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Improving the Implementation of Changes from End User Perspective: A Case Study

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This Thesis was carried out for Neste Oil Oyj as part of a development project of business processes and related ERP systems. The main objective of this Thesis was to provide guidelines for change implementation that engage end users and to find out areas for improvement in the case company related to the implementation of process and ERP system changes.

The research approach selected was case study. To propose an implementation framework that addresses the end user viewpoint, current best practices of change implementation and people change management were reviewed. The literature analysis was followed by a data collection from Neste Oil's employees through six interviews and a survey.

As a solution, a framework for implementing process and ERP system changes was presented and the most important targets for development in the case company were highlighted. The results indicate that the main challenges are linked to not involving the end users enough in the process, not communicating sufficiently about the changes and mishandling the actual roll-out and support during and after the implementation. Despite these challenges, the results also suggest that the employees have rather positive expectations for upcoming changes.

Based on a comparison with the theoretical findings and the empirical results, a number of improvement recommendations can be made. In upcoming ERP implementation projects it would be useful for Neste Oil to focus more strongly on getting users actively participated in the change process, communicating more directly about the intended changes and providing adequate support for all the branch offices during the implementation. End user satisfaction could be included as a criterion in the success factors of future change projects. The Thesis also proposed how to implement these recommendations. The findings from this Thesis can be used at Neste Oil to develop the procedure of carrying out change projects.

Keywords	Change management, change implementation, end user engagement

Metropolia

Contents

List of Abbreviations

KPI	Key Performance Indicator

1 Introduction

This study aims at preparing the implementation of a major business process and ERP system change through the engagement of end users at the case company Neste Oil Oyj. The main objective is to review possible challenges the end users may be facing in the implementation phase and recommend how to successfully engage the end users in the upcoming change.

1.1 Background

The study is part of a major development project of business processes (later referred to as “target project”) at Neste Oil Oyj. The purpose of this development project is to renew the core supply chain processes of Neste Oil Oyj and related ICT systems.

Neste Oil is an oil refining and marketing company with unique refining and technological expertise. The company focuses on producing premium-quality products and is the world’s leading supplier of renewable diesel. Neste Oil employs over 5,000 people in different countries and its main office is located in Espoo, Finland. (Neste Oil, 2013 and n.d.)

In changing business environments the company needs to continuously improve its way of working. With this objective in mind, the company has started a development project of business processes to improve its operational way of working. The key focus of the project is on the end-to-end view from supply to customer. The goal of the project is to improve the efficiency of the processes in the supply chain with clear accountabilities and better and up-to-date information available in the systems. With accurate and sufficient information, clear roles and responsibilities as well as better system support it is possible to make better and faster decisions.

Currently, the project has reached its first stage with high level process descriptions and is continuing to a more detailed level with the to-be processes. The process owners are being nominated and the requirements for ICT solutions are being defined. Some smaller changes in the scope of the project are already being implemented as quick wins. The actual implementation of the improved processes and new ICT systems is scheduled to start in two years' time from the time of writing this study.

1.2 Business Challenge and Goals of the Study

The importance of end user perspective is often underestimated in a major business process change such as this. An increasingly important reason for change project failures is the "human element" (Paton et al., 2008; Seo et al., 2012).Thus, the engagement of end users is critical for the success of the implementation and needs to be acknowledged at an early stage.

The objective of this research is, first, to review typical challenges in a change implementation process and to gather best practices and frameworks on implementation models related to end user engagement. Secondly, the goal is to study the experiences of the case company's employees regarding changes that have taken place previously in their work environment in order to gain a practical understanding on successful change implementation and to find areas for improvement. Finally, the goal is to prioritize the findings and recommend follow-up actions.

The study focuses on answering the following questions:

1. How to successfully implement business process and ERP system changes from the end user viewpoint?

2. How to improve the implementation of business process and ERP system changes in the case company?

The outcome of the study is a summary of recommendations that highlight the steps of the change implementation process that should be improved in the case company.

1.3 Research Design

Figure 1 presents the research design of this study.

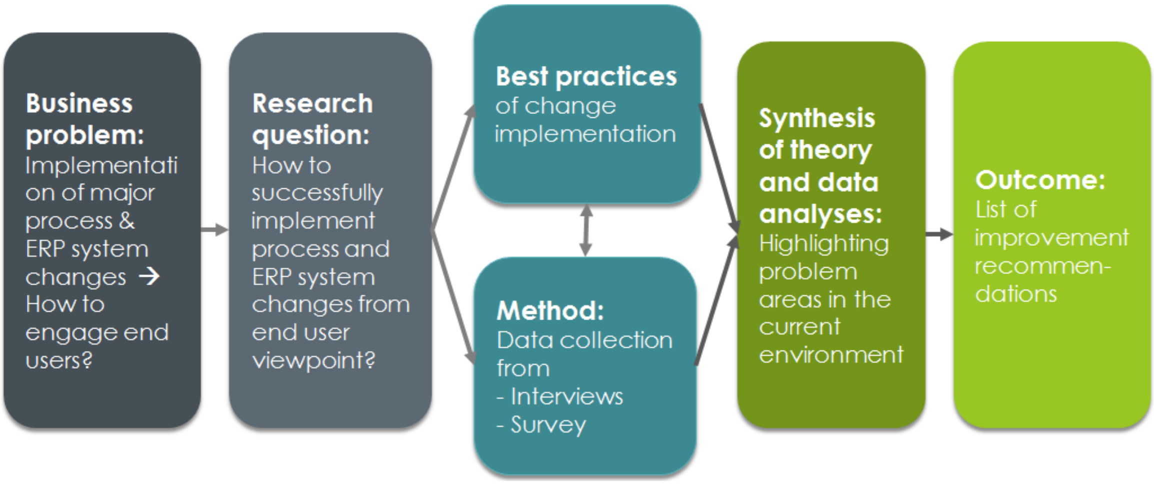


Figure 1. Research design of this study.

As Figure 1 shows, to achieve the outcome of the project, this study is designed as follows. First, the research question is formulated based on the research problem. Secondly, the best practices of people change management are studied. Then, the data is gathered from interviewing the employees and conducting a survey focusing on employees' change experiences. After that, the collected data is analyzed and based on a comparison with literature best practices, uncovered problem points will be highlighted. Finally, the outcome of the study, a list of recommendations, is formulated.

1.4 Structure of the Report

The study is written in 5 sections. Section 1, Introduction, presents the background, objective, business problem, research design and outcome of the study. Section 2 overviews current best practices of change implementation from end user viewpoint. Section 3 introduces the methods applied in this study and describes the data collection process. Section 4, Results and Analysis, introduces the results of the data analysis, the biggest challenges in current change implementations in the case company, and summarizes the improvement recommendations for the future. Section 5, Discussion and Conclusions, includes a short summary and an evaluation of the research project.

2 Change implementation

This section describes the implementation of changes from end user perspective and current best practices of people change management. First, it deals with the importance of end user perspective in a change process. Next, it investigates the reasons behind change resistance and studies different methods to engage end users in a change. Finally, the presented guidelines are summarized in one framework.

Change implementation can be defined as actions taken by organizational leaders to achieve and maintain outstanding performance in a dynamic environment (Spector 2007). According to Chaffay (2007), implementation is about piloting the change, introducing new procedures, training and rolling out the change. The implementation phase of a business process change is critical for the success of the project since the developed processes and new improved systems will not be realized in practice before the implementation is completed (Jeston et al., 2006). If end users of the change are not taken into consideration, there is a risk that the implementation fails.

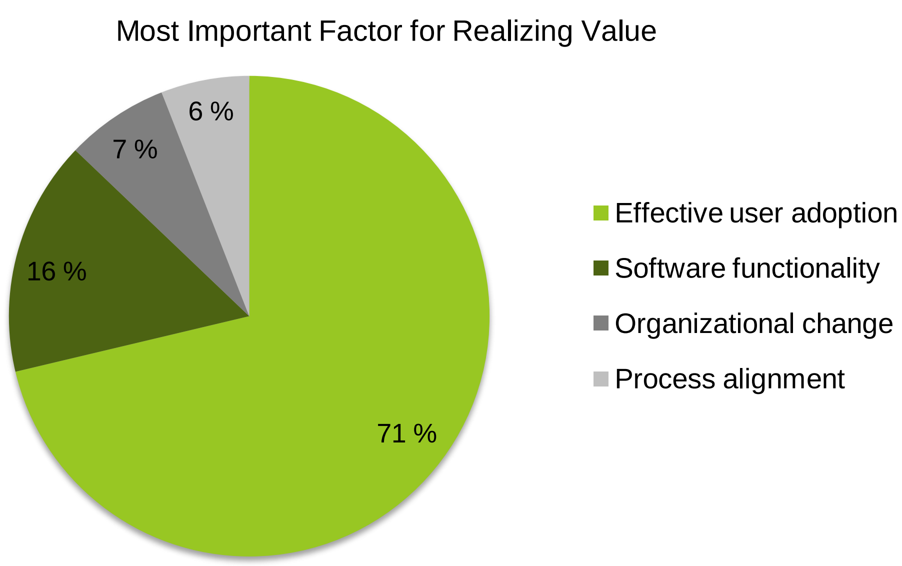


Figure 2. The most important factor for realizing value according to Neochange, SandHill.com and the TSIA (2009).

Neochange, SandHill.com and the TSIA have studied the specific factors that lead to the success of business applications in *Achieving Enterprise Software Success* (2009).

According to their study, effective user adoption is seen as the most important factor for realizing value, with as much as 71% of the total (see Figure 2). In the same study, enterprise software success was defined as realizing business benefits (75%) and high levels of effective usage (64%). These results show the importance of user adoption in successful implementations of new software. Clearly one should not underestimate the benefits of investing in the end user engagement and minimizing change resistance.

2.1 The Importance of End User Perspective in Change Implementation

An increasingly important reason for change project failures is the “human element” (Paton et al., 2008; Seo et al., 2012) and the inability to understand and manage employees’ perceptions of change (Bala et al., 2013). According to statistics, 84 % of change projects fail because of some people related issue (Mohapatra, 2013). One of the problems is that managers do not know how to involve end users in the process of planning the change (Pukkila, 2013). Furthermore, too often in change projects, user expectations are not met, the time to implement is much longer than expected and the cost to implement turns out to be much greater than expected (Stadtler et al., 2008).

Surprisingly few of the reasons why change projects fail are linked to the technology involved (Paton et al., 2008; Sadtler et al., 2008). Instead, one common reason for development project failures is that the implementation is seen only as one of the final phases of the project (Jeston et al., 2006; Paton et al., 2008). Indeed, there is a risk of a project failure if the implementation is rushed through without fully preparing the way ahead (Jeston et al. 2006). Often too much time is spent on developing a solution and not enough is left for the implementation (Paton et al., 2008).

The purpose of planning the implementation at the beginning of the project is to ensure that the new solution is optimal for the organization and that it is used in practice as planned. In addition, it is in everyone’s favor to complete the implementation in the shortest time possible. This requires acknowledging the importance of implementation already from the beginning of the project. (Jeston et al., 2006)

2.2 Change resistance

As presented, people change management is crucial for the success of a change project and it should be a key area of focus from the beginning of the project. The importance of the people side of the change implementation cannot be over-emphasized. A simple formula that presents this well is GE's equation of change effectiveness which forms the basis of their change acceleration process (Evans, 2011; Von Der Linn, 2009):

$$Q \times A = E$$

Where,
Q = quality of the technical strategy
A = acceptance of change (people side),
E = effectiveness of change (execution).

This equation presents that change effectiveness, E, consists of the quality of the technical strategy (e.g. change solution), Q, and end user acceptance of the change, A. We can observe from this formula that if the people side of the change, A, is forgotten, then the change fails even with an excellent change solution, Q (Evans, 2011; Von Der Linn, 2009). Indeed, the most important notion of this GE's equation is the multiplicative relationship between Q and A – if acceptance of the change is zero, also the total effectiveness will be zero, even with a high quality solution (Von Der Linn, 2009).

Why is the people side of the change so difficult to manage and the acceptance of end users so challenging to achieve? One major factor is change resistance. There are two aspects of change resistance that can be observed from the change management literature and studies. One is the natural resistance that is related to the feeling of uncertainty and anxiety during a change which people generally want to avoid. The other one is related to the resistance that is *created* unintentionally by the change managers when the end user perspective is not understood or acknowledged. Next, we will analyze these two aspects of change resistance.

Natural uncertainty

The first side of the change resistance is the natural anxiety among employees which is common in change projects. Previous experiences and presumptions form one part of the expectations of the employees which affect the amount of resistance (Mohapatra, 2013). A common reaction to change is fear, when employees are not sure how the change is going to affect their work and position and are comfortable with the familiar status quo (e.g. Jeston et al., 2006; Paton et al., 2008; Spector, 2007). If employees are satisfied with the status quo, they may easily see any change as negative (Spector, 2007). Employees might fear that responsibilities will be affected and employee power and authority will be reduced (Mohapatra, 3013; Paton et al., 2008). Or, conversely, employees might fear that they do not possess the needed skills to carry out new tasks (Mohapatra, 2013). In addition, new technological challenges are likely to cause concerns and disruption (Paton et al., 2008).

Furthermore, the redivision of work might result into having new superiors, which can also cause resistance (Mohapatra, 2013). On the other hand, changes aimed at increasing the transparency of processes might cause fear of the work being better monitored (Mohapatra, 2013). Overall, when employees experience changes in their work environment and in their job functions, it will eventually affect employees' job satisfaction (Bala et al., 2013). If the change is believed to affect the job functions significantly, change might be seen as a threat (Spector, 2007).

Moreover, employees might see change as a threat also because of other reasons. Change might be seen as a mere downsizing or cost cutting exercise, when people assume that processes are being changed only to cut costs and lay off people and thus will resist any kind of change. Change often requires learning new tasks or ways of working, and the implementation can be seen as slowing down the process and complicating the work. Similarly, the increased workload during the transition can cause resistance. (Mohapatra, 2013)

Created resistance

The second, often unrecognized, aspect of change resistance is resistance created by change leaders. Change leaders may unintentionally create resistance if end users are not sufficiently involved in the project. If employees are satisfied with the status quo and have not been engaged in the process of defining what needs to be changed, they might not fully appreciate or understand the advantages of the change. A potential danger is that end users believe that management and the project team simply do not have the competences or commitment to achieve the defined goals. Even though some employees may see the actual change as positive, there might be resistance if they believe that the change process is not handled correctly. (Spector 2007)

This leads to the importance of fairness of the change process. Evans *et al*. (2011) compare the significance of *distributive justice* and *procedural justice* in a change process. According to Evans *et al*., change managers generally pay more attention to distributive justice which relates to the fairness of the change outcome, e.g. resource allocation. However, as Evans *et al.* point out, in major changes there are always winners and losers, for example as some gain more power and others lose resources. Procedural justice, on the other hand, has a notable influence on the trust and commitment of the employees, since it relates to a fair process of making decisions. If the employees respect the way the change is carried out, they accept the change more easily even with a disappointing outcome (Evans et al., 2011). Conversely, if people perceive the decision process as unfair, they will distrust the organization even if the result was in their favor (Evans et al., 2011). Like Evans *et al.*, Spector (2007) also highlights that mishandling the change process will create change resistance among the employees.

As a summary, Table 1 lists the reasons behind change resistance presented above.

Table 1. A summary of reasons behind change resistance.

Natural uncertainty	Previous experiences
	Not clear how work will be affected
	Not clear how position will be affected
	Redivision of work
	Satisfaction with the status quo
	Uncertainty of own skills
	New technological challenges
	Complicated and increased amount of work
	Fear of downsizing
Created resistance	Not involving users
	Users not believing in the competence of project team
	Unfair decision process

As presented in this chapter and summarized in Table 1, there are different reasons behind change resistance. Next, we will see what methods there are to overcome change resistance and engage users in change.

2.3 Methods to Engage End Users in Change

In order to overcome change resistance, natural or unintentionally created, change leaders must understand the importance of people change management. In concrete terms, this means allocating enough time and resources of the project to involving end users in the change process, planning the communication well and training with adequate methods. In this chapter, these aspects are presented in detail.

After the to-be processes and system solution have been drafted, still possibly including several solution options, a high-level implementation plan should be defined (Stadtler et al. 2008). Change managers need to use a suitable implementation framework in order to anticipate possible challenges in the implementation (Mohapatra, 2013). It is important to plan how to manage unexpected issues during the implementation which are bound to arise, such as unexpected resistance from the end users or system bugs (Stadtler et al. 2008).

Too often the time to implement is much longer than expected and respectively, the cost to implement turns out to be much greater than expected (Harvard Business Essentials, 2003; Stadtler et al., 2008). Therefore it is crucial for the success of the project to develop a reliable estimation of the costs and duration of the implementation. In cross-organizational change projects it can be assumed that the actual money and time spent on the implementations will exceed the original estimates by at least 50 percent. Thus, it is important that the estimation is done realistically by experienced personnel based on successful projects. The estimation has to include all the aspects of the implementation, including e.g. communication and workshops. (Stadtler et al. 2008)

Well known models for leading change are Lewin's three-phased change model from 1951 and Kotter's 8 steps of change from 1996 (see Figure 3).

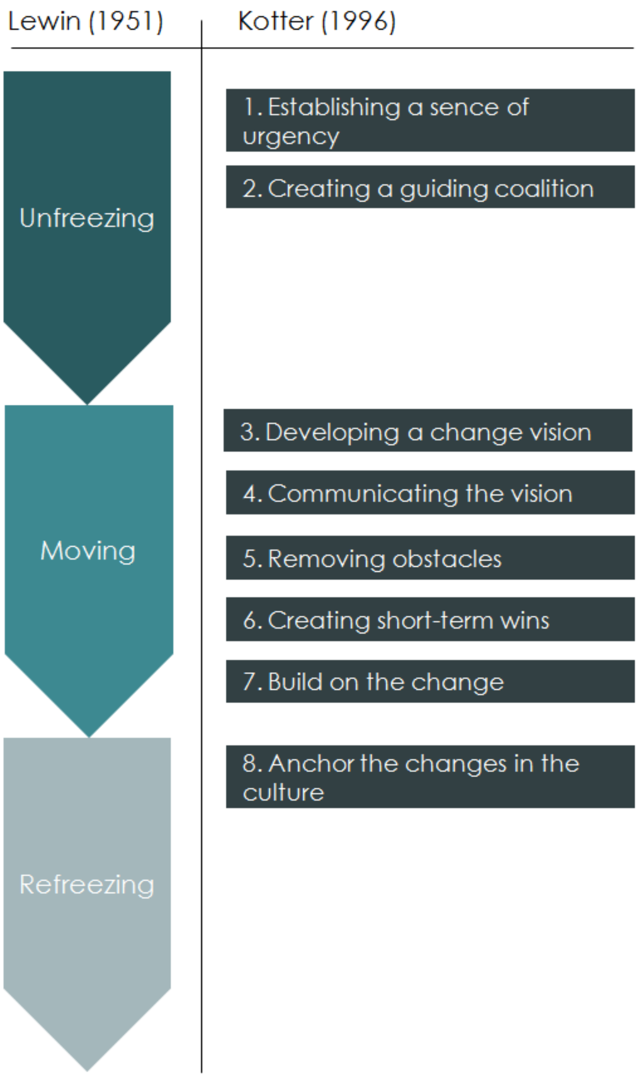


Figure 3. Comparison of Lewin's and Kotter's change models (adapted from Davis, 2012).

