

Implementing new ways of working model for a business transformation project according to Agile, Lean Startup and Design Thinking frameworks

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<p>In the current rapidly changing business environment, it is crucial to build new work models for global project teams that would enable cross-functional collaboration, greater speed, flexibility and possibility for co-creation with those closest to customers.</p> <p>The objective of this thesis is to create an effective work model for a business transformation project team by applying elements of Agile, Lean Startup and Design Thinking frameworks. The main research question aimed to clarify how to effectively implement a project work model by applying those frameworks. Further sub-questions aimed to evaluate the main achievements and challenges after the initial framework implementation stage and present recommendations to overcome identified challenges.</p> <p>Firstly, a theoretical framework was formed, and the implementation stage planned in August 2020. The framework implementation stage took place from September to December 2020. Data gathering and analysis was carried out from January to March 2021. Conclusions and recommendations based on the conceptual framework and data analysis were formed in April 2021.</p> <p>The chosen research strategy is action research and chosen methodology is a multi-method qualitative study. Data collection was carried out via team observation during the framework implementation stage, semi-structured interviews with project leads as well as a workshop with project team to co-create solutions to identified challenges.</p> <p>The implemented work model consists of organizing the Lean Site team's work in Agile Scrum sprints, applying Design Thinking exploration, co-creation and experimentation stages in structuring work together with KONE frontline experts as well as organizing experiments according to the Build-Measure-Learn cycle of Lean Startup.</p> <p>The results show that there were both achievements and challenges after the initial framework implementation stage. It can be concluded that the application of Agile, Design Thinking and Lean Startup framework elements has benefitted the structuring of an effective, collaborative and user-centric work model that has allowed the team to start co-creation with field experts. The main challenges related to Agile mindset, decision-making in the new setup, the need for longer term planning as well as clarity about the vision and roadmap. Future development suggestions to overcome these challenges include, among others, the introduction of a quarterly planning event, thereby clarifying the vision and roadmap, ensuring psychological safety and accountability, continuing agile coaching and improving the decision-making process.</p>	
Keywords Agile, Lean Startup, Design Thinking, experimentation, co-creation, prototyping	

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Abbreviations

IES Installation execution system

IT Information technology

MVP Minimum viable product

PO Product Owner

UX User experience

1 Introduction

The ever-changing business environment demands that even large companies become more flexible, innovative and nimbler in their ways of working to stay competitive and thrive. As stated by Perkin (2020, 38-39), the increasingly complex business climate requires a different type of thinking and doing. It requires starting with the internal and external customers and their needs, to test possible options, gather feedback and being ready to learn and adapt as the situation and requirements change.

Perkin (2020, 188) shared results of a research carried out by MIT's Human Dynamics Laboratory which showed that above the individual talent and skills, it is team's communication and way of working together that directly affects the team's success.

Therefore, it is important to build new work models for collaboration, greater speed and flexibility. Ries (2017, 38) argues that old-fashioned companies are made of experts in functional siloes between which work passes in a linear and slow manner whereas a modern company consists of cross-functional teams that collaborate and iteratively experiment together.

According to Ries (2017, 304), "every organization should have an active program of experimentation in new organizational forms and management methods embarked upon with caution and strictly defined liability, and helmed by the kinds of people who could one day become founders of the next company-wide transformation."

1.1 Main objective and research questions

The main objective of the thesis is to create an effective work model for a business transformation project team by applying elements of Agile, Lean Startup and Design Thinking frameworks.

The main research question is:

- How to effectively implement a work model for a business transformation project team by applying elements of Agile, Lean Startup and Design Thinking frameworks?

The research sub-questions are:

1. What are the main achievements after the initial framework implementation stage?
2. What are the main challenges after the initial framework implementation stage?
3. What are the recommendations to overcome identified challenges?

In order to find the answers to research sub-questions one and two, the author conducted team observation and interviews with project leads. Interview method and execution process are described in subchapter 2.3.1 and analysis is presented in subchapter 5.2. Additionally, the observation method and execution process are described in subchapter 2.3.3 and analysis is summarized in subchapter 5.1.

To answer the research sub-question three, the author organized a workshop with the full project team to co-create solutions to the identified challenges after conducting interviews and observation. The workshop method and execution process are described in subchapter 2.3.2 and outcome analysis is presented in subchapter 5.3. Conclusions drawn from the analysis are established in chapter 5.4.

The purpose of the empirical part of the thesis is to describe the planning and implementation stage of the new ways of working, research what benefits and challenges have resulted into after the initial implementation phase as well as propose future recommendations for the identified challenges.

1.2 Case company and case project

KONE is a global leader in the elevator and escalator business that manufactures elevators, escalators and automatic building doors as well as provides solutions for maintenance and modernization. KONE's mission is "to improve the flow of urban life" and it "aims to offer ease, effectiveness and experiences to its customers over the full life cycle of buildings". (KONE Corporation 2021a.)

KONE was founded in 1910 in Helsinki, Finland. In 2020, annual sales amounted to 9.9 billion euros. KONE class B shares are listed on the Nasdaq Helsinki Ltd. in Finland. (KONE Corporation 2021a.)

KONE is present in more than 60 markets globally, providing solutions for approximately 550,000 customers and moving over one billion people every day. It is headquartered in Helsinki, Finland and over 60,000 employees are working for KONE all around the world. (KONE Corporation 2021b.)

In January 2021, KONE entered its next strategy period called Sustainable success with customers. Within the next four years, KONE aims to increase customer value with new intelligent solutions and sustainable operations. (KONE Corporation 2021b.)

Lean KONE strategic direction emphasizes continuous improvement and the elimination of waste by leveraging Lean skills, practices and leadership towards increasing customer

satisfaction with KONE's products and services (KONE Corporation 2021c). The case project of the thesis called Lean Site is one of the KONE's strategic transformation projects implementing the new strategy for 2021-2024.

The Lean Site project is aiming to eliminate waste in KONE's field operations as well as ensure uninterrupted flow of installation work and continuous improvement by providing the right support and enablers needed for the work of field personnel. The author is working as a Project Manager for the case project. The formation of the project as well as brief introduction of Lean Site project vision and scope is described in chapter 3.

1.3 Scope and research limitation

The focus of the thesis is to describe how the project work model was set up by applying three selected frameworks – Agile, Lean Startup and Design Thinking. The author will not describe content or outcomes of the Lean Site project but will concentrate only on the ways of working model within the Lean Site team.

Chosen frameworks, especially Agile, are broad concepts that each can be separate thesis topics. Therefore, the theoretical framework in chapter 4 will be described in-depth with emphasis on elements that were applied in the project work model. The conceptual framework is presented in subchapter 2.4.

1.4 Structure of the thesis

The thesis is comprised of six main chapters. It starts with an introduction chapter that presents the overall background for the thesis, the main objective and the research questions. It also briefly introduces the case company and case project, the scope of the study and research limitations as well as the structure of the thesis.

Chapter two introduces the research strategy and process as well as gives an overview of methodological choices and data collections methods. Interview, workshop and observation methods applied in the thesis work are reviewed, and their implementation approach is presented. Finally, the conceptual framework of the study is described.

In chapter three, the planning phase is presented concentrating on the merging two projects into a Lean Site project and choosing frameworks to set up the Lean Site project team's ways of working model.

Chapter four describes the implementation stage of the ways of working model. It includes theoretical framework of the study which is followed by an explanation of how the theory was applied in a real corporate setting using zipper method, where the theoretical

framework is presented together with empirical research. The theoretical and practical implementation aspects of Agile, Design Thinking and Lean Startup framework elements are also examined. Furthermore, a summary of how the chosen frameworks complement each other and what the role of leadership is in enabling the new ways of working is provided.

Chapter five contains analysis and evaluation of the observation, interview and workshop findings. Finally, conclusions based on the analysis are presented.

The last chapter presents future development proposals based on the data analysis results and theoretical framework, discusses whether the objective of the study was achieved and states the main conclusions of the study.

2 Methods and research strategy

The second chapter presents the chosen research strategy and process of the study, the methodological choices and data collection methods as well as the conceptual framework of the thesis.

2.1 Research strategy

The chosen research strategy is action research. Action research aims to provide solutions to existing organizational problems. It encourages organizational learning and provides applicable solutions through understanding the challenge, planning action, implementing the action as well as assessing it. (Saunders, Lewis & Thornhill 2019, 202.)

Action research was chosen as the most suitable research strategy because the thesis work aims to change organizational ways of working through participation and co-creation. Participation is a crucial ingredient of action research. Saunders & al. (2019, 203) states that “action research is a social process in which researcher works with members in an organization, as a facilitator and teacher, to improve the situation for these participants and their organization”.

Action research requires collaboration with the employees of the company to further the improvement of ways of working, it unites data gathering and facilitation of change (Saunders & al. 2019, 204). Since the research objective requires new ways of working to be adopted by the project team members, it was crucial to choose a research strategy that promotes co-creation.

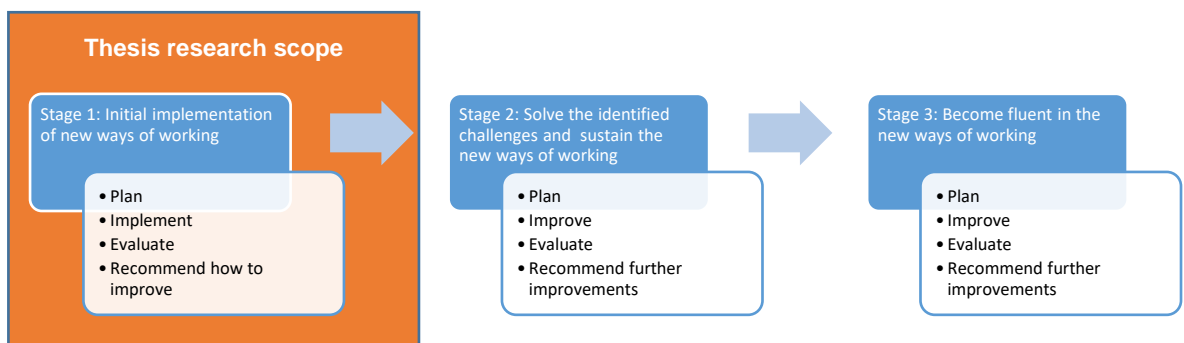


Figure 1. Case project’s ways of working development model based on Action research cycles (adapted from Saunders & al. 2019, 203)

Action research helps to develop solutions in cycles or stages to provide direction. Each stage includes diagnosing or understanding the problem, planning action, implementing

action, evaluating and recommending solutions. (Saunders & al. 2019, 203.) As shown in Figure 1, for the organizational issue of implementing new ways of working there are three stages defined as part of the thesis process.

The first stage - initial implementation stage - is in the scope of this thesis work. The recommendations from the thesis work will provide input for stage two - solving the identified challenges and sustaining the new ways of working where the action research cycle will be repeated (understanding the problems, planning, improving, evaluating and recommending solutions). After the second stage, it is evaluated whether further development cycles are needed. Finally, the goal for the team is to become fluent in the new ways of working.

The action research stages enable constant organizational reflection, learning and improvement of ways of working that can be taken up beyond the thesis work until the organizational challenge is solved or new ways of working are fully adopted.

2.2 Research process

The research process consisted of four phases – planning, implementation, evaluation and recommendation stages (Figure 2).

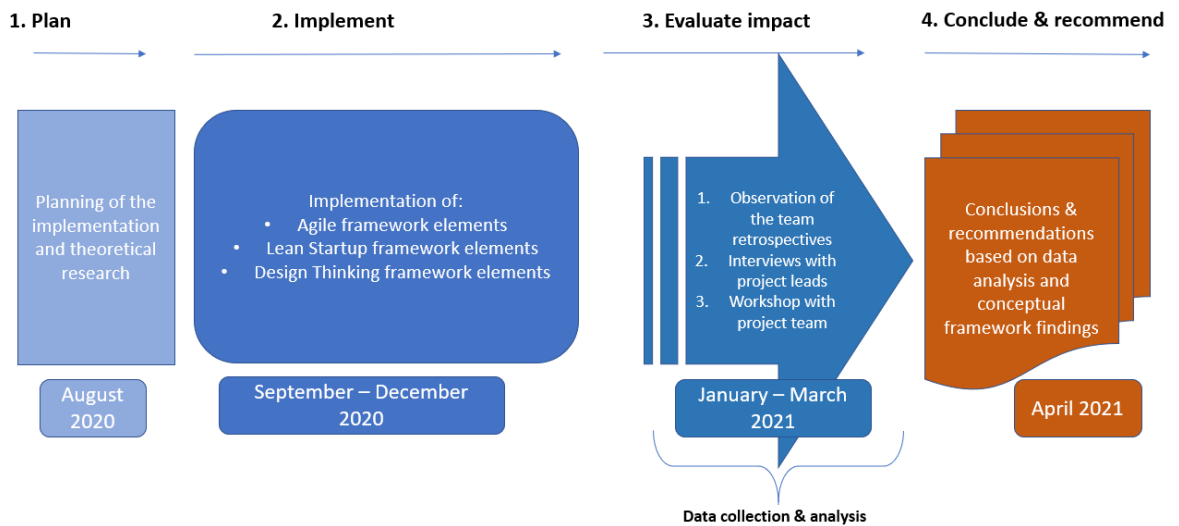


Figure 2. Thesis research process phases

As shown in Figure 2, the thesis process started in August 2020 with theoretical research and planning of the implementation phase. The implementation phase began in September 2020 with simultaneous introduction of Agile, Lean Startup and Design Thinking frameworks into the case project's ways of working. This implementation phase

was four months long and concluded in December 2020. After December, the team continued to work according to the new frameworks.

Data collection and analysis, or the evaluation phase, started in January and lasted until the end of March 2021. The author organized interviews in January and February and a workshop with the team took place in March. Interviews, workshop outcome and retrospective data were analysed in March 2021. Conclusions and recommendations were compiled in April 2021 based on qualitative data analysis.

The key tasks to ensure validity and reliability during the research planning and execution process were: a systematic approach to research from outlining the goals to data analysis, careful planning and scheduling the work in advance, getting approval for the research plan from academic and case company advisors as well as during the research process using clarifying questions, and exploring meanings from different angles and perspectives to obtain high quality data. In the data analysis phase, it was important to base conclusions against theoretical framework and use various sources.

Generalizability/transferability describes the degree to which the research outcomes are applicable to other environments and organizations (Saunders & al. 2019, 449). The aim of the research is not to provide statistical generalizations since the outcomes of the research will be subjective to the individual ways of working in a particular organizational setting. The research objectives were aiming to explore and analyse a particular cross-functional team's ways of working in the case company.

2.3 Methodological choice and data collection methods

The chosen methodology of the research is multi-method qualitative study which uses more than one qualitative data collection technique and analysis. As stated by Saunders & al. (2019, 179), qualitative research explores participants' interpretations and relationships between them to build a conceptual framework. In qualitative study, meanings are obtained from words and images, not numbers. It is particularly important to inspect the meanings of the words and images to fully understand the context. (Saunders & al. 2019, 179.) The advantage of qualitative research is its ability to provide a description of how a chosen sample encounters a certain research topic (Silverman 2010, 175).

The qualitative multi-method of this research includes data collection via semi-structured interviews, a workshop with the team and observation. The combination of these three methods improves reliability in the assessment of the implementation phase. Additionally, it was especially important to understand the challenges and co-create the solution

together with the whole team. As stated by Saunders (2019, 204), “members of an organization are more likely to implement change they have helped to create”.

2.3.1 Interview method

The first step after the implementation stage was to arrange semi-structured one-to-one interviews with project leads to assess the implementation and outcomes. As stated by Saunders & al. (2019, 437), semi-structured interviews contain a pre-selected list of themes and related key questions.

The main reason semi-structured interviews were chosen was due to their nature - feelings and thoughts can be explored, clarified and followed-up during the interview (Bell & Waters 2014, 178). Semi-structured interviews are especially compatible with an explanatory study where it is important to understand reasons for participant’s feelings and opinions. (Saunders & al. 2019, 444).

Table 1. Interview schedule and participants

Interview date	Interview participant (role)	Short role description
28 th December 2020	External Agile coach	The Agile coach role will be described in subchapter 4.1.3
7 th January 2021	Head of Global Installation / Product Owner	The Product Owner role will be described in subchapter 4.1.3
8 th January 2021	Business Transformation Manager / Scrum Master	Responsible for the Lean Site transformation planning and implementation. The Scrum Master role will be described in subchapter 4.1.3
8 th January 2021	Design Expert	Design Thinking / Service Design Expert in the project
18 th January 2021	IT Solution Owner	Accountable for IT solution quality and roadmap
25 th February 2021	Global Process Owner	Owens the global KONE delivery operation processes

As shown in Table 1, the chosen sample included six project leads. The duration of each interview was 60 minutes. Interviews took place either face-to-face in an office setting or online via Microsoft Teams during January and February 2021 (Table 1). One interview took place at the end of December since the person was leaving the company.

The main goal of the interviews was to encourage the participants to share their experiences openly, therefore the interview style was conversational and informal. Two main questions were asked in each interview:

1. Please reflect on the implementation stage and the new ways of working following Agile, Lean Startup and Design Thinking frameworks. In your opinion, what went well? What are clear achievements of the new ways of working?
2. In your opinion, what are the challenges of the new ways of working? What could be improved going forward?

Two main questions were chosen to provide insights in responding to two research sub-questions of this thesis:

1. What are the main achievements after the initial framework implementation stage?
2. What are the main challenges after the initial framework implementation stage?

The above questions were followed-up by additional supporting questions to better uncover the feelings and thoughts of each participant. Interview analysis is presented in subchapter 5.2.

In order to comply with ethical considerations, the participation in interviews was voluntary and it was assured before the interview that the results will be analyzed anonymously. Interviewees were informed before the interview about the purpose of the thesis work and research interviews and the research questions were stated beforehand.

The author paid special attention in maintaining the objectivity throughout the process and not imposing own beliefs during the interview and analysis process to avoid interviewer bias. Therefore, the interviewees were encouraged to openly share their personal experience, feelings and thoughts to avoid interviewee bias. In order to avoid participation bias, the chosen interview sample including six project leads was combined with a workshop method that included the full team as well as observing team's reflections during the framework implementation stage (workshop and observation methods described in more detail in subchapters 2.3.2 and 2.3.3).

As stated by Saunders & al. (2019, 180), "non-standardized qualitative data requires classification into categories". The qualitative interview data was summarized and analysed using categorization in two main topic groups - "benefits" and "challenges".

2.3.2 Workshop method

After the interview, results were summarized into two categories, and the main challenges were selected to be in the scope of the next step in data collection process - a co-creation workshop with the full project team.

In a workshop, the topics can be presented, experimented with and discussed. Therefore, by selecting a workshop as a research method, the researcher builds a collaborative and immersive environment where the topic at hand is discussed. A workshop provides chance to pinpoint new factors at play and explore the relationships between them which were not previously known. (Ørngreen & Levinsen 2017, 79.)

In order to succeed with the workshop method, the researcher needs to take a proactive facilitator's role as well as be aware of the different ways that people react to collaboration (Ørngreen & Levinsen 2017, 79). The task for the facilitator is to create an environment where participants feel that their opinions are important (Ahmed & Asraf 2018, 1508).

The workshop is a resourceful method to be used in combination with other research methods since the data generated in a workshop is quite different from data produced by observations or interviews (Ørngreen & Levinsen 2017, 79).

Analysis of all raised challenges during the interview phase were reviewed at the beginning of March 2021 together with the company thesis advisor, transformation lead and Agile coach. The scope of the workshop was decided by selecting the main challenges mentioned by project leads in the interviews.

The Lean Site team's ways of working workshop took place on 17th March 2021 via Microsoft Teams. The workshop overall took two hours with the whole team of 14 people in attendance. Three of the participants had the role of facilitators.

As stated by Ahmed & Asraf (2018, 1508), the activities of the workshop must be relevant to the main goals of the workshop. The goals were communicated at the start of the workshop:

- To review the main challenges raised during the thesis interviews.
- To co-create and brainstorm solutions together.
- To further improve common ways of working in the project team.

The workshop was organized to provide input for the third research sub-question of the thesis:

- What are the recommendations to overcome identified challenges?

The main challenges from the interview stage were structured into three challenge groups based on their content. Before the workshop, participants were randomly divided into three challenge groups and group overview is presented in Table 2.

Table 2. Lean Site team’s ways of working workshop groups

Workshop group name	Short group description	Number of Lean Site team’s participants per group
Group 1: Project scope and roadmap	Included challenges relating to the Agile project scope setting and road mapping	Four
Group 2: Agile mindset group 1	Included challenges related to Agile mindset	Three
Group 3: Agile mindset group 2	Included challenges related to Agile mindset	Four

As shown in Table 2, the first group included four participants and the goal of the group was to discuss challenges relating to Agile project scope and road mapping. The second group included three participants and the third group four participants; both were discussing Agile mindset challenges (Table 2). The challenges in the scope of the workshop will be summarized and analysed in subchapter 5.3.

As stated by Ahmed & Asraf (2018, 1508), a workshop should provide a chance for the participants to interact and learn collaboratively because otherwise they might not feel engaged.

Agenda

- 13.30 Opening and goals of the workshop (10') - Laine
- 13.40 Practicalities (5') – Laine and Juha
- 13.45 Workshop in groups (35')
 - Facilitated by Laine, Juha and Laura
- 14.20 Break (5')
- 14:25 Group presentations and discussion (60') – Facilitators & team
- 15.25 Closing (5')

Figure 3. Agenda of Lean Site team’s ways of working workshop

As shown in Figure 3, after the opening and reviewing the goals of the workshop as well as practicalities, the group work was kicked off. Each group's discussion was simultaneously facilitated by the author, company thesis advisor and the team's Agile coach.

Group 2: Agile mindset challenges



Challenges raised in the interviews	What does this challenge mean for me?	Proposals for improvement and owner:
<p>Incremental development and getting fast feedback:</p> <ul style="list-style-type: none"> • "Generally, ideology of agile was quite well understood. However, some team members need to move from component-based thinking - instead delivering small slices of value crossing all the components (roles, KPIs, processes, IT)." 	<ul style="list-style-type: none"> ▪ X 	<ol style="list-style-type: none"> 1. 2.
<p>Courage to experiment:</p> <ul style="list-style-type: none"> • "Courage to try out new things and experiment is sometimes lacking." • "Team has good conceptual expertise but should be learning more from real-life situations." 	<ul style="list-style-type: none"> ▪ X 	<ol style="list-style-type: none"> 1. 2.

Figure 4. Group work templates (group 2 example)

During the workshop, each group reviewed their challenges that were raised during the interviews, reflected on what these challenges mean to them and finally, what the team's solution proposals to tackle the raised challenges are (Figure 4). The task of the facilitators was to fill in templates per each group which were prepared before the workshop. Figure 4 shows a template example from group 2. All three templates can be found in Appendices (Appendix 1-3).

As shown in Figure 3, group discussions lasted for 35 minutes, after which all groups re-joined the main common discussion. Each group then had 20 minutes to present and discuss their group's suggestions for improvement with the full team (60 minutes in total).

Concrete improvements were agreed among all team members and the final outcome of the workshop was documented by the thesis author. After the workshop, team members gave feedback that it was good to discuss the challenges openly and think about solutions together. Analysis of the workshop outcomes is presented in subchapter 5.3.

In order to comply with ethical considerations, participation in the workshop was voluntary, however, it was encouraged that the whole team joined to be able to jointly discuss topics that influences everyone's work. Participants were informed about the purpose of the

thesis work, research questions and workshop goals before, as well as during, the workshop. Interviewees were encouraged to openly share their personal experiences, feelings and thoughts to avoid participant bias.

2.3.3 Observation method

Observation is a qualitative research method that provides an insight into what people do and how they interact. It consists of viewing, recording, describing and analysing the behaviours. (Saunders & al. 2019, 378.)

In observational research people being observed are called informants (Saunders & al. 2019, 378). Informants in scope of this thesis' observation are Lean Site project team members.

The chosen observation type was participant observation. As stated by Saunders (2019, 392), in participant observation, the researcher is submerging themselves in the environment and routines as well as gaining knowledge as an insider through participation. Participant observation takes place in a naturalistic environment, for example in a workplace setting (Saunders & al. 2019, 392).

The participant observation was Internet-mediated. Internet-mediation means that the researcher gathered data from online social interactions (Saunders & al. 2019, 408). The observation was conducted in a virtual setting via Microsoft Teams. This was due to both the ongoing global pandemic, when working in an office setting was not possible, and some of the team members being located abroad.

