 3.2), then there is little left to discuss on the matter. What users would want from the methodology, or what they think it does, is their views and cannot be incorrect as it is based on the current information that they have at the time. It can be incorrect, given that they have incorrect information, naturally. What can be discussed is the differences that the users and initiators have in the seven nodes that were found, to avoid false expectations.

5.1.1 *Differences in Desires*

Because the design of Sweco's design methodology is more or less complete, an analysis of what it should contain may be less relevant at this time. However, it was indicated by some of the initiators

that they intend for their methodology to evolve continually. Thus, the needs and desires of the users may still be of value. Furthermore, what users of the methodology expect of it is also of value; if the methodology does not accomplish what some users think or hope it does, it may cause problems later in the form of resistance. It should be communicated early what the methodology does and does not do, to reduce unwanted expectations. By knowing what the initiators of the change want to achieve, but also what the users need, a common ground can be reached.

As seen in Table 4-1, both groups discussed different aspects of the project management methodology differently. Initiators and users talked about, respectively, customers and standardisation the most. However, some users also indicated that many do not prefer standardised work processes. Thus, the benefits of the standardisation must outweigh the disadvantages some users may perceive of standardisation. Even when comparing what the users and initiators want from the standardisation that the project management methodology produces, there is a difference. Users are more concerned about the results that occur from standardised work processes, which may be explained due to their minor dislike of standardisation. Thus, showing the results is equally, if not more important than presenting the standardised work processes themselves. What initiators had in mind when designing the change seem to be more of the overall results and management of the projects. That does not mean either group disagree with the other on what they consider beneficial, just that each group value certain standardisation aspects differently. Naturally, the users would be more concerned about the aspects of work processes, as opposed to the initiators, which are more concerned with entire projects holistically.

Customers, results, progress and risk were the themes that the users and initiators were mostly in agreement on. For the customer aspect, both groups have a consensus on the benefits the new methodology will have for their customers. The only difference was that initiators talked more about the customer than the users. Similarly, users and initiators were in accordance with their views on results, progress and risk, as well. Unlike the customer views, the results, progress and risks were almost identically discussed. This indicates that both groups wholeheartedly agree on these views. When the deployment of the methodology occurs, these themes may not require as much deliberation, as both parties agree.

Both groups had processes as their second most mentioned need. As with the standardisation theme, initiators are more concerned with the work processes as a whole, whereas the users are more interested in the specific ways the methodology will help them. Undoubtedly, this is due to users being the ones that are going to be using the methodology. When the initiators go forward

with implementation of the methodology, the scalability of the methodology must also be communicated, and it must be shown how it can be applied to every project if that is the methodology's intention. This was a significant concern overall for users, and it should be prioritised. Because some of the initiators said that getting users with smaller projects may require more motivation, it is especially important to prove that it can work. This is also the third step in Hiatt's (2006) ADKAR model, to demonstrate performance.

Initiators can learn from the users by making the change communicable and understood, as both groups essentially discuss the same topics with varying levels of details. Initiators are talking in a broader sense of doing better and being more efficient; users talk about specific processes they want to be improved. As mentioned by Kotter (1995) about his model, skipping steps will not cause a change to finish an implementation earlier and does not yield a satisfying result. Creating a vision and being able to communicate it effectively, two of Kotter's steps, is a crucial beginning for any change. By knowing what users want, the new methodology can either change continually towards that, or it can be communicated earlier that some aspects of what they want will not be achieved by the methodology. This way, potential resistance can already be mitigated, and the expectations are what the project management methodology delivers.

5.2 Diagnosing the Kind of Change

After knowing the needs of Sweco's users of the methodology, as well what its initiators intended for it, the project management methodology itself should now be placed into the kind of change its implementation is. The implementation of their new methodology and its potential resistance can be eased by being aware of the kind of change that they have undertaken, and what that entails.

Chapter 2.1.2 presented many different kinds of change (e.g., continuous/discontinuous, radical, developmental, transitional and transformational). Sweco's change may be considered a continuous change as this is considered a natural progression in concurrence with the rest of the industry; yet, the change itself is not frequently occurring, thus more discontinuous. It is however not a radical change, either, as many of the interviewees denoted that many of the tools of the methodology are what some are already using. On the continuum of operational and strategic change (Burnes, 2004b), the change can be placed somewhere in the middle as it is neither small nor a large-scale change.

As seen above, the kinds of changes do not entirely fit the kind of change Sweco have undertaken. Thus, the kinds of change by Anderson and Anderson (2010) may be more beneficial, given that

they present three kinds on a scale. Sweco's implementation of a new project management methodology could initially be categorised as a developmental change, due to intention to improve existing techniques and processes. However, as Sweco is implementing something new that they have never previously had before, and transitional change is used for changes that aim to fix a problem, it would seem more suitable than developmental. The methodology intends to replace the way the tools are used, and it replaces an existing system for project management, which is what transitional is intended for. However, it does not necessarily change the tools that are used, as the tools are based on best practices at Sweco. Furthermore, as transitional change focuses on structures, technology and work practices, it seems even more fitting. Transformational change, on the other hand, requires a complete overhaul in mindset, behaviour and organisational culture. Thus, Sweco's change initiatives do not seem to fit this kind of change.

Transitional change is chosen as the most appropriate kind for the implementation of Sweco's new methodology. To manage transitional change, Sweco's must have a well-communicated reason for why the change is needed. This is reinforced by some of the steps in change management models from chapter 2.3, such as: creating a vision and vision communication (Kotter, 1995); understanding and supporting the change (Hiatt, 2006); and understanding the change and having a vision (Anderson & Anderson, 2010). Furthermore, employees should be involved, and support should be given when implementing a transitional change. Adequate time should be given for employees to readjust to the change.