Lewin's and Kotter's change models form the basis for people change management and a comparison of their models is presented in Figure 3. Lewin's model suggests that the change process has to start by unfreezing the status quo, creating the need for the change. As Kotter's model describes it, a sense of urgency needs to be established and a guiding coalition to be created. Next, in order to actually change, *move* as indicated in Lewin's model, there must be a clear vision to be communicated. In addition, Kotter 's model recommends focusing on reducing change resistance and creating short-term wins to show the benefits and the progress of the change, and keeping on building on the change. Finally, in order to refreeze the new way of working, the change needs to be anchored in the company culture. (Davis, 2012)

In order to realize these steps in practice, users have to be involved in the change process, the change communication has to be planned and adequate training has to be arranged. In this chapter, these aspects are studied in more detail. Some other tools that may help the implementation are also presented.

2.3.1 Participation of the End Users

Participation in decision making is one of the key ways to not only engage end users in a change but also to make sure that the new solution meets the real business requirements. The end users know their work and the context that the solution needs to support best, so it is vital to get them participated (Abelein et al., 2013). The participation of the users is critical in order to precisely define the requirements for the new solution and reduce unneeded but expensive features in ICT systems (Abelein et al., 2013). The users should be involved from the very beginning so that the designed solution would be usable (Bano et al., 2013). It is most cost effective to involve users in the beginning phase, in which case their involvement may not be required in the later phases (Bano et al., 2013). The more precisely the requirements are defined at the very beginning; the less changes are needed in the later phases. Besides, user value cannot be easily added in the late phase of the solution development if the real needs have not been defined at the start (Heiskari et al., 2009).

Pukkila (2013) presents a three phased model for engaging the end users throughout an ICT change project which is visualized in Figure 4. Many of these steps can be applied in process changes as well. The first stage in Pukkila's model is to agree together with the end users on the goals of the new ICT system. The functional requirements need to be carefully defined together with the end users as early in the project as possible. Asking the users to prioritize the identified requirements will help the project team to concretely structure the order of the development work. Managers need to get an understanding of the end user expectations and the functionality that is needed. In addition, it is worth evaluating the usability of the system already at the first stage based on the drafts, as the biggest changes are easier to adapt to before the design is too far on its way. (Pukkila, 2013)

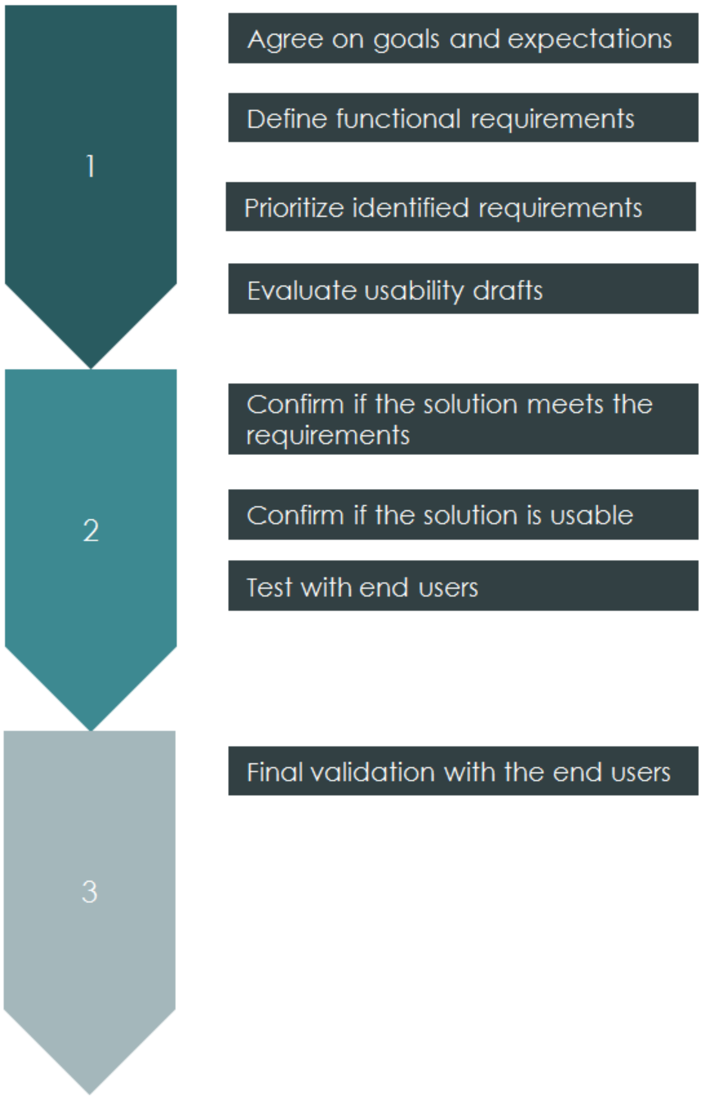


Figure 4. A three-phased model to involve end users in a system change process (according to Pukkila, 2013).

The second phase is about ensuring that the change is going to the right direction. It is important to confirm whether the solution meets the requirements listed in the first phase and particularly, if the user interface is functioning. In practice this phase can be realized by having the end users test the new solution. In case there are some elements that need to be improved, they have to be prioritized by the end users, after which the project team should take them into account and realize them to the extent that is possible within the budget and schedule. However, as Bano *et al.* (2013) notes, if the requirements have been defined with appropriate rigour at the beginning, there should not be a great deal of changes needed at the testing phase. (Pukkila 2013)

The third phase is about final validation of the solution with the end users. During the solution design, key processes and functionalities are validated in order to recognize the potential risks and constraints in the implementation (Stadtler et al. 2008). Pukkila proposes to conduct a final voting by the end users where they can decide whether the solution is ready for implementation. This will again increase the feeling of control of the end users. The results of the voting need to be handed over to the project leaders who are then responsible for making a decision whether to move on to piloting (Pukkila 2013). In order to avoid resistance against the upcoming changes, all the organizational units that are affected by the change need to participate in the validation (Stadtler et al. 2008).

Overall, in order to increase user satisfaction and to better respond to the business requirements, user involvement should be increased as much as possible during all the phases of the project. If the solution is developed in collaboration with the end users, it is likely to be more usable, and thus its implementation will be less challenging. For example in traditional waterfall models users can participate only in defining the requirements and validating the solution. Rapid application development, on the other hand, involves users also in the planning and in the user design. This ensures a closer match of the solution to the business needs. (Abelein et al., 2013)

Table 2. How to involve users in the change process (adapted from Bano et al., 2013; Abelein et al., 2013 and Heiskari et al., 2009).

Involvement in different stages	Ways to involve
Defining requirements	Interviews
Planning	Observations
User design	Contextual design
Evaluating prototypes	Workshops
Testing	Focus group
Final validation	

As summarized in Table 2, users can be involved in different stages of the project through different methods. Ways to involve users are interviews, observations, contextual design, workshops and focus groups. However, not all of these methods are clearly participative methods – for example interviewing and observing are more of acting as a consultant and not active participation. In a focus group, a group of users is given a part of the new solution or a specific topic to be commented and discussed on (Heiskari et al., 2009). This kind of occasion where users can discuss over the change with familiar people in a small group is an effective way to get feedback from the employees (Ponteva, 2010). Contextual design includes combining observation with discussion and reconstructing past events (Abelein 2013). This method can be used for example when planning the solution for complex cases. Workshops present the most active participation because users are involved in the actual decision making. (Abelein et al., 2013)

An important thing to note is that when involving users, there should be a systematic way to gather and handle the feedback and different views (Heiskari et al., 2009). Otherwise there is a risk that valuable information is ignored due to not having enough resources to process it effectively. In that case, the user is not actually able to influence the design of the solution. As per Heiskari *et al.* (2009), having users just physically present does not ensure that they really influence the design of the solution. The focus should be more on the real understanding of the user and business needs, so that the user perspective is actually taken into consideration in the design phase (Heiskari et al., 2009). However, if a change decision needs to be accepted and there are no alternatives, the employees should not be given the impression that they can choose (Työterveyslaitos, 2013).

Furthermore, a multinational context adds complexity to people change management, both in the communication and in the engagement of end users. As discussed above, one of the most effective ways to build acceptance and trust with end users is through participating them in the development process. But when part of the end users work around the world, it is more challenging to realize these steps in practice. With no existing social relationships and language differences, there is a temptation to ignore or overlook subsidiaries in the planning phase of the change project. (Evans et al., 2011)

Consequently, implementing change in an intercultural context is complex and challenging. According to Savolainen (2013), the influence of national culture is often a stronger factor than the organizational culture. In cultures which try to avoid uncertainty it is more difficult to accept change. Although the change might bring benefits to the employees, the status quo provides safety with clear instructions and rules. Thus, people might be resistant to change and reluctant to participate in the implementation process. This will require efforts from the project team to get the distant locations to participate as well. (Savolainen, 2013)

2.3.2 Change Communication

Communication is an important factor in implementing changes and has to be carefully planned. The two most important aspects in change communication are to highlight *why* the change is needed and what the *advantages* of the change are. The new solution should not be imposed on employees but some preparation is needed in order for employees to embrace the change (Mohapatra, 2013). Therefore a proper communication plan needs to be created. It includes the plans of how and when the goals and expected benefits are to be communicated to the organization. Through well-planned communication it is possible to reduce the natural uncertainty that causes change resistance.

What to communicate

The first step in change communication is to clearly communicate the trigger that is causing the change. It is easier for people to accept the change when they understand it is necessary. As Lewin's change model suggests, dissatisfaction for status quo should be created (Davis, 2012). The triggers for the change need to be clearly explained throughout the organization. Presenting a potential crisis as a possibility for change helps people to accept the situation. However, since people may react negatively to a threat, it is important to emphasize the change as an opportunity. Furthermore, when communicating the trigger for the change, it is critical to inform people of the notion that *no change is not an option*. The staff needs to understand that the change is going to roll out and they should also receive information on the impacts on themselves and on the organization. (Paton et al., 2008)

After expressing the need for the change, it is equally important to visualize the future. This includes defining where the organization is aiming to go – what the response for the crisis that is causing the change is, what the future goals and conditions are, and what the future challenges are. Most importantly, it is important to explain what the benefits from the change are. Change goals should be meaningful to all the employees in order for them to have a vision of the future that can motivate them to pursue difficult and uncertain tasks (Huy 1999). This helps in creating a climate of excitement and participation instead of fear or prejudices. (Paton et al., 2008)

Most importantly, people will want to change their ways of working only if they see that the advantages in the change are bigger than the disadvantages (Otala, 2013). End users need to be able to experience the benefits of the change, for instance through interactive simulations (Stadtler, 2008). Often implementation strategies focus too much on e.g. training, so that users *can* use the solution, when as much weight should be given to the motivation of the users, so that they would *want* to use it (Jeston et al., 2006). If people are not convinced of the advantages of the developed processes, those processes cannot succeed (Mohapatra, 2013).

According to Bordia *et al.* (2004), as soon as employees hear about an upcoming change, they start to wonder how it will affect the organization and especially their own job. If formal communication does not define the concrete impacts of the change, informal communication will arise, often in the form of rumors. Rumors will create challenges in the communication. Thus, in order to avoid wrong presumptions, an open and participative communication process is recommended (Bordia et al., 2004). Fugate *et al.* (2008) suggest presenting a clear vision and defining employee roles in the new environment. In order to be concrete about the change implications, the message should to be tailored for each audience (Payne, 2005).

Payne (2005) presents a case example of Excel's communication strategy in a change situation. First, different groups of employees were categorized according to their probable reaction to the change: resistors, supporters and neutral. Second, the communication strategy included meeting with each of these groups to talk about *why* the change needed to be done. The meetings included describing how the business had changed in the past years to provide an understandable context of why the change is critical for growth. One important aspect was emphasizing that managers would be supporting the employees during the change. (Payne, 2005)

How to communicate

Whether communicating about the reasons for the change or its benefits, the communication needs to be concrete (Beach, 2006). This means that the vision of the change needs to be described in a simple way and concrete language. In order for the vision to be clear enough, there should not be more than two or three well-defined goals (Beach, 2006), and the core change message should be able to be presented in less than two minutes (Payne, 2005). In addition, presenting a concrete action plan will convince people that the goals are reachable (Beach, 2006). One way to create an atmosphere of anticipation and motivation is to organize a kick-off workshop for the people affected by the change. (Stadtler 2008)

Furthermore, it is important to discuss the change openly – not only responding to questions, but initiating discussions and sharing own concerns and expectations as well (Fugate et al., 2008). Managers are often worried about the possible resistance from staff but open communication will best promote the implementation of the change (Jeston et al., 2006; Paton et al., 2008). Discussing should not only emphasize the positive elements of the change to the organization and individual employees (Fugate et al., 2008). Managers also need to provide a clear understanding of the risks involved (Stadtler, 2008). Truth is critical in presenting the change (Paton et al. 2008), and it will give the change a more positive light among the employees (Fugate et al., 2008).

It has been observed that a face-to-face contact is a much more powerful way to convince employees of the change than e-mail or other written notices. Thus, communication should be focused to be direct, two-way and face-to-face communication (Savolainen, 2013). Not only does two-way communication allow the employees to be involved in the change process, it can provide important views to the managers of the change implementation (Savolainen, 2013). Smaller group meetings and even one-on-one meetings will facilitate the acceptance of the change as they will allow employees to give feedback (Payne, 2005). A lot of people do not dare or know how to ask anything in an auditorium after a general PowerPoint show (Ponteva, 2010), so smaller meetings are required to get feedback from the employees.

However, large group meetings can also be useful when the message needs to be told at the same time for everyone in order to reduce rumors and speculation (Payne, 2005). Based on a study by Savolainen (2013), continuous communication during a change process facilitates overcoming change resistance. Communication needs to be continuous in order to be able to engage the employyees and to ensure transparency of the change process.

Huy (1999) presents the idea of using playfulness and humor as a tool against resistance. Indeed, the dynamic of playfulness can be seen as a facilitating factor in the change implementation phase. At an organizational level, the dynamics of playfulness refer to the ability to encourage experimentation and tolerate mistakes during change (Huy 1999). Also Mohapatra (2013) recommends using humor in the communication of a change in order to bring the employees together and to prepare them to accept the change. Humorous ways in communication may be for instance a role play or a skit showing the problems in the status quo for instance (Mohapatra, 2013).

Finally, Fugate *et al.*(2008) encourage, as does Kotter's change model (Davis, 2012), to realize "quick wins" during the change process. According to the study, quick wins help in creating positive emotions and may increase the commitment of the employees.

Table 3 summarizes the communication guidelines that are presented above.

Table 3. Summary of recommended communication and its purpose according to the above referenced literature.

What to communicate	Purpose
Explain triggers	Explain *why* change is needed
Crisis in the status quo	Explain *why* change is needed
Emphasize opportunity & positive challenge	Reduce the feeling of threat
No change is not an option	Understand that change will roll out
Visualize the future, meaningful & concrete goals	Create excitement and participation
Communicate advantages, show the benefits	Create desire to use the solution, increase commitment to change
Initiate discussion, share concerns, explain risks = openness	Reduce resistance, build trust
Be concrete, use simple language	Make the message clear and comprehensible
Define impacts of the change	Reduce uncertainty and rumors

Present a clear action plan	Reduce uncertainty
Incorporate playfulness and humor	Encouragement, tolerate mistakes, bring employees together
Realize quick wins	Show the progress, increase commitment

As seen in Table 3, the purpose of communication is to explain why the change is needed, create desire to use the new solution, create excitement and reduce uncertainty. Overall, the change message needs to be clear and comprehensible. According to a study by Savolainen (2013), what facilitates employees to accept the change and what seems to influence trust the most, is to provide the employees with sufficient information at the right time. When people feel that reliable and relevant information is being shared, they are able to overcome the change resistance (Savolainen, 2013).

2.3.3 Other Tools

Next, some other tools and methods that support the change implementation process are presented.

First, in order to understand expectations of the employees and to perceive possible resistance early enough, the reactions of the individual employees on the change should be studied (Mohapatra, 2013). Second, an impact study should be conducted in order to identify and estimate the impact which the change will have on individual employees. The impact study should cover different levels including e.g. technical and behavioral and work processes (Mohapatra, 2013). Also Jeston *et al.* (2006) suggest a behavioral charter to be developed showing what behavior needs to be changed from the current to the new behavior. Managers need to be able to communicate clearly how the ways of working and responsibilities will be changed and the purpose of the impact study is to clarify that. It will be a benefit to assess the change impacts several times along the way in order to fine-tune the process of change (Mohapatra, 2013).

Another tool for preparing for the change implementation is to make a heat map (see Figure 5). The purpose of a heat map is to find out the employees who are likely to resist the change most strongly during the implementation. The heat map is a 2x2 matrix with the parameters seniority and activity of the employees. The size of the blue circle presents the intensity of change resistance to be expected from the employees.

By analyzing the intensity of change resistance it is easier to manage and overcome it. By way of a heat map change resistance can be identified easier.

Figure 5. Heat map according to Mohapatra, 2013.

As seen in Figure 5, the heat map can be used not only to identify the biggest resistance but also change agents. Change agents are those with low intensity of change resistance but a high activity level. The purpose of a change agent is to promote the change, reduce resistance and facilitate its implementation (Paton et al., 2008).