The participant observation was carried out by observing and documenting team's reflections in retrospective meetings during the new framework implementation stage (September – December 2020). The reflections in the scope or focus of the observation were related to Agile, Design Thinking and Lean Startup frameworks and the team's common ways of working.

Agile retrospective meeting fosters a continuous improvement mindset by providing a chance for the team to look back at the common ways of working and agree on how to improve going forward (Alfonso 2021).

Retrospective meetings were organized after each development sprint. The observer was making notes in each of the meetings for data documenting purposes. Retrospective implementation as part of Agile Scrum events is described in more detail in subchapter 4.1.4.

The observation method was unstructured – there was no predefined list of attributes, behaviors or responses to observe (Saunders & al. 2019, 382). The observer was observing the flow of team’s reflections in the retrospective meetings.

There were three main questions asked in each retrospective meeting and team was asked to freely reflect on their ways of working:

1. What went well?
2. What could be improved?
3. What will we do to make things work better?

The team’s responses were sometimes not related to ways of working but rather the content of the project, collaboration with other teams or stakeholders etc. Those responses are not in the scope of observation analysis for this thesis.

The high level of immersion and richness of data are some of the main advantages of participant observation, compared to other data collection methods. In participant observation, the researcher is exploring the observational setting as both an insider (participant) and outsider (observer). (Saunders & al. 2019, 390.; 392.)

The author took both a participant and observer role. The observation was executed in an organizational setting in which the author was already participating (retrospective meetings as part of the team). According to Saunders & al. (2019, 384), “researcher’s role as an insider will provide chance for researcher to select a particular situation to observe related to the membership of the organization” and “since researcher is already accepted as a member of the organization in which they choose to conduct observational research, they do not need to reveal this purpose to other members.”

This approach was chosen due to the nature of the three research sub-questions below that needed to be explored while participating in team retrospective meetings to better understand team’s feelings and opinions within the framework implementation stage:

1. What are the main achievements after the initial framework implementation stage?
2. What are the main challenges after the initial framework implementation stage?
3. What are the recommendations to overcome identified challenges?

Saunders & al. (2019, 391) argue that using interviews may not reveal as much insight in comparison to engaging in participant observation to understand the environment in which informants are operating. Observation analysis is presented in subchapter 5.1. In total there were five retrospective meetings conducted during the framework implementation stage.

Keeping the ethical concerns and the validity of the research in consideration, this approach was chosen because there were no risks of creating harm for the participants being observed since working practices were observed on a team level to evaluate the relationship between theory and the real-life team environment. Therefore, anonymity of informants was ensured in the analysis part of the research.

Observer bias may occur when the observer uses their own subjective opinions or disposition to translate the observed setting (Saunders & al. 2019, 397). In order to overcome the observer bias, the author was critically reflective throughout the research process on how each observation may be interpreted from different perspectives.

2.4 Conceptual framework

The conceptual framework of the thesis consists of three main theoretical frameworks (Agile, Lean Startup and Design Thinking) that were applied in setting up the working model of the Lean Site project alongside two supporting theoretical concepts. All five are summarized in Figure 5.

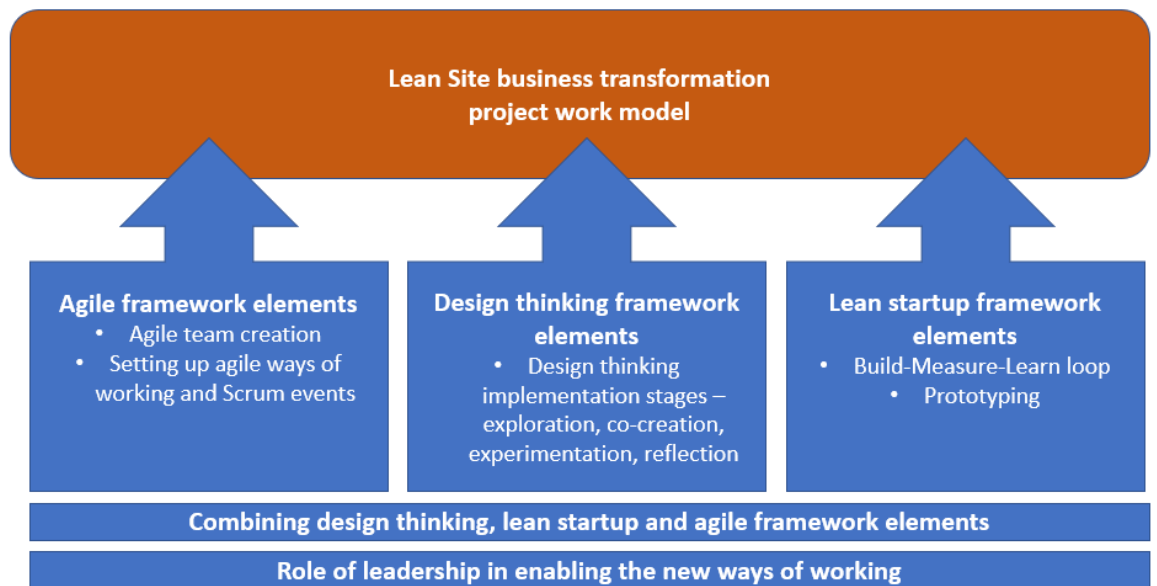


Figure 5. Conceptual framework groups of the thesis

The first concept presents Agile framework element implementation – Agile team creation, setting up Agile ways of working as well as Scrum events. The second concept describes Design Thinking framework element implementation based on Design Thinking implementation stages. The third concept presents Lean Startup framework element implementation – Build-Measure-Learn loop and prototyping as part of the loop.

To support the main theoretical framework implementation, the fourth concept describes a combination of Design Thinking, Lean Startup and Agile frameworks. Finally, the leadership role is being reviewed as an enabler of the new ways of working. Conceptual framework is presented in chapter 4 together with a description of the implementation phase.

3 Planning phase: Combining operating model and IT tool development projects into a business transformation project

The planning phase was the first phase of the thesis research process (Figure 6). It consisted of theoretical framework research and implementation planning of the new ways of working model for the Lean Site team. The background for the need of new work model is described below.

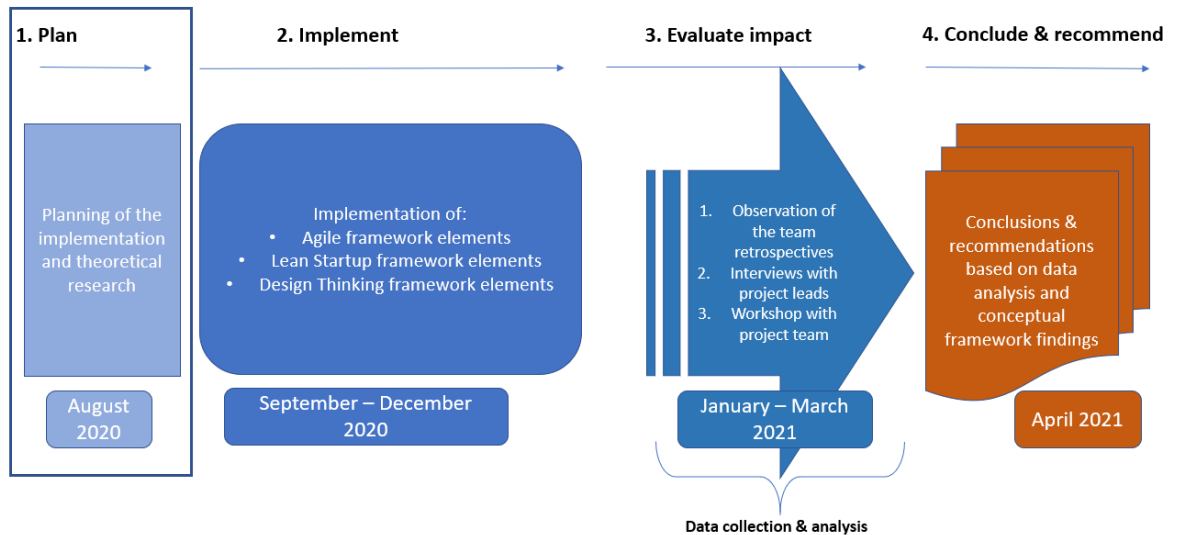


Figure 6. Planning stage in the thesis research process

In August 2020 the case company decided to merge two projects – Active Site business transformation project that aims to improve field operations and remove waste, and Installation execution system (IES) development project that aims to develop an Information Technology (IT) tool for KONE’s field personnel to support and digitalize their ways of working.

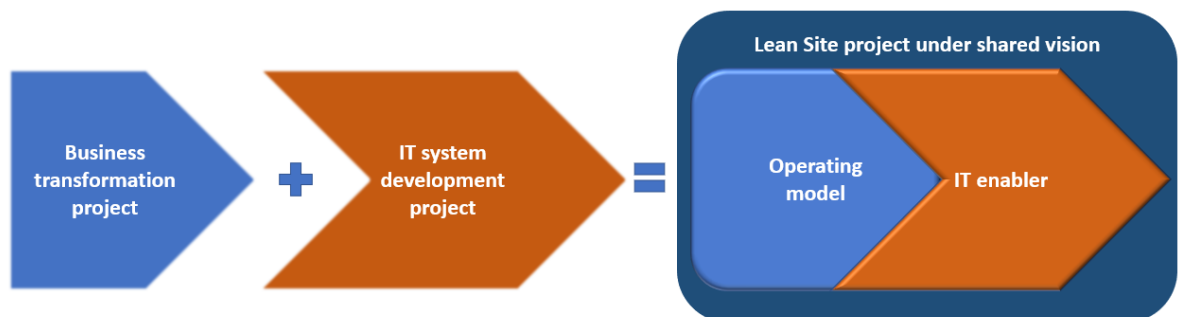


Figure 7. Creation of the Lean Site business transformation project

Beforehand, both projects were organized and led independently – with separate steering groups and separate teams. Operating model development was initially started under the Active site business transformation project and IT development preparations were ongoing under the IES IT development project (Figure 7).

Since both projects were trying to solve the same issues (e.g. improve the life of field personnel corresponding the same goals), it was decided to combine them. After merging in September 2020, the Lean Site project was born under a common Lean Site vision. The project comprised of operating model development as well as IT enabler development elements (Figure 7). The Lean Site project joint steering group was formed in September consisting of business and IT teams' stakeholders. The newly created cross-functional team was comprised of business, process, service design and IT experts.



Figure 8. Lean Site vision

Lean Site vision is putting installation Supervisors and Installers in focus to ensure that they have the right environment, enablers and support to effectively do their work (Figure 8). Support includes fast constraint management and continuous improvement, and enablers include processes, planning practices, methods and tools. In addition, the Lean Site project is aiming to ensure management having Lean focus to support their employees.

With the decision to merge projects an important question emerged: how to set up a work model of the joint project team that consisted of cross-functional professionals from various fields of expertise? The aim was to break the organizational silos and create a

cross-functional team's work model that would promote communication, collaboration and co-creation.

It was decided to apply elements from three frameworks – Agile, Lean Startup and Design Thinking methodologies - to create an effective work model that would enable the project team to collaborate, structure the work and reach development goals.

Since the project is aiming to make field operations Leaner it was also important to explore how to become Lean and Agile in the team's ways of working. It was crucial to create a transparent and collaborative environment for the new cross-functional project team. That is when it was decided to start applying Agile methodology to set up the work model.

Agile process is flexible and evolutionary providing an opportunity for the team to learn with every new iteration. Agile offers framework to quickly respond and adapt to changes without losing momentum and continuously welcoming end user feedback. (Rigby, Sutherland & Takeuchi 2016.) Agile implementation is described in subchapter 4.1.

Additionally, it was important to become more user-centric and explore the problems and needs of the people on site before thinking of offering them possible solutions and it was important to do it with them by co-creating together. It was recognized that Design Thinking would provide the right philosophy and tools for this purpose. Design Thinking implementation is described in subchapter 4.2.

Furthermore, before the start of IT enabler development it was decided it was worthwhile to create a prototype and collect feedback from the frontline field operations (KONE's local units) and Lean Startup provided the right framework for achieving that. Lean Startup implementation is described in subchapter 4.3. Agile and Lean Startup methodologies were new for most of the team members. Design Thinking was a well-known framework to the service designers but less so to the rest of the team members.

4 Implementation phase: Adopting elements of Agile, Design Thinking and Lean Startup frameworks in business transformation project work setup

The implementation phase was the next stage after Planning, and it was started in September 2020 (Figure 9).

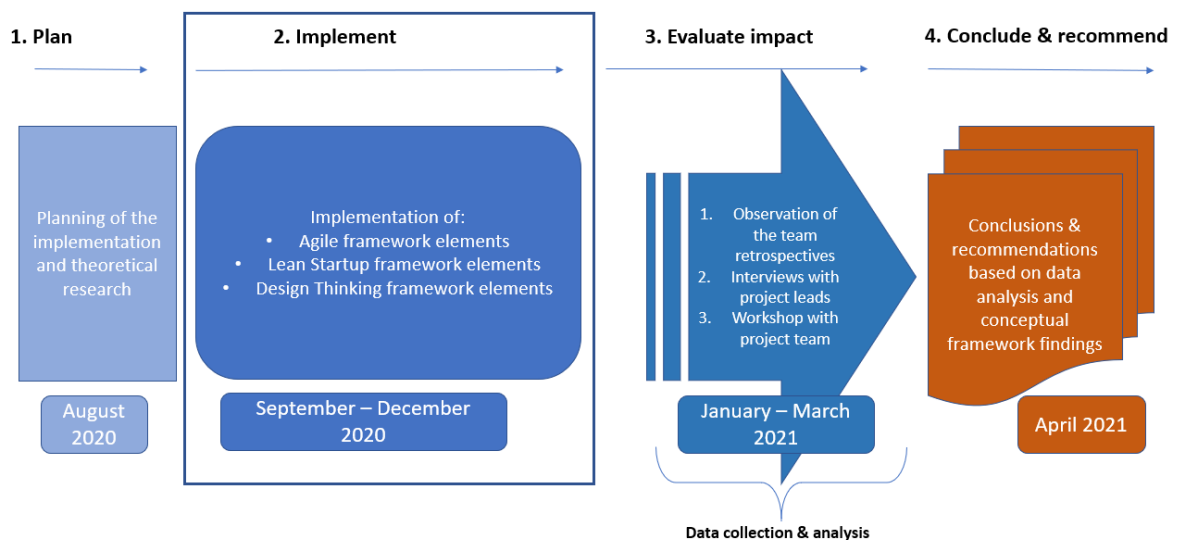


Figure 9. Implementation stage in the thesis research process

The subchapters will describe the implementation stage of Agile, Design Thinking and Lean Startup framework elements. This comprises of theoretical framework of this thesis followed by explanation of how the theory was applied in Lean Site project. Furthermore, a summary is given of how the chosen frameworks complement each other and what the role of leadership in enabling the new ways of working is.

4.1 Implementation of Agile methodology

The implementation of Agile methodology was done by forming an Agile team, setting up Agile ways of working and Scrum events. The concept of Agile will be described first.

4.1.1 Agile concept

Agile methodology emerged in the software development field in order to tackle challenges of linear waterfall development processes (Perkin 2020, 33). Waterfall methodology requires creating a detailed design or plan before being able to move to development and implementation stages. It presumes that the plan or specification remains fixed until it is implemented, and requirements do not change. This methodology

brings value in well-known environments that do not change over time. (Carroll 2012, 22; Perkin 2020, 32-33.)

However, working in a linear and fixed manner may mean developing something that does not fit the changing needs of the end users or customers. Additionally, the time that is spent in the design and planning stage is bringing delays to the overall go-to-market rate. The current business climate, that is increasingly complex and quickly changing, requires a different type of thinking and doing. It requires starting with the users and their needs, testing possible options and being ready to learn and adapt as situation and requirements change. (Perkin 2020, 38-39.)

Fifteen developers gathered back in 2001 and decided that change is required. They published the Agile Manifesto which proposed value shifts in the ways of working (Beck & al. 2001):

- Individuals and interactions over processes and tools.
- Working software over comprehensive documentation.
- Customer collaboration over contract negotiation.
- Responding to change over following a plan.

Gerrits & al. (2017, 17) argue that “any description of Agile is not Agile”. Agile is not one specific way of operating or a rigid set of instructions to follow. In any situation it can work differently, therefore it needs to be viewed in the context of the company and the goals it wants to achieve. (Gerrits & al. 2017, 17.)

Agile has transformed the way in which technology teams operate and deliver results. Smart businesses recognize that Agile principles bring value beyond technology teams. It can enable flexible and adaptive operations within organizations. In the fast-changing business environment, only those who can adapt quickly will result in success. (Perkin 2020, 33; Rigby, Berez & Elk 2020a, 39; Gerrits, Groot & Venneman 2017, 15.)

KONE has recognized the need for new work models that would respond to quickly changing environments and business needs. KONE’s new Lean strategy for the next four years concentrates on continuous improvement by leveraging more agile skills and ways of working.

Agile teams are suited for creative innovation to improve services, business processes and technology. They change business through innovative solutions when “what to deliver” and “how to deliver” is unclear or not yet known. (Rigby & al. 2020a, 40.; 175.)

4.1.2 Agile team creation

Agile teams are small and cross-functional to ensure that all skills required to complete the tasks are included. An Agile team manages itself and is accountable for each task they are working on. (Rigby & al. 2020a, 40.)

Denning (2018, 29) presented The Law of the Small Team: complex problems divided into smaller bundles and worked on by a small, cross-functional autonomous team that work in short iterations in a state of flow, with quick feedback from end users or customers.

The Lean Site Agile team was formed in September 2020 immediately after the merger of business transformation and IT projects. Lean Site team was comprised of business stakeholders (KONE Way and Global Installation team members), Global Process Owners, service designers and IT team members. The team was assembled based on the important know-how team members possess that would enable progress with the Lean Site project scope of work.

Perkin (2020, 182) suggested that Agile teams should consist of three areas of expertise: business, creative and technology. A team needs people who link the activities back to business needs; it also needs people who are creative problem-solvers as well as people that thrive in technology. Lean Site team was comprised of these three categories.

As stated by Perkin (2020, 31) and Rigby & al. (2020a, 40), ideally Agile teams are co-located, and the members are allocated full-time. This theoretical approach turned out to be challenging to implement in real life. It could be argued that theoretical framework should offer more flexibility in terms of exploring the possibilities of Agile teams working virtually and not allocated full time.

In terms of Lean Site, team co-location was not possible. Some of the team members were located abroad, therefore it was needed to form the team in a virtual setting. Due to a global pandemic, even Finnish team members were most of the time not able to meet in the office and had to work and communicate online. Additionally, it was not possible to allocate the members to Lean Site project full time because most of the team members are subject matter experts who are involved in multiple projects. This brings increased complexity and new type of challenges. In most cases, full allocation is achievable in technology projects however the author would argue that, in business projects, it generally is challenging to find experts that can be allocated to only one project at a time. It requires allocation evaluation and discussion with Supervisors of the team members.

According to Brewer (2015, 21-22), challenges to virtual teams include gaining trust, since it requires more time to establish trust virtually compared to a face-to-face setting, as well as acknowledging communication patterns of other team members – people presuppose that others view situations the same way they do.

To create trust and get to know each other's way of working better, it was important to clearly state the vision of the project from the start as well as set up Agile events which would help to organize the work forward. This would allow not only tracking the team's progress but also provide a joint forum for openly discussing the common ways of working.

Agile working is all about teamwork and communication between team members. The team is self-organizing and accountable for the delivery progress. (Gerrits & al. 2017, 63.)

4.1.3 Setting up Agile ways of working

There are numerous Agile methods and frameworks, for example, Scrum, Kanban, ITIL, among others (Gerrits & al. 2017, 44). In many cases, organizations focus on putting the right framework in place instead of changing mindsets. Even though frameworks provide structure to the work of the team, it is important to not be fixed on adoption of a framework, but rather to think how to adapt it to the needs of the team and organization. (Handscomb, Jaenicke, Kaur, Vasquez-McCall & Zaidi 2018.)

Non-profit organization SD Learning Consortium launched research to find out what enables the successful implementation of Agile. They learnt that in every successful case, each company started from some general principles and eventually set up Agile practices to respond to the needs and culture of the specific company and team. There is no "one size fits all". (Denning 2018, 33.)

For most of the team members, working according to Agile principles was a completely new way of working. IT team members and service Design Experts had previous positive experiences working with Scrum in the past, therefore it was decided to set up the Lean Site Agile team's ways of working according to Scrum methodology.

Scrum is an incremental product development framework in which complex problems can be tackled while delivering solutions of the highest possible value (Scrum.org organization, 2020a). It is often used in software development projects but is also applicable to other types of development projects (Carroll 2012, 66).

A Scrum team has no hierarchies; it is a cohesive group of professionals who are working towards the objectives (Scrum.org organization 2020a). The Scrum team consists of following roles: development team, Product Owner and Scrum master. The Product Owner (PO) is responsible for setting the vision of the end-goal and delivering value to customer and business. The PO usually comes from business and works together with the Agile team and other stakeholders (Perkin 2020, 33; Rigby & al. 2020a, 41.) The PO's role in Agile is truly important since Agile means continuous iteration and adjustment but also requires a strong vision and direction (Perkin 2020, 111). The Head of Global Installation took on the role of PO in the Lean Site project.

The Scrum master is an Agile process facilitator which makes sure that the team does not get distracted from the sprint goal (Perkin 2020, 33; Rigby & al. 2020a, 41). The Business Transformation Manager took on the role of Scrum master in the Lean Site project.

Both Product Owner and Scrum Master are fundamental roles in Agile processes, however neither dictates the team– the team members agree together on how to solve the prioritized challenges (Perkin 2020, 33).

The development team is self-organized and contains all the necessary expertise required to develop the product (Carroll 2012, 70-71). The Lean Site Scrum core project team was comprised of following roles: Global Process Owners, Service Design Senior Expert, Service Design Senior Specialist, Quality and Area Support Manager, IT Project Manager, Solution Design Owner, Installation Process Consistency Manager and Change Communications Manager. In October, the team was joined by an external Agile coach to observe the team's ways of working and provide support in the Agile journey. The Agile coach trains teams on Agile methodology and guides team through the implementation process when, often, teams and management question the value of Agile (White 2018). It was especially important to get the support of an Agile coach in the implementation phase when the team is setting up the common ways of working and Agile methodology needs to be applied to the project's needs and environment.

An Agile team works closely with customers, both external and internal. Innovation is co-created with people who are closest to the customers. Every piece of work that the team is working on should meet customer needs (Rigby & al. 2020a, 40-41.) When confronted with a big and difficult issue, the team splits it into modules and develops solutions through feedback gathering (Rigby & al. 2020a, 40).

From the start of the project, along with forming the core project team, it was important to deeply incorporate co-creation and frontline field expert feedback in ways of working,

therefore frontline reference groups were formed in two of KONE's country units. Co-creation is described in more detail in subchapter 4.2. For the Lean Site project, the customers in the scope of work are internal customers – field experts. Their performance is vital to improve external customer experiences and satisfaction.

4.1.4 Setting up Scrum events

In a Scrum process, sprints are the development time boxes and most often they take between one week and one month. Each sprint is used to achieve some increment of work, such as a sprint goal. (Carroll 2012, 74.) Short sprints of work motivate Agile teams to consider how they can rapidly create something worth testing (Rigby & al. 2020a, 41).

Executing work in sprints can drive organizational learning and foster adaptability by promoting continuous improvement that, in turn, leads to improved ways of achieving objectives (Perkin 2020, 227). The team jointly agreed to work in two-week development sprints. All the upcoming work tasks were organized in a Lean Site backlog.

To prioritize the work of an Agile team, backlogs are used – a list of requirements prioritized by business value that will be developed in order of importance (Carroll 2012, 81). In the Agile implementation stage, it was decided not to use any backlog software and backlog items were logged and tracked using Excel. In January 2021, the team started to use the DevOps tool for backlog management.

The PO prioritizes the backlog according to value to internal or external customers. The backlog is prioritized before each sprint, which means that priorities or requirements may change, therefore sprint working supports adaptation and flexibility in teams' ways of working. After the PO has prioritized the backlog, the team breaks the prioritized items into tasks and decides how much they can accomplish in the next sprint (Perkin 2020, 32-33.)