5.3 Kinds of Resistance

As presented in chapter 2.1.1, change management is in more candid terms the management of people. People can resist a change, and thus need to be managed carefully to implement a change successfully. By being aware of the kind of change that Sweco has undertaken, and its implications, resistance can be further mitigated proactively and will aid in the formation of our construct.

Kotter and Schlesinger (1989) presented four different kinds of resistance: parochial self-interest, misunderstanding and lack of trust, different assessments, low tolerance for change. By placing all resistance themes, presented in chapter 2.2.1, into Kotter and Schlesinger's four kinds of resistance (see Table 5-1), it can help choose a strategy to avoid resistance, discussed later in chapter 5.4. By separating what users and initiators discussed regarding potential resistance, it can illuminate vital areas of resistance.

Table 5-1: Resistance Placed into Kotter and Schlesinger's Kinds of Resistance.

Combined			Users only			Initiators only		
<i>Kind of Resistance</i>	<i>Freq.</i>	<i>Ratio</i>	<i>Kind of Resistance</i>	<i>Freq.</i>	<i>Ratio</i>	<i>Kind of Resistance</i>	<i>Freq.</i>	<i>Ratio</i>
<i>Low tolerance for change</i>	22	37 %	<i>Different assessments</i>	16	37 %	<i>Low tolerance for change</i>	9	53 %
<i>Different assessments</i>	19	32 %	<i>Low tolerance for change</i>	13	30 %	<i>Misunderstanding and lack of trust</i>	5	29 %
<i>Misunderstanding and lack of trust</i>	13	22 %	<i>Misunderstanding and lack of trust</i>	8	19 %	<i>Different assessments</i>	3	18 %
<i>Parochial self-interest</i>	6	10 %	<i>Parochial self-interest</i>	6	14 %	<i>Parochial self-interest</i>	0	0 %
		100 %			100 %			100 %

By placing one of Kotter and Schlesinger's four kinds of resistance onto every single resistance citations (see chapter 3.5.2 for Node Refinements), resistance can be further broken down to find causes of resistance. This combination can be seen Table 5-2. As the resistance uncovered through the interviews could be placed in both resistance themes, the source of resistance and Kotter and Schlesinger's four kinds of resistance, many combinations can be seen. However, many of the combinations had a frequency of zero and were not added to Table 5-2.

Table 5-2: Resistance Themes Compared to Kotter and Schlesinger's Kinds of Resistance.

<i>Kotter and Schlesinger's Kinds of Resistance</i>	<i>Source of Resistance</i>	<i>Resistance Theme</i>	<i>Freq.</i>
<i>Different assessments</i>	<i>Design</i>	<i>Does not make the work more manageable</i>	2
<i>Different assessments</i>	<i>Design</i>	<i>Not fitting the work performed</i>	3
<i>Different assessments</i>	<i>Design</i>	<i>Not scalable</i>	8
<i>Different assessments</i>	<i>Implementation</i>	<i>Not seeing the value of it</i>	6
<i>Low tolerance for change</i>	<i>Design</i>	<i>Too many systems</i>	1
<i>Low tolerance for change</i>	<i>Design</i>	<i>Too rigid</i>	4
<i>Low tolerance for change</i>	<i>Implementation</i>	<i>Doubting what is new</i>	2
<i>Low tolerance for change</i>	<i>Implementation</i>	<i>Not enough time/resources</i>	9
<i>Low tolerance for change</i>	<i>Implementation</i>	<i>Preferring what has been done for years</i>	6
<i>Misunderstanding and lack of trust</i>	<i>Implementation</i>	<i>Not enough time/resources</i>	10
<i>Misunderstanding and lack of trust</i>	<i>Implementation</i>	<i>Not understanding the change</i>	3
<i>Parochial self-interest</i>	<i>Design</i>	<i>Too many systems</i>	2
<i>Parochial self-interest</i>	<i>Design</i>	<i>Too rigid</i>	3
<i>Parochial self-interest</i>	<i>Implementation</i>	<i>Not seeing the value of it</i>	1

Low tolerance for change was the most recurring kind of resistance when combining both users and initiators' opinions on potential resistance. People generally are challenging to change, which makes communication an essential element when dealing with a low tolerance for change. As seen in Table 5-2, the most notable combination for the low tolerance for change is not having enough time and preferring what has been done for years. When implementing, sufficient time should be

allocated to learn and use the methodology, without hindering progress in the project. For those that prefer doing what they have done for years, it may be important to explicitly show the improvements the use of the methodology will give them. The facilitation period when starting to use the methodology in actual projects may be equally as vital, to help those employees to utilise what the methodology can offer entirely.

Different assessment is primarily based on resistance towards the design of the methodology. The most significant, single resistance theme here is the predominantly user concern that the methodology is not scalable, as discussed in chapter 5.1. It is a design resistance, as it involves the methodology itself; yet, if it is scalable, it is a different assessment of the change. Naturally, few of the interviewed initiators thought about any resistance related to different assessment, as opposed to users, because they made it. Resistance based on the design of the methodology is often hard to change after it is made.

Misunderstanding and lack of trust only contain two themes of resistance, *not having enough time* and *not understanding the change*. Naturally, the initiators talked more about this kind of resistance than the users, as they might worry more about users not understanding the change. Not having enough time was the most discussed theme of resistance to initiators, but here, it is due to misunderstandings. That is because the initiators felt users must be able to see why the methodology is necessary for them to make time for it. As it is a resistance that can occur when implementing, it should be demonstrable that the concerns of the usability of the methodology are not necessary.