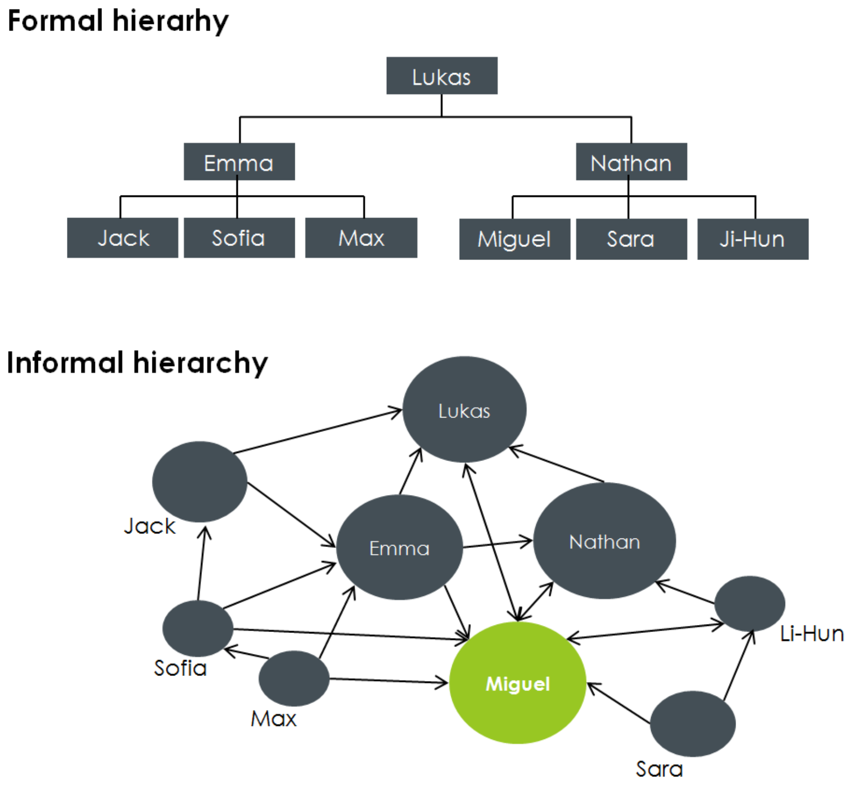


Figure 6. Comparison of formal and informal hierarchy according to Battilana et al. (2013).

Paton *et al*. (2008) recommend that the change agent is preferably a member of the staff but should come from outside the social system where the change is implemented. However, according to Battilana *et al.* (2013), the most important aspect of successful change agents is their personal networks, i.e. their relationships with colleagues. Regardless of their position in the organizational hierarchy, being in the center of an informal network (see Figure 6) is a clear advantage.

2.3.4 Training

End user training is essential for the success of system implementation. Training requires a great deal of resources especially if the employees are not yet familiar with the system (Henriksen et al. 2008). In order to ensure a return on a system investment in the long term, time must be devoted to end user training in the short term (Ferrando, 2001). However, training requirements are often underestimated (Norton et al., 2012). If training is not paid enough attention to, or it is not done in adequate methods, system implementation will most likely fail (Noudoostbeni et al., 2009).

Norton *et al.* (2012) provides a comprehensive viewpoint to the training of end users for highly demanding information systems, such as ERP. As usually a very small proportion of the implementation resources are left for the end user training, the research of Norton *et al.* shows the critical role of training in successful implementation. Moreover, in the study of Henriksen *et al.* (2008), an explicit relation between the lack of training and the low rates of users actually using the system post-implementation was proven.

According to Norton *et al.* (2012), end user training should be invested in throughout the implementation. Both end user training and post-implementation training were found to be of importance. In addition, training needs to go beyond the use of the actual system and its functionality – training should include a focus on the cultural change that the new way of working requires (Henriksen et al., 2008). In order to realize the full benefits of the system implementation, end user training requires enough resources which should be allocated effectively (Norton et al., 2012).

Training is a crucial phase of system implementation because end users need to fully understand the functionalities and in particular, how to use them in their specific work. The research of Norton et al. (2012) presents nine recommendations that should be followed in order to allocate the training resources effectively (see Table 4).

Table 4. Training requirements for successful system implementation and their allocation throughout the implementation lifecycle (adapted from Norton et al., 2012).

Phase	Recommendation	What to take into account	Training type
PLANNING	1. Develop a holistic training strategy	- End user training requirements - Post-implementation training requirements - Provision of training resources	End user training
PLANNING	2. Incorporate customer management training	- Tailor training for each department - User acceptance testing by internal trainers who know the business - Relate objectives and content to end users' work	End user training
DELIVERY	3. Timing of training delivery	- Outline training milestones - Schedule training close to the go-live date - Flexibility to ensure enough practice	End user training
REVIEW	4. Undertake skills based training	- Core users and standard users - Training in line with work requirements	End user training
REVIEW	5. Carry out training course evaluations	- Verify effectiveness of training - Determine if refresher courses are necessary	End user training
EXPLOITATION	6. Promote the benefits of the system	- Use internal staff as transition champions - On-the-job training	Post-implementation training
EXPLOITATION	7. Ensure knowledge transfer from the vendor	- Ensure under contracts enough training from the vendor - Continue post-go-live	Post-implementation training
EXPLOITATION	8. Treat as knowledge workers	- Maintain records of training - Post-implementation training program - Centralized training department / by each department	Post-implementation training
EXPLOITATION	9. Internally disseminate knowledge	- Set up an internal support network of super users - Keep super users in place post-implementation	Post-implementation training

Table 4 presents a clear framework for planning the training requirements according to Norton et al. (2012). First, in the planning phase of the implementation, a holistic training strategy should be developed. The training strategy should include three key aspects which are end user training requirements and post-implementation training requirements (as presented in Table 4), and the allocation of resources. Second, customer management training should be incorporated, meaning that training should be tailored for each department in order to relate the objectives and content to the work of end users. It is important that the objectives are clear to the end users and that they are relevant to their job. In addition, it should be noted that user acceptance testing should be done by internal trainers who understand the business and how the system serves the customer facing services. (Norton et al., 2012)

In the delivery phase of the implementation, timing of the training is critical. It is important to set up clear milestones for each department, for example when the training analysis needs to be finished and when the training materials need to be ready. Training should not be timed too early but preferably as close to the go-live date as possible. However, enough flexibility needs to be left for the schedule so that more training can be arranged if needed. Next, when the implementation is reviewed, skills based learning should be undertaken. This relates to identifying core users from standard users right after go-live in order to give them more detailed training in one key area. This ensures that these core users can disseminate their skills in each department. It must be noted that core users have to be trained in line with their own work requirements. Furthermore, after go-live it should not be forgotten to verify the effectiveness of the training; training needs should be re-analyzed during the implementation (Mohapatra, 2013). Refresher courses need to be organized if necessary. (Norton et al., 2012)

Finally, at the exploitation phase of the system implementation, the benefits of the system still need to be promoted. To do this, internal trainers are preferred to be used as “transition champions”. Transition champions are to convey the benefits to end users and therefore need to be influential and experienced to handle questions and resistance. The promoting of the system benefits is most efficient through on-the-job training. Next, it is also important to ensure knowledge transfer from the vendor, so that the knowledge transfer and training provision continues post-go-live. Moreover, end users should be treated as knowledge workers – post-implementation training program is important to be followed and records of trainings need to be maintained. Training can be either coordinated from one centralized department or by each department being responsible for their own training and manuals. Finally, it is important to keep disseminating knowledge long after go-live by setting up an internal support network of super users. Super users should be kept in place long enough post-implementation to gain full benefits. (Norton et al., 2012)

In addition to planning of the training requirements and allocation of resources, training methods should be thought through carefully; according to the research by

Noudoosbeni *et al.* (2009), inappropriate training methods is the second most important reason why system implementations fail, right after poor planning or poor management. On the other hand, effective training of users is one of the most important success factors of system implementations (Noudoostbeni *et al.* 2009). According to the study by Noudoostbeni *et al.* (2009), the most effective methods of end user training are a lecturer, on-the-job training and computer based training. Computer based training is increasingly popular because of its low costs and easiness (Mahapatra et al., 2005). Moreover, simulations are a good way to teach complex processes with a structured and dynamic grasp. As many things in complicated processes may operate in parallel and affect each other, simulations are able to demonstrate the views of different players and their connections (Verbraeck et al., 2005).

Moreover, gamification is an increasingly popular method to carry out training. The idea in gamification is to utilize game mechanics and game design to learn new things. Game-based training helps in engaging employees in a fun way, by collecting "points" and earning rewards. In addition, through game training it is possible to receive data of the developing skills of the users and it will be easier to identify the most competent users who could act as super users or tutors to help others. When designing a game for training, there should be something interesting for the users in order to achieve the game psychology. Rewards may be materialistic at first, but they have to transfer to other kind of recognition. The game should not turn to an intense competition but there also has to be elements of cooperation, such as giving extra points to helpful colleagues. (Harbert, 2014)

Overall, since people learn in different ways, it would be most beneficial to combine different training methods. Some people get excited about game-based training but other ones want to go through new things at their own pace. Thus, various methods should be incorporated in the training strategy. In addition, end user training should be designed separately for each department and different user groups. The purpose of this is to ensure individual attention for the employees in order to achieve more positive attitudes among the end users (Mohapatra, 2013). In any case, real world exercises should be used in the training in order to hold the attention of end users throughout the training; relevance to the end user's work is a motivating factor (Mahapatra et al., 2005). According to Harma *et al.* (2007), the first phase of the training should focus on technology-related training and building technical skills of the end user. The second phase should include task-related training, and users are encouraged to train together if they share task interdependencies (Harma et al., 2007).

2.4 Summary

Concerning the research question of the study, the most relevant aspect of change implementation best practices is to understand that the end user view must be emphasized. To clearly summarize the theory presented earlier, I gathered the most relevant steps in one framework (see Figure 7).

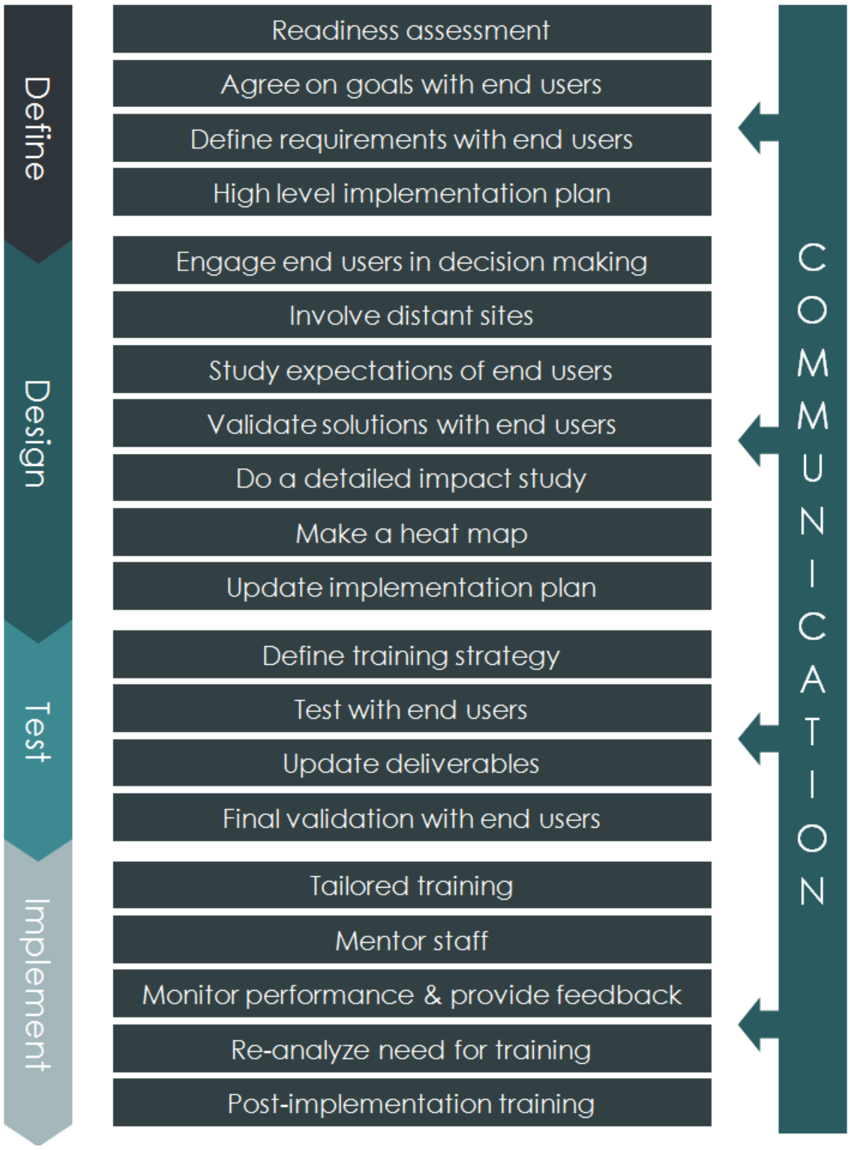


Figure 7. Conceptual framework of this study for change implementation.

Figure 7 presents a synthesis of current best practices in a change process from the point of view of end user engagement. Overall, end users should be involved as much as possible during the process, and end user expectations, resistance and impact of the change on end users should be analyzed along the way. The final validation of a change solution should be done with end users, and tailored training is important both before and after the implementation.

Engaging end users in the process allows for a two-way communication, where users can influence the change and provide a practical view on the execution. As seen in Figure 7, end users should participate in each stage of the process. However, in major changes that concern the whole organization, not everyone can be involved. Change communication needs to be planned as well, in order to inform about the change in the right way. The guidelines for change communication are summarized in Figure 8.

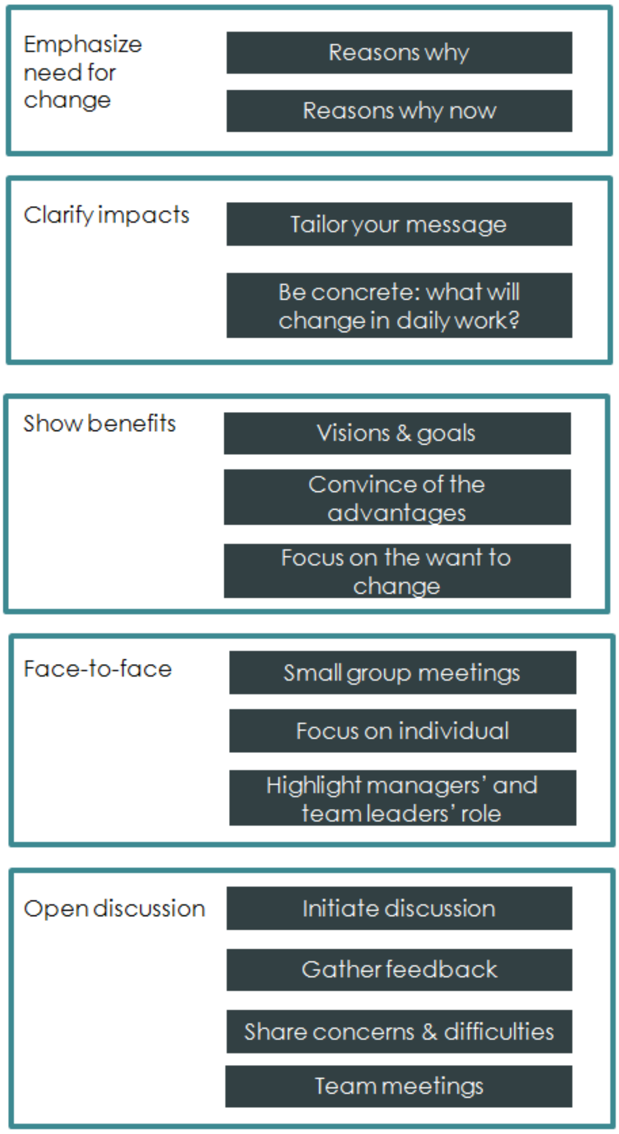


Figure 8. Synthesis of change communication guidelines.

As seen in Figure 8, change communication should by no means consist only of informative lectures in large auditoriums by top management. Open discussion and smaller face-to-face meetings are required in order to minimize the resistance. Communication needs to emphasize the reasons behind the change and clarify its impacts; the message should always be tailored according to the audience. It is also critical to convince the users of the benefits of the change in order for them to accept that it is better to change than not to change.

The guidelines summarized in Figures 7 and 8 are not new tricks, as companies have tried to reduce change resistance for years. Why do companies continue to almost systematically fail with these rather simple steps? One easy, and also likely, answer is the lack of resources or their wrong allocation during the project. Major change projects are often costly already regarding the obligatory design and thus, the budget might be limited to the most critical elements only, such as the technical design of an IT solution. On the other hand, it might not be understood how much of resources these steps actually require and thus the budgets are underestimated. Even with a good project plan, issues that need to be addressed right away might come up. Firefighting to solve sudden problems might take too large a bite from the resources originally reserved for end user engagement. However, as validated in this chapter, ignoring change resistance and skipping the proactive way to increase commitment can only lead to frustration of the end users and a slow adaption of the change, which evidently leads to major costs.

Another explanation could be that companies still do not realize and assimilate the importance of involving users in the change development. There might be too must trust for the commitment of the employees to the company and thus, it might be thought that users will simply start to work according to a change when asked. Furthermore, the plans of the projects are probably not detailed and specific enough to be executed in the correct way. When “involving end user” and “communication” are included in the task list, are they detailed enough? Are the steps so specifically defined and scheduled that they cannot be skipped? Moreover, are the critical KPIs of the project linked only to the schedule, such as starting the roll-out as early as possible, or are they measuring the actual adoption and success of the change?

Whatever the reason for the lack of end user perspective in change projects is, in order to succeed in the implementation and to have satisfied end users, the guidelines summarized above in Figures 7 and 8 should be followed.

3 Research Methodology and Data Collection Process

This section describes the research methodology applied in this study. It also presents the research and data collection process.

3.1 Research Methodology

This study relies on using qualitative research methods. The research approach utilized in this project is case study. Qualitative research strives to understand a situation deeper than statistical generalizations, and to investigate details and correlations (Hirsijärvi et al., 2010). Thus, both individual interviews and a survey were selected to be used in the data collection in order to get a deep understanding of the case company's way of implementing changes.