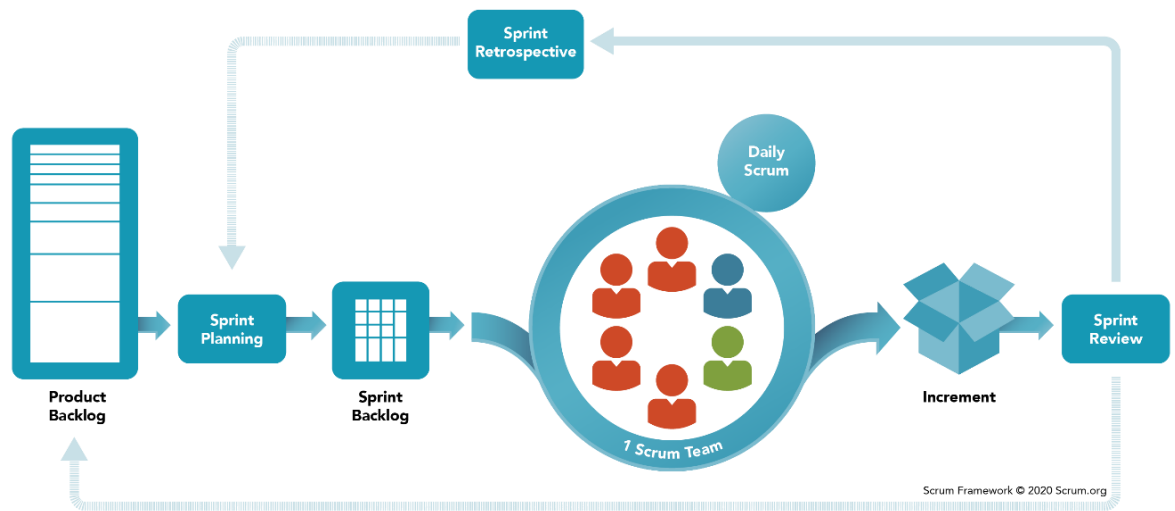


Figure 10. Scrum process (Scrum.org organization 2020b)

In total, Scrum has four meetings or ceremonies within a sprint – sprint planning, daily Scrum, sprint review and sprint retrospective. As shown in Figure 10, the sprint process starts with sprint planning where prioritized items from the product backlog are brought to the sprint backlog. In a sprint planning meeting, the prioritized items are jointly reviewed and agreed to be added to the next sprint (Perkin 2020, 32). The PO sets the sprint goal and the team confirms how much they are able to achieve during the sprint (Carroll 2012, 74). Lean site sprint planning usually takes place on the first Monday of a new two-week sprint.

A common misconception about Agile ways of working is that it requires no planning. The Agile manifesto declares “responding to change over following a plan”. However, it does not mean no planning at all. Agile methodology requires creating adaptive plans. Agile teams view plans as hypotheses to be tested and gradually adjusted. (Rigby & al. 2020a, 111-112.)

Team members meet in daily (or lower frequency according to the needs of the team) meetings called Scrums or standups to review the progress and tackle roadblocks (Figure 10). The team shares what has been done, what will be done next and if there are any issues they see on the way. The meeting is intended for the team itself, not for others to control the progress. (Denning, 2018, 34; Rigby & al. 2020a, 42.)

Scrums in Lean site setup were renamed to “huddles”, and Lean Site huddles take place twice a week – on Tuesday and Thursday mornings.

At the end of the sprint, progress is reviewed in a sprint review meeting (Figure 10) to go through the achieved work; it is attended by the team and stakeholders (Perkin 2020, 32).

The Lean Site sprint review meeting is open to a wider stakeholder group to present the accomplished sprint tasks. It provides visibility to others on the progress of the project. Additionally, the team receives external feedback at the end of each sprint. If there is anything to demo to end users, the team can set up a demo within the sprint review to receive valuable feedback.

At the end of the sprint, it is also important to look back at how the sprint proceeded and what knowledge has been acquired that could help to improve the next sprint ways of working. Therefore, the team attends a sprint retrospective meeting (Figure 10) which is usually scheduled soon after the sprint review meeting. Retrospectives promote a continuous improvement mindset and allow team members to have an influence on how the team is executing and improving (Perkin 2020, 32-33).

During the sprint retrospective meeting, the team is reflecting on what went well in the previous sprint and what to commit to improve in the next sprint (Alfonso 2021).

Three questions are asked in each Lean Site retrospective meeting and the team is asked to reflect on the last sprint:

1. What went well?
2. What could be improved?
3. What will we do to make things work better?

Continuous improvement and willingness to improve is at the heart of Agile and feedback is integrated into Agile ways of working (Gerrits & al. 2017, 27).

Scrum goes through an experiential learning circle, representing knowledge emerging from planning something, executing it, reviewing the result and then adapting the process for the next iteration based on the learning (Carroll 2012, 68).

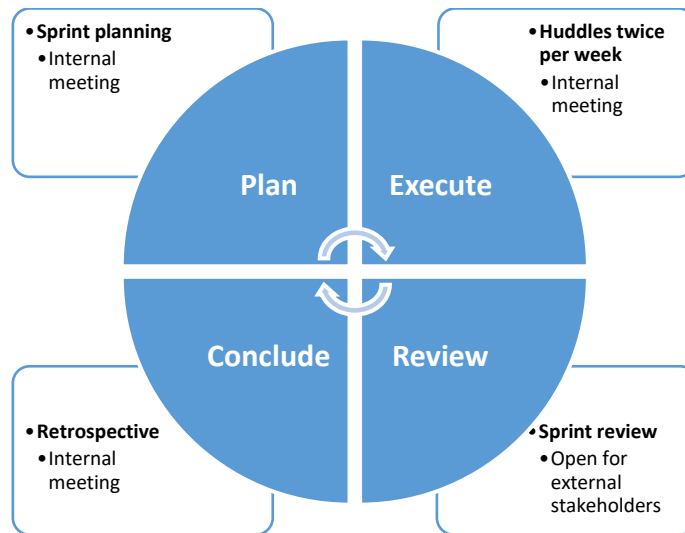


Figure 11. Lean Site Scrum learning cycle and corresponding Scrum events (adapted from Carroll 2012, 68)

The Lean Site plan-execute-review-conclude learning cycle and Scrum events for each phase are presented in Figure 11. In the Plan phase, the team is having an internal sprint planning meeting. The Execute stage is followed-up in internal huddle meetings twice per week. Sprint outcomes are reviewed in a sprint review meeting that is open for external stakeholders and the Conclude stage finalizes with internal sprint retrospectives, where the team reflects on common ways of working in the previous sprint and what can be improved for the next sprint. Then the learning cycle starts again with next sprint planning session.

Even though setting up the right ways of working is very important, time also needs to be allocated for the team to grasp the new ways of working and shift their mindset towards Agile. According to Meyer (2015, 8), “mastery for the agility shift is unlike mastery of a specific skill; it is a continuous process and demands a commitment to developing the competence, capacity, and confidence necessary for learning, adapting and innovating.”

Rigby & al. (2020a, 40) argue that Agile is a combination of both mindset and methods. There is an ongoing discussion between practitioners and researchers which one is more important. Nevertheless, Rigby & al. (2020a, 40) propose that this is an absurd argument: “Is your head or your heart more important to survival? You die unless you have both”

Agility shift primarily means a shift in mindset. As stated by Meyer (2015, 14), “Agile mindset is a shift from false comfort of a plan to achieving a state of readiness to find opportunity in the unexpected.”

Denning (2018, 33) argues that The Law of Small Teams is not about methodology or tools but rather about the mindset. Agile mindset means moving away from planning in a linear way with a set start, middle and end towards preparing yourself to thrive in a system where all elements are continuously developing (Meyer 2015, 9).

4.2 Implementation of Design Thinking elements

Design Thinking is a people-centric framework that combines business requirements and technological opportunities with human needs (Perkin 2020, 30). It can be used not only to design a new product or service but also to solve any problem that needs a creative solution (Linke 2017).

Design Thinking is a solution-focused framework that evaluates multiple possible solutions before deciding on the best possible way forward with the help of prototyping, testing and learning (Perkin 2020, 30). Applying Design Thinking to a project means basing it in research and testing, not in opinion or authority (Stickdorn, Lawrence, Hormess & Schneider 2018, 14).

Tim Brown, author of book *Change by Design* stated: "Design Thinking taps into capacities we all have but that are overlooked by more conventional problem-solving practices. It is not only human-centered; it is deeply human in and of itself. Design Thinking relies on our ability to be intuitive, to recognize patterns, to construct ideas that have emotional meaning as well as functionality, to express ourselves in media other than words or symbols. Nobody wants to run a business based on feeling, intuition, and inspiration, but an overreliance on the rational and the analytical can be just as dangerous. The integrated approach at the core of the design process suggests a "third way." (Rikke & Teo 2020.)

Design Thinking values empathy and exploration in order to pinpoint the right issues to be solved for the customer or end user. It also promotes the necessity to continuously learn and adapt the plan forward. (Perkin 2020, 30.)

The Design Thinking method belongs at every level of a business. It is not only for designers but also for teams and leaders who seek more customer- or user-centric solutions to important business problems. (Rikke & Teo 2020.)

There are multiple Design Thinking models practiced by experts and researchers. Van Oosterom & al. (2010, 128) proposed four steps of Design Thinking framework - exploration, creation, reflection and implementation. One of the most used model is a five-stage model proposed by the Hasso-Plattner Institute of Design at Stanford that includes

empathising, defining the problem, ideating, prototyping and testing stages (Rikke & Teo 2021).

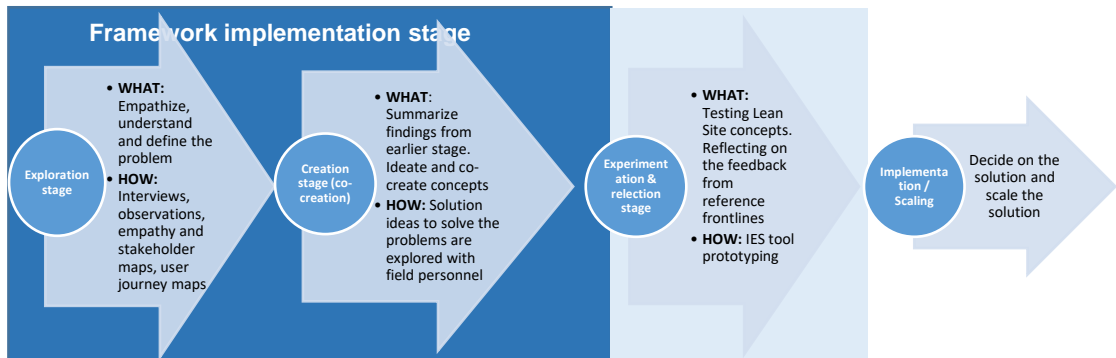


Figure 12. Design Thinking implementation stages in Lean Site project (adapted from Van Oosterom & al. 2010, 128; Rikke & Teo 2021)

For the Lean Site project purpose, the model was adapted from Van Oosterom & al. as well as five-stage model by Hasso-Plattner Institute. Lean Site four stage Design Thinking implementation model was defined together with service Design Experts. Stages include exploration, creation (or co-creation), experimentation and reflection as well as implementation / scaling (Figure 12). The two first stages were fully in the scope of framework implementation stage and therefore in the scope of the thesis. The third stage experimentation and reflection (iteration) was started only with IT solution Installation execution system prototype, not with other Lean Site concepts (light blue visualization in Figure 12). Other Lean Site concepts were not yet ready for experimentation during September – December 2020. The implementation or scaling stage was out of scope of framework implementation stage (Figure 12).

It is important to note that even though the visualization in Figure 12 seems linear, Design Thinking is an iterative and non-linear process. The results that each Design Thinking stage bring can be continuously used to review, question, and improve initial assumptions and solutions. The Design Thinking process constantly provide new insights and learnings that can be used to iteratively shape the final solution thereby meeting the needs of the end users. (Rikke & Teo 2020.) Additionally, the stages are not always sequential since they can take place in parallel and be repeated iteratively. However, stages provide a systematic model of Design Thinking that can be carried out in an innovative problem-solving project. (Rikke & Teo 2021.)

4.2.1 First stage of Design Thinking implementation: exploration

The first Design Thinking implementation stage is exploration. It starts by understanding the customer or end user in a non-judgemental and empathetic manner via observations and interviews in order to understand what the problem to be solved is. (Perkin 2020, 30; Van Oosterom & al. 2010, 128.) It is important to recognize the needs and problems of customer or end user before jumping to solutions (Stickdorn & al. 2018, 14).

The mistake is to try and empathize, connecting the stated problem only to own experiences. This falsely leads to the belief that you completely understand the situation. But the actual problem is always broader, more nuanced, or different than people originally assume. (Linke 2017.)

Linke (2017) states that in order to propose possible solutions, it is important to do creative brainstorming. Leaving behind one's own preconceptions is important yet challenging for many.

In the Lean Site project, it was important to start the Design Thinking process by learning and understanding the people in the field, their daily work and problems. Two reference groups were formed in two of the KONE's frontline units. The first step to start Design Thinking process was to arrange frontline interviews with a focus group. The focus group consisted of core field personnel roles (Supervisors, Installers, and Testers) and supporting roles. As stated by Linke (2017), it is useful to interview and better explore other stakeholders supporting the focus group.

Ten KONE field expert roles were interviewed – Supervisors, Installers, Project Managers, Project Admins, Field Trainers, Testers, Delivery Operations Managers, Delivery Operations Development Managers, Delivery Operations Directors and Regional Managers. In total over fifty individual interviews were conducted by December 2020. These interviews do not refer to research interviews of this thesis; the interviews explained in this chapter are based on Design Thinking framework and they were conducted in parallel by the Lean Site project team. Team members interviewed focus group to empathize with them and understand their experiences and problems. They also visited multiple installation sites in Helsinki for observation and further interviews.

The next step in the exploration stage was to visualize the findings of the interviews to simplify the complicated processes. As stated by Van Oosterom & al. (2010, 128), there are multiple methods available for visualization in Design Thinking.

Together with the service design team members it was decided to use stakeholder maps, empathy maps as well as user journey maps for visualizing the learnings.

Stakeholder map (AS-IS key topics)

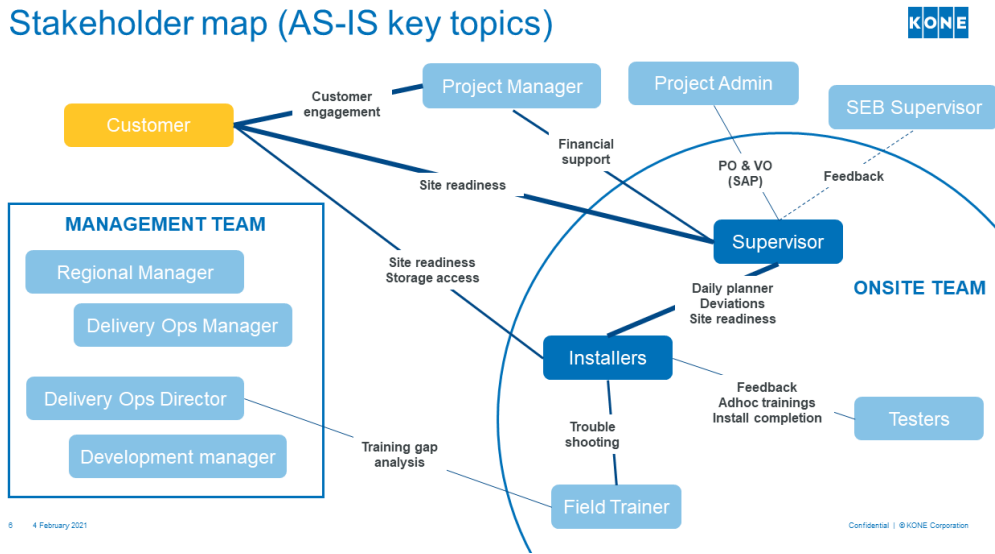


Figure 13. Lean Site stakeholder map (one of the reference group’s example)

A stakeholder map provides visualization of all the stakeholders of the project (Savina 2020). Lean Site stakeholder map (Figure 13) was created before starting the interviews and was a direct input to identify the focus group for the interviews.

An empathy map provides a deeper insight into the user group. It aims to provide deep understanding of what the user is thinking and feeling as well as what their problems and pain points are. (Rudd 2020.)

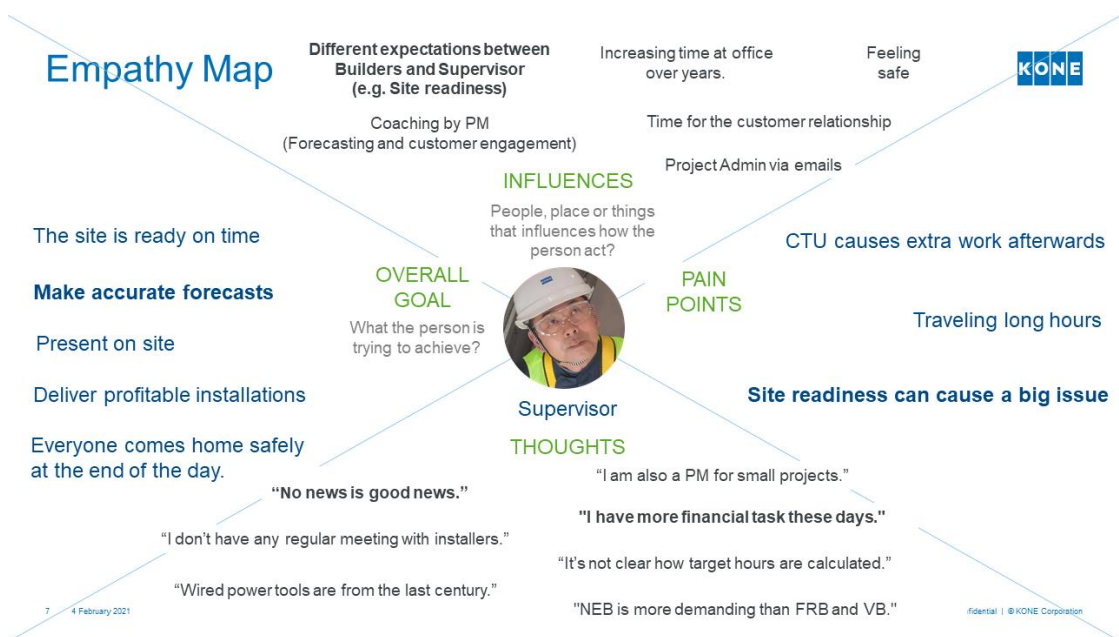


Figure 14. Supervisor empathy map (one of the reference group's example)

The Lean Site empathy map provided a chance to concisely visualize each role's (Supervisor's in the given example in Figure 14) influences (external positive or negative factors that influence their performance), overall goals, thoughts and insights as well as pain points.

Customer or user journey maps visualize focus role's experience and helps to pinpoint gaps in it (Stickdorn & al. 2018, 44). It is a visual story that includes touchpoints that link user experiences with the service. It presents a high-level summary of the elements affecting user experience and is created from user's viewpoint thereby pinpointing both problems and opportunities. (Van Oosterom & al. 2010, 158-159.) The journey map's aim is not to show the full complexity with all possible scenarios, instead it pinpoints typical parts of the journey or experience (Stickdorn & al. 2018, 46). Created user journey maps were complimented with elements from service blueprints. Service blueprints unite user's experience with organizational support processes (Pugh s.a).

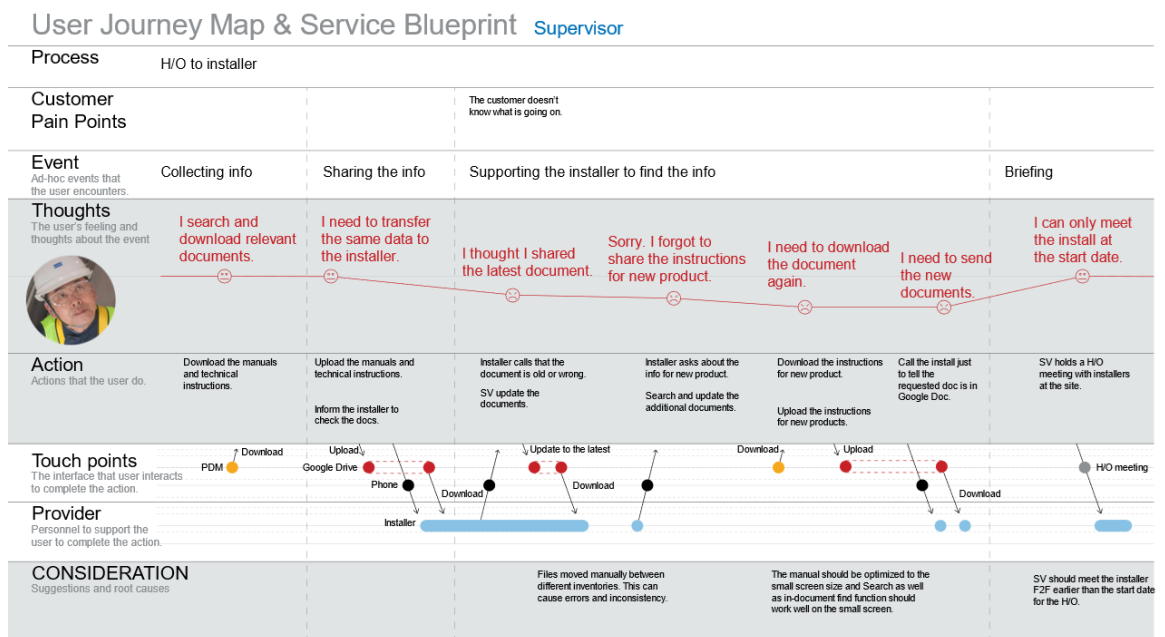


Figure 15. Partial capture of Supervisor user journey map (one of the reference group's example)

The partial journey map shown in Figure 15 gives an example of the created user journey maps for Supervisor's role including service blueprint elements as well. It visualizes the flow of the process, main pain points, event sequence, thoughts, actions, touch points, providers as well as important considerations.



Figure 16. Design Thinking exploration stage for Lean Site project (adapted from Van Oosterom & al. 2010, 128; Rikke & Teo 2021)

Figure 16 visualizes a summary of what was achieved in the exploration stage. During this stage information was gathered from reference group to gain understanding of the field personnel, their needs and problems. The team learnt about the focus group and problems were defined by learning through interviews and observations. Empathy and stakeholder maps as well as user journey maps were created to visualize the findings. The gathered information was analysed and synthesized in order to define the identified core problems.

4.2.2 Second stage of Design Thinking implementation: co-creation

During the second – creation or co-creation stage, potential ideas and concepts are being explored and tested (Van Oosterom & al. 2010, 130).

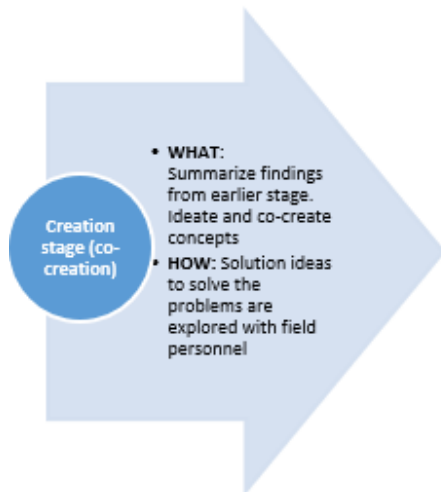


Figure 17. Design Thinking co-creation stage for Lean Site project (adapted from Van Oosterom & al. 2010, 128; Rikke & Teo 2021)

Figure 17 visualizes a summary of the co-creation stage for the Lean Site project. In this stage, it was decided to work closely together with reference frontlines to co-create the solution to the problems together. It was important to go through the exploration stage findings with the reference frontline management before starting experimentation stage to pinpoint and jointly agree on key problems requiring a solution that will be in the scope of the project. It was needed to summarize the findings, get on the same page and prepare for the experimentation stage. Next, the team worked together with reference frontlines to begin to define concepts to experiment with in the next stage.

Design Thinking fosters a hands-on and co-creation approach (Stickdorn & al. 2018, 21). Co-creation is at the heart of Design Thinking and it involves designers, users and any other identified stakeholders working together to pinpoint different viewpoints and investigate possible directions in order to improve experiences. Additionally, co-creation brings a diverse group of people together to promote shared ownership of the concepts and new ways of working that are getting innovated. (Van Oosterom & al. 2010, 198-199.)