Parochial self-interest is at the bottom for both the users and initiators in Table 5-1. This indicates that the initiators believe the users of the model does not have any parochial self-interest (i.e., only thinking of themselves). The users, on the other hand, believe some other users may have ulterior motives in mind when resisting the change (e.g., too rigid, too many systems). If the initiators want to avoid such resistance, it must be shown that is not too rigid. If the methodology does, on the other hand, result in more work for its users, the focus should be spent on showing the advantages the users gain by using the model.

What is evident here, is that communication is partly the key to successfully alleviate resistance that may occur. If communication is not prioritised, resistance may occur merely for the reason that the expectancy of the model is not met, as seen in chapter 5.1. Resistance can also be caused by misunderstandings, which sufficient communication can help.

5.4 Strategising for Change

A common mistake that managers do when implementing changes is not having a clear strategy but instead approaching the change in a disjointed and incremental way (Kotter & Schlesinger, 1989). Change efforts that are based on inconsistent strategies will often experience problems. Thus, it is valuable to set a strategy for how Sweco should handle and carry out the change.

5.4.1 Analysing Situational Factors and Setting the Strategy

According to Kotter and Schlesinger (1989), it is crucial to address the degree of involvement of others and the speed of the implementation when setting the strategy for a change. In chapter 2.2.3, the strategic continuum from Kotter and Schlesinger (1989) was presented, as well as what questions managers should ask themselves when assessing the continuum. They argue that it is perhaps best to move as far to the right on the continuum as possible, both for economic and social reasons. However, this often means a slower paced implementation. A slow implementation also avoids side effects, both in the shorter and longer term, as opposed to what a forced change possibly could bring (e.g., lowered trust and general discontent). How Sweco should implement their change, can be better decided by assessing the following factors:

1. The amount and kind of resistance that is anticipated

If the expected resistance is overwhelming, it is necessary to move the change on the continuum to the right. By doing this, employees should be involved in a more substantial degree to deal with resistance. In this case, as disclosed in chapter 4.3, both users and initiators did not worry about Sweco's ability to implement the project management methodology collectively. However, as became evident, resistance could occur in any various forms. Some of the resistance that was found was more or less likely to occur. However, considering that both users and initiators of the methodology are optimistic of the implementation, the placement on the continuum is recommended to be in the middle.

2. The position of the initiator vis-à-vis the resisters, regarding power and trust

When questioned about the power relationship between the initiators and users, not too many could formulate a definite answer. Formally and hierarchically speaking, management possesses the power to influence the organisation in the ways they propose. However, the organisational structure in Sweco seems to be relatively flat, according to Metier that assisted Sweco with the change. It is said that the employees have a say in organisational decisions. One of the initiators mentioned that forcing a change to employees against their will, will not work, as it is necessary for

the initiators to have the users on the same side in order for this to work. The less power the initiators have towards the user, the more to the right on the continuum the strategy should be placed. In this case, the power of the initiator towards resisters is quite similar. Thus, placement to the right seems appropriate due to equal and shared power distribution. However, it is worth mentioning that several of the users said that they have to be forced to use the new tools, in order for them to adapt to it.

3. Who has the most accurate information about what changes are needed

The more the initiators anticipate that they need information from others, the more to the right on the continuum the strategy will need. The methodology consists of best practices from Sweco. This means that it is those behind the specific tool and practice that inhibit the most precise information on how to perform the task. Although the majority of the users were familiar with most of the tools in the project management methodology, it is likely that follow-ups and more precise explanations on how to act out the tools should be done. Additionally, the initiators are dependent on user feedback to improve the methodology, and to confirm whether it serves its purpose or not. Thus, the initiators are dependent on others, suggesting a placement to the right on the continuum as it would be wise to include others in the design of this change. For this change, Metier has also been involved in the design of the new tools, meaning that Sweco is open for participation and involvement of others. Sweco is also abiding by the second (of four) perspectives to change, which is professional practice, by cooperating with Metier (Nickols, 2016).

4. The stakes involved

If the change is heavily dependent on being successful within a limited time, it is acceptable to move the strategy to the left on the continuum according to (Kotter & Schlesinger, 1989). Both users and initiators were asked how they believed Sweco was doing compared to other firms in the industry regarding such execution models. Most argued that they were probably placed quite similar in comparison. A few believed they were somewhat behind, as they had heard rumours of Multiconsult already experimenting within the field of project models and project management methodologies. Some of the interviewees argued that if Sweco were to fail in such a development, as other firms advanced, they could potentially lose customers and find themselves positioned inferior in the market. This implementation could be argued to be strategically placed on both sides of the continuum. A left-leaning, rapid implementation could be beneficial for Sweco to experiment with such a methodology ahead in time of other firms. On the other side, it could be

useful to proceed with the change in a slower paced manner, to make sure the change settles the first time. Trying to implement this change a second time if it fails, is said to be much more difficult.