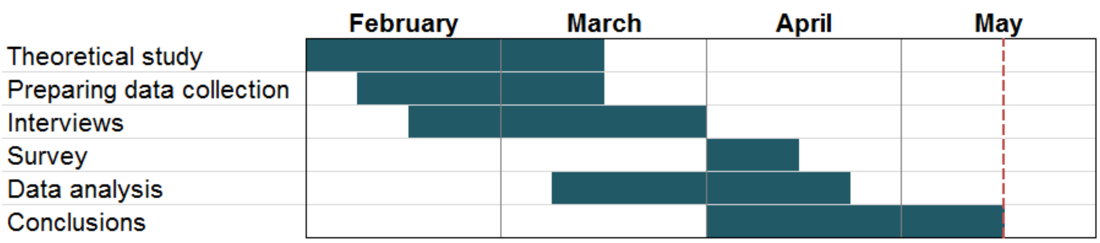
The study applies best practices of people change management to the current challenges of implementing changes in the case company. First, the research process started with a study of best practices related to people change management in order to answer the first research question, "How to successfully implement process and ERP system changes from the end user viewpoint?". Based on the theory investigation, a conceptual framework was drawn to crystallize the key findings. Next, to address the second research question, "How to improve the implementation of process and ERP system changes in the case company?", an empirical study through interviews and a survey was conducted. The purpose of the data collection was to find out which steps of the change process had been well organized and what should still be improved in the future. After the data gathering, the results were analyzed and compared with the conceptual framework, after which the main challenges in the case company could be highlighted. Finally, improvement recommendations for the future were presented.

In order to get a deep understanding of the views of the employees, six semi-structured interviews were conducted. The interviewees were selected from different organizations and different offices to present different change cases in the company. The interviews focused on finding out how the subjects understand the implications and the background of the changes, how they think the change process has been handled and what the biggest challenges in the implementation process are. A more detailed description of the interviews follows in Chapter 3.2.

The second phase in the data collection relied on a survey. The survey was sent to 171 employees in five different business functions. The purpose of the survey was to study the experiences and views of change implementations on a larger scale in the case company and to verify the findings of the interviews. The survey questions were formulated based on the theory and the data collected from the interviews. The response rate of the survey was 48%. The execution of the survey is presented in more detail in Chapter 3.3.

Table 5 presents the schedule of the research process.

Table 5. Schedule of the research process.



As seen in Table 5, the research process started at the beginning of February with the theoretical study and continued in parallel with the empirical study from mid-February until mid-April. The data analysis and conclusions were finalized by the beginning of May.

3.2 Interviews

The data collection started with individual interviews. Different change cases were selected to be studied in order to get a wide perspective on the employees' experience of change implementations. First, three change cases that were being implemented at the time of the study were chosen. After the first interviews, it was decided to include a fourth change case in the study, the implementation of which had already been finished. The interview cases are presented in Table 6.

Table 6. Change cases for the interviews.

System change	Function of the system	Location	Scale of the change
Salsa & JAWA	Sales and inventory management	Houston	Major change in operating models
JAWA	Inventory management	Geneva	Minor change
VAHA	Assets management	Geneva	Minor change
R12	Financial accounting	Singapore	Version upgrade, process change

As seen in Table 6, the selected change cases represent different types of changes in terms of systems, locations, and scale of the change. The target project is due to influence various types of user groups and teams at different levels of the organization, and thus it served to study as wide a range of change situations as possible. All of the cases were IT system changes, but some of them included process changes as well. Three of the change cases were at their testing phases at the time of the interviews; one of the cases had been implemented over a year ago.

The leaders of the change projects were asked to name the relevant end users for interviewing. Since most of the changes were not actually implemented yet at the time of this study, the majority of the selected subjects had been involved in the change process. The purpose was to interview users that already had an understanding of the change and its implications. It should be noted that none of the interviewees worked in the head office but they all presented smaller offices in Houston, Geneva and Singapore.

Table 7. List of interviews.

Person	Business unit	IT change	Location	Date	Method	Duration	Documented
A	**Operations**	Salsa & JAWA	Houston	19.2.14	Face-to-face	30 min	Recording, field notes
B	**Operations**	JAWA	Geneva	5.3.14	Video call	30 min	Recording, field notes
C	**Operations**	JAWA	Geneva	5.3.14	Video call	30 min	Recording, field notes
D	**Finance**	VAHA	Geneva	17.3.14	Video call	45 min	Recording, field notes

E	**Finance**	R12	Singapore	17.3.14	Face-to-face	40 min	Recording, field notes
F	**Finance**	R12	Singapore	24.3.14	Email	-	Email

Table 7 presents a list of the interviews held. As the interviewees worked in different locations, not all of the interviews could be held face-to-face. Two of the interviews were conducted face-to-face at the time of the subjects visiting the head office in Espoo; three of the interviews were carried out by video call and one by email. Separate video conference rooms were used for the video interviews, so that the interviewees would feel as comfortable as possible to discuss their concerns privately. Video calling was chosen over normal phone calls as it allowed the interviewer to perceive facial expressions and body language, and it also facilitated the situations where the interviewees were not familiar with the interviewer (Bryman et al., 2011).

Before the interviews, best practices of change implementation were studied. This ensured that various aspects of change implementation were included in the interview questions. The interviews were semi-structured; the same main questions were asked from all the interviewees, and more specific questions were posed depending on the breadth of the responses. Table 8 introduces the main interview questions and reasons why the questions have been generated.

Table 8. Background of the interview questions.

Question	Background of the question
Describe your work and responsibilities	Relation to the change
How long have you been working at Neste Oil?	Experience & established work practices
How are you feeling about the upcoming change?	Emotional attitude
What kind of impact does it have on your daily work?	Effect of the change on the interviewee
What is the need for change?	Understanding of the triggers
What advantages are there?	Perception of the benefits
Are there disadvantages?	Perception of the harm
Are you involved in the planning and how?	Participation in the change process
How have you been informed about the change?	Communication during the change
Have you been listened to in the process?	Participation, control
What kind of training is needed?	View on training needs

Do you think something could have been done differently?	Own ideas

The interview questions presented in Table 8 have been generated in order to find out what sort of impact the change has on the interviewees and how the subjects perceive and understand the change. In addition, the questions were formulated in order to map out the communication and participation of the end users during the change process.

The order of the questions may have varied along the responses during the interviews. Furthermore, some specific and more detailed questions were presented depending on the matters that came up during the interview. The interviews were recorded and some field notes were taken during the interview. After transcribing the interviews, the notes were sent to the subjects within one week from the interview to allow the interviewees to check the correctness of the transcription and add more points.

The data from the interviews was analyzed by grouping the answers on a spreadsheet. By grouping the key findings together it was possible to analyze the biggest challenges in the case company. An analysis of the results is presented in Chapter 4.

3.3 Survey

In order to map out the change experiences of the employees on a larger scale, a survey was sent to 171 employees. The survey included 19 multiple choice questions and one open question for improvement ideas. The questions studied the previous change experiences of the employees and their views and expectations of future changes. The main goal was to find areas for improvement and to understand how the employees see the change implementation process in the case company. Participating in the survey was voluntary. The survey was carried out as an electronic questionnaire, the link to which was sent to the subjects by email with a covering letter.

The questionnaire was formulated based on the theoretical study and the answers received from the individual interviews. The purpose was to study the views of the employees on a larger scale, and also to verify if the results would be similar to the individual interviews. The questions in the survey were organized in a logical order by starting from the background information of the respondent, then moving on to the previous change experiences with both positive and negative aspects, participation of the respondents in the change process, communication and expectations for the future changes. The questionnaire can be found in Appendix 1.

The respondents for the survey were selected from different business units that will be affected by the target project. Table 9 presents a summary of the survey subjects. Five different business units were included in the survey.

Table 9. Summary of the survey subjects.

Business unit	Number of surveys sent	Number of responses	Response rate
Supply Chain Management	47	18	38%
Operations	36	22	61%
Sales & Supply	41	21	51%
Customer service	15	7	47%
Finance	32	14	44%
Total	**171**	**82**	**48%**

In total, the survey was sent to 171 employees, out of which more than a half worked at the head office. The response rate was 48% with 82 responses, which can be considered as a fair result. It should be stressed that the results of the survey are not statistically relevant but they serve to deepen the understanding of the matter and give certain verification to the interview results. Because of the project schedule, the survey had to be conducted at the time of monthly closing, the busiest time for many of the departments. The respondents were left with 7 working days to complete the questionnaire. In addition, a dozen of ‘out of office’ responses were received which also affected the response rate.

The background of the respondents varied not only concerning the business unit but also concerning the experience in the case company, as presented in Figure 9.

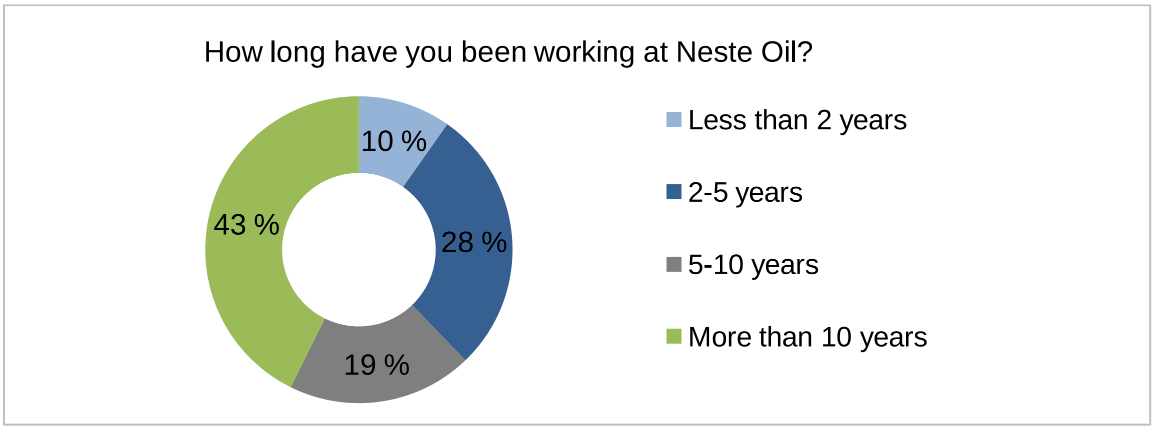


Figure 9. Experience of the survey respondents in the case company.

As seen in Figure 9, a good variety of respondents participated in the survey, as 43% of them had been working more than 10 years in the case company, and the remainder less than 10 years.

3.4 Validity and Reliability

To correctly evaluate the results of this study, it has to be considered from the perspective of validity and reliability. Validity reflects whether the research measures what it is supposed to measure (Bryman et al., 2011; Hirsijärvi et al., 2009). Reliability of a study, in turn, relates to the consistency of measure: whether the measure is stable over time and has little variation (Bryman et al., 2011; Hirsijärvi et al., 2009).

Validity for this study was secured through the next steps. First, exploratory interview questions without prejudices were generated to avoid research bias. Next, the research measured what it was supposed to measure, i.e. the perceptions of the employees over change implementations, via interviews and a survey. The questions for the interviews and the survey were formulated based on the research problem and the theory studied. Finally, the interview answers were checked by the subjects for correction.

To ensure reliability, the consistency of measure was secured by the following means. The same main questions were asked during the individual interviews to get exact results. Respondents from different organizations and change cases were involved to ensure the fairness of the research process. In addition, the survey questions were formulated as multiple choice questions with only one open-ended question in order to have a consistent scale of responses.

It should be stressed that the results may differ if the data was collected from different parts of the organization that might have other kind of change experiences in the case company. Furthermore, the intensity of the respondents' criticism could vary if the research was conducted at a different point of time, depending on how recently the subjects have had positive or negative change experiences.

4 Results and Analysis

This section introduces the data analysis and compares the results with the synthesis of current best practices. It also presents improvement recommendations for the identified problem areas.

4.1 Problem Areas and Recommendations

Based on the individual interviews and the survey results, the biggest challenges in the change implementation process were analyzed. The goal of the analysis was to find out what needs to be better emphasized in the target project and other future change projects in the case company. Figure 10 highlights the steps in the developed conceptual framework that should be improved in the case company and presents four new steps to be added in the framework. The analysis of the data and the reasoning for the highlighted points in Figure 10 follow in the next chapters with reflections of improvement recommendations. Interviewee profiles and survey respondents are described in Chapter 3, and a summary of the interview and survey results can be found in Appendices 2 and 3.

In Figure 10, the steps that should be more focused on in the future are highlighted in yellow. In addition, there are four new steps that have been added in the framework based on the interviews and the survey. Those are marked with black borders to separate them from the original framework.

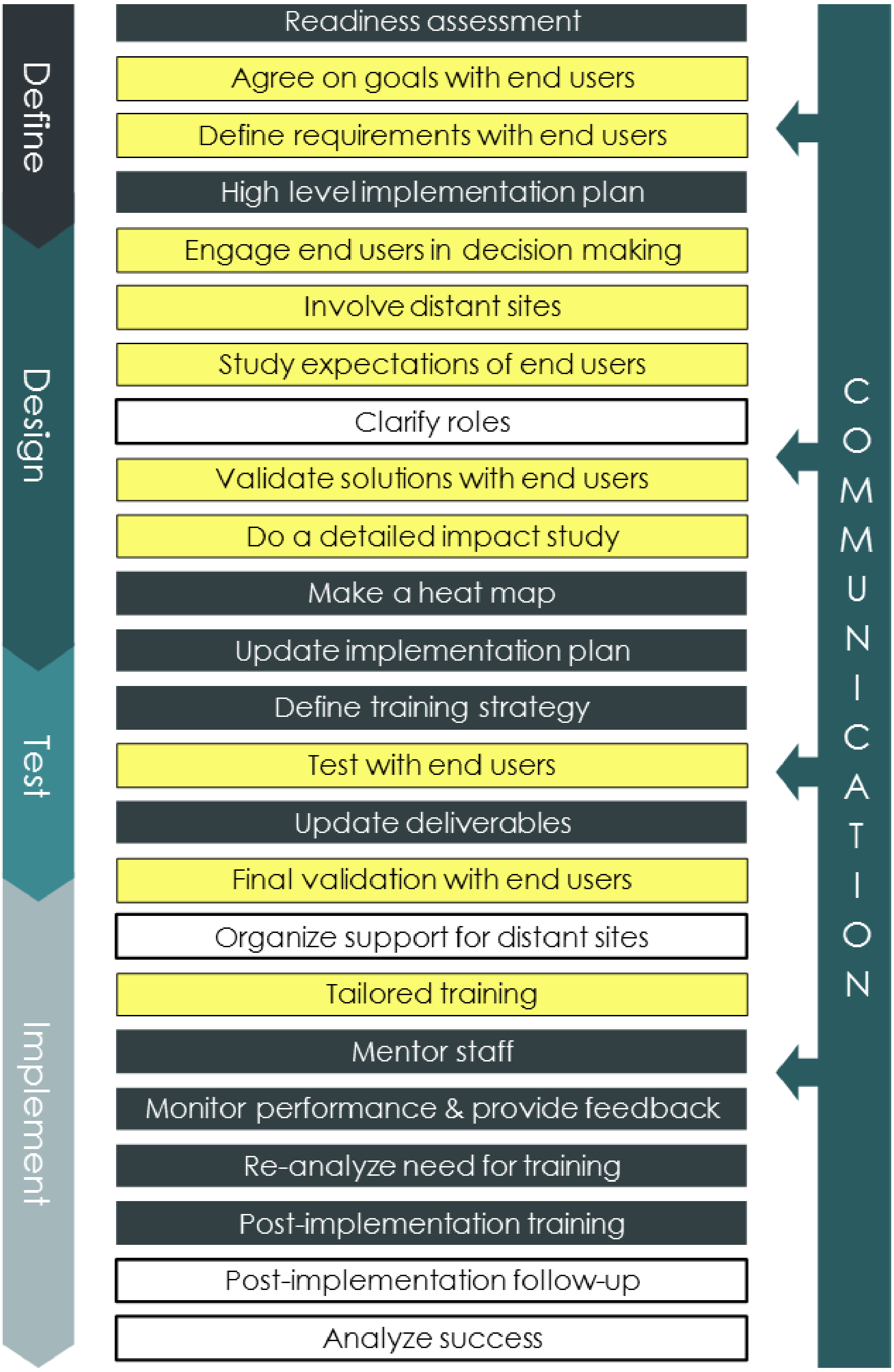


Figure 10. Steps to be improved in the change process based on the interviews and the survey.

Furthermore, there are also challenges in change communication based on the data analysis. Figure 11 highlights the problem areas in the change communication guidelines using yellow.

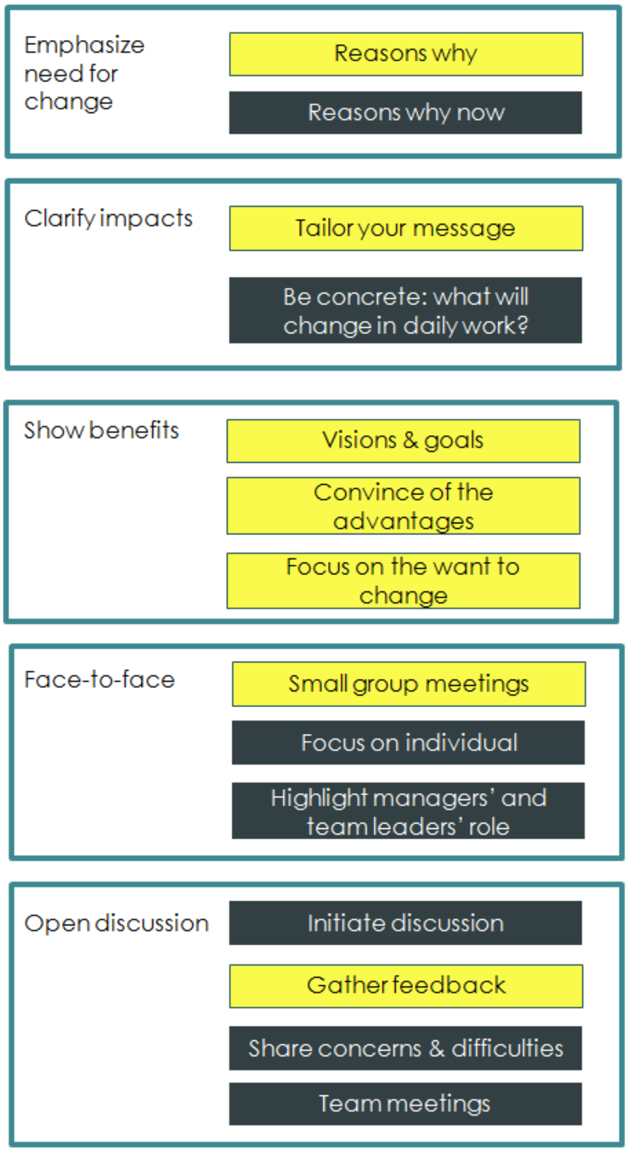


Figure 11. Points to be improved in change communication based on the interviews and the survey.