4.2.3 Third stage of Design Thinking implementation: experimentation and reflection

As previously stated in subchapter 4.2, third stage experimentation and reflection or iteration was started with only one of the Lean Site project concepts that was ready for experimentation - IT solution IES prototype.

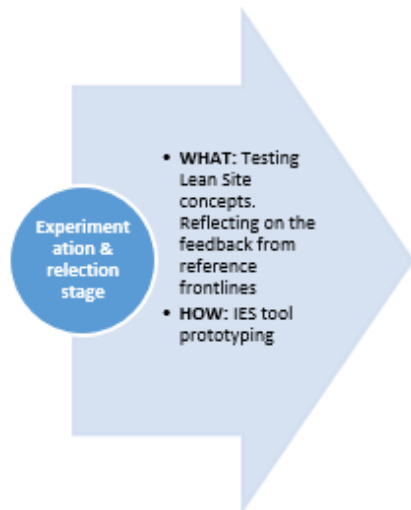


Figure 18. Design Thinking experimentation and reflection stage for Lean Site project (adapted from Van Oosterom & al. 2010, 128; Rikke & Teo 2021)

Figure 18 visualizes the start of the experimentation and reflection stage with the first Lean Site concept – IES MVP prototype. Other concepts still needed shaping and definition in the co-creation stage, however an IT solution prototype was created and ready to be brought to reference frontlines for early user feedback according to Lean Startup framework principles. A detailed description on the Lean Startup implementation and experimentation according to the framework can be found in the next chapter 4.3.

As stated by Ries (2017, 40), outdated companies implement huge projects that cost a lot and take a lot of time to develop since “they have always done it this way” while state-of-the-art companies implement smart experiments to learn quickly without spending substantial amount of money.

The Design Thinking process third stage suggests reflecting on the experimentation and testing results, iterating and deciding on the possible solutions which are then later implemented and scaled in stage five – implementation / scaling (Van Oosterom & al. 2010, 132). Testing is an iterative process and the results from this stage are often used to reevaluate the approach and might require going back to co-creation or exploration stages if needed. (Rikke & Teo 2021.)

The next step after experimenting and iterating with the IES MVP prototype will be to develop the IT solution according to the feedback received in the prototyping phase. The final Design Thinking process stage - implementation / scaling was out of scope of the framework implementation phase.

4.3 Implementation of Lean Startup framework elements

The Lean concept is sometimes confused between Lean production system (also known as Lean Six Sigma) and Lean product development (Lean Startup framework). Lean production system provides tools for boosting the quality and efficiency of operations and minimizing waste. (Rigby & al. 2020a, 159.) The Lean Startup framework in turn promotes innovation and repeated experiments to gain validated learning about the vision of the end-goal (Ries 2011, 8-9).

Despite the naming of the methodology containing the word “startup”, Blank (2013) argues that in the long term some of the most rewarding advantages will be earned by large enterprises that adopt elements of Lean Startup in their operations.

It is important to pinpoint the potential mistakes as early as possible and learn from them before implementing new concepts and solutions. Building prototypes and validating them with the users provides valuable feedback. It is important to keep subsequently refining the prototypes and retest them to find the optimal solution. (Van Oosterom & al. 2010, 130-132.)

Experimentation is at the core of Lean Startup methodology and occurs via learning or feedback loops (Euchner 2019, 36).

In the framework implementation stage Lean Startup framework was applied to the IES system development part of the project. Business and IT stakeholders had a vision of a new IT system that field personnel would need to digitalize and improve their work. Before proceeding with the actual development, it was decided to start by building an early prototype and bringing it to field experts as soon as possible for quick feedback in multiple iterations.

This approach was new for the IT team members as well as for the business stakeholders. Most often, IT developments used to be managed by gathering requirements from business upfront (usually global stakeholders, not field personnel), freezing the scope and starting the development with external vendors according to what was agreed. The downside of this approach has been that by the time the solution is developed, it does not get adopted by end users due to not matching their needs because they were never fully explored with the actual users themselves. As stated by Ries (2011, 75), the Build-Measure-Learn feedback loop is at the heart of Lean Startup framework.

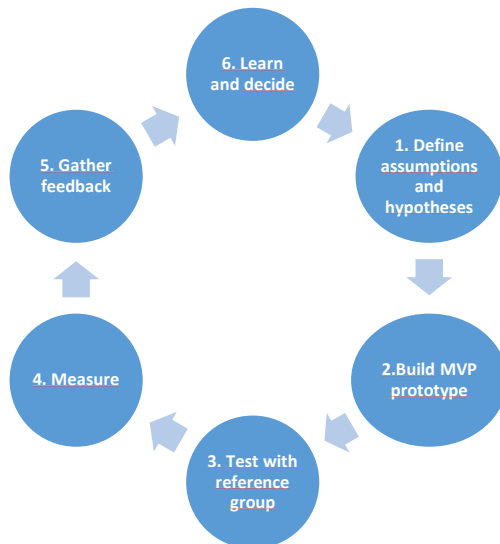


Figure 19. Lean Site project’s Build-Measure-Learn loop (adapted from Ries 2011, 75 and Euchner 2019)

The Lean Site’s learning loop is shown in Figure 19 with six phases which are described below. At the start of the Build-Measure-Learn loop it is important to understand what hypotheses need to be tested (Ries 2011, 76). Together with business stakeholders and IT professionals, multiple hypotheses were pinpointed that needed to be validated later with field experts before starting the actual software development (Figure 19, step 1).

The next step included building an experiment otherwise called the minimum viable product (MVP) that provides opportunity to go through the Build-Measure-Learn loop quickly and collect validated learning with the least effort (Ries 2011, 76). MVP is the first prototype that is useful for end users or customers, however it is not perfect since it may not have many features that the end product will have but it contains the best current understanding of the crucial components that need to be tested (Euchner 2019, 36).

It may feel embarrassing for the team who embraces Lean Startup thinking to ask feedback about imperfect product for the first time, but it is important to understand that MVP aims to generate a successful product with the least waste by learning quickly from fast experiments involving end users (Ries 2017, 96; 98).

The IT Solution Design owner together with the User experience (UX) specialist built an MVP IES wireframe prototype that visualized the main functionalities of the future tool that the team wanted to validate with field experts (Figure 19, step 2). Initially two prototypes were created – for fitter and Supervisor roles.

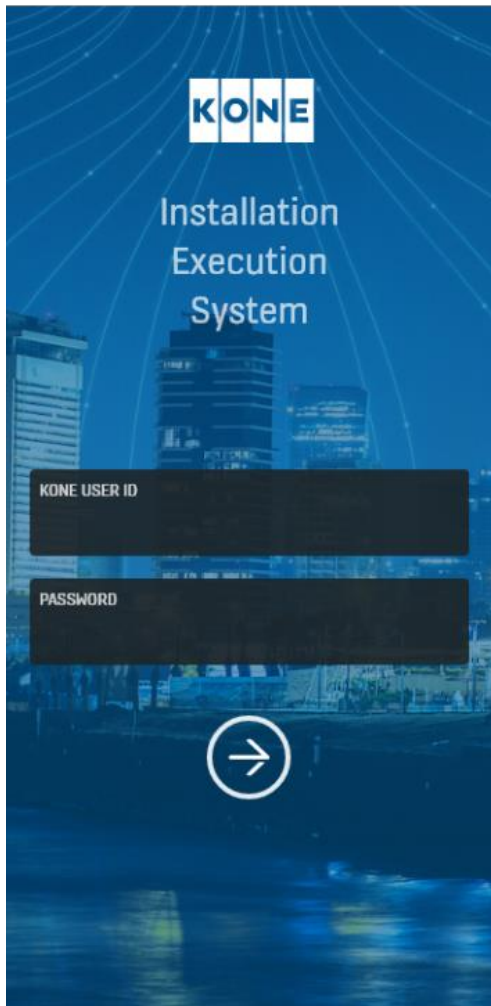


Figure 20. IES MVP wireframe prototype starting page

Wireframing is used to create prototypes that visualize the potential end-product. It utilizes nongraphical digital interfaces. Wireframes provide opportunity to facilitate discussion with stakeholder focus group. (Stickdorn & al. 2018, 236.) The IES MVP wireframe prototype starting page is shown in Figure 20.

The next step was to test initial assumptions and hypotheses with real users (Figure 19, step 3). Multiple demo sessions were organized with the field experts of two frontline reference groups to go through the process of how a user would move through the system via prototype as part of their working day. At the same time, we asked for feedback and suggestions on how the team could further improve the prototype to better serve the users' needs.

The aim of early contact with end users in the Lean Startup model was not to receive definitive answers on how a solution needs to look. Rather, it was to understand the end user better as well as gain an understanding of what they need on a fundamental level. (Ries 2011, 89.)

At the Measure stage (Figure 19, step 4) it was important to understand whether MVP is meeting the goal and whether hypotheses are true or false.

Closing the Build-Measure-Learn loop requires an answer to the most challenging question – whether to pivot the effort or persevere. If one of the hypotheses turns out to be false, it is important to adapt the plan to bring value. Each pivot gives a chance for adoption and further experimentation, and the loop repeats. (Ries 2011, 76-77; 125.)

It was crucial to gather the feedback and learning (Figure 19, step 5) before going into the development stage because experimentation allowed the team to pinpoint potential issues that would have later cost time and money. It is safe to assume that the team would have needed to re-develop the system to better meet the needs of the end users if development stage would have been started before getting feedback from the end users.

As for learning, the team was able to improve the functionality of the future tool because valuable feedback was received from the end users (Figure 19, step 6) on how to make it more user-friendly and matching to their needs. Additionally, during the prototype feedback sessions the team found out that in the initial design phase they had overseen the role of Testers in the field operations. As an outcome of the first MVP Build-Measure-Learn cycle it was confirmed that the Tester role and process needs to be better understood and a separate prototype for needs to be created for Testers and brought to the reference frontlines in the next learning cycle.

As stated by Ries (2017, 108), if an experiment is bringing in information that supports at least some assumptions, then the team can persevere and possibly fine-tune next version of MVP to continue the Build-Measure-Learn cycle. If negative responses continuously come from users or the learning denies some key assumptions, it is important to pivot and change the strategy (Ries 2017, 108). As stated by Euchner (2019), the starting prototype is most of the time very simple but later updates become more thorough and final as they evolve based on user feedback.

In the framework implementation stage, the team was able to complete two rounds of the Build-Learn-Measure cycle with the prototype. After first round of feedback, the improvements were made, and updated prototype was presented as part of round two. The feedback received was mostly positive, however in one of the reference frontlines it meant realizing that more change management will be needed in the rollout stage in terms of new process adoption along with an IT tool. Therefore, resistance to implementing new ways of working and a new solution based on the prototype was notably higher than in the other reference frontline.

Creation of an MVP provides an opportunity to quickly get through the Build-Measure-Learn feedback loop with a minimal amount of effort and investment. Its essential goal is to test basic business hypotheses. (Ries 2011, 93-94.)

Most entrepreneurs build the product and then check to see how customers react to it. I consider this to be exactly backward because it can lead to a lot of waste. First, it turns out that we're building something nobody wants, the whole exercise will be an avoidable expense of time and money. The lesson of the MVP is that any additional work beyond what was required to start learning is waste, no matter how important it might have seemed at the time. (Ries 2011, 96.)

Establishing an MVP is not a one-time action, it is a continuous process to keep learning (Ries 2017, 106). Once there is confidence in the design and how it meets the needs of users, the actual development stage of the IT system can begin.

4.4 How the chosen frameworks complement each other

Back in 2016, Gartner proposed combining Design Thinking, Lean Startup and Agile frameworks to use the best of the three approaches in order to deliver the best results across the innovation lifecycle (Blosch, Brand & Osmond 2016).

Combine Design Thinking, Lean Startup and Agile

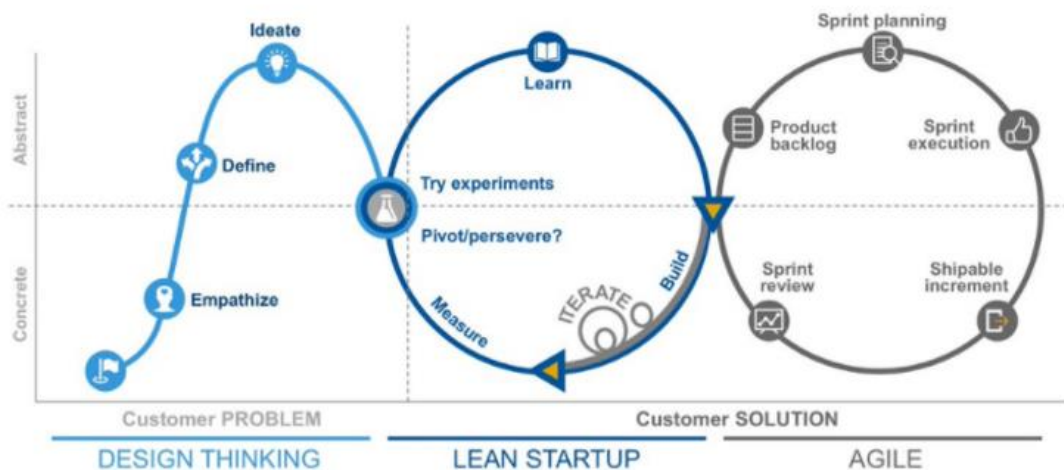


Figure 21. Gartner model for combining Design Thinking, Lean Startup and Agile (Vaghefi 4 September 2019a)

Figure 21 provides a simple way to visualize how to combine the three frameworks. However, other researchers and practitioners are pointing out that the linear structure of the visualization may lead to wrong assumptions of a Waterfall process.

Appelo (2020) suggests that the innovation process is not linear but rather dynamic. De Jonge (2020) shares the same view and argues that Gartner’s model in Figure 21 being divided into multiple phases may give practitioners the wrong idea of a sequence of various siloed linear sub-processes. The danger lies in thinking that the first part (Design Thinking) is done by “thinkers” and the rest is done by “doers” – that is the different process phases are implemented by various people meeting only at the touchpoints and doing handovers. This may lead into unwanted siloes. Gartner’s model also suggests that the problem-solving stage finishes before execution, which directly points to a typical Waterfall approach. (De Jonge 2020.)

Additionally, Yoshida (9 November 2018a) argues that the end state of Design Thinking should not be prototyping (Figure 21). The prototyping findings can be integrated back into the Agile development routine. Yoshida proposes proceeding with Agile Scrum after the solution ideation stage and that it should be an ongoing process. (Yoshida 9 November 2018a.)

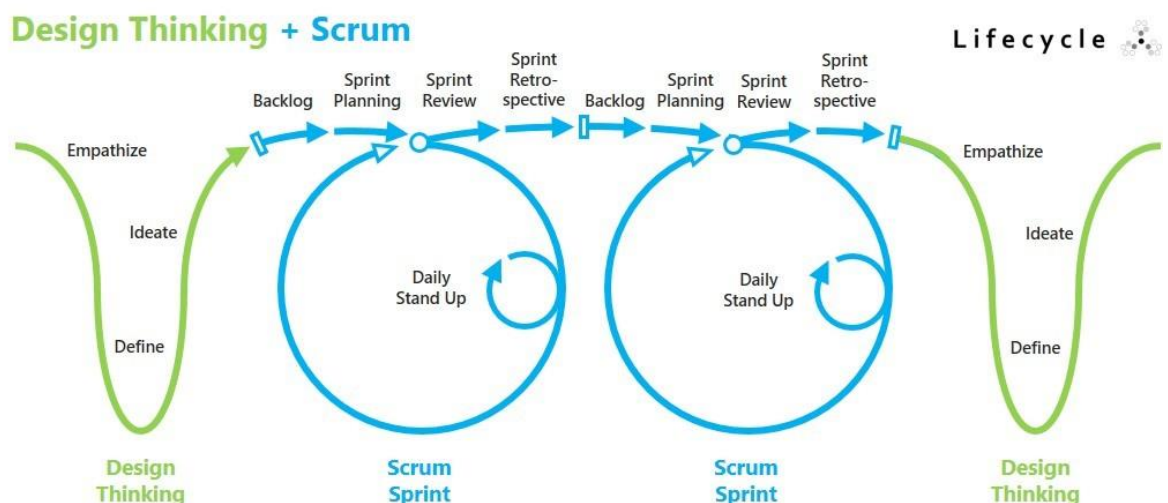


Figure 22. Design Thinking and Scrum approaches combined (Yoshida 9 November 2018b)

Design Thinking can support teams by identifying the right thing to build. Finding time in between sprints to ask: “Are we really building the right thing?” can bring clear benefits (Figure 22). (Yoshida 9 November 2018a.)

As stated by Yoshida (9 November 2018a), “Design Thinking and Agile Scrum overlap in an extraordinarily complementary way – they both are Agile approaches sharing the same “relentless pursuit of customer value creation” spirit”.

In addition, Design Thinking and Lean Startup are also complimentary methods and two sides of an innovation process. Lean Startup places less focus on design and more on creating hypotheses and validating experiments. Design Thinking uncovers the user needs and problems and provides openness to discover various ideas. These Design Thinking elements can be direct inputs for experimentation and testing phase in cycles provided by Lean Startup (Build-Measure-Learn) to match the user's needs in the quickest possible way. (Tamboryn 2021.)

Both methodologies suggest creating a prototype (in Design Thinking) or an MVP (in Lean Startup) and lead it through a test-and-learn cycle. Design Thinking and Lean Startup requires a switch in thinking from "getting it right the first time" to get the idea out to the customer or user in the form of prototype and test it quickly and affordably. (Stickdorn & al. 2018, 14.) However, Design Thinking starts with understanding the customer or user and their problems before creating a prototype. Design Thinking should therefore complement a Lean Startup approach. (Tamboryn 2021.)

Additionally, Ries (2017, 123), the father of Lean Startup methodology, stated that the Lean Startup methodology stands on the shoulders of the following methodologies: Lean manufacturing, Six Sigma, Agile software development, Design Thinking, and others. The framework has evolved comparatively recently based on the above-mentioned methodology principles and Rigby & al. (2020a, 159) suggested that Lean Startup is a method of Agile innovation. Similar to Agile, Lean Startup is concerned about the mindset as much as the process (Perkin 2020, 34).

Agile, Lean Startup and Design Thinking frameworks encourage failing fast if it brings validated learnings followed by an adapted plan (Blank 2013; Stickdorn & al. 2018, 26).

Appelo (2020) proposed that Design Thinking, Lean Startup and Agile development all focus on the same points: iterative discovery, delivery and improvement. They only look at them from different angles sometimes emphasizing design, sometimes validating hypotheses and sometimes developing the right thing. He insists that contradictory to Gartner's model in Figure 21 and Yoshida's model in Figure 22 "continuous discovery, delivery and improvement is one circle". (Appelo 2020.)

It is true that a lot of design is needed in the early stages of a new product. But design activities never end! You still need to empathize with clients late in a product's lifetime. Design only ends when the product stops evolving and improving. (Appelo 2020.)

Based on findings from various theoretical framework sources, the author concludes that Agile, Lean Startup and Design Thinking frameworks complement each other and promote experimentation over extensive planning, iterative development, involving the user in a continuous feedback process over assumptions, and applying feedback to continuously learn and improve the end result and the value it offers.

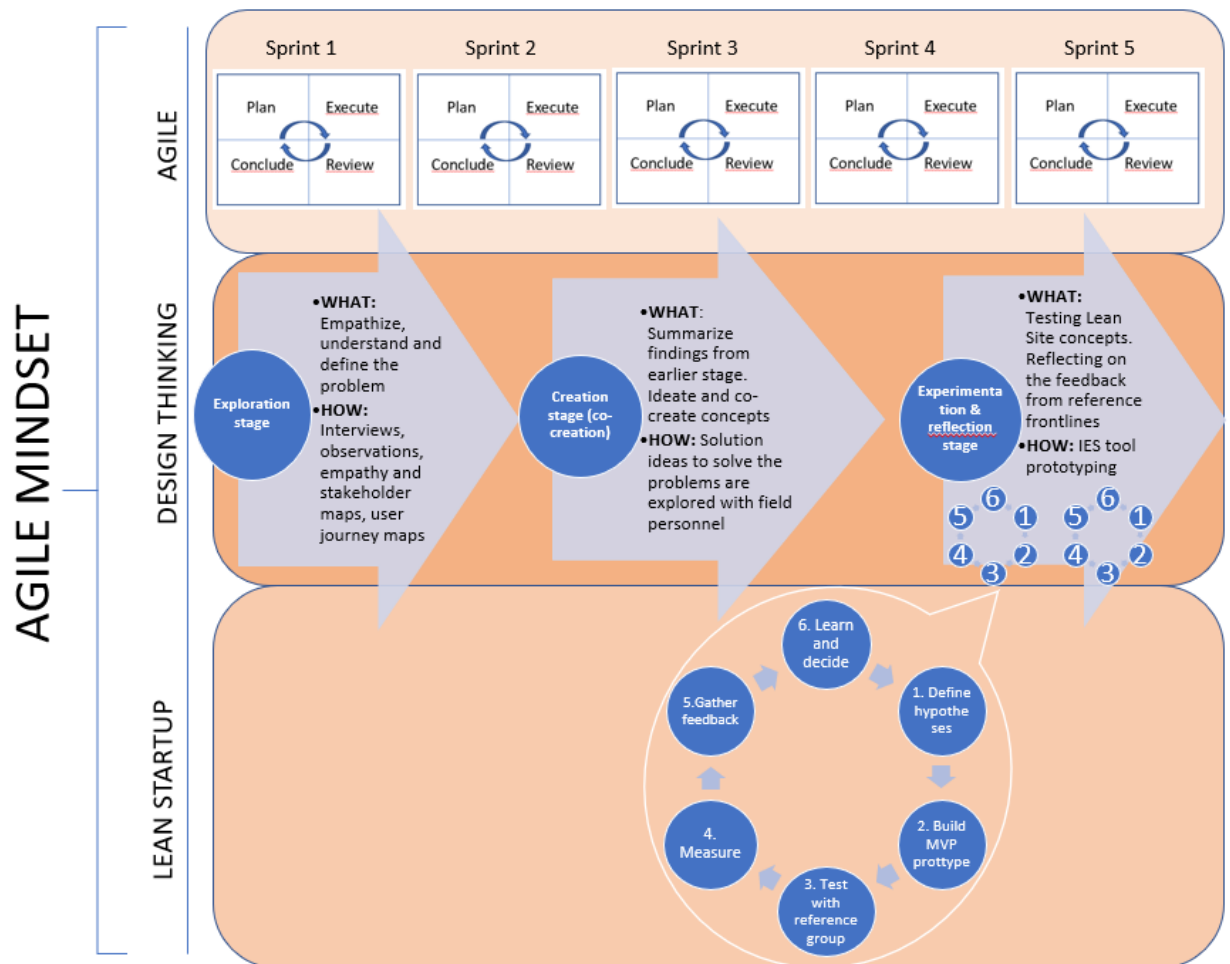


Figure 23. Lean Site framework implementation phase model (adapted from Carroll 2012, 68; Van Oosterom & al. 2010, 128; Rikke & Teo 2021; Ries 2011, 75; Euchner 2019)

Figure 23 presents the Lean Site framework implementation phase model that is based on Agile working in sprints (five sprints achieved during the framework implementation phase), the Design Thinking stages of exploration, co-creation, experimentation and reflection as well as the Lean Startup Build-Measure-Learn cycle which was part of the experimentation stage. In total, there were two iterations of the IES prototype achieved by December 2020 and hence, there are two 6-stage circles (e.g. two rounds of Build-Measure-Learn cycle) within the experimentation stage. After first round of feedback, the improvements were made, and updated prototype was presented as part of round two.

The uniting force for all the frameworks is the Agile mindset that is required to succeed with the new ways of working and promote continuous learning within the team. The framework implementation phase model can be found in Appendix 6.

At this stage, it is worth recapping that, as previously mentioned in subchapter 4.2, Design Thinking should not be viewed as an inflexible method. As stated by Rikke & Teo (2021), the stages in the model guide actions to be carried out, however, they can be switched or executed in parallel as well as repeated several times in order to find the best possible solutions.

According to Ries (2011, 178), “it is what makes the companies resilient in the face of mistakes: if we take a wrong turn, we have the tools we need to realize it and the agility to find another path.”