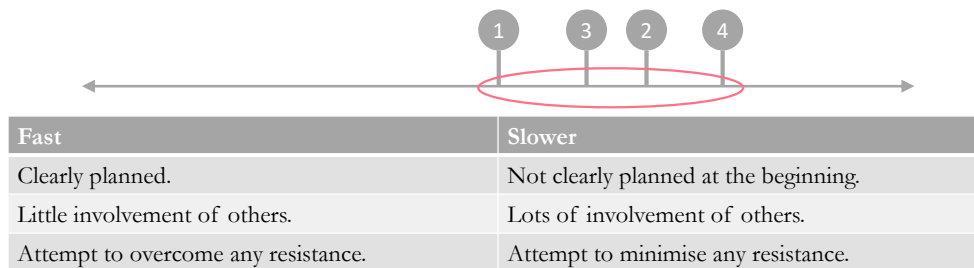


Figure 5-1: Strategy Placement on Kotter and Schlesinger's (1989, p. 8) Continuum.

Figure 5-1 illustrates the placement of the four factors on Kotter & Schlesinger's continuum. The placement is by no means exact and should only be interpreted as an indicator. As seen in the four factors, it seems that it is more likely for Sweco to be successful in their implementation if they position themselves more to the right on Kotter and Schlesinger's (1989) strategy continuum for change. We also recommend this change to happen in a slow-paced manner, which not necessarily needs a clear plan. Involvement of others is beneficial, as it is the users themselves that will use the new tools. The choice of strategy also fits well with proposed measures to handle transitional change, diagnosed in chapter 5.2. Anderson and Anderson (2010) recommend that ample time should be allocated to readjust to the change and that employees are involved in the change process.

5.4.2 Approaching the Change and Dealing with Resistance

Kotter and Schlesinger argue that the proper form of approaching a change will vary with the environment and setting. The most common mistake managers do is relying on only one or a limited set of approaches, regardless of the situation. A discussion on each of Kotter and Schlesinger's approaches to change is given, to explore suitable methods for Sweco to use.

From the approaches that Kotter and Schlesinger (1989) have defined to handle change (see chapter 2.2.2), the *education and communication*, and *participation and involvement* methods would seem to be the best-suited approaches for this change. If this change is to be successfully implemented, it is crucial that the users of the methodology see the need and understand how to perform projects according to the new methodology. Their inputs and experiences of it are of importance. If the users' needs are not being heard, it may be tempting to go back to previous routines and work methods. Both of the approaches *education and communication*, and *participation and involvement* share some of the same disadvantages, as they are both very time-consuming activities.

It does not seem that this change needs to happen immediately, as evidenced by interviews at Sweco. If the change is exceedingly necessary, *manipulation and co-optation* or *explicit and implicit coercion* could have been appropriate strategies. Instead, it seems that Sweco is in need of an adjustment to better adapt to and implement technological progress in the industry. According to Metier, this change is not a change that requires people to perform their activities very differently, but rather in a more standardised and structured manner. However, *explicit and implicit coercion* is not ineffectual, as several interviewees said they might need to be forced to use the methodology.

The *negotiation and agreement*, and *facilitation and support* should also be considered, especially *facilitation and support*. This may come in the form of assisting employees with the necessary training or with emotional support to help those that struggle to proceed with the new methodology. It may also be a possibility to reduce the workload of employees to allow them time to adjust to the new procedures, although this change intends only to make the work easier.

If the initiators of the new methodology reflect on these approaches and evaluate how they can be of best value to the organisation, the implementation is more likely to succeed. A successful organisational change often needs a combination of these approaches (Kotter & Schlesinger, 1989).

5.5 Communicating the Change

As resistance can be alleviated, as seen in previous chapters, having a clear communication plan is essential, as opposed to improvising the message as the change occurs. Communication is also a vital part of the strategies and methods chosen in the previous chapter.

5.5.1 *Communicating the Content*

The message that Sweco communicates must be clearly defined to succeed with the change effort at hand. The methodology's role in projects should be clear, and it must be easily understood how it fits into the organisation and their organisational structure. As discussed in chapter 5.1, if the needs that users have to the methodology is not what the methodology truly accomplishes, it must be communicated. There are also two more significant points that should be explicitly defined before commencing implementation and communicating the methodology further: whether the change is to be forced (either entirely or more concealed) and lastly, what the methodology is and what it should be called.

The first issue that needs to be addressed, which can be seen in Table 4-5, is that half of the interviewed users want to be forced to use the methodology. Furthermore, there did not seem to

be some disparities between the initiators on this issue. When the time comes to more actively present and educate how to use the methodology, a decision must be made whether the methodology should always be used, regardless of the project type and size, or if it should be entirely or somewhat optional. The choice may be unpopular with some but must be taken at some point so that the message is clear. However, it was said by users that is imperative that the methodology works as intended, and that it lives up to the users' expectations if it is mandatory. Forcing the change may be difficult if it does not perform as expected. However, if the methodology performs unsatisfactorily, there may be broader issues than the result of making it mandatory. Work may then be required on the methodology or its implementation before enforcement can occur. If the project management methodology indeed performs satisfactorily, its forced use can cause more employees to realise precisely this and continue using it.

The second issue arose through interviews and documentation of the methodology. It became unclear what the methodology was, what it did and what it was truly called. Interviewees called it many names, most likely based on preconceptions of what they were used to of such models (e.g., project execution models, project models). Communicating it with an explicit name makes it easier for employees at Sweco to understand each other easily. When cooperation with external entities, such as cooperating companies or a customer, the name matters especially. Many project execution models are defined and understood differently (Skinnarland, 2016), yet, there is a mutual understanding of what it is, at least overall, due to its name. Sweco's methodology was also presented as a toolbox, which it is, as it contains ten tools. However, that name might imply that it is more optional than what might be intended.

The message that is eventually going to be communicated to many different groups of people internally and externally at Sweco is of importance and should be planned and analysed thoroughly to avoid confusion. The message should also be communicated sufficiently and adequately with the recipient in mind.