As highlighted in Figures 10 and 11, the biggest challenges in the change implementation process from the end user viewpoint are linked to not involving the users enough in the decision making, not communicating directly or enough and not properly handling the actual roll-out. Next, reasoning for highlighting these particular steps is provided, the problem areas are analyzed in more detail and some improvement ideas are presented.

4.1.1 Participation in Decision Making

Interview results

Half of the interviewees pointed out some challenges in involving the users in the process. First, the results suggest that the changes are not always designed by correct people. End users have the impression that top-level managers are making the change decisions without consulting the employees on the practical level. This is a point that needs to be acknowledged since the employees are bound to resist any change if they believe that the decision has been made by unqualified people. This aspect is supported by Evans *et al.* (2011) who argue that perceiving the decision process as unfair will lead to distrusting the organization, even with a favorable change result (see more in Chapter 2.2). The next comments were linked to the decision making during the change and not agreeing on the goals with the end users from the beginning:

> It's like they've said out in the upper level what they need − − "ok, we'll have them do it. We'll show you but you're going to do it." − − And the things that we need the most is like "oh, they won't need it in their reports, there's no need to really do this".

> Where actually people that make these decisions don't actually know the detail behind, I think that's where we lose things here at Neste − −. I think they had the wrong people involved in the change, they had the wrong experience, because they didn't understand the business − −.

In order for the end users to appreciate the decision made, even with an unbeneficial result for them, people from practical enough a level should be involved. Sometimes a change that should accelerate the process might actually turn out to be so impractical that it will only slow down the work. In order to make the change work in practice, the decision makers need to fully understand the impacts for the lower level of processes as well. This is why the participation of end users is vital for the success of the project. In addition, the change will not be such a kick in the teeth if the targets are agreed with the users from the very beginning.

On the other hand, five of the interviewees had been involved in the phase of defining the requirements for the system changes. They had been interviewed and asked to send material of their business cases to the development teams. One of the interviewees felt that the solution was quite well realized according to the needs of the users, another one was frustrated that the important local ways could not be adapted to the common system. Two of the interviewees still did not know how their views would be visible in the solution. Nevertheless, two of the interviewees did note that process changes had not been prepared with the users and the users could not influence the planning of the new processes. It can be concluded that defining the *system* requirements with the users seems to be well included in the projects as the developers cannot finish the solution without knowing the business in detail. User participation in defining the *process* change requirements, in turn, should be addressed more in the future.

Moreover, only the key people should be involved in order for them to really be able to influence. One of the interviewees felt that too many people had been involved in the change process and testing:

> That's the only thing I would criticize really that sometimes they don't listen, they just think: right, this is the way, let's get everybody involved.

Having the right people involved who know the business and practicalities is important, but it should be kept to the key people only, in order for the project team to be able to really listen to the views. As presented in Chapter 2.3, having users just physically present is not the goal but they have to be able to influence. A systematic way to collect the ideas has to be developed (Heiskari et al., 2009) in order for the project team to be able to show that all the ideas have been handled and either accepted or rejected. If an idea is rejected, the reasons should be outlined as well. With a transparent process the users will be more motivated to participate.

When developing major changes that concern a large amount of people, it can be difficult to identify the key users that should be involved, and not everyone can be included in the workshops. Then, it could help if there was another kind of channel, an application, for everyone to give feedback and discuss about the key issues. As it can be difficult to identify the users that would have important insights or who want to participate, this would provide more opportunities to be involved. It is also a question of having the possibility to bring out different points. Providing this opportunity for example for each team could help to find some unrecognized bottle necks. Feedback could be collected on a certain topic by an agreed date, after which all the notions would be reviewed and handled. This would be an effective way to increase the transparency of the decision process.

Furthermore, the solution needs to be ready at the time of the implementation; it should be tested and noted to work properly in practice. To get the users involved also close to the implementation helps to ensure that all the practicalities have been thought through before the implementation starts. As stated in one of the interviews:

> When it's implemented, it should be already broken down. It should be handled so ready that it works for sure. It is difficult, but there it would surely help if someone from us would be involved in the process of breaking it down.

Thus, end users should be involved throughout the process, also when finalizing the solution. This applies to the process changes as well, as the processes should be tested by going through all the steps with the actual users before starting the final implementation. There should be written instructions for the process flows, system usage and role division available before the implementation. This will ensure that the functionality has been thought through before the implementation and that unnecessary confusion will not appear during the implementation.

However, sometimes it is difficult to get the end users to participate in the change process, particularly if they are resistant to change or have negative experiences from previous changes. In addition, if the users are expecting a ready solution, requiring their active participation in the end might create frustration. These points are revealed by the following quotes:

> I don't think they [other users] want to be involved too much, because they went [to a new system], and they lost confidence right there with that program, so they're like "Here we go all over again, another program that's not gonna help us" – that's their attitude.

> And also the roles have to be very clear, so that everyone understands what we have to do in the implementation; what belongs to us, what belongs to the project team. − − is it us who is the customer for the concern administration, or is it the other way around. When this is clarified at the beginning, then it becomes easier. − − When we know that the system is brought to us on a silver plate, like "here it is, start to use it", then we understand that we are being served.

The reluctance of the users to participate should not discourage the project team but they should persuade the key people of getting actively involved. As reluctant people are not helpful in taking the project forward, there should be some carrot for the users. It has to be made clear that the change is going to roll out in any case. Then the employees may see it as more beneficial to be involved – in order to acquire new skills and to be able to affect the changes related to their own work. The effects of the users' views on the solution should be made very visible in order to create a desire to participate. When having people involved who actually know the business in detail, it should be communicated to the end users too. If the end users see that competent people are taking part in the decision making, they will more easily accept that the change is the best option that there is. In addition, the project team should define and communicate all the stages where participation of the users is necessary already from the beginning, so that the role division is clear.

Survey results

The survey results, however, suggest that as much as half of the respondents feel that they have been able to influence the changes that are related to their work, as seen in Figure 12.

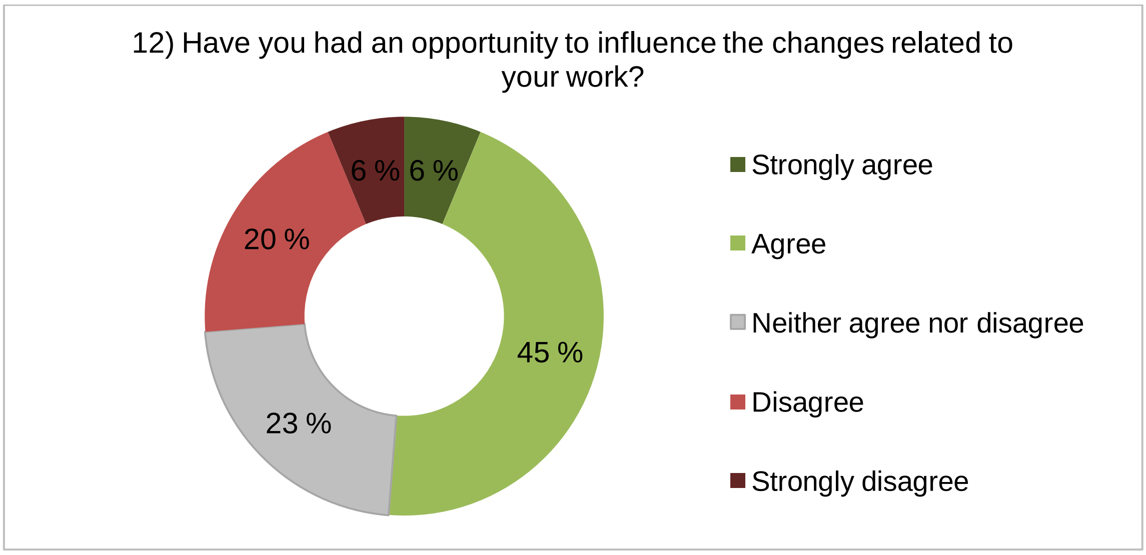


Figure 12. Survey results to question no 12.

The difficulty of interpreting this solution is with not knowing the size and scale of the changes that the responses relate to. If the change is rather small and directed to a relatively small team, naturally there are more possibilities for the users to be involved. On the other hand, if a change is a major one, it is usually impossible to involve every-one. Nonetheless, only 26% of the respondents disagreed or strongly disagreed when asked if they had the possibility to influence the changes related to their work, which can be considered a moderate result.

At the same time, when asked if the respondents trust in good decision making in the company during change, only 48% of the respondents said yes and even 29% disa-greed, as visualized in Figure 13. This result would support the fact that when involving users from different levels of the organization, it should be transparent. In order to increase the trust of the employees, the fairness of the change process has to be visible, as already noted on page 42.

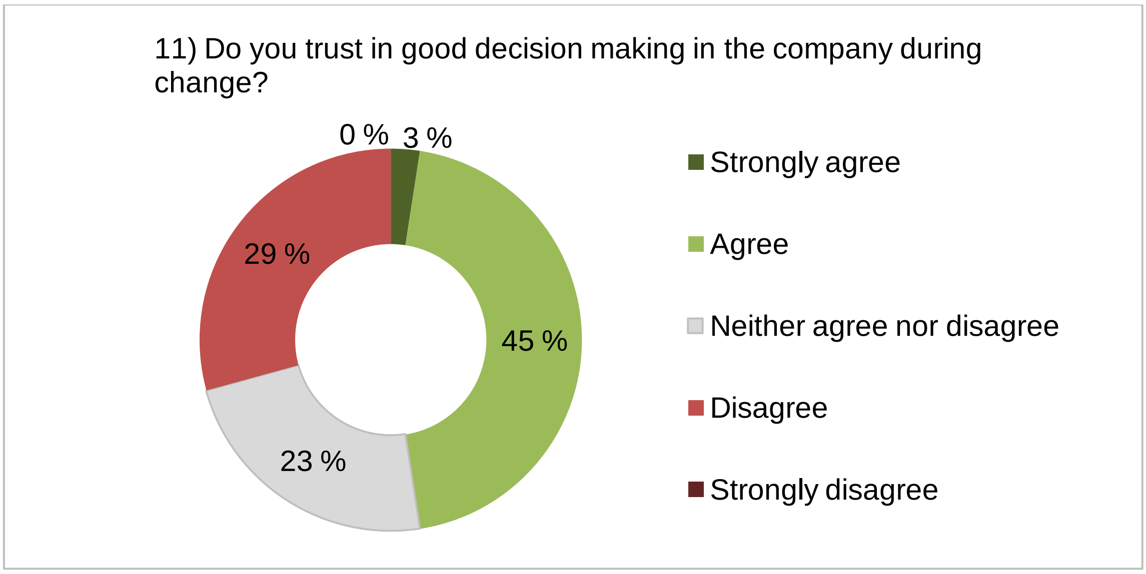


Figure 13. Survey results for question no 11.

In addition, the majority of the improvement propositions (12 out of 29) that were given in the open question of the survey by the respondents were linked to participating users in the planning phase. The next three examples outline the importance of user participation in the change process:

> Changes are carried out too much behind closed doors based on too little and biased information.

> Decision for change should be taken in accordance with people "working on the field". Not only top management decision, who do not always realize the implications of the change they wish to make – –.

> The designer of the change should discuss as early as possible with the parties that are going to be affected. This should happen when the change is being planned. Otherwise it turns out (systematically at Neste Oil) that the planner / management has been pondering the matter for several months but the user should embrace the change, understand, accept and implement it immediately. A decent groundwork is required and that's why involving the ones who will be affected by the change enables a correct result and fast implementation.

As seen in these quotes, users do not trust that workable changes can be designed without consulting employees on the practical level. Therefore, users should be involved to ensure that the implications of the change are practical. Without the participation of the users, some critical elements might be ignored and the processes might turn out too complicated regarding the customer interface for instance. In addition, having users involved will ease the acceptance process and this, in turn, allows for a faster implementation of the solution.

Furthermore, the majority of the respondents had been involved in the change process through giving feedback of the change or improvement ideas, as visualized in Figure 14. More focus could be put to increasing the user participation in the planning phase with defining the requirements and designing the solution, i.e. stages which present the most active participation.

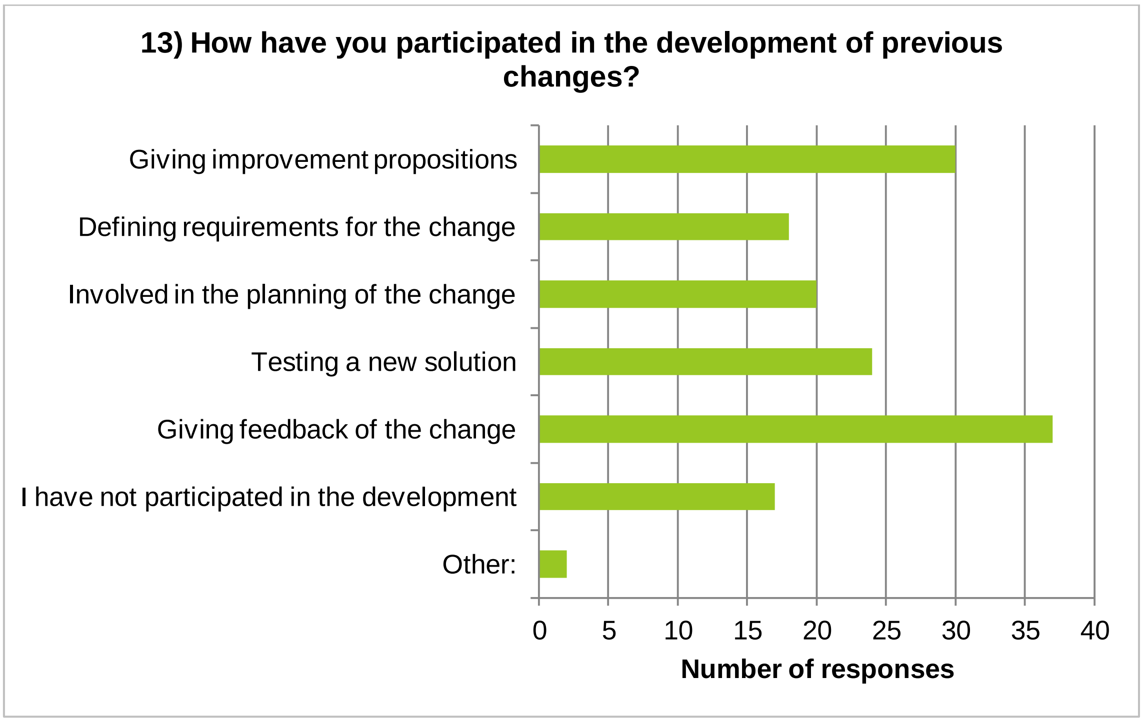


Figure 14. Survey results for question no 13.

Based on these results, we can state that there is room for improvement with involving the users in the process, yet the situation could be worse. In bigger changes, it is impossible to get everyone participated, but then it should be communicated that at least key users from the operational level are involved and are able to influence. The participation process has to be transparent in order for the users to see that valid change decisions are made.

4.1.2 Change Communication

Based on the interviews and the survey, change communication is something that could be improved greatly. All of the six interviewees pointed out some challenges in change communication. The different aspects of communication that came up are analyzed below.

Insufficient and unclear communication

Interview results

It became evident during the individual interviews that the biggest challenge present in all of the cases is change communication. The amount and the quality of communication are clearly inadequate during changes. The first problem caused by insufficient change communication is that the employees do not receive sufficient information on what will change or why. This is revealed by the following comments:

> what was surprising was that there were process changes that came completely as a surprise to us. − − We thought that this was quite clear system change but it involved so many other things.

> I don't understand fully the idea behind it and its value. − − they're just saying to me that this is going to be done, − −, it's not really clear.

> Not enough communication. − − Not very clear in the beginning stage [what will change, implications]

> I don't remember that I received something precise [reasons behind the change], not really

The above comments show that major improvements are required for the change communication in the case company. One would assume that the communication of the change regarding its reasons and implications would be the first thing on the agenda when starting the implementation. However, this step does not seem to get enough attention in the change projects. As validated in Chapter 2.3, if people do not understand why the change is necessary, it will be difficult to accept (Paton et al., 2008). In order to facilitate the implementation process, employees need to receive enough information of the change at the right time (Savolainen, 2013).

Another aspect in change communication that stood out during the interviews was not understanding the benefits of the change. The impacts of the change regarding different teams and their workflow were quite unclear. The interviewees did not understand how the new solution would be beneficial for them, as seen in these citations:

> the communication of benefits, they should be better informed − − They [other users] are not aware that this will bring the benefits for the whole group rather than just for our team. So this shows the lack of communication.

> The only issue is with: it's more work to enter, what can we get from it? − − we hadn't got to a point or even topic of how it would be beneficial − −. I feel like that would have been the most important thing: "Yeah, you're entering these, but l*et's make sure you can pull these statements*." And we haven't done that, that's why I think that it's not the goal.

> we might find value in the long run, find different reports that we can do. I'm still hopeful for it.

As the above quotes indicate, the users will firstly be interested in the effects on their daily work, and the benefits should be clearly visible. Since there probably are different reports and summaries in the systems that the end users themselves can utilize, the focus should be in promoting those functionalities in order to increase the perceived value of the change. Benefits for the end users need to be clearly expressed *throughout* the change process, during testing and training as well. For example, if none of the useful functionalities or reports to the end users is presented, end users are likely to presume that the information is being entered into the new system only for the management to monitor the work. As discussed in Chapter 2.3, the focus should be more on users *wanting* to use the solution than knowing how to use it (Jeston et al., 2006).

As there was a lot of confusion about the reasons behind the change, consequently the users had some unmet expectations. In some cases, the users had understood that the change would directly help their own work, but it had turned out that it was actually not the case. Some frustration among the end users could be observed:

> I think it's mainly directed to [other teams], rather than us, because for us, at the moment, from what I've seen, it's going to cause more work. And we won't get any value out of it.

> In the past I was thinking this system will help us something more, and finally not − − only advantage is for the other teams, not for us for the time being.

> We've had some internal discussions and they [other team] said it's all done for you, and then it's actually not the case. So it's not we that requested, but this is corporate policy

> I'm just entering invoices there, I don't know where they go, who sees them.