As Mark Zuckerberg says in his famous manifesto: “Try to build the best services over the long term by quickly releasing and learning from smaller iterations rather than by trying to get everything right all at once... We have the words “done is better than perfect” painted on our walls to remind ourselves to always keep shipping.” (Ries 2017, 96.)

Perkin (2020, 29) argues that there are many methodologies but no perfect roadmap applicable for every organization and therefore no single framework that always fits best. As a result, it is important for an organization to find what works best for its unique environment and development goals. Perkin suggests that finding the best approach could draw on foundational principles from Agile, Lean Startup and Design Thinking. (Perkin 2020, 29.) As stated by Perkin (2020, 36), these frameworks “all offer related practices that enable far greater flexibility and adaptiveness for a complex, changing, non-linear world and the value inherent in the mindset, culture and approaches that they all speak to applies way beyond product development, design and technology teams”.

4.5 Role of leadership in enabling the new ways of working

Traditional change in organizations is top-down, driven by strategy. An Agile change often starts from the team level, which is bottom-up. (Gerrits & al. 2017, 68.) Gerrits & al. (2017, 68) argue that an Agile transformation will most likely succeed if both of these elements are present – direction and vision coming from the leadership and the cultural change starting at the team level.

As stated by Handscomb & al. (2018), “successful transformations require not only bottom-up change in the way of working at the team level but also a change in the way the

executive level operates, as this has a disproportionate influence on the overall culture of the organization.” Not paying enough attention to the cultural and change management impact of Agile ways of working is one of the worst mistakes that companies can make while embarking on an Agile journey (Handscomb & al. 2018).

According to the research of Rigby, Berez & Elk (2020b, 73), Agile teams mention leadership and culture as the biggest obstacles for Agile implementation and scaling. However, the majority of leaders are not consciously resisting Agile. Most often they simply have not comprehended what Agile means in terms of their own role. (Rigby & al. 2020b, 73.)

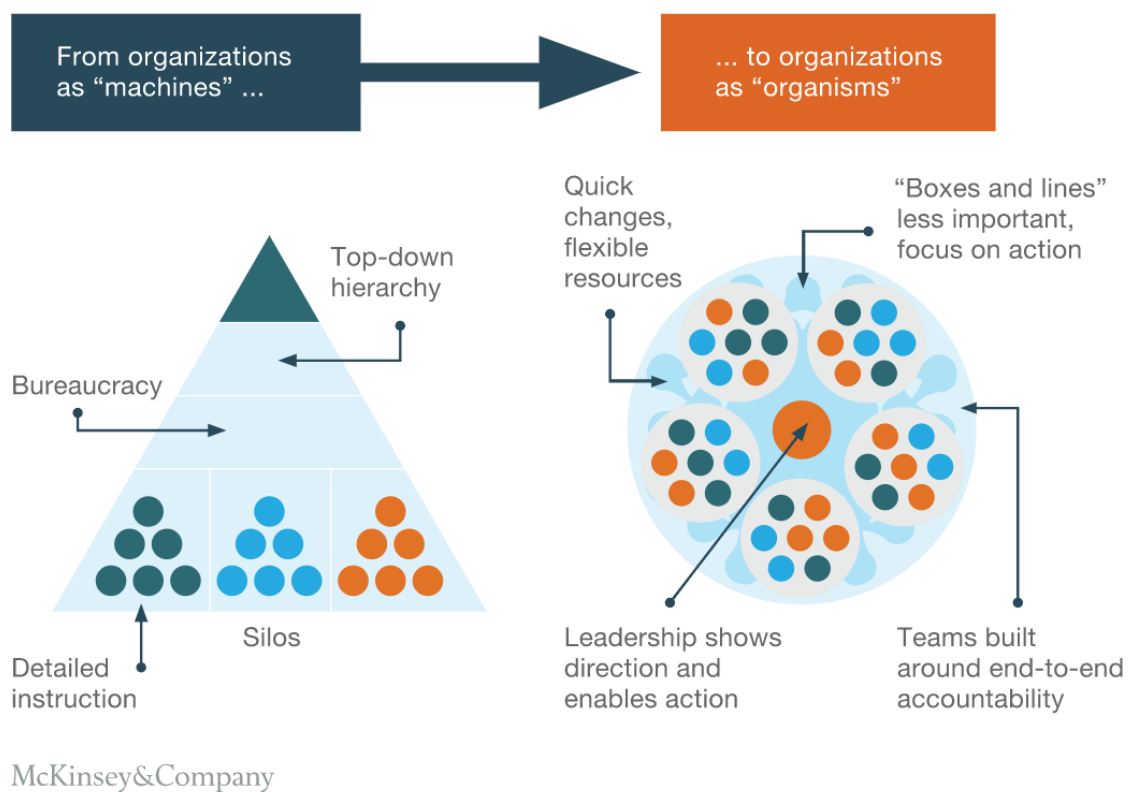


Figure 24. From “organizations as machines” towards organizations as “organisms” by McKinsey & Company (Aghina & al. 2018)

As presented in Figure 24, it is important to realize that Agile ways of working require moving away from top-down hierarchy and bureaucracy with detailed instruction and silos. It requires viewing a company as a living organism with focus on action, quick changes and flexibility. Leadership is required to show direction and enable action while at the same time giving teams the accountability for the work that they do.

For many business teams in KONE Agile ways of working as well as Design Thinking and Lean Startup principles are new concepts. Lately there have been more and more teams

trying the new ways of working and exploring options to become nimbler and more competitive. One of the success factors for implementing new ways of working for the Lean Site team was leadership support from the very beginning. The Product Owner and Transformation Manager were supporting the exploration of new ways of working and the implementation of the new frameworks. They encouraged the team to learn as they go and continuously improve throughout the process. The framework implementation phase would have been so much harder if there would not have been support and a positive push from leadership.

To enable Agile ways of working, not only the team but also leaders have to learn and put into use a new Agile mindset (Denning 2018, 11; Meyer 2015, 5). Leaders can only change the organizational culture by starting with themselves. Rigby & al. (2020a, 110) argue that leaders who are not pledging to learn and practice Agile ways of working should not even think of starting an Agile project.

For the Lean Site Product Owner Agile ways of working as well as applying Design Thinking and Lean Startup framework elements were rather new concepts but there was a desire to learn to lead in an Agile environment. At its core the demands of the Product Owner's role are significantly different than leading by traditional steering and therefore required significant mindset changes.

The summary of five main Agile mindset principles based in research helps leaders shift their thinking about the value they add to Agile teams:

1. Agile hierarchy is based on competence, not authority – leaders should set the vision, direction and priorities but should never tell the team what to do or how. The team's mission is to experiment, test and reflect. Leaders must acknowledge that ideas can come from anywhere, including customers. (Denning 2018, 19-20; Rigby & al., 2020a, 97.)
2. The leader's role changes from a know-it-all controller to an enabler of self-organizing teams – this means enabling a space where the team has the autonomy to show their talents and innovativeness to come up with a solution that will respond to end user needs. Additionally, a leader's task is to make sure that the right resources are in place and obstacles are moved out of the team's way. (Denning, 2018, 99; Rigby & al. 2020a, 110.)
3. Trust can be acquired with time – productive collaboration fosters trust and communication within the team, therefore a leader's task is to enable it and remove impediments (Rigby & al. 2020a, 99).
4. Customers or end users decide what they want and need – an Agile team knows that the end user is the best judge of what they want. Therefore, an Agile team embarks on a journey to validate the initial assumptions and adapt the plan according to the feedback received. (Rigby & al. 2020a, 101.)
5. From requiring a detailed plan upfront to continuous testing and learning - in the current business environment where the future is unpredictable, a detailed plan can turn into an obstacle. Therefore, not only the teams' but also leadership's mindset has to switch towards innovation and continuous experimentation, testing

and learning. To make this work, freedom, trust and accountability to enable autonomous teams are crucial. (Dewar, Ebrahim & Lurie 2018.) While bureaucratic cultures fear changes to operating models due to testing culture, Agile teams want to continuously test everything to ensure that the company will continuously grow and adapt. Agile leadership must get comfortable with delegating decisions that can be tested. (Rigby & al. 2020a, 103-104.)

Denning (2018, 107) shares an example of Microsoft model where “the key is to have the alignment at the top and autonomy at the bottom”. Team efforts must be well in synch with the business goals since if there is no control at all the Agile effort may quickly turn into chaos. Therefore, at Microsoft the goal is to achieve balance and leadership is held accountable for the guidelines – clarifying the vision, roles and resources. (Denning 2018, 107.)

When the framework implementation was started, the emphasis was on ensuring the needed roles were in place and communicating the vision and to-be state alongside the methodology. Purpose and vision should guide the team’s co-working. It has been important to not only blindly adopt new frameworks but to stop and think: “What does it mean for us?” Ries (2017, 115) suggests that leaders ask the team to continuously reflect on following two questions: “What did you learn? How do you know?”

Agile ways of working require a different approach from leadership. Embracing experimentation and the possibility for failure is important. It was challenging to move from a culture of expertise to a culture of experimentation with trial and error. Instead of requesting a decision, it was encouraged to go ahead with the experiment and test it on the site. It was also crucial for the leadership to put their own skin in the game as well as role model the new behaviors and ways of working. Therefore, it was important that the Product Owner was working as part of the team and joining sprint meetings to not only review progress but also to listen to concerns, failures, and successes.

Also, Stickdorn & al. (2018, 455-456) argue that it is much easier to introduce and make Design Thinking a success if the company has a supportive culture that promotes cross-silo thinking and doing and iterative work.

As a leader in service design context, you should understand and value qualitative research and prototyping. You should appreciate the concept of a “shitty first draft,” the importance of early stakeholder involvement, and the powerful process of early user feedback and iterative improvement. Employees at all hierarchical levels often fear change because it happens too frequently, is initiated “top-down,” and often has a negative impact on their own experience. Co-creation can lower this fear if you

involve your employees in this process, embrace a culture of failure, and are open to feedback and change yourself. (Stickdorn & al. 2018, 467-469.)

Ries (2017, 91; 115) suggests the importance of realization that learning as part of the process is key for not only the teams but also the leaders and that it is okay to not always get it right. Often failures happen not because of faults in the execution but rather due to assuming something that does not match the real situation. Innovative companies like Amazon leverage failing as an opportunity to become better. (Ries 2017, 91; 115.)

Failure culture is something that needs to be continuously nurtured and encouraged. The team needs to feel safe in order to raise their ideas, questions, comments and concerns. People need to feel comfortable to be challenged, to discuss various viewpoints and agree together on a way forward.

Amazon's Jeff Bezos said at the time: "I've made billions of dollars of failures at Amazon.com. Literally. None of these things are fun, but they also don't matter. What matters is that companies that don't continue to experiment or embrace failure eventually get in the position where the only thing they can do is make a Hail Mary bet at the end of their corporate existence." (Ries 2017, 33.)

Rigby & al. (2020b, 71) argue that Agile demands humility from leaders. Humble leaders acknowledge that rapid feedback loops provide learning and that smart ideas can emerge from anyone, not just those with authority. Additionally, they see their own mission as encouraging their teams to learn and take responsibility rather than telling them what to do and how. (Rigby & al. 2020b, 71.) Perkin (2020, 251-252) states that emotional intelligence and empathy are also essential to realize the support that team members need to succeed with new ways of working and being able to offer that support where required.

Agile leadership requires modelling, encouraging and coaching others to explore new concepts and perspectives. Leaders play a crucial role in enabling and cocreating a safe territory for the team to play with new solutions and ways of working. (Meyer 2015, 56.)

Perkin (2020, 188) shared the results of research carried out by MIT's Human Dynamics Laboratory which showed that above the individual talent and skills, it is team's communication and way of working together that directly affects the team's success.

To make sure that a team is expressing what they really mean, debating and raising their concerns, executives need to enable the context of psychological safety within the team. Healthy discussions should not be shut down but rather encouraged, since they can provide fruitful outcomes and new ideas. (Perkin 2020, 187.)

It is important to create an environment where it is safe for people to take risks and experiment without being afraid of punishment in case of a failure. It is a crucial factor to enable innovation and learning. (Meyer 2015, 22.) To make that work, leaders should continuously reflect on whether they are enabling learning, building trust and creating a safe environment for their teams (Rigby & al. 2020a, 109).

Every culture draws in different types of people. An old-fashioned culture will get in the way of innovative people and teams. (Ries 2017, 122.) As stated by Ries (2017, 123), new cultures emerge from the “lived experience of seeing a new way succeed”, therefore, teams who are experiencing new ways of working can become the starting points of new organizational culture if they are properly encouraged and supported.

Additionally Ries, who has experience with multiple companies undergoing transformation based on Agile and Lean Startup principles, asserts that leaders who begin as team members working on early pilot projects and seeing the impact and benefits often turn into important change agents who devote their careers to bring new ways of working to others in the organization (Ries 2017, 123).

5 Evaluation

This evaluation chapter consists of data analysis as well as conclusions based on the analysis.

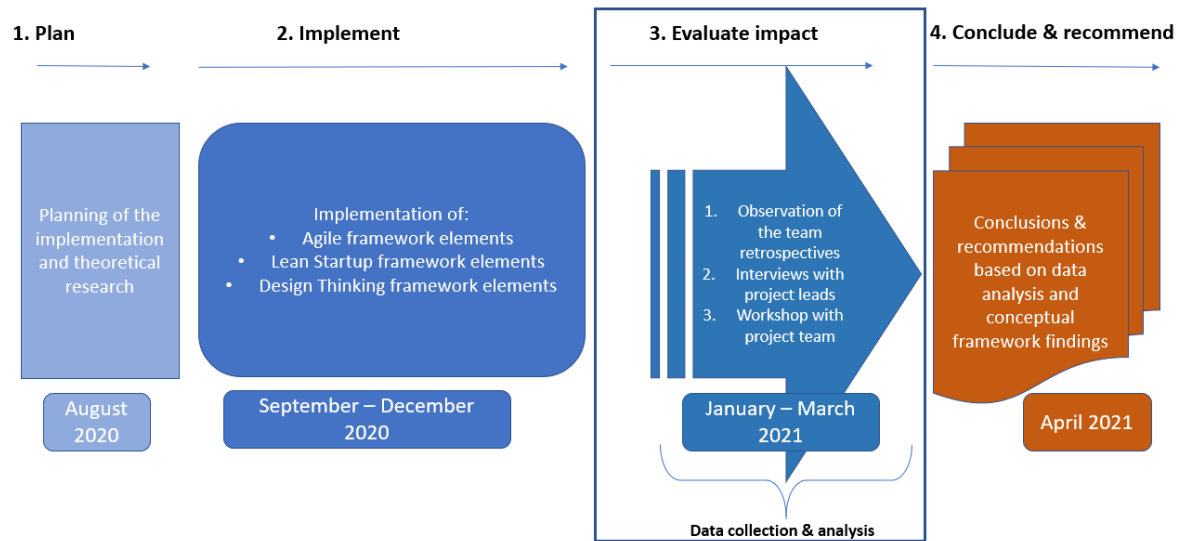


Figure 25. Evaluation stage in the thesis research process

Figure 25 visualizes evaluation stage in the overall thesis research process. Evaluation stage consists of three data analysis methods – interviews, workshop and observation.

5.1 Observation analysis

The participant observation was carried out by observing and documenting the Lean Site team’s reflections in retrospective meetings during the new framework implementation stage (September – December 2020). The observation method is described in subchapter 2.3.3.

The first Lean Site team’s retrospective took place after the first sprint review was completed and they reflected on new common ways of working. They shared that they had started to learn and understand the methodology, especially what it means to work according to Agile principles and ceremonies. They expressed that they felt supported up to that point. They also shared the feeling that working in sprints give them the right focus – they are aware of the things they need to concentrate on and accomplish in the next two weeks. Team members were glad that they already achieved some tasks during the first sprint despite challenging schedules and only taking the first steps with the new

methodology. Everyone was glad that now there is a common forum for openly sharing ideas as well as concerns.

In terms of things to be improved after the first sprint, the team reflected that they would need more clarity on the overall scope of the project. Additionally, more clarity on the goal beyond one sprint would be needed. Scrum provides structure for short term planning, but longer-term planning was missing at that point. It was also pointed out that the team needs to put emphasis on the definition of done during the planning phase – not only describing the task to be done but providing clarity on the expected outcome at the end of the sprint. Additionally, more structure would be needed to reach agreement on how the team will collaborate to get a task done.

Everybody agreed that personal time management is one of the biggest challenges – since team members are not allocated full-time to the project, they often have difficulties managing their own time. People were complaining that there are too many meetings alongside sprint ceremonies. This issue persisted and was raised in almost every retrospective during the framework implementation stage – team members found it really challenging to manage their time since there were so many meetings, working sessions and time required to complete sprint tasks, yet they were also expected to work on other projects and topics. Some of the team members were involved in many work streams and hence, struggling to find time to attend every meeting. During the retrospective, it was discussed to learn to focus on the right topics and people were encouraged to evaluate the need for their participation in each of the meetings and avoid joining meetings where they cannot add much value. Nevertheless, this issue persisted throughout the framework implementation stage due to busy schedules and daily tasks that require attention from the team members.

As stated by Perkin (2020, 31) and Rigby & al. (2020, 40), Agile teams are ideally co-located, and the members are allocated full-time. This may work quite well in the IT field with a fully allocated development team, however in the business world, this Agile rule is really challenging to implement. In the context of the Lean Site team, it was not possible to fully allocate people for this project since they are subject matter experts involved in multiple projects and working groups. Additionally, team members are located all around the world and cannot co-locate. Therefore, time management turned into one of the biggest challenges of the framework implementation stage for the team members.

During the subsequent retrospectives, it was expressed that with each sprint team there is a better focus on the sprint priorities. Team collaboration was also improving with every sprint and the team recognized that their spirit was on a good level. The biggest challenge

to productive work was time constraints due to other responsibilities outside the project that were distracting team members and sometimes taking away their focus. Team members shared that sometimes it was challenging to find balance between doing their own tasks and contributing to other ongoing tasks when needed.

It was pointed out that more co-creation time with the team would be needed but at the same time, people knew that others are busy, so they did not want to be intrusive or bother colleagues. As an action, it was agreed to book Thursdays in everyone's calendars as common co-creation days for the team to collaborate on various project topics.

A common misconception about Agile ways of working is that it requires no planning. The Agile manifesto declares "responding to change over following a plan". However, it does not mean no planning at all. Agile methodology requires creating adaptive plans. Agile teams view plans as hypotheses to be tested and gradually adjusted. (Rigby & al. 2020, 111-112.) Throughout the framework implementation stage, the team was occasionally raising concerns about scope of the project. They expressed that they would like a better understanding of what is in the scope as well as the longer term the plan. A high-level roadmap was introduced to the team, however, they consistently had questions and concerns about it.

Additionally, it was often challenging for the team to deal with uncertainty and not having a rigid plan to follow. Suddenly moving from "traditional ways of working" where somebody decides what to do towards a self-organizing team was, at times, a challenging and uncomfortable exercise. Changing the mindset towards agility was by no means an easy task for everyone. As stated by Meyer (2015, 9), an Agile mindset means moving away from planning in a linear way with a set start, middle and end towards preparing yourself to thrive in a system where all elements are continuously developing.

During the framework implementation stage, the team was building up their Agile capabilities from scratch. It was discussed during retrospectives that it would be valuable to have somebody coaching the team on the new ways of working as well as Agile roles, processes, and so on. As an outcome of that discussion, the IT team negotiated coaching support for the team and an Agile coach joined the team in October 2020. Overall, it was a positive development because the team could discuss their concerns with somebody who is external, has a fresh view and strong previous experience with Agile ways of working.

In one of the retrospectives, the team was contemplating the role of the external customer in this project – how to integrate customer insights in the content of work. After internal discussions it was concluded that the external customer is out of scope of the framework

implementation stage (September – December 2020) and Lean Site project is starting with having internal focus. The objective is to be more productive, get things done right the first time in the field operations which will have a positive impact on external customers. However, it is important to note that even though the work was started with internal focus to understand what drives the internal productivity, external customer will be part of the scope of the project in the next stage when Lean Site concepts will be tested not only with field experts but also with external customers.

The team reflected that one of the positives of sprint working was also the sprint review being the place and time to showcase the team's progress to other stakeholders. It provides a joint forum with a wider group of stakeholders to demo the work done, get inputs, comments and improvement ideas.

Overall, the team felt that retrospectives provide an opportunity for the team to stop and think how they worked together in the previous sprint and what improvements would be needed for the future. Other meetings are more work-related, discussing the content and next steps, however, the retrospective should be preserved as an important time to reflect and agree on necessary changes in common ways of working. As stated by Gerrits & al. (2017, 27), continuous improvement and willingness to improve is at the heart of Agile and feedback is integrated into Agile ways of working.

5.2 Interview analysis

The main goal of the project lead interviews was to encourage them to reflect on the framework implementation stage and share their thoughts, feelings, experiences about main achievements and challenges after the initial implementation stage. The method is described in subchapter 2.3.1.

Two main questions were asked in each interview:

1. Please reflect on the framework implementation stage and the new ways of working following Agile, Lean Startup and Design Thinking frameworks. In your opinion, what went well? What are the clear achievements of the new ways of working?
2. In your opinion, what are the challenges of the new ways of working? What could be improved going forward?

The outcomes of the interviews were grouped in five categories – General, Agile, Lean Startup, Design Thinking and Applicable to all frameworks. The full summary of interviews can be found in Appendix 4.

The category “General” included factors that are not direct outcomes of working with the new frameworks, however, they are the enablers of new ways of working. Table 3 summarizes the main responses in this category.

Table 3. Interview summary, category “General” (enablers)

	Achievements	Challenges
General (enablers)	<ul style="list-style-type: none"> – Business and IT co-working evolution – Great effective cross-functional team – Business buy-in and sponsorship – Business owner (Product Owner) involvement – Culture in KONE – Psychological safety 	<ul style="list-style-type: none"> – Not fully clear how this project fits in the bigger picture with other Lean initiatives and the overall IT roadmap

In terms of achievements, it was recognized that the business and IT co-working evolution and progress has been one of the success factors. If previously IT development projects have mostly been run as separate and rather disconnected initiatives, this project united two projects from the business and IT worlds without clear touchpoints into a joint effort under the same vision and goals. Another success factor for this team is combined expertise from different line organizations that consists of cross-functional competences. It was expressed that all the ingredients for successful execution of the project were there. One of the interview participants said: “Brilliant team is basis for all, and we have it”. New routines were started together even if most of the people on the team had no previous experience with new frameworks, and everybody embarked on the learning journey together.

Another important factor for this project has been the business buy-in and sponsorship and the Product Owner’s involvement – he is making time for the project and team. Without leadership support, the implementation of new ways of working would not have been successful. As stated by Handscomb & al. (2018), “successful transformations require not only bottom-up change in the way of working at the team level but also a change in the way the executive level operates, as this has a disproportionate influence on the overall culture of the organization.”

Additionally, culture in KONE was mentioned as an important factor – people respect each other, there is no power play which is a good baseline for iterative work and co-creation. It was stated the psychological safety is there, which is a basis for diverse teams. Different viewpoints are safe to bring up, team members are able to discuss together and agree on a way forward. As stated by Meyer (2015, 56), leaders play a crucial role in enabling and cocreating a safe territory for the team to play with new solutions and ways of working.

In terms of challenges, it was mentioned that it is not fully clear how this project fits in the bigger picture with other Lean initiatives and the overall IT roadmap. This point was not further explored since it is out of the scope of this thesis work.

The biggest number of achievements as well as challenges were raised in the category “Agile”. Table 4 below summarizes interview outcomes in category “Agile”.

Table 4. Interview summary, category “Agile”

	Achievements	Challenges
Agile	<ul style="list-style-type: none"> – Successfully set up new Agile ways of working in sprints and team routines – Improved scope and clarity – Sprint reviews allow to showcase achievements and generate good discussions – Actively sharing opinions in retrospectives by promoting continuous improvement mindset – During sprint planning more actionable things are getting planned – Working in sprints – concentrating on focused tasks at hand for the next two weeks – Agile coaching support 	<ul style="list-style-type: none"> – Missing clear goals / vision – Ambitious scope of the project – some team members need to develop multiple things simultaneously – Longer term roadmap needed, higher-level understanding with targets – Agile talks about fully dedicated team but in this case, it is not possible, managing schedules is challenging – Sprint planning could be improved – Number of meetings is very high – Focus on people was sometimes lacking, retrospectives have helped – External customer focus missing – Incremental development focus was sometimes missing – Courage to experiment sometimes lacking – Decision-making in Agile process needs to be clarified – Self-management mindset challenge – Agile environment challenges – KONE budgeting rounds and lack of Agile project management methodology

In terms of achievements, it was pointed out that the team has successfully set up ways of working with Agile sprints, people are familiar with the routines and it is working – there are outcomes from the ceremonies and the project work is progressing. At the beginning there was some confusion over what should be done and why, but the team has been able to move towards clarity after practising together. Agile ways of working have helped the team to get closer together and organize common routines.