5.5.2 Customizing the Message to the Recipient

Sweco is a large organisation where the different types of recipients should get their message customised to them. The interviewed users of the project management methodology wanted everyone in the company to at least know that the methodology exists. This can make communication and cooperation at both ends of the organisational hierarchy more possible. However, to avoid too extensive introduction that is unnecessary for some, customising the content to the recipient is of value.

The customer could benefit in knowing how Sweco execute their projects in several different ways, as seen in Table 4-2. They may only need to understand the main essence of the new methodology, by being given a short presentation, as anything more may be too excessive. Employees at Sweco that are not managers should get an introduction as well, but more in-depth than the customers. As they may be required to read and understand the data from the tools in the methodology, understanding how it works may be beneficial. If their work processes change due to the methodology, they should also understand how it makes the result better. This way, they may feel more attached to the methodology and the success it may bring, instead of going back to old work patterns.

The project managers should have the opportunity to learn every tool in the methodology in a structured and in-depth manner. However, as seen from the interviewed users in Table 4-5, there was a wide range of methods that they wanted to learn about the methodology. Some learn better by immediate, practical work. Some may want a more extensive, theoretical introduction before using it more. Some wanted a slower introduction, to get to know the methodology. Because this group of employees that the methodology is mainly aimed towards varied in opinions, a more extensive range of alternatives should perhaps be given to accommodate the different requests.

5.6 Formation of the Construct

A set of change management models was presented in chapter 2.3 and compared in chapter 2.5. To create a construct, as defined by the methodology in chapter 3.3, and answer the research questions, a combined change management model could benefit Sweco in structuring the implementation of their methodology. The construct's foundation is based on the presented change management models and is then built upon with empirical data from interviews at Sweco. However, a discussion of whether any of the four models could be beneficial to Sweco when used exclusively will be presented below.

5.6.1 *The Differences in Existing Models*

The set of models presented in chapter 2.3 are all similar in that they pursue to aid the user through the phases of implementation of change; yet, in other ways, they are different. The ADKAR model and both Lewin's (1947) and Kotter's (1995) models are based on a series of steps that have to be followed in sequential order for the change to succeed. Anderson and Anderson's (2010) model is different, due to their stages being less rigid and may be combined and overlap to a more considerable degree. It is created to assist transformational changes, acting more like a thinking discipline, thus creating awareness over the different factors going on in a change. However, similar

to all models is that they assist in breaking down the change in parts, making it easier to understand where a change fails or struggles.

Lewin's (1947) three-step model is a valuable tool to visualise and distinctively break down the main phases of a change, making it easy for anyone to understand. However, it has been criticised for being too simplistic and mechanistic (D'Ortenzio, 2012). The model is undoubtedly useful, as it describes the main phases of a change effort. However, it falls short by leaving too many of the details to the user. Thus, the model is not recommended for this change effort.

Kotter's (1995) eight-step model is an excellent model due to its practical and detailed approach. It promotes confidence in the user of the model, as they have a rigid framework to lean on. The first step will particularly benefit Sweco, as it puts weight on establishing an urgency and need through the organisation. With the step covered, it is possible that their strategy (i.e., exemplification and inspiration through pilot projects) is more likely to succeed if project managers are inspired and motivated to use the methodology. However, Kotter's model is criticised for being mainly top-down driven (Kavanagh, 2004), perhaps making it less suitable to use exclusively, as the initiative for this change is born in the middle management, and being carried out through middle management.

Hiatt's (2006) ADKAR model seems to be a great model for many changes, as it assesses the individual's likelihood to change. Through surveys and interviews, the initiators can address specific variables that inhibit the change. If Sweco already had previous experience and practice with this model, it would be very fitting for this implementation. However, the model alone does seem less likely for Sweco to adapt, as it may be too time-consuming to interview many individual users.

Anderson and Anderson's (2010) seems to fit Sweco's needs. However, the model is foremost designed to fit transformational changes but can be used for non-transformational changes, as well. Sweco's change is not categorised to be transformational (see chapter 5.2), but the model may suit Sweco as the steps can be completed in a non-sequential order, as opposed to Kotter's model. This is beneficial for Sweco, as the change has already begun. However, because the model is designed for transformational change and it contains many steps, in addition to numerous sub-steps, its utilisation may lead to less guidance and more frustration.


As mentioned numerous times throughout this thesis, a single method cannot fulfil any given change effort (Anderson & Anderson, 2010; Jacobsen, 2004). As the four presented change

management models were chosen explicitly for Sweco, and each does not adequately fit the change effort undertaken by them, a customised approach by combining relevant areas of the models may be necessary.

5.6.2 The Constructed Model

The combined steps we made in Table 2-2 have been used as a foundation for a new change management model, seen in Table 5-3. The essence of the steps from the change management models presented in chapter 2.3 has been summarised into new steps, seen on the right side of Table 5-3, with new names for each row to signify its summarised meaning.

Table 5-3: Four Change Management Models as a Foundation for a New Model.