In order for the project team to be able to understand the implication of the change for different user groups, a detailed impact study of each user group should be done. Without understanding the impacts on a user's daily work, it will be difficult to demonstrate how the benefits of the change outweigh the disadvantages. This requires listing the concrete implications and benefits for each user group.

In case there are no direct advantages for the users themselves, it also needs to be openly expressed. Otherwise there will be disappointment among the users, when the expected benefits are not actually realized, as seen in the above quotes. A proposed model is to draw the relations between two user groups presenting e.g. what information the other team needs from the user and why, in order to validate the importance of giving the information in a particular format. This will help to explain the need of increased workload even without direct benefits to the user's own work. If the users do not understand why their work is important for other teams, it will be difficult to accept an increased workload. Visualization could be a more effective way to present the relations than just discourse.

Survey results

The survey results support the view that the change communication is not clear or comprehensive enough. As seen in Figure 15, as much as 40% of the respondents disagreed or strongly disagreed when asked if the change communication had been comprehensive enough, and only one third agreed.

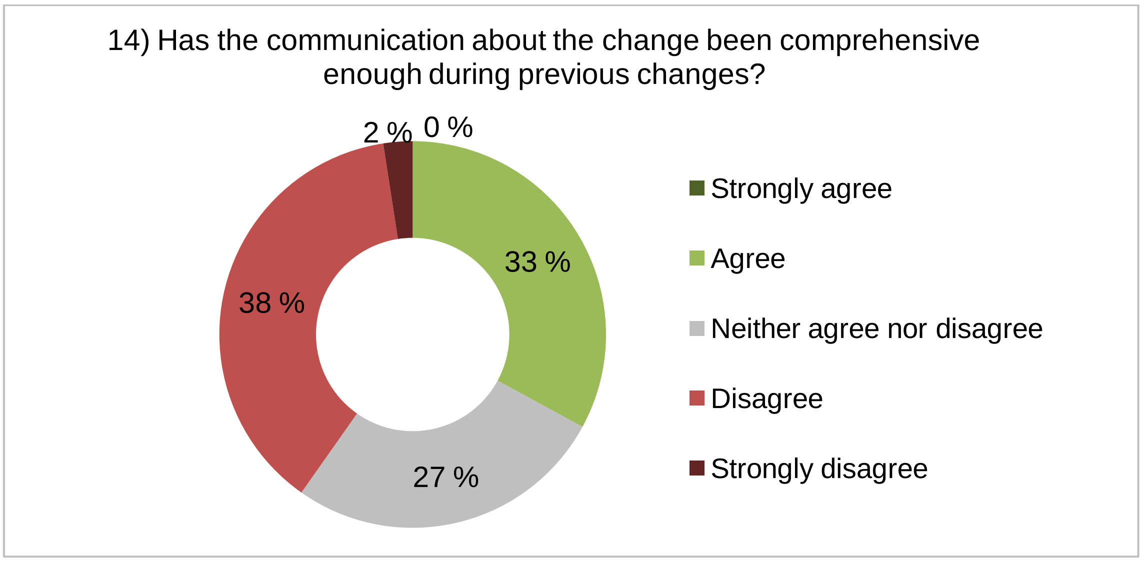


Figure 15. Survey results for question no 14.

As Figure 15 shows, only one third of the respondents were satisfied with change communication. The lack of communication had clearly been a big issue during previous changes according to the survey. Figure 16 shows that insufficient communication was named as the biggest challenge in previous change implementations by 31% of the respondents. The second biggest challenge in previous change implementations was training with 24% of responses. Training needs are analyzed in more detail in the next chapter.

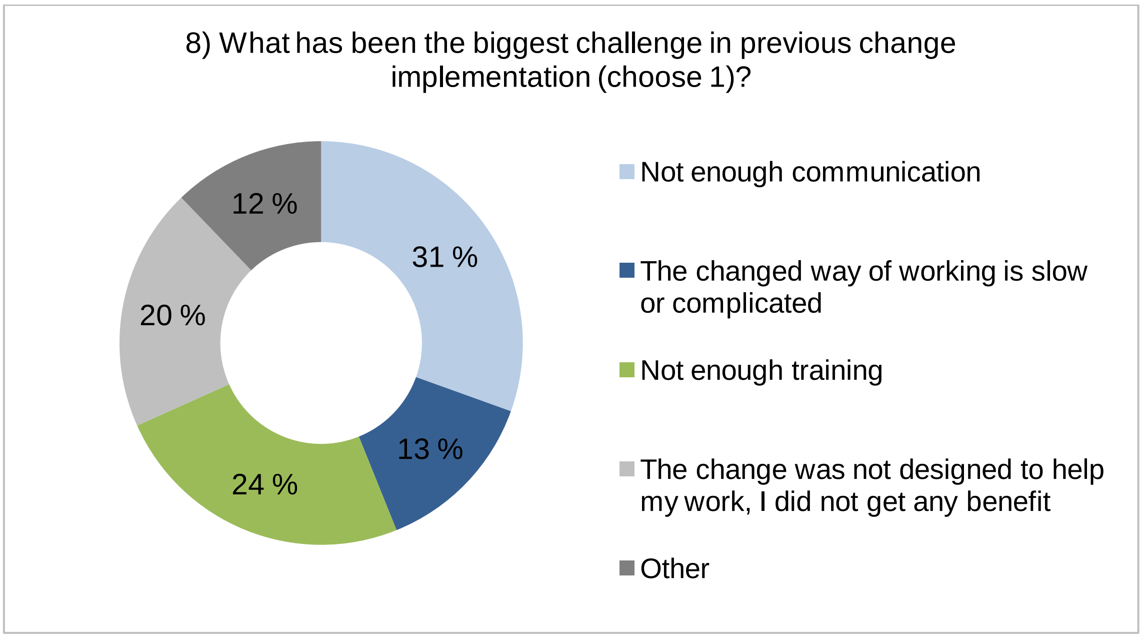


Figure 16. Survey results for question no 8.

In addition to the multiple choice questions, also the answers received to the open question of the survey supported the need for more communication. Nine improvement propositions out of 29 were linked to change communication. The following examples highlight the need for improving change communication:

> At Neste we tend to not talk a lot about what we do and why we do it if changes happen. That can lead to rumours, unhappy employees and customers which could often be avoided by considering more the impact of talking about things

> The backgrounds should be made clearer before starting the implementation and these things should be gone through openly.

> Sufficiently taking the change to grass roots level and training and going through things and reasons there, not only at info briefings in the auditorium at a general (theoretical) level.

> More attention should be put on interpreting the messages from management and IT to a practical level.

These citations strongly support the results from the interviews presented above. This should be taken as a clear pointer that change communication should be increased. Changes need to be openly discussed and efforts need to be made to interpret the core message in concrete terms. In order to make sure that the users understand the change message correctly, it should be interpreted in concrete terms. To be able to discuss the impacts on the users' work and not just on a general, high level, smaller meetings need to be arranged.

Furthermore, the survey results for question number 17 presented in Figure 17 support the importance of explaining the reasons behind the change. As seen in Figure 17, the most important thing in change communication according to the survey is to explain the background why the change is done and why now (49%). The second most important thing is concrete information of the change impacts on personal work with 27% of responses.

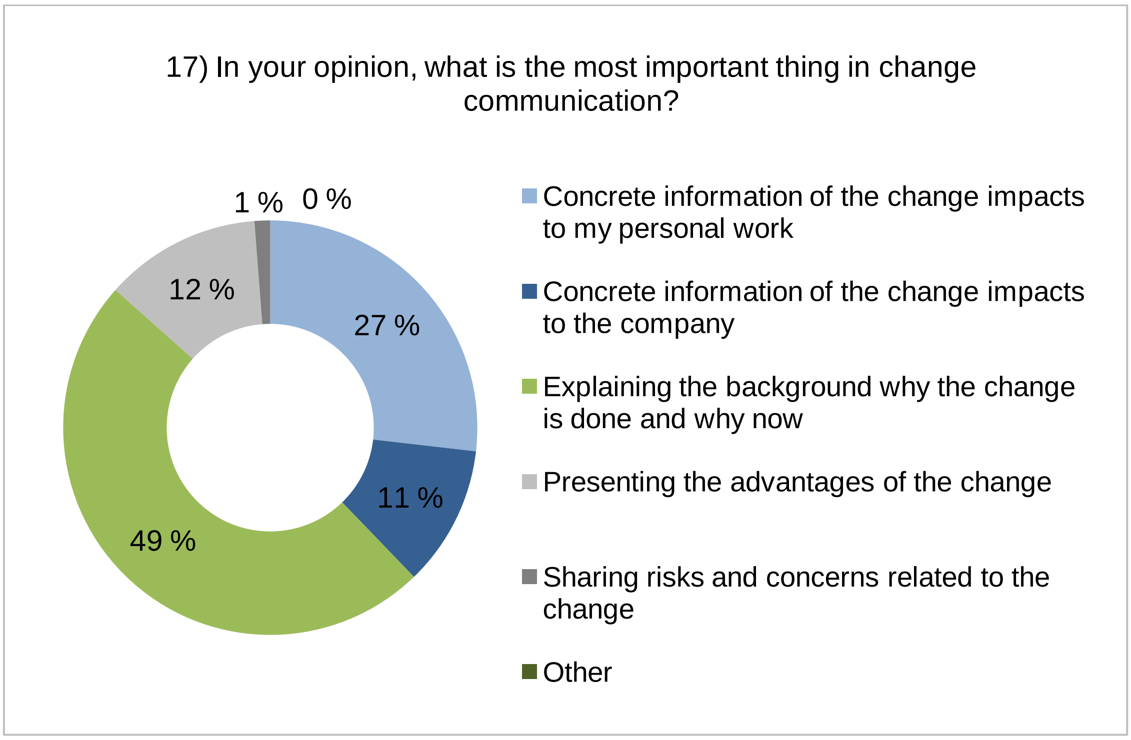


Figure 17. Survey results for question no 17.

These results support the view that the project team should make a communication plan from the very beginning of the project in order to ensure that this important aspect is not rushed through. As the change information is new for the employees who are not involved in the development, the main message cannot be over-emphasized. As noted in one of the open responses in the survey, the process of accepting a change does not happen in one instant. Before people can adopt new solutions, they have to be dissatisfied with the status quo, or at least understand that something needs to be changed. After there is a need, the change solution is easier to adopt. In order to create a need, the project team has to show what the crisis is, to concretely highlight the problem that has to be solved. Further, also the developed solution has to be clearly communicated, and in order to reduce uncertainty, the impacts to different user groups should be outlined. This requires a detailed impact study to be done. People should be aware of what is going to change and how before the implementation starts.

Indirect communication

Interview results

The second problem with communication is that the project teams are not taking advantage of the power of *direct* communication. The lack of direct communication strongly affects the attitude of the employees towards the changes and creates frustration. If the change message is given to the employees via emails or portal pages, the users will surely say that there was not enough communication. As stated in the interviews:

> they did a great job with the passive communication. They wrote blogs, the news was updated all the time, but then the direct communication was missing. – – At the end, it started to work when we had this kind of weekly meetings. But before that, we didn't hear anything at all if you were not active yourself. – – Frankly, it was quite weak [communication]

> Whenever we talk with experts, they always have very good communication. When the head office communicates something, this is something that can be improved. Just more information. – – I think all the guys in Espoo office they are very intelligent, they know what to do, but it's somewhat in the Finnish culture not to communicate

These citations highlight the importance of providing enough information, throughout the progress and face-to-face. More direct meetings should be organized to tell the employees about the change, also for the distant locations. The power of direct communication is much more effective than with written notices. And when having meetings with the users, the reasons, implications and benefits of the change should be clearly outlined. An effective way to invest in direct communication is to organize a small kick-off meeting for the end users to present the change concept and its goals face-to-face. A kick-off meeting is a good way to give a compact presentation of the change and create a climate of excitement. This was also the desire of some of the interviewees:

> it would be good if at least we had one kick-off meeting with head of [the department] – –. They should explain, they should communicate the vision.

> a presentation to everyone involved explaining why we're doing it, what the values are, and what the goal is. I think that would be something that would have been good. – – just even a ten minute discussion or an online call to say that we're doing this system, this is why, this is the affects that we're going to have, this is the goal. Just to everyone to know.

To create a need and a want to change, a kick-off meeting can help to get people to listen and to get them on board. If there is resistance to change, how is it possible to get a change message across if the person is not receptive? In this case an email will surely not work to get the required attention, and finally the users will be unsatisfied with the provided explanation for the change. A participative event could help in explaining the background and transferring the change vision to the employees. This is supported by Stadtler (2008), according to whom a kick-off meeting will create a motivating atmosphere.

Survey results

Furthermore, the survey results also indicate that focus should be kept on direct communication.

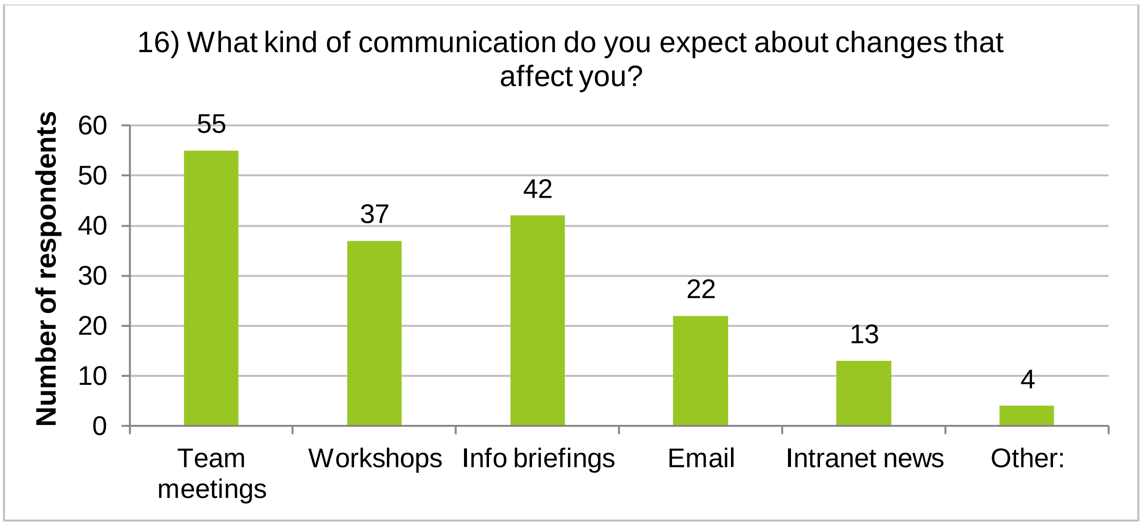


Figure 18. Survey results for question no 16.

As seen in Figure 18, communication is expected to include mostly team meetings, info briefings and workshops. Only 22 out of 82 want to receive email and 13 of 82 intranet news over changes, and mostly just in addition to direct communication. Thus, the biggest efforts of the communication should be put on direct, face-to-face communication. Written information should also be available for those who want to know more details, but it should not be the main focus.

In a large project, the project group might not have time to arrange meetings with each team. Then, team leaders should be trained to be champions of the change and to communicate the concrete impacts to their teams. It is important to note, however, that the responsibility of the change communication should not just be offloaded on to the team leaders, but the project group should cooperate with them.

4.1.3 Actual Roll-out and Support

The actual roll-out of the change is not always properly handled: either there is not enough support or the post-implementation follow-up is missing. Four of the interviewees pointed out challenges related to the roll-out phase, and the views were supported by the survey results as well. Below, the different sides of the roll-out are analyzed.

Lack of support

Interview result

The interviews showed that the end users were quite concerned of how the implementation would be rolled out. The lack of resources during increased amount of work and the difficulty of reaching system experts during working hours were named as one of the biggest challenges during implementation. For instance one of the interviewees pointed out:

> change is great, but in the middle of this busy work − − I don't have time for doing things new for them to mess up and make it even further behind. We're in a horrible position − − no one has time to do their regular duties and this new system. It's gonna be a mess.

These kinds of worries are bound to arise if there is not an adequate support network available. A big part of the end users' stress could be diminished by providing the needed support in the go-live phase. As noted in Chapter 2.2, increased work amount is one of the reasons causing resistance (Mohapatra, 2013).

In addition, two of the interviewees noted that training was not adequately planned for the change. Apparently in one of the change cases it had been presumed that not much training was required as the system change was only a version upgrade. There had not been training for process changes, either. The next comments show the lack of training:

> Not enough trainings due to not much change of the feature as it is upgraded system but not new system

> But when changing processes at the same time, it should be remembered to give training for the processes as well

Adequate training enables a faster implementation of the change, as the users are already more familiar with the changed way of working. The users will also feel more comfortable with changes if they have been trained for the matter.

Next, two of the interviewees mentioned that the time difference was creating a number of challenges for the most distant locations concerning support during implementation. Support was not available during the working hours of all the offices, as shown in the next comments:

> we’re at this huge time difference, everyone that knows the system is sleeping [system experts in Espoo] − − What if we run into a problem? And they [experts] are going to answer this one question, when we get in touch with someone from here tomorrow, we’ll get in touch with them the next day, start on the next invoice, now here’s another problem, and everyone’s already left the office from helping us.

> What also created frustrations was if it was left to the other half of the day, and at some point we had to leave home if we didn’t receive an answer during that day − − I think there the most critical things should be settled. − − when the end users sit around the globe, you should have a trained network out there.

As seen in the above citations, not allocating enough resources to the support functions for the distant locations is creating frustration. Even with excellent training there can always appear system errors or special business cases that were not trained for. Thus, the support network during implementation should be enhanced. As in the go-live phase the workload is usually increased and work is bound to slow down for a while, at least technical support for problem solving should be in place. Evidently, support in the go-live phase could be better managed in the future.

Survey results

In addition, also the survey results suggest that support during implementation could be better planned, since the biggest concerns in change situations had been the increased workload with 30% of the responses (see Figure 19).