One of the interviewees mentioned that the scope and clarity has gradually improved during the framework implementation stage and it should be continuously improved going forward. However, scope and goal / vision clarity were raised also as one of the main challenges by some of the interviewees (to be discussed below as one of the challenges).

In terms of ceremonies, it was mentioned that sprint reviews generate good discussions with stakeholders – the team has created a good forum after each sprint to showcase progress and generate discussions. Sprint planning sessions in the beginning were

challenging due to the need for planning work in a relatively short meeting as well as define what exactly needs to be achieved by the end of the sprint. However, with time, sprint planning sessions have improved – now more actionable things are being planned and achieved. The team expressed good feedback about retrospectives – people are active, they want to share their opinions on what went well in common ways of working and could be further improved. Even though retrospectives meant one more meeting in the calendar, it has been important to have those sessions to commonly agree on how to further improve the team’s work together.

Some of the interviewees expressed that they think that concentrating on tasks at hand in focused mode for the next two weeks (e.g., working in sprints) has been a good development for the whole team because otherwise, focus could sometimes get lost. Setting sprint priorities and tasks allows the team to better focus on the right things first. The team is setting reachable short-term objectives; however, it was noted that sometimes it might be challenging to achieve them for various reasons but at least there is progress in the right direction. It is important to note that even though some people mentioned short-term sprint planning as one of the achievements, it was strongly pointed out that the lack of longer-term roadmap planning is one of the challenges. It will be discussed below among the other challenges.

Agile coaching support was mentioned as one of the supporting factors. It was appreciated to have support from an experienced coach observing ways of working and suggesting improvement ideas. As stated by White (2018), an Agile coach trains teams on Agile methodology and guides them through the implementation process when teams and management are often questioning the value of Agile.

In terms of Agile challenges, one of the most expressed challenges was relating to project scope, vision and roadmap. Interviewees reflected that the project scope was not fully understood, especially in the beginning and there was some frustration around it. Now it has improved and it was expressed that clear goals / vision for this business transformation would need to be clarified to have the whole team’s commitment towards the vision: “We are missing clear goal / vision for this business transformation to have full team’s commitment to the vision.” Additionally, it was said that this project has an ambitious scope – multiple things need to be developed at the same time relating to roles, processes, new ways of working, new tool development and so on, which means that some team members need to participate and develop multiple things simultaneously. It was noted that for Agile to be successful there needs to be a doable project scope compared to the count of team members.

Interviewees expressed that even though the team has started to plan work in sprints, a higher-level understanding of the overall roadmap and plan is missing. Backlog is a development roadmap, however, currently the team was planning one, or maximum two, sprints ahead. Building a higher-level view and understanding the big picture would be needed with clear targets ahead.

Another challenge relating to team setup concerns the fact that Agile talks about a fully dedicated team but in this project, it is not possible for everyone to be fully dedicated to Lean Site work. People are involved in multiple parallel work streams and other projects and initiatives. They have to multitask and manage their schedule which often can lead to delays with deliverables. This was already discussed in the observation analysis where the project team raised the same concern. Even if team members would be interested in joining more work streams, they do not have time to do so because there are many ongoing topics and they need to prioritize their time wisely. It was also pointed out that the number of meetings is very high since the team is co-creating the solutions.

In terms of ceremonies, it was discussed that sprint planning meetings could be further improved – the team needs to be activated to create the backlog together and build the understanding of what needs to be done and in which order. One of the interviewees mentioned that overall, in the project work, the focus on people was sometimes lacking, especially in the beginning when the focus was more on setting up the ways of working and starting the work full speed. It is important to discuss how the team feels and what the big picture is, not only concentrating on plans and tasks. Introducing retrospectives has helped to have an open discussion forum relating the team's feelings and improvements needed to enable smooth cooperation. The "human element" needs to be taken into consideration since people need to be happy about the work they do, and they need to feel ownership. It is also important to set a realistic and achievable sprint plan that people can achieve within the sprint, otherwise unrealistic planning may lead to lower team morale.

One of the interviewees mentioned that external customer focus is missing from the current scope of work. The team is concentrating on the internal feedback loop and internal roles and there is no feedback from customers. It was clarified after the interview that the Lean site is having an internal focus and is not focusing on external customer at the current stage, but instead, aims to get things done first time right in the field operations.

Agile and Design Thinking frameworks are promoting customer centricity mindset that explores and ensures possibilities for creating positive experiences for the customer

(Scaled Agile Framework 2021b). Even though customer feedback was out of scope of framework implementation stage (September – December 2020), external customer will be in the project scope in the next stage when Lean Site concepts will be tested also with external customers.

Agile mindset challenges were named as the second biggest challenge in current ways of working. For example, it was reflected on that, generally, the ideology of Agile was quite well understood - working in increments, experimenting fast, validating with the users. However, some team members were struggling to move away from component-based thinking and instead aim to deliver small slices of value across all the components. The incremental development mindset was sometimes hard to grasp and the courage to try out new things and experiment was sometimes lacking. The team members have good conceptual expertise but should be striving to learn more from real-life situations.

Additionally, it was pointed out that a mindset switch towards Agile does not happen overnight, and it is rather difficult to move away from a “being told what to do” mindset towards “being self-managing”. It needs nurturing, encouragement and practice. Team members need to grow to realize that they own the backlog, they are responsible for the team’s work and they need to self-manage. Nevertheless, it was also partially related to the challenge of the team members not being able to fully allocate their attention to this Agile project as they have other tasks and responsibilities outside the project.

Perkin (2020, 39) stated that the key mindset shifts in order to become more Agile consists of:

1. Value creation – from defining detailed and fixed upfront plan towards setting a vision for the project outcome and being adaptive in how to achieve it. Concentration is on delivering as much value early on as possible and learning along the way. It requires being more comfortable with not knowing where the team will be at any given stage in the project. (Perkin 2020, 39-41.)
2. Adaptability – it is important to adapt rapidly. Linear Waterfall processes often require becoming path dependent, Agile process encourages doing significant changes along the way to learn and adapt. (Perkin 2020, 41.)
3. Approaches to risk – in Agile environment is more important to try, learn and adapt rather than define the exact solution at the start. It requires to create a “safe to fail” rules that encourage people to test and learn while mitigating unnecessary risk. (Perkin 2020, 42-44.)

Another topic raised during the interviews was decision-making in an Agile environment. Agile principles of having one Product Owner and many business stakeholders (within the team as well as outside) that need to continuously be on the same page could be improved. It was also mentioned that the decision-making process requires more clarity.

Even though this thesis' work scope concentrates on setting up the team's ways of working, it is also impacted by the overall environment in the company. Some challenges mentioned in the interviews were a lack of Agile methodology support. As stated by Brosseau, Ebrahim, Handscomb & Thaker (2019), many agile transformations have serious roadblocks in scaling up, since agile teams are emerging without important company-wide backbone components like processes and roles. An Agile operating model providing a clear vision and designing how teams working in agile mode should operate – what are the expected changes in processes, budgeting, performance management, and people - values, roles, expected mindsets and leadership support (Brosseau & al. 2019).

It was said that: “Current project management methodology in the company is supporting a Waterfall model. There are several methodologies across different teams, whether they work with Agile, Waterfall or hybrid approaches.” The requirements for Lean and Agile ways of working was said to be unclear from a methodological support point of view. At the beginning of framework implementation stage, it was challenging to choose the right methodologies as, for most of the team, they were new and rather unknown. It would have helped to have guidance regarding how Agile, Lean Startup and Design Thinking co-exist. Additionally, it was mentioned that the current company's budgeting rounds are not fully supporting Agile ways of working and if the company is planning to further scale the Agile approach, it would need to take this into account and change budgeting periods.

Table 5 below summarizes the achievements concerning Lean Startup implementation. There were no challenges specified during the interviews.

Table 5. Interview summary, category “Lean Startup”

	Achievements	Challenges
Lean Startup	<ul style="list-style-type: none"> – Prototyping and experimenting brought crucial learnings for the team – The needs of users were explored – Good open discussions within team and with frontlines during MVP building and experimenting stages – Iterative mindset building – Prototype validation allowed to pinpoint things that would have been overseen otherwise (time and money savings) 	

Applying Lean Startup framework to the team's ways of working meant experimenting and iterating with an IT solution prototype. Team members had no previous experience with prototyping, but it proved to bring benefits. The team recognized that they needed to ask for feedback from field experts who have the knowledge and experience but sometimes, it is difficult to ask something without visualizing it. Therefore, building a prototype helped to

engage the reference group and going through the prototype helped to simulate a real-life scenario and get direct feedback. The IT system minimum viable product needs to be realistic and make sense for the users, otherwise there will be no adoption if it does not cover the needs of the end users. It was recognized that the MVP prototype sparked productive open discussion, both within the team as well as with frontline users. The team was testing and iterating with the reference group to understand how the IT system could support the work, taking into account complexity and variability of the local processes.

It was recognized that one of the biggest achievements in terms of the Lean Startup framework was that the experimentation with prototype allowed the team to pinpoint things that otherwise would have been overlooked and resulted in lost time and money. As stated in the theoretical framework by Ries (2011, 93-94), creation of an MVP prototype provides an opportunity to quickly get through the Build-Measure-Learn feedback loop with minimal effort and investment.

For example, users in frontlines pointed out that one of the processes in the prototype is missing an important role – Testers. It was recognized that the team had overseen the importance of the Tester role within the process and it was agreed to build the next version of the prototype by including the Tester’s process. Additionally, users also gave valuable feedback about the functionality and user-friendliness of the prototype that allowed improvement after the first round of the Build-Measure-Learn cycle. As stated by Euchner (2019), the starting prototype is, most of the time very simple, but later updates to become more thorough and final as they evolve based on user feedback.

Table 6 below summarizes the achievements of Design Thinking implementation. There were no challenges specified during the interviews concerning Design Thinking framework.

Table 6. Interview summary, category “Design Thinking”

	Achievements	Challenges
Design Thinking	<ul style="list-style-type: none"> – Service design team members joining the team provided new points of view and put more emphasis on the user perspective – UX support from service design team – Design Thinking is looking at the big picture yet aims to understand the user – Empathy maps and user journeys helped building better understanding about users 	

During the interviews, it was expressed that the service design team members joining the team provided new points of view and put more emphasis on the user perspective. The

team also got UX support from the service design team and a UX specialist helped with prototype creation and user-centric design insights. Design Thinking provides understanding of the big picture by learning about the user or customer and also, a means to visualize it. As stated by Stickdown & al. (2018, 14), applying Design Thinking to a project means basing it in research and testing, not in opinion or authority.

Empathy maps and user journeys that were created after interviewing and observing field personnel helped building a better understanding about reference frontlines – what the problems are and how they are linked, which is an input for defining what should be the solution and where to focus the attention of the project. It was pointed out that, going forward in the solution development stage, we should not forget to ask, “What’s in it for me?” from the user perspective. As stated by Perkin (2020, 30), Design Thinking values continuous empathy and exploration in order to pinpoint the right issues to be solved for the customer or end-user.

Table 7 below summarizes achievements relating to all frameworks – Agile, Lean Startup and Design Thinking.

Table 7, category “Applicable to all frameworks”

	Achievements	Challenges
Applicable to all frameworks	<ul style="list-style-type: none"> – Iterative, incremental approach and very quick team learning has happened during implementation stage – Validation with users, co-creation brought a lot of knowledge – Involving frontline field experts in the teamwork and iterations, co-creating – Design Thinking is applicable not only in the beginning of the project, it can be utilized in solution development stages – Agile, Lean Startup and Design Thinking frameworks are complementing each other and building bridges – It was important to take elements from each framework and finding compromise in our reality; understanding how they contribute rather than distract 	

The main achievement in terms of all the new framework implementation was that they enabled very quick team learning. One of the interviewees stated: “I think that truly rapid team learning has happened during implementation stage.” Interviewees expressed that with the help of the framework’s iterative and incremental approach to the project, validating the team’s understanding and delivering something that fits the needs and problems of the field personnel were promoted. It was expressed that it is important to maintain the iterative mindset and also in solution development stage (for example, IT

solution development after the prototyping phase) it is important to validate with field experts.

Involving frontline reference group has been the right decision – interviewees stated that it was valuable to interview them since they are giving the context and realities, providing valuable feedback. Experimentation and co-development of the other Lean Site concepts together with frontlines should be the next stage of the project.

It was mentioned during the interviews that Design Thinking is applicable not only at the beginning of the project, but it can be utilized in the solution development stages. One of the interviewees also expressed: “Agile, Lean Startup and Design Thinking frameworks are complementing each other and building bridges”. This supports the earlier hypothesis (in conceptual framework subchapter 4.4) that Design Thinking complements Agile and Lean Startup processes as well as that empathizing with end users and designing the best user experience is important throughout the project. (Appelo 2020; Tamboryn 2021; Yoshida 9 November 2018a.)

As stated by Appelo (2020), Design Thinking, Lean Startup and Agile development all focus on the same points: iterative discovery, delivery and improvement. They only look at it from different angles sometimes emphasizing design, sometimes validating hypotheses and sometimes developing the right thing. One of the interviewees stated: “It has been the right approach to “pick the raisins from the bun” – taking elements from Agile, Design Thinking and Lean Startup frameworks and finding compromise in KONE’s business reality.”

5.3 Workshop outcome analysis

During the workshop, each of the workshop groups was brainstorming two challenges prioritized from the interview stage and potential solutions for each challenge. Appendix 5 summarizes all the challenges for each group. The workshop method is described in subchapter 2.3.2.

Table 8. Group 1 workshop challenges

	Challenge 1	Challenge 2
Group 1: Project scope and roadmap challenges	<p>Project scope and vision:</p> <ul style="list-style-type: none"> - “Ambitious scope of the project – multiple roles and processes, new ways of working, new IT system development – some team members need to develop multiple things at the same time. For Agile to be successful we need to have a doable project scope compared to count of team members.” - “We are missing a clear goal / vision for this business transformation to have the full team’s commitment to the vision.” 	<p>Roadmap:</p> <ul style="list-style-type: none"> - “Backlog is a development roadmap – the roadmap should be on a more detailed level than 1-2 sprints. Building a higher-level view, understanding big picture with targets.”

Group 1 worked on challenges related to project scope, vision and roadmap (Table 8). Concerning challenge 1, the team discussed that the project team members’ limited allocation to the project is one of the main challenges, since the scope of the project is quite extensive. As a solution, the team suggested to evaluate and review the resource allocation with managers. For example, deployment will require more resources in the team. It was agreed to further identify resources to drive change in the frontlines and local frontline change agents. In terms of the lack of clear goals and vision, the team agreed that clarification is needed on the goals and the “North Star” of this project. It is important to define: “What does the Lean Site change mean for me as a field expert? What is in it for me?” The team also proposed to organize more Gemba walks on a regular basis to have the opportunity to reflect on the reality of the site. As stated by Lindquist (2018), Gemba walk is a Japanese term for personal observation of work where it gets done. It means going to see the real-life process and understanding the frontline work. It is part of Lean philosophy. (Lindquist 2018.)

The second challenge for group 1 was related to roadmap planning (Table 8). Currently, the team is planning 1-2 sprints ahead, but a higher-level roadmap is missing. It was agreed to start quarterly planning practice to create a roadmap and high-level work plan for the three months ahead. It was agreed to include reference frontline contact persons in the planning of this work in order to create a joint roadmap and ensure frontline commitment.

Quarterly planning is an event with a goal to align the teams to a shared mission and vision and jointly plan the work for the next quarter (Scaled Agile Framework 2021).

Additionally, the team suggested to start celebrating successes to motivate the team. During the everyday rush, it is easy to forget to celebrate achievements. However, it is important to take a moment to “praise ourselves”. During brainstorming, it was suggested not only to celebrate successes but also failures, since it would help to normalize failure as part of the learning process and would help to foster the continuous improvement mindset. Ries (2017, 91; 115) suggests the importance of the realization that it is okay to not always get it right. Often failures happen not because of faults in the execution but rather due to assuming something that does not match the real-life situation (Ries 2017, 115).

Table 9. Group 2 workshop challenges

	Challenge 1	Challenge 2
Group 2: Agile mindset challenges	<p>Incremental development and getting fast feedback:</p> <ul style="list-style-type: none"> – “Generally, the ideology of Agile was quite well understood. However, some team members need to move from component-based thinking - instead delivering small slices of value crossing all the components (roles, KPIs, processes, IT).” 	<p>Courage to experiment:</p> <ul style="list-style-type: none"> – “Courage to try out new things and experiment is sometimes lacking.” – “Team has good conceptual expertise but should be learning more from real-life situations.”

Group 2 worked on challenges related to the Agile mindset (Table 9). In terms of the incremental development challenge, the team was reflecting that they would need further help with splitting the project work into doable increments. This is a situation where an Agile coach’s further guidance and coaching would be needed.

In terms of the second challenge, courage to experiment, the team reflected that there is still a certain level of fear of failure and a culture of expertise within the team. It is challenging to adopt the mindset of “test fast-fail fast” because of the roles of the team members require expertise. It requires going out of their comfort zone in order to fail and not “lose face”.

Additionally, fast testing with frontlines has been challenging, and therefore getting feedback takes time. Frontlines have their own agenda and sometimes synching schedules takes time. Going forward, the cooperation with frontlines should be strengthened by choosing a few sites to conduct the experiments and gather fast feedback and ideation.

As a solution, the team proposed to further encourage each other to challenge and present different solutions, not to avoid conflict and not to fear failure. This is where the role of the PO is also quite crucial – showing an example by their own behavior and enabling failure acceptance within the team. As stated by Meyer (2015, 56), Agile leadership requires modelling, encouraging and coaching others to explore new concepts and perspectives since leaders play a crucial role in enabling and co-creating a safe territory for the team to play with new solutions and ways of working.

Another solution proposal was to set up short, small group session for discussing options, not presenting “ready” solutions. In general, it was discussed that the practice of brief ad-hoc idea discussions should be encouraged in order to facilitate fast collaboration in the right time, quickly discussing and reaching discussion immediately instead of waiting for an official meeting.

Table 10. Group 3 workshop challenges

	Challenge 1	Challenge 2
Group 3: Agile mindset challenges	<p>Decision-making in Agile process:</p> <ul style="list-style-type: none"> – “Agile principles of having one Product Owner and many business stakeholders that need to continuously be on the same page (self-organizing team) could be improved.” 	<p>Self-management:</p> <ul style="list-style-type: none"> – “Mindset switch doesn’t happen overnight, and it is hard to move from being told what to do to being self-managing. Needs nurturing, encouragement. Team members need to own the team backlog, being responsible and self-managing.”

Group 3 was also collaborating on challenges related to Agile mindset (Table 10). In terms of the decision-making challenge, the team confirmed that the decision-making is not fully clear for them. Is the Product Owner the final decision maker or is it expected to work in more of a de-centralized way? The team was requesting clarification of decision-making responsibilities. It was suggested to empower the team to decide and not require all decisions to involve Product Owners in order to encourage teamwork and speed up the process. As stated by Rigby & al. (2020, 103-104), Agile leadership should delegate decisions that can be tested.

For the self-management challenge, it was discussed that team members are having different clock speeds, allocation levels and levels of KONE experience. It would be required to clarify the way of working in terms of self-management and being an empowered team. It was expressed that if the team is required to self-manage and take responsibility, then the team needs to be encouraged to decide by not having to go to the

Product Owner about every decision. This refers to the decision-making challenge discussed above.

5.4 Conclusions based on analysis

Based on observation, interview and workshop outcome analysis after the framework implementation stage it can be concluded that the main achievements are related to Agile ways of working (mentioned both during interviews as well as during the team's retrospectives):

- The team has successfully started to practice the new ways of working and has been building understanding of the methodology by practicing it. There are outcomes from working in sprints and the project work is progressing. Agile ways of working have helped the team to **organize common routines**. Team members are also building their Agile mindset by practicing every day. Even though setting up the right ways of working is very important, the team also needs time to get used to the new ways of working and shift their mindset towards Agile, because as stated in conceptual framework, it is a long-term effort. According to Meyer (2015, 8), “mastery for the agility shift is unlike mastery of a specific skill; it is a continuous process and demands a commitment to developing the competence, capacity, and confidence necessary for learning, adapting and innovating.”
- Rigby & al. (2020, 40) argue that Agile is a **combination of both mindset and methods**. It can be concluded based on the analysis that Agile indeed requires both and cannot be evaluated only based on method (ways of working) or mindset without the right ways of working in place.
- **Working in sprints** provides focus for the next two weeks to concentrate on the prioritized work content. It is important to note that even though team members recognized short-term sprint planning as one of the achievements, it was strongly pointed out that the lack of longer-term roadmap planning is one of the challenges, since the team is planning only one or two sprints ahead.
- **Sprint reviews** are showcasing the team's progress to other stakeholders. It provides a joint forum with a wider group of stakeholders to demo the work done, get feedback and further improvement ideas.
- **Retrospectives** have been recognized by the team as a great opportunity to pause the work rush and reflect on what went well and what should be improved in common ways of working. As stated by Perkin (2020, 227), executing work in sprints can drive organizational learning and foster adaptability by promoting continuous improvement that in turn leads to improved ways of achieving objectives.
- **Agile coaching support** has been helpful in the implementation stage and should be continued going forward to support the team's mastery of both being Agile and doing Agile.
- An important factor for the framework implementation stage has been the **business buy-in and sponsorship** as well as the Product Owner's involvement. It was expressed during the interviews that without the leadership support, the implementation of new ways of working would not have been successful. As stated by Denning (2018, 99) and Rigby & al. (2020, 110), a leader's role in Agile environment means enabling the space where the team has autonomy to show their talents and innovativeness to come up with a product or solution that will respond the end-users needs. Additionally, a leader's task is to make sure that the right resources are in place, the team is aware of the vision they need to follow, and obstacles are removed out of the team's way. Meyer (2015, 56) argues that

Agile leadership requires modelling, encouraging and coaching others to explore new concepts and perspectives as well as enabling a safe territory for the team to play with new solutions and ways of working.

Additionally, after analysis, the main Lean Startup and Design Thinking framework-related achievements can be summarized as follows:

- **Prototyping** brought the chance to visualize the team's vision and quickly test with frontline users. As stated by Van Oosterom & al. (2010, 130-132), building prototypes and validating them with users provides valuable feedback, however it is important to keep subsequently refining the prototypes and retest them to find the optimal solution.
- It was recognized that one of the biggest achievements in experimenting according to Lean Startup framework by building a prototype and following the Build-Measure-Learn feedback loop has been **crucial learning points** for the team. It allowed them to pinpoint things that otherwise would have been overlooked and resulted in lost time and money in the solution development stage. For example, users on the frontlines pointed out that one of the processes in prototype was missing an important user group. A lot of valuable feedback was also received during iterations from the end users on how to make the prototype more user-friendly. It is safe to assume that the team would have needed to re-develop the system to better meet the needs of the end users if the development stage would have been started before getting feedback with prototyping from the end users. As stated by Ries (2011, 76), an MVP prototype provides the opportunity to go through the Build-Measure-Learn loop quickly and collect validated learning with minimal effort and cost.
- Service design team members joining the team provided new points of view and Design Thinking framework put more **emphasis on the user perspective**. As stated by Perkin (2020, 30), Design Thinking is a people-centric framework that combines business requirements and technological opportunities with human needs. It is important to recognize the needs and problems of the customer or end user before jumping to solutions (Stickdorn & al. 2018, 14).
- **Empathy maps and user journeys** that were built after interviewing and observing field personnel helped to build a better understanding about reference frontlines – what the problems the field personnel are facing. That is an important input for defining what the solution should be and where to focus the attention of the project. As stated by Perkin (2020, 30), Design Thinking values empathy and exploration in order to pinpoint the right issues to be solved for the customer or end user.
- **Co-creation with frontlines** was successfully started. As stated by Van Oosterom & al. (2010, 198-199), co-creation is at the heart of Design Thinking, Agile and Lean Startup frameworks and it involves development teams working together with actual users to empathize their problems, pinpoint different viewpoints and investigate possible directions in order to improve experiences. Additionally, co-creation brings a diverse group of people together to promote shared ownership of the concepts and new ways of working that are getting innovated (Van Oosterom & al. 2010, 199).