<i>Lewin's (1947) 3-step model</i>	<i>Hiatt's (2006) ADKAR model</i>	<i>Kotter's (1995) 8-step model</i>	<i>Anderson and Anderson's (2010) Change Process Model</i>	<i>Combined Steps</i>
<i>Unfreeze</i>	<i>Awareness</i>	<i>1. Establishing a Sense of Urgency</i>	<i>Wake-up call</i>	<i>The Need for Change</i>
	<i>Desire</i>	<i>2. Forming a Powerful Guiding Coalition</i>	<i>1. Prepare to Lead the Change 2. Create Organizational Vision, Commitment, and Capacity</i>	<i>Commit to the Change</i>
	<i>Knowledge</i>	<i>3. Creating a Vision</i>	<i>3. Assess the Situation to Determine Design Requirements 4. Design the Desired State</i>	<i>Design the New Methodology</i>
<i>Moving</i>	<i>Ability</i>	<i>4. Communicating the Vision 5. Empowering Others to Act on the Vision</i>	<i>5. Analyse the Impact 6. Plan and Organize for Implementation</i>	<i>Plan the Implementation</i>
<i>Freezing</i>	<i>Reinforcement</i>	<i>6. Planning for and Creating Short-Term Wins</i>	<i>7. Implement the Change</i>	<i>Deployment</i>
		<i>7. Consolidating Improvements and Producing Still More Change 8. Institutionalizing New Approaches</i>	<i>8. Celebrate and Integrate the New State 7. Learn and Course Correct</i>	<i>Facilitation Fortification</i>

These new steps can guide a change initiative towards a finished implementation, with the goal to integrate the change into the organisational culture. Based on the findings from the interviews of the initiators of Sweco's design methodology, it would seem that they are currently residing in the step that comprises the planning of the implementation.

To avoid the previously mentioned issues wherein any given change model would never wholly fulfil all requirements for a change effort, the steps in the combined model above will be supplemented with the empirical observations and our analyses derived from the interviews at Sweco. Thus, the steps become phases, or processes, particularly created for Sweco's change initiative. The constructed model, where theory and empirical data are combined, can be seen in Figure 5-2. Elaborations into each phase is given following the construct.

The Need for Change	<ul style="list-style-type: none"> • Must have an answer to why the change must occur • The areas where users and initiators of the methodology differ in what they want from it must be clarified to avoid a false expectancy
Commit to the Change	<ul style="list-style-type: none"> • Have a strong coalition of employees to drive the change • Must have sufficient time and ability to enforce the change • Assess the capabilities to enforce the change in Sweco
Design the New Methodology	<ul style="list-style-type: none"> • Have a vision for the change • Be aware of the needs from the first phase and whether the methodology fulfils the needs (see Table 4-2) • Be aware of the potential resistance that can occur from the methodology itself (see Table 4-3)
Plan the Implementation	<ul style="list-style-type: none"> • Proactively minimise potential resistance • Involve others, such as change agents, and initiate pilot projects, to understand potential resistance early and to use experiences later for exemplification • Do not underestimate the implementation aspect of the change • Do not rush the implementation • Decide whether to make the methodology mandatory • Assess how the methodology can be educated as clearly as possible (see Table 4-5)
Deployment	<ul style="list-style-type: none"> • Communicate the change and its vision clearly • Use change agents and pilot projects for advocacy and exemplification • Consistent information and naming of the project management methodology • Recipients must understand why the change effort was initiated • The expectancy of the change must be as close to the real methodology as possible
Facilitation	<ul style="list-style-type: none"> • Handle resisters immediately by helping them • Motivate and help struggling users • Exemplify the results from the pilot projects to motivate further • Allocate sufficient time for projects, as using the design methodology comes in addition to what users are used to
Fortification	<ul style="list-style-type: none"> • Sweco must never stop emphasising the importance of using the methodology • Continually point to success due to use of the methodology in non-pilot projects • Involve users the continually improve the methodology

Figure 5-2: The Constructed Model

1. The Need for Change

Every change management model from chapter 2.3 begin with an affirmation for why effort should be put into a change. Thus, defining the needs for Sweco's change effort and identifying any internal or external driving forces for it is inherently valuable. The interviewed initiators and users of the new project management methodology were asked what they would want from it, which resulted in seven main needs, seen in Table 4-2. Because Sweco is beyond such a phase as this in their implementation, the needs cannot directly affect the design of the project management methodology anymore. However, it can indicate areas the initiators can highlight later when communicating the change to all the users of the methodology. Such areas could be standardisation and processes, as those are the needs that differ the most from the initiators who created Sweco's design methodology and require more attention to avoid confusion. Knowing why a change must occur is also essential to convince others in the organisation that they, too, must change. It also helps as it gives higher impact when requesting time and resource allocation to the change effort.

2. Commit to the Change

When there is a need to change and a reason to move forward, the goal is to ensure that the change, indeed, moves forward. This phase involves the creation of a coalition of employees with enough influence to change an organisation and with sufficient time to contribute to the change effort. Such a coalition have been created at Sweco, with sufficient influence capabilities. However, whether they have enough time to implement the change sufficiently is still unclear, as they all have other roles in the organisation. The coalition must embrace and commit to the change, which they seem to fulfil. Based on the steps from the change management models that this phase is founded on, an assessment of whether the organisation is ready and capable of embracing the change must be performed. The group must work together as a team to ensure consensus on what the change entails. The initiators should also be able to prove the old ways are no longer viable, perhaps with help from the resultant needs from the previous phase.

3. Design the New Methodology

This phase concerns the design of the new methodology. This includes performing a thorough assessment of what design specifications are needed. The change should align with the needs that are found through the first phase, and a defined vision for the change must be defined. However, as the users' needs for the methodology (see Table 4-2) was defined after the design of Sweco's design methodology was mostly completed, tailoring the methodology to those needs is less possible at this point. The potential resistance to the methodology itself (see design resistance in Table 4-3) is also less possible to change as well. If Sweco's goal with the methodology is to

continually improve it, which it was indicated to be, then the needs and resistance may help for future changes. However, that may be difficult to do at this point, given their schedule for the release of the methodology in September. Thus, if there are needs that are not met with Sweco's methodology, or if potential resistance to the design occurs, it is important to be aware of those issues when planning the implementation of the design in the next phase. It can be used in the implementation strategies by communicating what the project management methodology does and does not do.