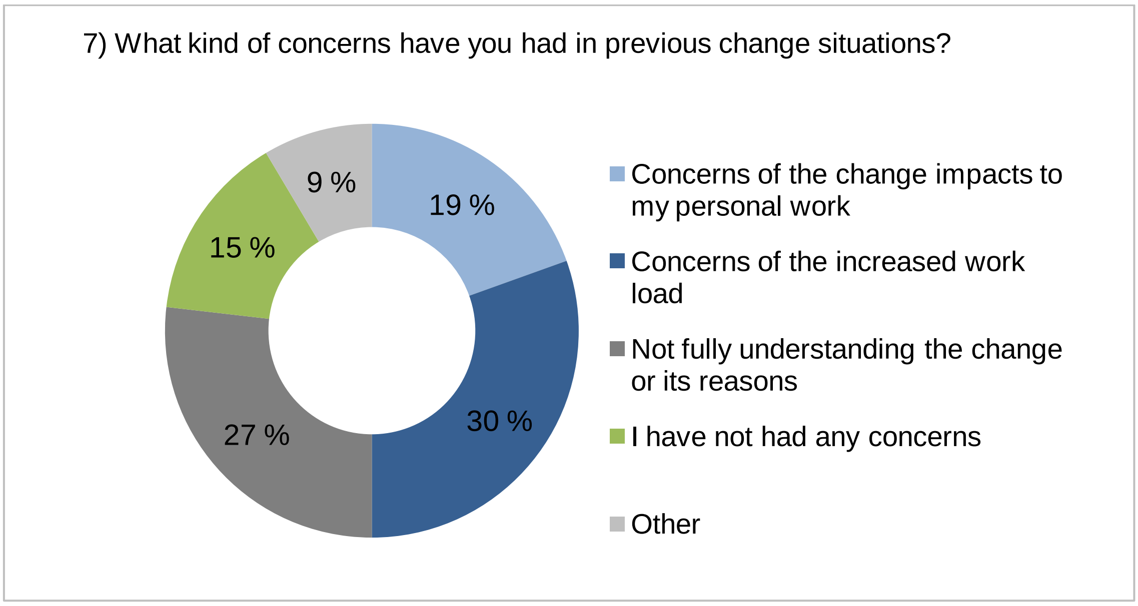


Figure 19. Survey results for question no 7.

To reduce the concerns of the end users and therefore also some of the resistance, support during implementation should be provided. This could be handled for instance through having temporary extra workers to help with the routine tasks during the most critical time of the implementation.

In addition, as presented in Figure 20, more than half of the subjects said that there either had not been support available during change or they did not know if there was support available.

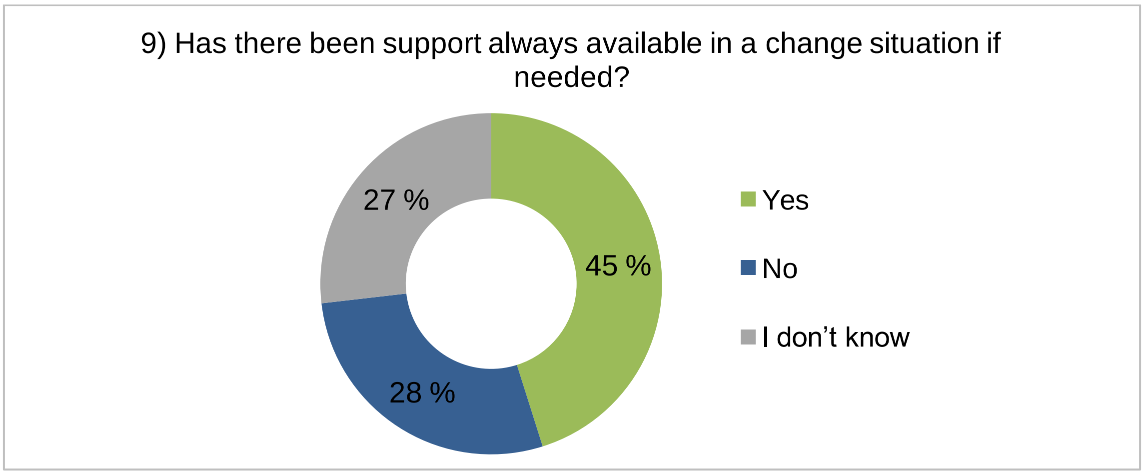


Figure 20. Survey results for question no 9.

This result suggests that there should be more visible support for the employees during the implementation. The employees should know exactly who to contact in case of technical problems or in case some help with the tasks are needed.

Training came also up from the survey, as according to 24% of the respondents insufficient training was the biggest challenge in previous change implementations. Thus, inadequate training was named as the second biggest challenge after communication. The graph of the results for this question was already shown in Figure 16 on page 51.

Support during implementation was demanded in three of the improvement propositions of the survey as well. One of the respondents put it this way:

> Provide actual 24 hour support so that all the companies are adequately supported and can achieve change success not just the corporate office.

The only way to respond to this need is to organize support and experts to be available during working hours of each office. It does not necessarily need to be a person on the spot, but there are also other options. For example one of the interviewees had positive experiences of a “data room”, a Lync meeting during the implementation phase where one could write the system problems when they arose, and the experts then called back. Or, if the technical solution is bought from an external provider, it might be possible to buy temporary support services from the supplier in order to help the distant locations with the implementation phase. Regardless of how support is handled, there should be a way to solve the most critical problems right away.

Mishandling the actual implementation and follow-up

Interview results

When doing process changes or any bigger system changes, it is clear that a support group should go to the spot of the implementation. Support on the spot should be provided for the help of the end users and also to make sure that the solution is really being taken into use. Two of the interviewees pointed out that a support person or group would have been needed to be physically present at the time of roll-out:

> And in the implementation phase we didn’t have anybody from the head office on the spot in our office. – – And when it’s brought to us, it’s really brought properly, not with a covering letter but with an escort. “Here it is, this is how it works, now

> you can start to use it." – – it should be brought *from* Espoo, and not so that *we* have to go and get it from Espoo to [our office].

> It's just a case of "you go ahead and sort it out". There's no support there at all, – –. We're told to do it.

As seen in the above quotations, the smaller offices in distant locations do not seem to receive enough backing from the head office for the actual implementation. These citations refer to changes that have been imposed from the head office, and it is clear that end users expect the head office to devote some resources to putting the solution in practice.

Moreover, the project is not finished right after the go-live date as support and training are still needed *after* the implementation. From the interviews it was possible to conclude that the post-implementation support should be better emphasized as well. In some of the cases the end users were not keen on really adopting the changed ways, which complicated the mobilization of the changes. If a lot of resistance can be identified during the change implementation, it should be ensured that there is continuous support after the roll-out.

Particularly when implementing changes from the head office to smaller offices, there is a big risk that the users do not actually adapt to the change. This can be seen in one of the interview answers as well, as the users might want to keep the old ways of working in parallel with the new or simply refuse to use the new solution:

> No one does the system there except myself. Oh, [one user] does, and the [other team], but the other [people in our team], no one wants to deal with it

In order to ensure that the change is really adopted and that the users stick with it in the long run, there should be a practical owner of the change on the spot. The practical owner can be for instance an immediate superior whose responsibility is to make sure that the change will be fully implemented. In addition, it helps if an implementation group is present also after implementation, to ensure that the change is properly adapted.

Survey results

In addition, some of the survey respondents specified that the biggest challenge in change implementations is the actual roll-out and the mobilization of the new solution. For instance, the following were named as the biggest challenges in the implementation:

> A proper implementation of the change

> The change is implemented at the “upper level” but it’s not sufficiently implemented at the operational level.

In order to succeed with the implementation at the operational level, the practicalities have to be thought through. This point links to the participation of end users during the design phase. A practical owner of the change will also help to see that actions are really taken to implement the change effectively. The monitoring should continue also after the implementation, which leads to the next point, post-implementation support.

The survey results also suggest that the follow-up actions after the implementation are sometimes left undone. The next ideas of the survey that should be better taken into consideration when implementing changes were linked to the post-implementation follow-up:

> As in all of the projects in our company, an analysis of how well we have succeeded should be made. A post-implementation analysis is usually never done or at least it is not communicated.

> There is no post-implementation follow-up

> When a change is implemented, accountability needs to be clearly defined. I think a change divides into four parts; planning, implementation, follow-up, corrective actions. At Neste Oil, this fourth part, in which the details are still fine-tuned, is often left out.

In order to make sure that the change is anchored, a post-implementation analysis should be made. It should include an analysis on for example how well the change has been adopted by the users, if they need more training, if the solution is functioning or if some minor changes are needed and if the possible new roles are clear enough. The results of the analysis should be communicated to ensure the transparency of the process. Furthermore, an analysis on the overall success of the project should be made including the well tried methods and the points which created the most challenges. These analyses of different projects should be gathered in one common place from where they could be found at any time. When starting new change projects, reviewing the lessons learned from the latest projects should be incorporated into the project plan.

4.2 General Positive Results from the Survey

Even though there are areas for improvement based on both the interviews and the survey results, the situation is not hopeless. In general, the results of the survey are still comforting. Even though there have been numerous changes in the work environment of the respondents (66% said a reasonable amount of changes and 21% too many changes), their experiences from these changes were not only negative. The majority (65%) of the subjects had partly positive experiences from previous changes and 28% had only positive experiences.

An encouraging result is also that most of the respondents feel that there have been benefits to their work from the previous changes. As Figure 21 presents, 44% of the subjects said that the benefits to personal work had promoted the success of changes the most. This shows that more or less functional changes have been implemented.

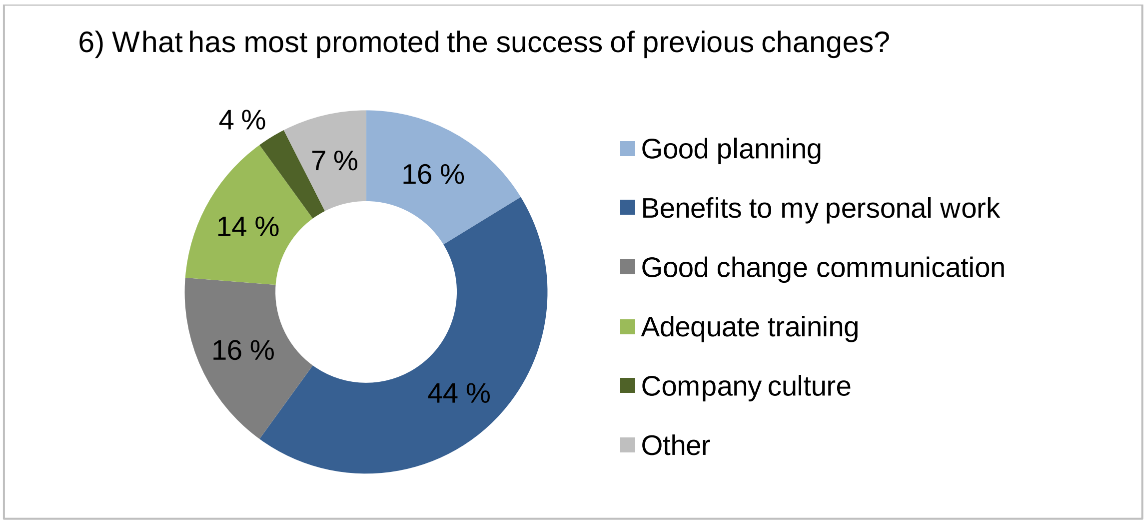


Figure 21. Survey results for question no 6.

Finally, the expectations of future changes of the survey subjects are rather positive, as seen in Figure 22. Almost half of the respondents (45%) have positive expectations and only 10% have negative expectations.

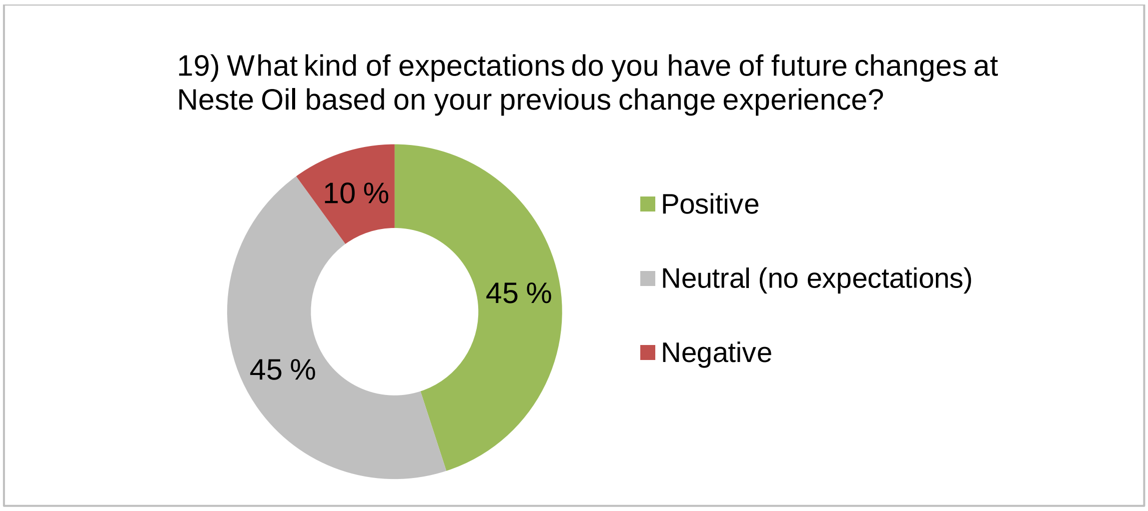


Figure 22. Survey results for question no 19.

These results enable improvements to be realized in the near future, as the overall attitude seems to be quite positive regardless of the needs for development. Even if there were critical views presented in the open question of the survey, altogether the results are not crushing.

4.3 Summary of the Results

Based on the data analysis, three main problem areas in change implementations in the case company stood out; namely involving end users in the decision making, insufficient communication and inadequate handling of the actual roll-out. All of them are linked to the lack of end user perspective in the process. These challenges are bound to create frustration and resistance and will lead to a slower adoption of the solution.

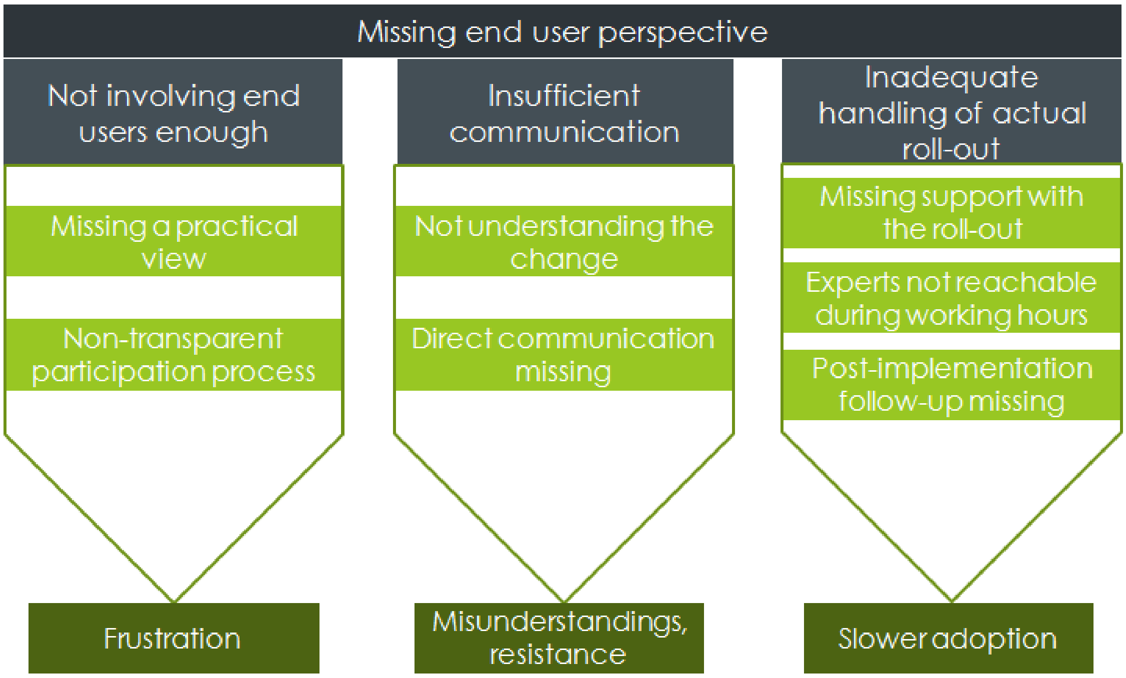


Figure 23. A summary of the challenges in change implementations in the case company.

The challenges in change implementations presented in Chapters 4.1.1-4.1.3 are summarized in Figure 23. It became clear that the end user perspective is not always thought through in the change projects – especially from the point of view of the distant locations. Probably the results would have been slightly different if the interviewees worked in the head office. These results highlight the difficulties with having the project team far away from the place of the change implementation. However, the interview results were strongly supported by the survey results, making it clear that these aspects should be acknowledged throughout the organization.

Not involving the users in decision making during the change process will inevitably lead to change resistance as the users are likely to distrust the process if they are not listened to. In addition, the solution might turn out to be impractical if the operational level is not involved in the planning. Next, insufficient change communication will lead to misunderstanding the purpose and goals of the change and therefore create resistance that could be avoided. The most effective way of communication is direct, face-to-face communication, which has not been a key area of focus in the case company. Finally, not having an adequate support network organized for the distant locations will lead to slower adoption of the change. In addition, the distant locations are missing more help with the actual roll-out. Post-implementation follow-up is often missing which can even lead to the users not sticking with the new solution.

The lack of resources explains for one part why these aspects summarized in Figure 23 are not better managed. However, after hearing the frustration from the employees, it would seem that allocating resources for engaging end users from the beginning would create more value in the long run. Reducing frustration would help the users to accept the change more easily and to overcome the problems quicker. Another explanation for neglecting the end user aspect is that even though it is known in principle that communicating through emails and intranet is not as efficient as direct communication, it is easy to ignore this fact when focusing too much on the technical side of the change. Furthermore, it might be presumed that if an office has relatively few employees compared with the head office for instance, not so much effort for involving the users and organizing the support is needed. As seen in the interview results, this kind of thinking is misleading.

In addition, the project team might be afraid of pushing too much information to people which might create frustration in its turn. Indeed, emails will get lost with other urgent mails and portal communication cannot reach everybody. Nonetheless, as stated in one of the interviews, people just have to be *made* to listen and the main message should be told face-to-face, directly. It is clear that there almost always will be resistance to change and therefore people might not be eagerly waiting for the news of the change project or participating in it. This should not frighten the project team, but they should keep making efforts to get people actively involved.

Table 10 summarizes the improvement recommendations presented earlier for the problem areas (for a more profound analysis of how to realize these in practice, see Chapters 4.1.1-4.1.3).