In terms of the positive impacts of the new framework implementation, it was discussed that the frameworks have sparked experimentation and iteration culture within the team. Co-creation has been successfully started with frontlines and in the next project phase –

experimentation with Lean Site concepts – it needs to be actively continued. Frameworks also have provided the project team with rapid learning during the implementation stage and have encouraged continuous validation and iteration with frontline users.

It was mentioned during the interviews that Design Thinking is applicable not only at the beginning of the project, but it can be utilized in the solution development stages. During the interviews, it was also expressed that Agile, Lean Startup and Design Thinking frameworks are complementing each other and building bridges. This supports the author's previous hypothesis, after conceptual framework review, that Agile, Lean Startup and Design Thinking frameworks complement each other and promote experimentation over extensive planning, iterative development, involving the user in continuous feedback process over using assumptions, and applying feedback to continuously learn and improve the end result and the value it offers. (Blank 2013; Stickdorn & al. 2018, 26.)

The research confirmed that it has been the right approach to “pick the raisins from the bun” – taking elements from frameworks and finding compromise in business reality. Understanding how the frameworks contribute to each other has been the key – the team has started to build common understanding on how these three frameworks work together in the case project's setting. As stated by Perkin (2020, 29), there are many methodologies but no perfect roadmap applicable for every organization and therefore no single framework that always fits best – it is important for an organization to find what works for its unique environment and development goals. Overall, based on the analysis, it can be concluded that the new framework implementation phase has been successful. Nevertheless, there are also challenges that need to be addressed going forward.

Based on analysis after the framework implementation stage, it can be concluded that the main challenges are concerning Agile ways of working and the Agile mindset:

- One of the biggest challenges concerns **team members not being allocated to the Agile project full-time**, which evolved into a personal time management challenge. People are involved in multiple parallel work streams and other projects and initiatives. They have to multitask and manage their busy schedules which may lead to delays with deliverables.
- The team needs to manage a lot of meetings alongside sprint ceremonies since members are co-creating the solutions within the team and with frontlines. The biggest problem mentioned for productive teamwork was the **time constraint** due to other responsibilities outside the project that were distracting team members and sometimes taking away their focus.
- The scope of the project – research analysis showed that **project scope and goals** were not fully understood and would need to be clarified to have the full team's commitment towards the vision. On the other hand, it was challenging for the project team to immediately **change the mindset** from following a well-defined upfront plan towards an agile plan that is flexible and continuously evolving.

- **Roadmap or goals beyond one sprint** – research showed that even though the team has started to plan work in sprints, a higher-level understanding of the overall plan and roadmap is missing. As stated by Rigby & al. (2020, 111-112), a common misconception about Agile ways of working is that it requires no planning. Agile methodology requires creating adaptive plans. Currently, the team is planning one, or maximum two, sprints ahead. Building a higher-level view and understanding the big picture would be needed along with clear targets ahead.

Interviews helped to uncover further Agile challenges relating to mindset and decision-making:

- It was often challenging for the team to deal with uncertainty and not having a rigid plan to follow. Suddenly moving from “traditional ways of working” where somebody dictates what to do towards **self-organizing team** was, at times, challenging and uncomfortable.
- **Decision-making** in an Agile environment was not fully clear for the team.
- For some team members, it was challenging to move away from component-based thinking towards an **incremental development mindset**. As stated by Meyer (2015, 9), an Agile mindset means moving away from planning in a linear way with a set start, middle and end towards preparing yourself to thrive in a system where all elements are continuously developing. Additionally, the courage to try out new things and experiment was sometimes lacking.

All the identified challenges need to be addressed in the next stage of the project.

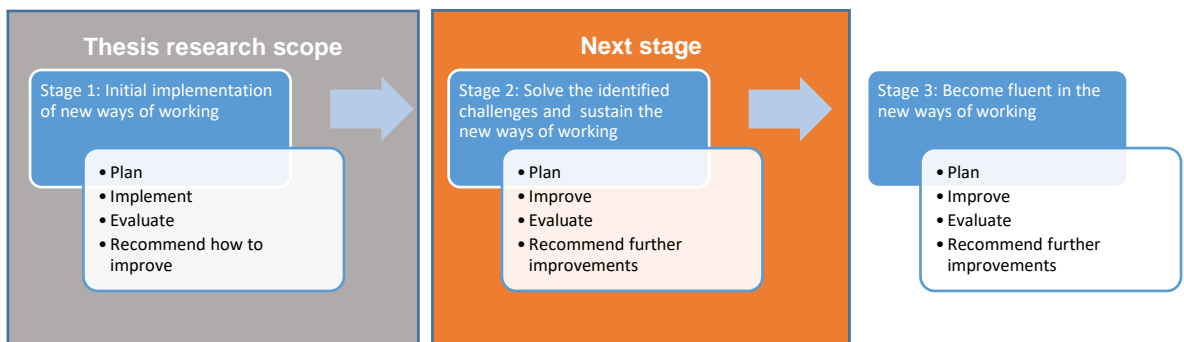


Figure 26. Case project’s ways of working development model based on Action research cycles (adapted from Saunders & al. 2019, 203)

Figure 26 visualizes the next stage in the action research process. The aim of the next stage is to solve the identified challenges by applying development suggestions and sustain the new ways of working. Subchapter 6.1 summarizes the development suggestions.

6 Conclusions and recommendations

The last chapter of the thesis summarizes the development suggestions and main conclusions based on the analysis of research data and theoretical framework (Figure 27).

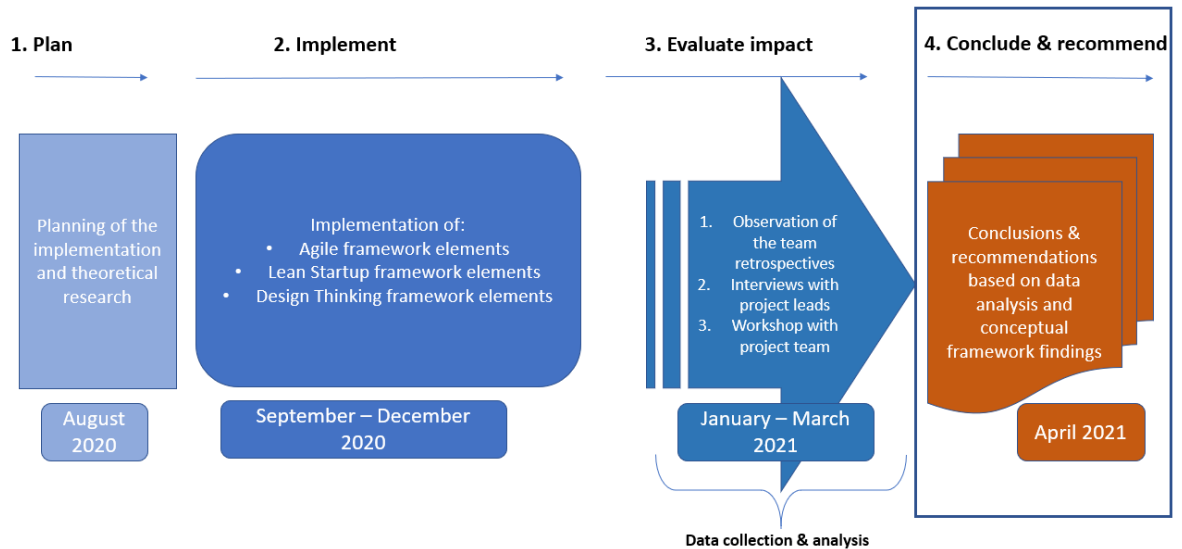


Figure 27. Conclusion and recommendation stage in the thesis research process

The main research question of the study was:

- How to effectively implement a work model for a business transformation project team by applying elements of Agile, Lean Startup and Design Thinking frameworks?

The research sub-questions were:

1. What are the main achievements after the initial framework implementation stage?
2. What are the main challenges after the initial framework implementation stage?
3. What are the recommendations to overcome identified challenges?

Answers to research sub-questions 1 and 2 were summarized in the previous subchapter 5.4. Answers to research sub-question 3 can be found in subchapter 6.1 and the main research question is answered in subchapter 6.2.

6.1 Future development suggestions

In order to overcome the identified challenges summarized in subchapter 5.4, suggestions for future development are presented in this subchapter. The suggestions are recommended to be applied in the next stage of the project.

Recommendation 1: Due to not being able to be fully allocated to the Lean Site project, team members were expressing challenges in managing their timetables and the high number of meetings. As stated by Perkin (2020, 234-235), meetings are important for a team to efficiently cooperate and exchange ideas, but they can also be a “demotivating time suck”.

Dr. Steven Rogelberg, who has researched the keys to more efficient meetings for over 15 years, suggests keeping meetings short and including only the people whose presence is necessary. Having people only be bystanders in meetings is counterproductive. Frequent short meetings can quickly provide a solution rather than waiting for a week to have a one-hour meeting. (Rogelberg 2019.)

It is important for team members to learn to focus on the right topics and evaluate the need for their participation in every meeting. Additionally, having short, small group sessions for discussing possible options, and not presenting ready solutions, could help cut down the need for long meetings. In general, it is always important to evaluate whether a meeting is needed or, for example, a quick chat in Teams would solve the issue. Alternatively, editing the same document online could help to coordinate the topic without having a meeting.

Recommendation 2: Perkin (2020, 187.) argues that many of the characteristics that have long been thought to have an impact on team performance have proved to be irrelevant (e.g., backgrounds, personality or skills of team members). Google has performed broad research on the topic of team performance. Their study presented five main factors for high performance:

1. Psychological safety: being able to express themselves and take risks in a team setup without fears.
2. Dependability: be able to trust other team members to excel in their work on time.
3. Structure and clarity: making sure that the vision and roles of each team member are clear.
4. Meaning of work: work is personally meaningful.
5. Impact of work: being confident that the work being done matters. (Rozovsky 2015.)

Harvard Business School professor Amy Edmonson proposes three suggestions for leaders to adopt to promote an environment of psychological safety:

1. Stating work as learning problems instead of execution problems: each team member’s contribution has value in solving challenges and overcoming uncertainty.
2. Acknowledging that the leader does not have the solutions to everything: creating permission for everyone’s contribution.

3. Modelling curiosity: encouraging team members to express their voice by asking questions and enabling the culture of co-creation. (Lebowitz 2015.)

Edmondson also argues that, in an environment of uncertainty, psychological safety needs to go hand-in-hand with accountability to result in a high-performing team. Accountability without an environment of debate and openness will result in anxiety. At the same time, some accountability will lead to members staying in their comfort zone. Allowing questions and discussions yet holding the team accountable for excellence will turn into learning and results. (Lebowitz 2015.) These considerations are very important in order to enable team members' Agile mindsets.

Recommendation 3: To keep up the team spirit, the team should regularly reflect on their achievements. To encourage the continuous learning mindset and normalize failure, it is recommended to also start reflecting on failures within the team during retrospective meetings. That way, the team learns that it is not shameful or uncomfortable to admit your failures because it is accepted, and everyone can learn something from it. Generally, it is important to remember to pay attention to team members' feelings about being part of the team, enable an environment of psychological safety and make everyone feel heard.

Recommendation 4: In order to foster self-management within the team, it is recommended to continue Agile coaching in order to observe the team members in action and support them. As stated by Lynn (2020), before becoming a true self-organizing team, members require coaching. Currently, the team is a mix of a self-organizing team and a traditional team of experts expecting the manager to lead them. A coach should provide guidance towards an Agile mindset while observing interactions. With time, the role of a coach decreases as team members begin to take ownership and practice working with each other in a self-organizing way.

Recommendation 5: As part of the analysis, it was concluded that the team requires longer term planning than just one or two sprints ahead. During the data collection stage, team members mentioned that they wanted to know the high-level roadmap and understand the scope of the project and vision better. To solve this challenge, it was jointly agreed in the workshop to introduce an Agile quarterly planning event for the Lean Site team. As stated by Scaled Agile Framework (2021), quarterly planning, or program increment planning, is a face-to-face event which intends to align a team on a shared mission, vision and work goals. In the current pandemic where face-to-face is not possible, it can be organized online.

The rule of quarterly planning is "the people who do the work plan the work". The quarterly planning agenda includes presentation of vision and roadmap followed by the team

planning the realistic scope of work for the next three months. The team also identifies dependencies and risks. (Scaled Agile Framework 2021.) It is therefore recommended to also include reference frontline management in the planning event to align on the work scope for the next three months and thereby, hold everyone accountable for the agreed plan.

Recommendation 6: In order to clarify decision-making in an Agile environment, it was decided together with the team that the following are the three decision-making levels for Lean Site project:

1. Empowered Lean Site team making the decision: seeking a joint decision as a team.
2. In case of differing opinions and the team is not being able to make a joint decision: the PO tries to involve and support the team in agreeing. If it is not possible to agree, the PO takes the decision.
3. In case the decision is related to project goals and vision, it is taken to the Lean Site steering group for final decision.

The team should feel empowered to make the decision in most of the cases. Options 2 and 3 should be minimized according to Agile principles. As stated by Montgomery (2020), it is important for an Agile team to show their progress regularly to get feedback for the changes needed, thereby, Agile decision-making is collaborative – the team works on issues together and reaches the solution together.

Recommendation 7: For the team to learn more about the real-life issues on site and get feedback on possible solutions, it was agreed to organize more regular Gemba walks, or site visits, to have the opportunity to reflect on the reality of installation sites and how it impacts the Lean Site scope of work.

Recommendation 8: Going forward, the Lean Site team will start experimenting with other concepts than just the IES MVP prototype. For the next stage, it is important to strengthen cooperation with frontlines by identifying the right roles and contact persons as well as choosing a few sites to conduct Lean Site experiments and gather fast feedback.

Transforming to a fast and Agile organization is not an easy task, since it means enabling change in the operating model and culture. Changing mindsets and ways of working is surely one of the hardest tasks - however, people are willing to change when they recognize themselves becoming stronger, wiser and more empowered as a result of the new ways of working. (Guggenberger & Simon 2019.)

6.2 Achieving the objective

The main objective of the thesis was to create an effective work model for a business transformation project team by applying elements of Agile, Lean Startup and Design Thinking frameworks.

The planning phase was started in August 2020 and initial implementation phase began in September 2020 after two project teams were merged into a joint cross-functional Lean Site project team. Since the Lean Site project is aiming to make KONE's field operations Leaner, it was important to explore how to become Lean and Agile also in the project team's common ways of working. The implementation stage continued until December 2020.

The implemented work model consists of organizing the Lean Site team's work in Agile Scrum sprints, applying Design Thinking exploration, co-creation and experiment stage methodology in structuring work together with frontline reference groups as well as organizing experiments according to the Build-Measure-Learn cycle of Lean Startup. The work model is presented in chapter 4 (and Appendix 6), based on extensive theoretical research.

After the initial implementation phase, it was important to evaluate the success of the implementation by evaluating achievements as well as challenges to be addressed in the next stage. The methodological choice of this thesis included three important steps:

1. During the framework implementation stage: Observing the team's reflections in retrospective meetings.
2. After the initial implementation stage: Organizing interviews with project leads.
3. After observation and interviews were conducted and analysed: Organizing a co-creation workshop with the project team to go through the identified challenges and brainstorm potential solutions together.

The research resulted in substantial and valuable learning. Detailed conclusions based on analysis can be found in subchapter 5.4. It can be concluded that the application of Agile, Design Thinking and Lean Startup frameworks has benefitted structuring an effective, collaborative and user-centric design and development work model. In addition, the model has allowed the team to get to know and learn from the focus group of the project as well as brainstorm and address potential benefits and issues early enough based on feedback from field experts.

Based on the analysis, as well as theoretical background, it can be concluded that Agile, Lean Startup and Design Thinking frameworks complement each other by promoting experimentation over extensive planning, iterative development, involving the user in a

continuous feedback process over assumptions, and applying feedback to continuously learn and improve the result and the value it offers. Appelo (2020) argued that Design Thinking, Lean Startup and Agile development all focus on the same points: iterative discovery, delivery and improvement; they only look at it from different angles. Vaghefi (4 September 2019b) summarized that “Design Thinking is how you explore and solve problems; Lean Startup is your framework for testing your beliefs and learning your way to the right outcomes; Agile is how you adapt to changing conditions.” Conceptual framework and data analysis confirmed that these frameworks share many similarities in their goals and ways of working.

The new work model minimizes the waste of repetitive planning, contradicting priorities, organizational siloes, excessive documentation, and low-value solution features with early validation and co-creation with field experts. As stated by Ries (2011, 76), “if we are building something that nobody wants, it does not matter if we’re doing it on time and on budget”.

Even though there have been many early benefits of the new ways of working, analysis pinpointed multiple challenges that should be addressed going forward. The main challenges relate to switching towards an Agile mindset, decision-making in the new setup, the need for clarity about the vision and roadmap of the project as well as longer term planning.

A four-month-long new framework implementation stage cannot alter mindsets that have been shaped for years. It requires time and practice. A new work model is more than just implementing new processes, it is about adopting an Agile mindset that promotes iterative work, adaptability over detailed plan, flexibility, and co-creation with end users.

Agile working and thinking have the potential to transform large, slow organizations to become far more responsive, yet they involve some fundamental mindset shifts that challenge entrenched belief systems and habits that have grown up over decades in companies. This is no small shift and organization that underestimate the significance of this change or under-commit to both doing Agile and being Agile, will fail to truly adapt for the modern world. (Perkin, 33-34)

Future development suggestions to address the identified challenges were presented in subchapter 6.1.

Based on the research and analysis, it can be concluded that to effectively implement a project work model by applying elements of Agile, Lean Startup and Design Thinking,

there are some crucial elements summarized below that are recommended to consider based on research findings as well as conceptual framework.

An Agile mindset is an important enabler for the new ways of working, since it enables continuous improvement, learning, adaptivity, experimentation culture and responsiveness. It needs to be encouraged and practiced. As stated by Brosseau & al. (2019):

The importance of investing in culture and change on the journey to agility cannot be overstated. Agile is, above all, a mindset. Without the right mindset, all other parts of the agile operating system can be in place, and yet companies will see few benefits. (Brosseau & al. 2019.)

If the team does not have an Agile mindset, even if they are implementing the new processes and practices by the book, the implementation will not result in success. (Denning 2018, 20) Leadership support towards new ways of working and Agile mindset plays a very important role and leading by example is required. The role of a business Product Owner is to define the vision, direction and priorities as well as remove impediments. A crucial enabler for the team to thrive in the new environment is leadership ensuring psychological safety and allowing failure to happen to learn from the mistakes. Failure needs to be normalized for the team not to be apprehensive towards experimenting with new approaches and solutions.

It is important to continuously ensure that the team is aware of the vision and goals of the project (e.g., "why are we doing this"). High-level roadmap creation jointly with the team in the quarterly planning event helps to foster discussion and create accountability for agreed upon goals.

Agile coaching supports the implementation stage for the team, improving their mindset and practices. Coaching needs to be continued in the form of observation and guidance, especially to help dealing with uncertainty, encourage self-management and incremental development mindset.

An Agile team needs to continuously challenge themselves to become more user-centric by exploring the needs and problems of the users and co-creating the solutions together with the people who have the best understanding of business reality and are closest to the customers.

For Agile teams to thrive, it is important that the environment is supporting the new ways of working. Based on the research, it was concluded that the case company needs to

further improve project management methodology and budgeting to support Agile projects. As stated by Brosseau & al. (2019), many agile transformations have experienced roadblocks in scaling up since agile teams are emerging without important company-wide components like processes and roles.

To maintain the new ways of working, it is important to not only practice them but also take the time to look back at what has been achieved so far, reflect how the team is working together, celebrate successes and failures, address the challenges and brainstorm together how to continuously improve the common ways of working. Joint learning and co-creation spirit are key. As stated by Perkin (2020, 175), a team that learns fast is a team that is building resilience in a changing environment.

According to Perkin (2020, 29), there are many methodologies, but no perfect roadmap exists that is applicable to every organization and no single framework that always fits best. Therefore, it was vital to set up a model that is applicable for the case team and case company. Based on the research, it can be concluded that the implemented model has been effective and should be continued into subsequent project stages. It is also important to apply a continuous improvement mindset by fine-tuning the model as the project proceeds to the next stage that will go deeper into experimentation with Lean Site concepts together with frontlines. It is all about working together, adapting to the changing environment and achieving results together.

The key outcome presentation is attached in Appendix 7. When presented to the company, the feedback regarding the thesis results has been very positive. It was recognized that the thesis work has supported the move towards Lean and Agile organization which is one of KONE's goals. The aim was to break the organizational silos and create a cross-functional teamwork model for a business transformation project that promotes teamwork, collaboration and co-creation. It was important to start co-creating the solutions to problems and experimenting together with the people who are closest to the customer – KONE frontline field experts.

The new work model has provided a valuable knowledge and experience for KONE how to run business transformation projects according to Agile, Design Thinking and Lean Startup frameworks. It has been important to apply the theoretical framework to KONE environment and real-life challenges. It was mentioned as part of the feedback that the case project has been one of the trailblazer projects to create and adopt the new model in a cross-functional team setting and test the new ways of working.

The objective of the study has been achieved and the work model has been set up and implemented successfully. Research has provided crucial information on what were the achievements and challenges from the initial implementation stage. It is important to implement the suggested solutions to the identified challenges to ensure that the new work model is sustained. Additionally, it is important to regularly confer with the project team and identify possible challenges to be able to continuously improve the common ways of working.

Rigby & al. (2020, 175-176.) state that it is important for Agile teams and their sponsors to not only to be aware of Agile practices but also acknowledge why the team does everything they do, since effective teams do not just go with the flow, they comprehend why they are on a mission and they repeatedly look for better ways to do it.

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Appendices

Appendix 1. Group 1 template for the Lean Site team's ways of working workshop

Group 1: Project scope and roadmap



Challenges raised in the interviews

- **“Ambitious scope of the project** – multiple roles and processes, new ways of working, new IT system development – some team members need to develop multiple things at the same time. For agile to be successful we need to have a doable project scope compared to count of team members.”
- “We are missing **clear goal / vision** for this business transformation to have full team's commitment to the vision.”

What does this challenge mean for me?

- X

Proposals for improvement and owner:

- 1.
- 2.

-
- “Backlog is a development roadmap – **roadmap should be on a more detailed level than 1-2 sprints**. Building a higher-level view, understanding big picture with targets.”

What does this challenge mean for me?

- X

Proposals for improvement and owner:

- 1.
- 2.

Appendix 2. Group 2 template for the Lean Site team's ways of working workshop

Group 2: Agile mindset challenges



Challenges raised in the interviews

Incremental development and getting fast feedback:

- "Generally, ideology of agile was quite well understood. However, some team members need to move from component-based thinking - instead **delivering small slices of value crossing all the components** (roles, KPIs, processes, IT)."

What does this challenge mean for me?

- X

Proposals for improvement and owner:

- 1.
- 2.

Courage to experiment:

- "Courage to try out new things and experiment is sometimes lacking."
- "Team has good conceptual expertise but should be learning more from real-life situations."

What does this challenge mean for me?

- X

Proposals for improvement and owner:

- 1.
- 2.

Appendix 3. Group 3 template for the Lean Site team's ways of working workshop

Group 3: Agile mindset challenges



Challenges raised in the interviews

Decision making in Agile process:

- "Agile principles of having one product owner and many business stakeholders that need to continuously be on the same page (self-organizing team) could be improved."

What does this challenge mean for me?

- X

Proposals for improvement and owner:

- 1.
- 2.

Self-management:

- "Mindset switch doesn't happen overnight, and it is hard to move from **being told what to do to being self-managing**. Needs nurturing, encouragement. Team members need to own the team backlog, being responsible and self-managing."

What does this challenge mean for me?

- X

Proposals for improvement and owner:

- 1.
- 2.