4. Plan the Implementation

How the methodology will be presented and communicated must be planned. It must be decided how the methodology should be communicated and how to educate users of it. The impact of the change must be analysed to see whether the implementation strategy must be individually tailored to specific areas (e.g., the change requiring extensive training or education, or what facilitation is needed when the change is in effect). As one of the interviewees stated, the implementation process must not be underestimated. On the contrary, equal attention, if not more, should be spent to plan the implementation of the methodology, as have been spent designing it. Because this is the phase where Sweco is residing in now, and the phase being an essential part of the success of the change effort, it is imperative to fulfil the goals of this phase sufficiently.

First and foremost, a decision must be made whether to make the methodology mandatory. It is not irrational to make it required, as half of the interviewed users specifically mentioned that they wanted this. However, the users said this, given the contingency that the methodology does what it intends satisfactorily. Forcing the change will cause more employees to use it earlier, but the fortification process (i.e., the last phase) will be more difficult if the methodology does not live up to expectations. While the decision is up to Sweco, the decision must be communicated clearly and early.

How to educate users of the new methodology must be considered. The preferred education methods that the interviewed users discussed, seen in Table 4-5, is worth using to strategise and plan. The results from the analysis based on Kotter and Schlesinger's continuum for strategies to change can also be useful here (seen in Figure 5-1). It is recommended to plan for a slower implementation, to ease the users into the change. Another part of the recommended strategy from Kotter and Schlesinger's continuum is to involve others in the change initiative, which is also recommended by Anderson and Anderson (2010) for transitional changes like this. As the continuum shows a strategy only leaning to the right, a large number of involved employees might

not be necessary. Thus, change agents and pilot projects can be used, which the initiators already plan to use. They will become familiar with the methodology and can later help new users to use it. They can also detect resistance earlier, as opposed to when others start using the methodology. The uncovered potential resistance caused by the implementation of the change effort (see implementation resistance in Table 4-3) is not guaranteed to occur. However, at this point, measures can be taken to reduce the likelihood of some of the resistance occurring with proactive planning, with the help of the change agents. This is part of the strategy seen in Kotter and Schlesinger's continuum where initiators of change should attempt to minimise any resistance, as opposed to overcoming it after it occurs during the deployment of the methodology.

5. Deployment

The deployment of Sweco's design methodology is a crucial process for its success, as it has been established that designing the methodology is not the only challenge. This phase is the second part of the implementation challenge, where the deployment of the implementation strategies occurs. It is dependent on communication, education and exemplification, as the vision of the change should be communicated to users of the methodology and relevant parties. The recipients should understand why the change is necessary and understand why the coalition decided to initiate their change effort. The performance and results gained from the use of the methodology should be presented.

The different methods to educate and communicate the methodology, planned in the previous phase, must now be used. Consistency in information is essential, to ensure everyone understands the fundamentals of the methodology. Another vital consistency issue to be aware of, is the different use of names for the methodology (e.g., project execution model, project model, design methodology). This is not only important for the users of the methodology, but also for the customers to projects in Sweco. Everyone that is educated on the change must receive adequate information and knowledge to fulfil what is expected of them with the new methodology. The attention should be on the needs that users want when presenting the methodology. However, users of the methodology should also be aware of what it does not do, to ensure that false expectancy does not occur during utilisation in projects. However, the primary focus should be spent on what it does do. Sweco could also exemplify successful pilot projects with how those projects used the tools in the new methodology to reach their goals.

6. Facilitation

This phase is where the initiators facilitate the on-going change and commence ‘freezing’ the methodology and its effects on project management in Sweco. Resisters must be handled immediately by helping them, by any means necessary, to continue using the methodology. The most prominent resistance uncovered during the interviews at Sweco was the worry of not having enough time for projects when trying a new methodology like this. As Sweco’s change initiative was assessed to be a transitional change, Anderson and Anderson (2010) recommend that sufficient time is allocated to readjust to the change. Even with proactive measures to minimise time issues, some users may simply require more time than others to adjust to the change. Some may also worry about using something new, in addition to everything else they have to do. Allocating more time specifically for the change may help ease their discomfort.

If motivation is an issue, showing the results of pilot projects are vital. This exemplification will ensure users that the methodology works and will benefit them and Sweco. If skills and understanding is an issue, help from change agents can be beneficial. As they have the first-hand experience of truly using the methodology, they can then help others use it effectively and efficiently. They can advocate its usability, as well. If users do not receive resources or help if they need it, it may be easy to return to old habits. Some of the interviewed users mentioned that they would like follow-up meetings, either formally or informally, to ensure proper utilisation of the methodology.

The facilitation phase is critical to succeed in the continued use of the methodology and to fortify the changes that are made to the organisation. If the users are not able to proficiently use the methodology, fortifying the change is useless.

7. Fortification

To ensure that the change stays in the organisation and is kept for projects in the future, as opposed to merely ceasing, a fortification process must occur. This can include pointing to success in projects from the previous phase (i.e., non-pilot projects), where the link to success is due to the new way of managing projects. Changing the organisational culture to include the methodology is preferable. However, it is not an easy task to explicitly do. For the project management methodology to be part of the organisational culture, it must work as intended, and it must not stop being used. If it is not working as anticipated, invite and involve its users to help change the methodology. This strategy can be beneficial, regardless of the success of the methodology, to ensure future needs being applied and implemented.

These are the seven phases of the constructed model, aiming to assist the implementation process of Sweco's new design methodology, as a part of their project model. The constructed model itself is generalised by being based on existing change management models, with additions based on empirical data and analyses from Sweco to customise it for them.

6 CONCLUSION

The constructed model consists of seven phases which Sweco should traverse to fulfil the implementation of their new project management methodology, which was the aim of our research. The construct is based on both theory and empirical data, where the former is four change management models that provide generalised steps for implementing most change efforts. Our constructed model, however, contains phases instead of generalised steps, due to an empirical foundation. This foundation is based on what users and initiators of the methodology want from such a model; what resistance might occur to the methodology itself and its implementation; and implementation strategies that are beneficial to the change initiative. Combined, both the elements of theoretical and empirical data can assist Sweco with their implementation of a project model with a new methodology.

6.1 Theoretical Contribution

The fact that many of the future users of the methodology would prefer that this specific change become mandatory is noteworthy, given that they were also weary towards too much standardisation. This is not only beneficial to know in this specific change initiative, but also for future changes or even other organisations in the same industry. However, a contingency was that the change must visibly improve work processes. If it is adequate, it is easier for employees to see how by being forced to use it. Organisations that intend to implement new methodologies for project management may benefit in knowing what employees at Sweco value and expect for such changes. It may also be valuable to see what they think may cause resistance, as the resistance uncovered at Sweco could be generalised enough for many managerial changes. How change management is used varies with different contexts. In this context, where the power relation between management and employees was somewhat flat, it may be especially important to understand different approaches and their implications when handling the change. In other countries or organisation cultures, changes are likely to be executed differently.

6.2 Managerial Implications

The constructed model should not be used as a model that explicitly details the steps needed for successful change. It should instead be seen as phases that Sweco's change initiative will go or have already gone through. Each phase contains elements with the goal of assisting the implementation and elements that the initiators of the change must be wary of. If a phase appears to not be as relevant for Sweco, then it should have less attention. The implementation must not be as clearly planned in the beginning and can change continuously, as part of the strategy chosen on the

continuum in Figure 5-1. That is also why the implementation planning phase is the most prominent because that is the phase they currently reside in. As the phases are based on the worries of the future users of the improved project model, it is not something that should be ignored. While some elements of the constructed model may be inherently opposite of the views of the initiators, there is a reason it is there.

6.3 Future Research

The constructed model will not be tested or validated due to time constraints of this master's thesis, as described in chapter 3.6. While a constructed model has been created to assist implementing Sweco's new methodology, it is difficult to test its viability as the implementation will only occur once. However, as parts of the constructed model are based on inductive research, the result cannot be untrue as it is based on the opinions of employees at Sweco. This limitation could result in future research on how our constructed model contributed to Sweco's initiative. While the construct itself is customised to fit Sweco and their organisational culture, the implementation strategy may be beneficial elsewhere, as mentioned in the theoretical contribution. Further future research can be conducted to assess the viability of the constructed model for other project management methodology implementations.

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APPENDIX

Appendix A — Interview Guide for Users

<i>How long have you been with Sweco or in the industry? What is your current position?</i>
<i>What do you know about the model already?</i>
<i>How have previous changes in Sweco affected you and your work?</i>
<i>What needs do you think the new methodology will cover? What will it not cover?</i>
<i>Can you remember an actual problem where you would be better suited to solve it if the model was released?</i>
<i>What do you think the goals are with the model?</i>
<i>How will a formalised project management methodology affect you and your work?</i>
<i>What challenges do you think Sweco will have when implementing the model or when using the model?</i>
<i>What resistance from users do you think can appear as a result of this change?</i>
<i>Do you think there is a difference between how Sweco in Oslo and Bergen should implement this change?</i>
<i>How is the power dynamic between potential resister of the change and with those who are initiating the change?</i>
<i>How would you like the model to be introduced to you and others?</i>
<i>How should you, as a user, be motivated by management to continue using the model?</i>
<i>How important do you think it is for Sweco to start using this model in projects? How important is it for you?</i>
<i>What consequences do you think can come from not implementing this change successfully?</i>
<i>What strategy should Sweco make for implementation of the model?</i>
<i>Any parting thoughts concerning the model?</i>

Appendix B — Interview Guide for Initiators

<i>How long have you been with Sweco and in the industry? What is your current position?</i>
<i>How have previous changes been executed in Sweco?</i>
<i>How do you proceed with such a large change?</i>
<i>Who decides how the model should be made and used?</i>
<i>Do you use any tools for measuring progress and success in change initiatives?</i>
<i>What needs do you think the new methodology will cover? What will it not cover?</i>
<i>What are the goals with the model?</i>
<i>Are there any areas where the model could be better?</i>
<i>How would you describe an ideal vision of the model?</i>
<i>How thoroughly must the model be followed?</i>
<i>How many resources are allocated to the change?</i>
<i>How will a formalised project model affect Sweco?</i>
<i>What resistance do you think can appear as a result of this change?</i>
<i>How is the power dynamic between potential resister of the change and with those who are initiating the change? Can it affect the implementation?</i>
<i>How will you motivate project managers to use the model?</i>
<i>Who has the most precise information and knowledge about what changes are needed?</i>
<i>How important is it to start using the model in projects?</i>
<i>When do you see yourself “finished” with the implementation?</i>
<i>How will you ensure that the model stays in use when you are “finished”?</i>
<i>What consequences can occur by not implementing the model successfully?</i>