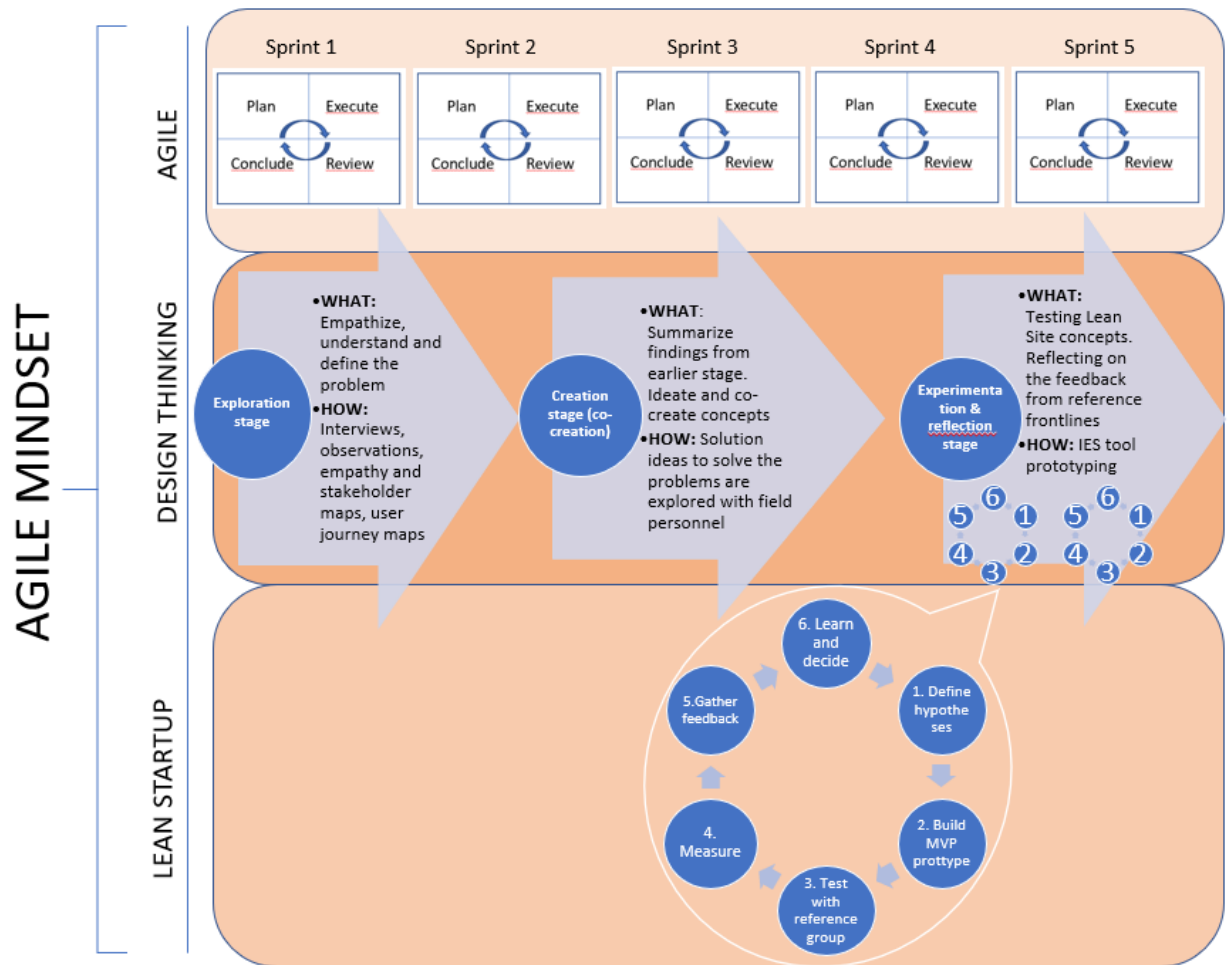
Appendix 4. Interview summary

	Achievements	Challenges
General (enablers)	<ul style="list-style-type: none"> - Business and IT co-working evolution - Great effective cross-functional team - Business buy-in and sponsorship - Business owner (Product Owner) involvement - Culture in KONE - Psychological safety 	<ul style="list-style-type: none"> - Not fully clear how this project fits in the bigger picture with other Lean initiatives and the overall IT roadmap
Agile	<ul style="list-style-type: none"> - Successfully set up new Agile ways of working in sprints and team routines - Improved scope and clarity - Sprint reviews allow to showcase achievements and generate good discussions - Actively sharing opinions in retrospectives by promoting continuous improvement mindset - During sprint planning more actionable things are getting planned - Working in sprints – concentrating on focused tasks at hand for the next two weeks - Agile coaching support 	<ul style="list-style-type: none"> - Missing clear goals / vision - Ambitious scope of the project – some team members need to develop multiple things simultaneously - Longer term roadmap needed, higher-level understanding with targets - Agile talks about fully dedicated team but in this case, it is not possible, managing schedules is challenging - Sprint planning could be improved - Number of meetings is very high - Focus on people was sometimes lacking, retrospectives have helped - External customer focus missing - Incremental development focus and courage to experiment was sometimes missing - Decision-making in Agile process needs to be clarified - Self-management mindset challenge - Agile environment challenges – KONE budgeting rounds and lack of Agile project management methodology
Lean Startup	<ul style="list-style-type: none"> - Prototyping and experimenting brought crucial learnings for the team - The needs of users were explored - Good open discussions within team and with frontlines during MVP building and experimenting stages - Iterative mindset building - Prototype validation allowed to pinpoint things that would have been overseen otherwise (time and money savings) 	
Design Thinking	<ul style="list-style-type: none"> - Service design team members joining the team provided new points of view and put more emphasis on the user perspective - UX support from service design team - Design Thinking is looking at the big picture yet aims to understand the user - Empathy maps and user journeys helped building better understanding about users 	
Applicable to all frameworks	<ul style="list-style-type: none"> - Iterative, incremental approach and very quick team learning has happened during implementation stage - Validation with users, co-creation brought a lot of knowledge - Involving frontline field experts in the teamwork and iterations, co-creating - Design Thinking is applicable not only in the beginning of the project, it can be utilized in solution development stages - Agile, Lean Startup and Design Thinking frameworks are complementing each other and building bridges - It was important to take elements from each framework and finding compromise in our reality; understanding how they contribute rather than distract 	

Appendix 5. Workshop challenge summary per group

	Challenge 1	Challenge 2
Group 1: Project scope and roadmap challenges	<p>Project scope and vision:</p> <ul style="list-style-type: none"> – “Ambitious scope of the project – multiple roles and processes, new ways of working, new IT system development – some team members need to develop multiple things at the same time. For Agile to be successful we need to have a doable project scope compared to count of team members.” – “We are missing a clear goal / vision for this business transformation to have the full team’s commitment to the vision.” 	<p>Roadmap:</p> <ul style="list-style-type: none"> – “Backlog is a development roadmap – the roadmap should be on a more detailed level than 1-2 sprints. Building a higher-level view, understanding big picture with targets.”
Group 2: Agile mindset challenges	<p>Incremental development and getting fast feedback:</p> <ul style="list-style-type: none"> – “Generally, the ideology of Agile was quite well understood. However, some team members need to move from component-based thinking - instead delivering small slices of value crossing all the components (roles, KPIs, processes, IT).” 	<p>Courage to experiment:</p> <ul style="list-style-type: none"> – “Courage to try out new things and experiment is sometimes lacking.” – “Team has good conceptual expertise but should be learning more from real-life situations.”
Group 3: Agile mindset challenges	<p>Decision-making in Agile process:</p> <ul style="list-style-type: none"> – “Agile principles of having one Product Owner and many business stakeholders that need to continuously be on the same page (self-organizing team) could be improved.” 	<p>Self-management:</p> <ul style="list-style-type: none"> – “Mindset switch doesn’t happen overnight, and it is hard to move from being told what to do to being self-managing. It needs nurturing, encouragement. Team members need to own the team backlog, being responsible and self-managing.”

Appendix 6. Lean Site framework implementation phase model



Appendix 7. Presentation of key outcomes



Thesis work results and recommendations

LAINÉ NAGLINSKA

MAY 2021

The goals of the thesis



CASE PROJECT: LEAN SITE BUSINESS TRANSFORMATION PROJECT

- **Thesis topic:**
 - Implementing new ways of working model for a business transformation project according to Agile, Lean Startup and Design Thinking frameworks

- The main **research question:**
 - How to effectively implement a work model for a business transformation project team by applying elements of Agile, Lean Startup and Design Thinking frameworks?

- The research **sub-questions:**
 - What are the main achievements after the initial framework implementation stage?
 - What are the main challenges after the initial framework implementation stage?
 - What are the recommendations to overcome identified challenges?

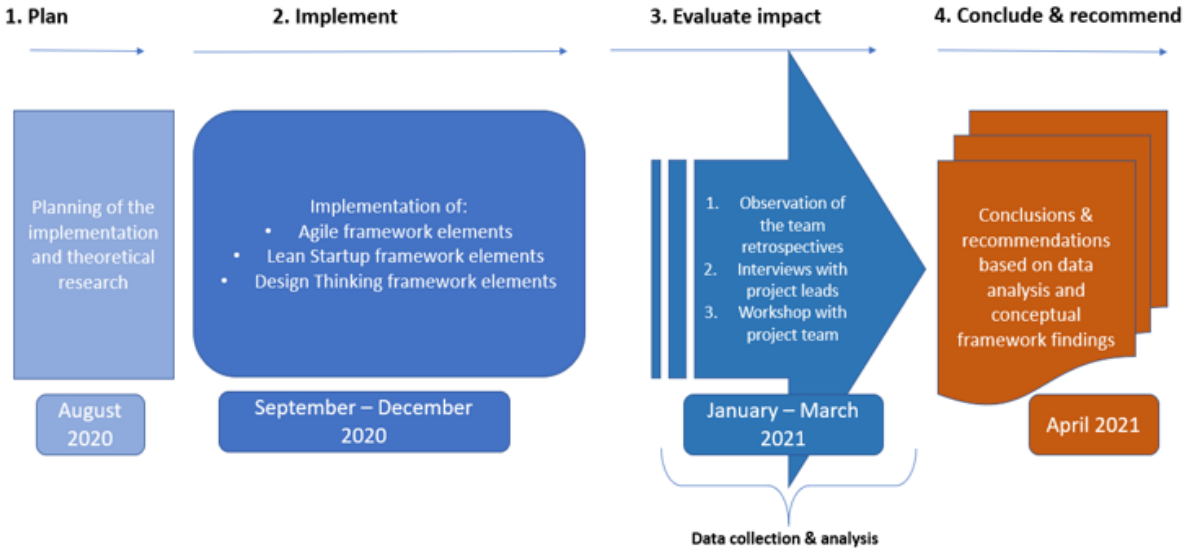
Research phases and data collection methods



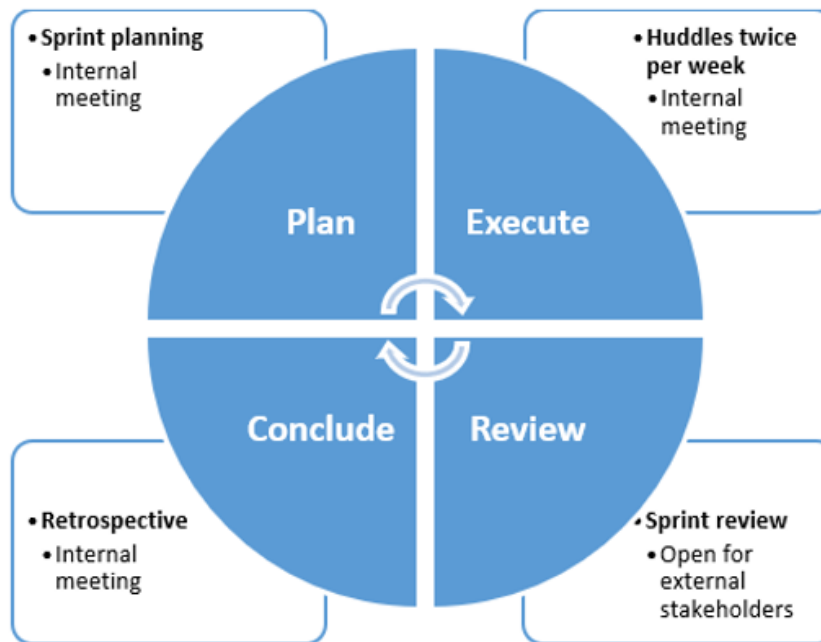
- For the study it was important to plan, implement, evaluate and recommend how to improve the work model according to action research cycles

- The chosen methodology of the research was multi-method qualitative study:

1. Team **observation** during implementation
2. **Interviews** with the project leads after implementation stage
3. **Workshop** with project team to co-create solution to found challenges after implementation stage



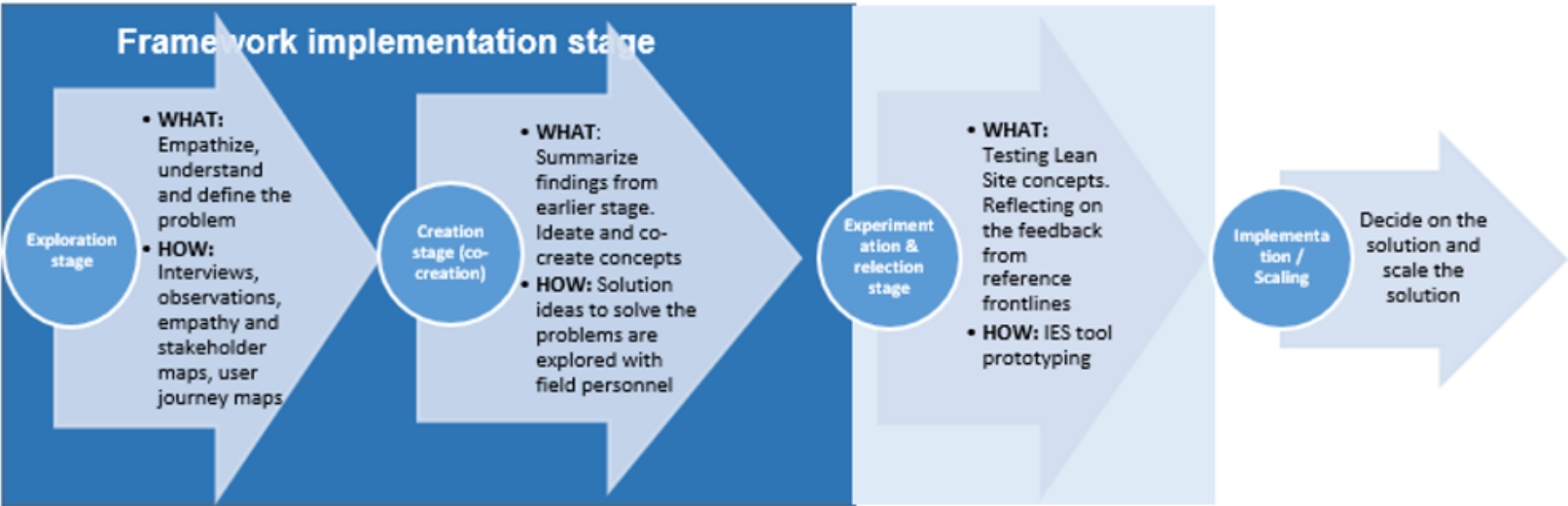
Agile framework application



- The cross-functional teamwork routine was set up according to Agile Scrum learning cycle and corresponding Scrum events

(adapted from Carroll 2012, 68)

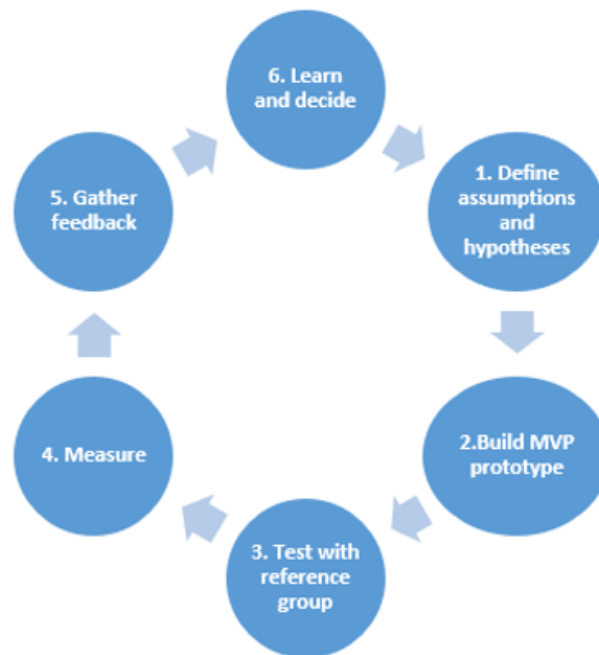
Design Thinking framework application



(adapted from Van Oosterom & al. 2010, 128; Rikke & Teo 2021)

- Applying Design Thinking exploration, co-creation and experimentation stages in structuring work together with KONE frontline field experts.

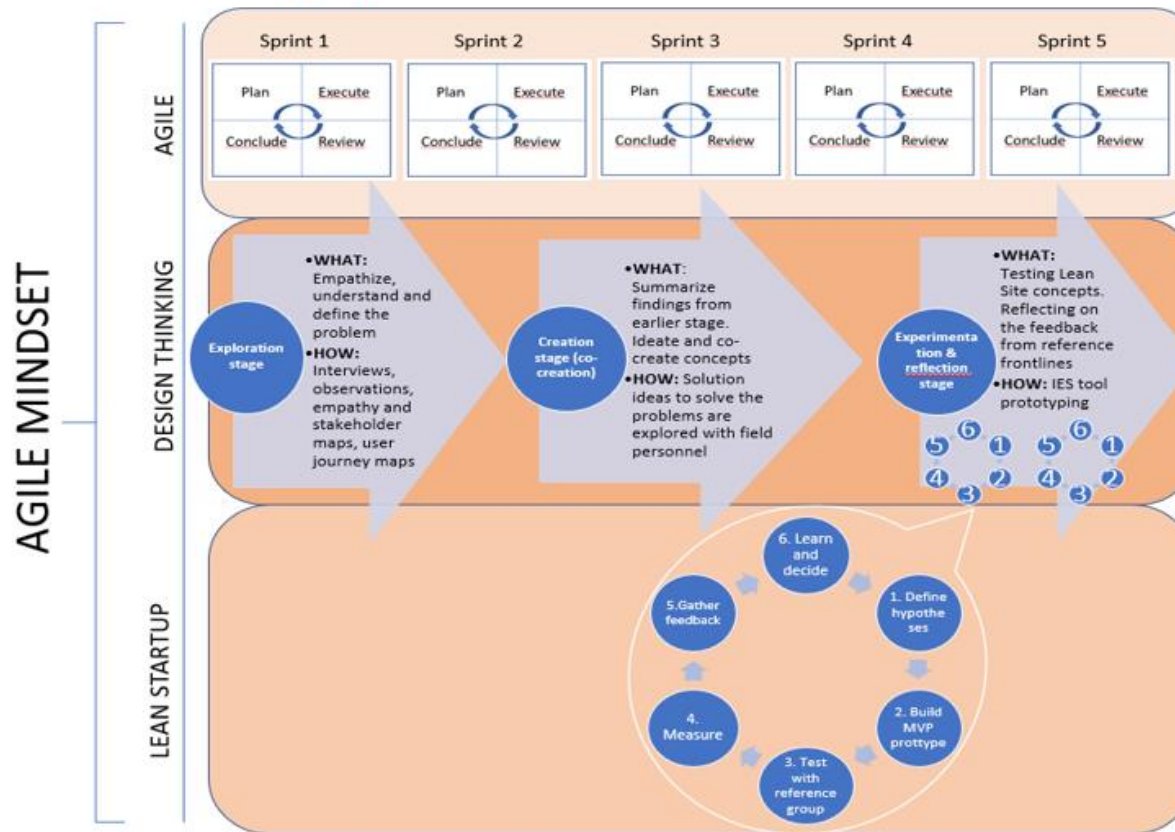
Lean Startup framework application



(adapted from Ries 2011, 75 and Euchner 2019)

- Organizing experiments according to the Build-Measure-Learn cycle of Lean Startup.

The complete Lean Site project ways of working model (implementation stage)



Main conclusions

WAYS OF WORKING & MINDSET

- A new work model means more than just implementing new processes. It is about **adopting an Agile mindset** that promotes iterative work, adaptability over detailed plan, flexibility, and co-creation with end users.
- *The importance of investing in culture and change on the journey to agility cannot be overstated. Agile is, above all, a mindset. Without the right mindset, all other parts of the agile operating system can be in place, and yet companies will see few benefits. (Brosseau & al. 2019.)*



Main conclusions

RESEARCH SHOWS THAT THERE WERE ACHIEVEMENTS AND CHALLENGES AFTER THE INITIAL FRAMEWORK IMPLEMENTATION STAGE

Main challenges

- **Agile mindset** challenges
 - Lack of fixed plan, incremental development with flexible plan
 - Self-organization
- **Decision-making** requires clarification in the new setup
- Need for **longer term planning**
- More clarity needed on the **vision** and **roadmap**

Main benefits

- The application of framework elements has benefitted the structuring of an **effective, collaborative and user-centric work model** that has allowed the team to start co-creation with field experts.
- Model has allowed the team to get to know and learn from the field experts based on **experimentation and co-creation**
- Frameworks **complement each other** by promoting experimentation over extensive planning, iterative development, involving the user in a continuous feedback process over assumptions

Main recommendations

- It is important to implement the suggested solutions to the identified challenges to ensure that the new work model is sustained:
 - **Agile quarterly planning event** needs to be introduced for the team to work on a high-level roadmap, understand the goals of the project better and plan the work for the next quarter together with reference frontlines. The rule of quarterly planning is “the people who do the work plan the work”.
 - In order to enable team performance, the aspect of **psychological safety** is important. Team members should continuously feel valued, heard and safe to raise opinions.
 - To encourage the **continuous learning mindset and normalize failure**, it is recommended to also start reflecting on failures within the team during retrospective meetings.
 - In order to foster self-management within the team, it is recommended to **continue Agile coaching** to observe the team members in action and support them. A coach should provide guidance towards an Agile mindset while observing interactions.
 - In order to reduce the need for participation in many meetings, **frequent short meetings** can quickly provide a solution rather than waiting for a week to have a longer meeting where the full team is present. It is important for team members to focus on the right topics and evaluate the need for their participation in every meeting.

Main recommendations

- To clarify decision-making in an Agile environment, it was decided together with the team that the following are the **three decision-making levels** for Lean Site project:
 1. Empowered Lean Site team making the decision: seeking a joint decision as a team.
 2. In case of differing opinions and the team is not being able to make a joint decision: the PO support the team in agreeing. If it is not possible to agree, the PO takes the decision.
 3. In case the decision is related to project goals and vision, it is taken to the Lean Site steering group for final decision.
- For the team to **learn more about the real-life issues on site** and **get feedback on possible solutions**, it was agreed to organize more regular Gemba walks to have the opportunity to reflect on the reality of installation sites and how it impacts the Lean Site scope of work.
- In the next phase of the project when Lean Site team will start experimenting with other concepts, it is important to **strengthen cooperation** with frontlines by identifying the right roles and contact persons as well as **choosing a few sites** to conduct Lean Site experiments and gather fast feedback.

Crucial elements in setting up an effective work model

- An Agile team needs to continuously challenge themselves to become more **user-centric** by exploring the needs and problems of the users and **co-creating** the solutions together with the people who have the best understanding of business reality and are closest to the customers.
- Team members need to get comfortable with iterative development, lack of fixed upfront plan and self-organization. The **mindset change** takes time and practice.
- To maintain the new ways of working, it is important to not only practice them but also take the time to **look back** at what has been achieved so far, **reflect** how the team is working together, **celebrate successes and failures, address the challenges** and brainstorm together how to **continuously improve** the common ways of working
- It is important to continuously ensure that the team is aware of the **vision** of the project (e.g., “why are we doing this”).
- **High-level roadmap and goals** discussion jointly with the team in the **quarterly planning event** helps to foster discussion and create accountability for agreed upon goals.

Crucial elements in setting up an effective work model

- **Leadership support** towards new ways of working and Agile mindset plays a very important role and leading by example is required.
- The role of a **business Product Owner** is to define the vision, direction and priorities as well as remove impediments.
- A crucial enabler for the team to thrive in the new environment is leadership ensuring **psychological safety** and **allowing failure to happen** to learn from the mistakes.
- **Agile coaching** supports the implementation stage for the team, improving their mindset and practices.
- For Agile teams to thrive, it is important that the **environment is supporting the new ways of working** (roles, budgeting processes, project management methodology etc.)