Table 10. A summary of the problem points in change implementations and recommendations for improvement (for a more profound analysis of how to realize these in practice, see Chapters 4.1.1-4.1.3).

Problem area	Improvement recommendation
Participation in decision making	To agree on the goals with users
	To identify & communicate the steps where user participation is needed
	To check with users that the practicalities of the change have been thought through before implementation
	To have a transparent system for collecting the feedback
	To make the effects visible in order to create desire to participate
Change communication	To do a detailed impact study
	To organize face-to-face, direct meetings to communicate the main message
	To keep a strong focus on the “why” and the benefits
	To tailor the message for different audiences: be concrete
	To organize a kick-off meeting for the end users to create motivation
Actual roll-out and support	To train for processes and interfaces
	To send a support person or group on the spot
	To provide technical support during working hours to all the offices
	To have a practical owner of the change on the spot post-implementation
	To do a post-implementation analysis & realize needed follow-up actions
	Include collecting feedback from the users to the evaluation of the project

The recommendations summarized in Table 10 are a starting point for an improved implementation process of changes in the case company. The case company should strive to put each of the steps thoroughly into practice.

As already analyzed in Chapter 2.4, lack of resources or their misallocation is one of the reasons why these steps are not properly realized. Nevertheless, the case company does understand that there are challenges with this aspect and have noted the possible change resistance that there is. Furthermore, the biggest reasons behind the challenges are most likely not the lack of knowledge – in principle, the theory presented in Chapter 2 is known in the case company. The reasons are probably more linked to not having detailed and specific enough a plan for realizing the steps in practice.

In addition, one big problem might be wrong KPIs for change projects. The actual user engagement and level of adaption are difficult to measure in numbers at the end of change projects. The top management, however, needs results that can be quantified and compared, and thus, the end user perspective is difficult to be included in the targets and the short-term incentives. Furthermore, in order to improve, the problems and challenges from previous change projects should be acknowledged and analyzed. In order to be able to openly admit the areas for improvement, the culture of the company needs to be tolerant for mistakes. A realistic understanding of the missteps is the only way to avoid them in the future. When starting a new project, the analyses from previous changes should be taken into consideration in the planning.

The topic can be analyzed through a maturity model. The first, initial level could be that some kinds of actions are taken to include the end user perspective in the change process, but there is no standard way of doing it. The second, repeatable level would include common guidelines to be used in all of the change projects. The third, defined level would require a consistent and controlled way of using the guidelines in each project. The fourth, managed level would include measuring the results and managing the guidelines based on agreed metrics. The fifth, optimized level would mean that based on the measurements, continuous improvements and specifications would be added in the guidelines and they could be flexibly adjusted to different kind of change projects.

Based on the results presented above, the current situation in the case company seems to be at level one or two. There are some vague guidelines available on the Intranet for example for communication of change projects, but they are not particularly addressing the end user perspective. In addition, there is no visible encouragement in the written instructions for getting the users participated in the process. The post-implementation evaluation seems to be more focused on the views of the project team and the steering group than collecting feedback from the practical level. Furthermore, the maturity level is also linked to the culture in the company, as these two are highly connected. The culture affects the maturity level and the other way around. If there is not a good culture for changes, it will be more challenging to increase the maturity level. For instance, if there have been a lot of changes where the users have not been listened to, it will be difficult to get them engaged in the next changes as well. The users might presume that they will not be able to influence the change in any case, and even with much effort from the project team, it can be tricky to change this attitude.

In conclusion, a successful implementation of process and ERP system changes from end user viewpoint requires a great deal of work. The recommended steps should be a key area of focus, and the case company should strive to put each of the steps thoroughly into practice. The culture for changes cannot change in an instant, but the maturity level of end user perspective can be increased step by step. Before there are common, detailed guidelines incorporated in the project plans, more efforts are required to realize the steps.

5 Discussion and Conclusions

This chapter presents a short summary of the study and evaluates the success of the research project.

5.1 Summary

Based on the introduced business challenge, the research questions “How to successfully implement business process and ERP system changes from the end user viewpoint?” and more particularly, “How to improve the implementation of business process and ERP system changes in the case company?” were formulated.

To respond to the first question, best practices of change implementation from the end user perspective and people change management were studied. Based on the investigation of current theories, a conceptual framework was drawn to crystallize the key findings. In order to understand the standard procedure of implementing changes in the case company, an empirical study was carried out. First, six employees from different change cases were interviewed. Second, a survey focusing on the employees’ change experiences was conducted, to which 82 responses were received.

After gathering the data, the results were analyzed and compared to the developed conceptual framework. The steps of the conceptual framework on which the case company should focus more in the future were highlighted and four new steps were added in the framework (see Figures 24 and 25). As highlighted in Figure 24, the case company should focus on getting the users actively participated in the change processes, also in the more distant locations. The expectations of the users and the impacts of the change on their daily work should be studied at an early stage. Better support should be arranged for the smaller branch offices during the implementation, and training needs should be observed to cover e.g. process changes. A post-implementation follow-up review should be one key area of focus to ensure that the implemented change is functioning correctly. Finally, each project should be analyzed from the end user perspective, and the results utilized to improve the next projects.

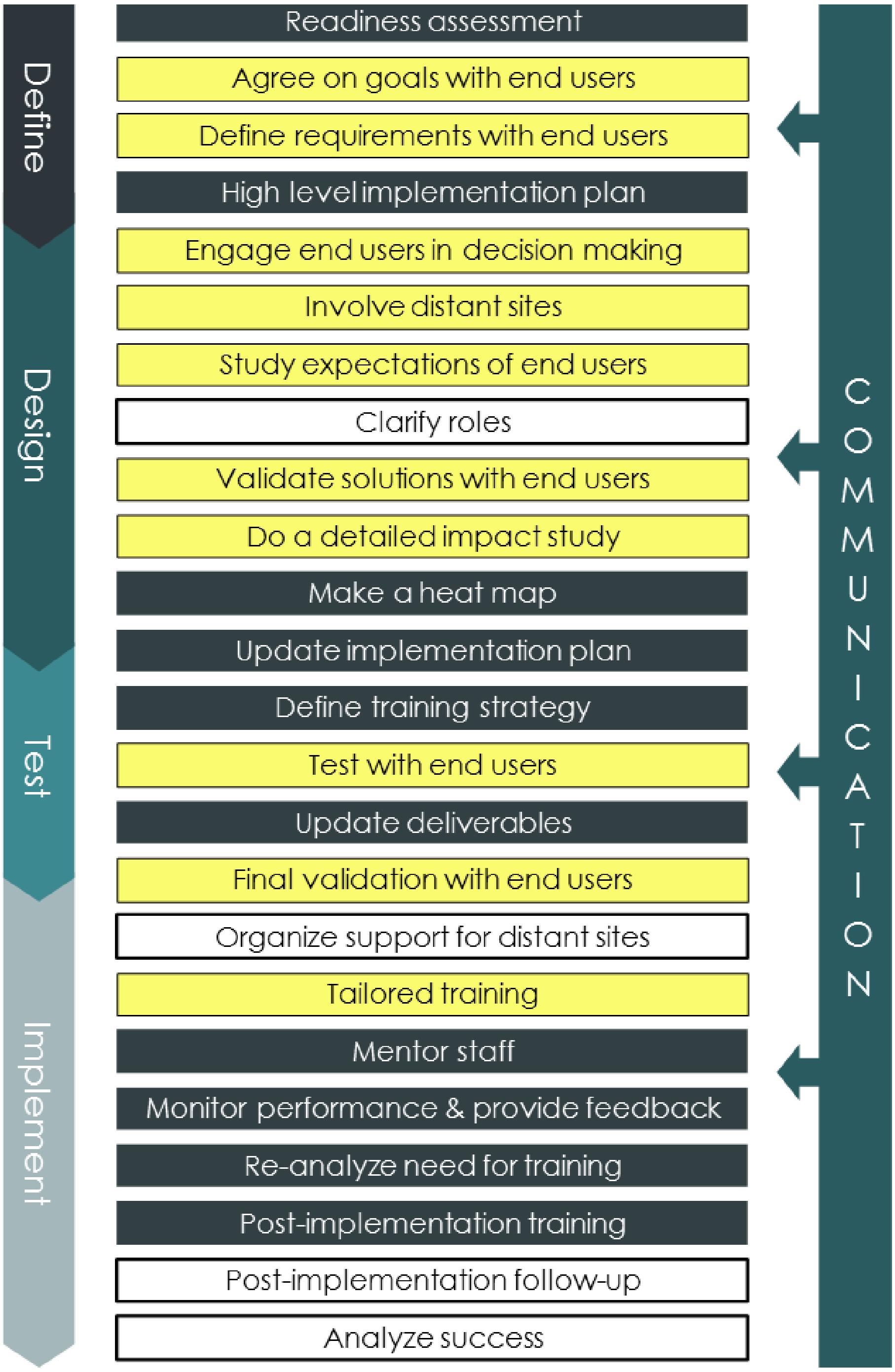


Figure 24. Steps to be improved in the change process based on the interviews and the survey.

Furthermore, there is room for improvement with change communication. As highlighted in Figure 25, the case company should focus on the following steps of the communication guidelines. First, the reasons behind the change should be better explained, and the vision and the benefits should be strongly promoted. In addition, to ensure that the change message is in fact conveyed, the message should be tailored according to the audience and it should be told face-to-face, preferably in small team meetings.

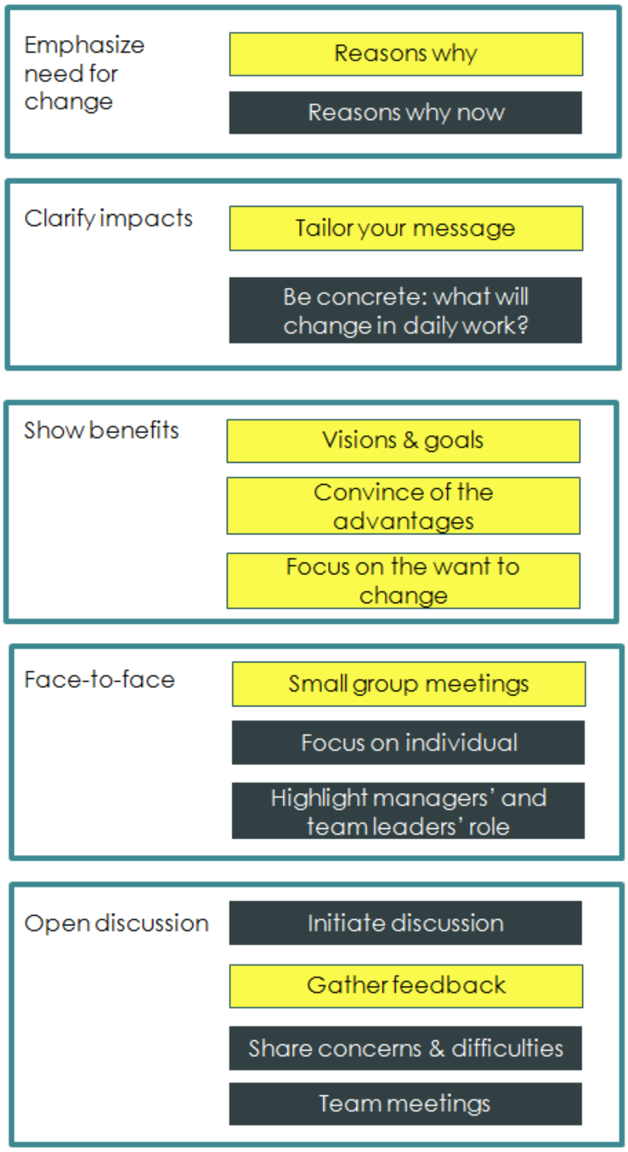


Figure 25. Steps to be improved in change communication based on the interviews and the survey.

As a summary, Figure 26 presents the critical problem areas in the case company related to the implementation of changes from the end user perspective. As seen in Figure 26, the biggest problem areas in the case company are linked to not involving the end users sufficiently in the development process, not sufficiently or directly communicating about the change and not adequately handling support during implementation and the follow-up after the implementation.

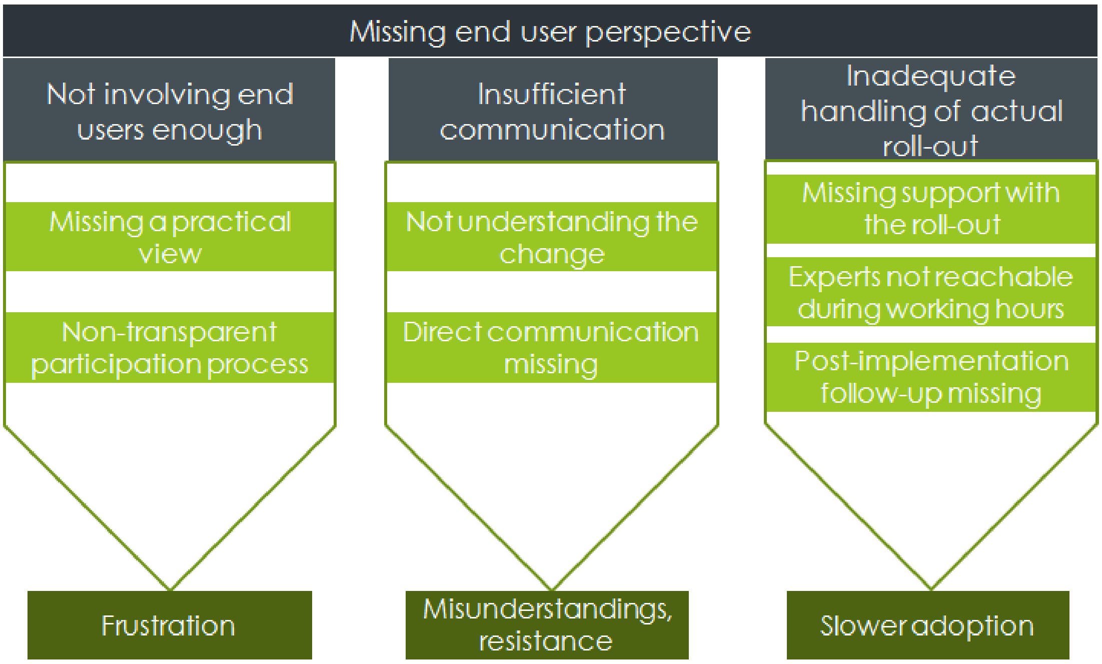


Figure 26. Summary of the problem areas in the case company based on the data analysis.

First, the end users feel that they are not always listened to when planning new changes. Thus, some of the changes turn out to be impractical at the operational level, or, they are implemented before the solution is really played out and noted to work at every stage of the process. Missing a practical view from the development phase can complicate for example the customer interface, which leads to the frustration of the employees. In addition, it seems that the process of engaging end users is not transparent. Increasing the visibility of user participation could increase the trust of the employees in the decision process.

Second, the change communication is insufficient according to the data analysis. As direct, face-to-face communication is often missing, the users do not understand why the change is carried out or what the benefits are. This leads to misunderstandings of the change goals, unmet user expectations and, eventually, to change resistance.

Third, the results suggest that the actual roll-out is not always adequately handled in terms of support and post-implementation analysis. Technical support is not available during working hours of the distant locations, which is creating frustration and leading to slower adoption of the new solutions. The branch offices are not always getting backing from the head office with the implementation phase. Furthermore, an analysis of the actual adoption of the solution is sometimes left out, or at least not utilized in the projects that follow.

Based on the theory studied and the views collected from the employees, a list of the most critical improvement recommendations was formulated. Table 11 summarizes the improvement recommendations presented in Chapters 4.1.1.-4.1.3. The recommendations aim to improve the problem areas that stood out in the data analysis.

Table 11. Summary of the improvement recommendations.

Problem area	Improvement recommendation
Participation in decision making	To agree on the goals with users
	To identify & communicate the steps where user participation is needed
	To check with users that the practicalities of the change have been thought through before implementation
	To have a transparent system for collecting the feedback
	To make the effects visible in order to create desire to participate
Change communication	To do a detailed impact study
	To organize face-to-face, direct meetings to communicate the main message
	To keep a strong focus on the “why” and the benefits
	To tailor the message for different audiences: be concrete
	To organize a kick-off meeting for the end users to create motivation
Actual roll-out and support	To train for processes and interfaces
	To send a support person or group on the spot
	To provide technical support during working hours to all the offices
	To have a practical owner of the change on the spot post-implementation
	To do a post-implementation analysis & realize needed follow-up actions
	Include collecting feedback from the users to the evaluation of the project

The improvement recommendations summarized in Table 11 present a starting point for developing the implementation of changes in the case company. End users should be involved in the change process particularly to ensure that the practicalities of the change have been carefully considered before starting the implementation. There should be a transparent system for collecting the views so that the effects of the user participation are visible. Change communication should be increased; especially a detailed impact study of the change should be done in order to better understand and communicate the benefits for each user group. An effective way to invest in face-to-face communication would be organizing a kick-off meeting with the actual users. Regarding the actual roll-out phase, it would be beneficial to send a support person or group on the spot of the implementation, even for the most distant sites. To ensure that the change is properly adopted, a practical owner on the spot should be named. It is also important to do a post-implementation analysis and realize the needed follow-up actions accordingly.

Most importantly, user satisfaction should be included in the KPIs of the change projects or otherwise these steps will most likely be overlooked in the future change projects as well. Collecting post-implementation feedback from the users should be included in the evaluation of the project. New projects should also start with revising the feedback from the latest projects in order to develop the culture for changes even further towards the desired way.

Finally, as the results of this study clearly indicate, there is a big risk of change project failure if the provided guidelines are ignored. A slow adoption of the new system or a total refusal of the users to adapt to the new processes inevitably leads to major costs. On top of the costs, the users become frustrated, and this leads to negative attitudes among the employees. This will complicate the implementation process even further. In order to avoid the costs of a failed implementation, resources have to be devoted to address the end user perspective already from the beginning of the change process. Based on the results presented in this study, it is the only way to carry out changes successfully.

5.2 Evaluation of the Study

The goal of this study was to answer how to successfully implement process and ERP system changes from the end user perspective and how the implementation of changes could be improved in the case company. The named targets were reached by drawing up a framework for engaging end users in a change process and by analyzing the problem areas in the case company and presenting improvement recommendations for the future. The study underlines the importance of the end user perspective in change projects and provides valuable information for the case company of their way of implementing changes. It should be stressed that this study focuses on improving the implementation of changes in the case company. The recommendations and conclusions presented are case-specific, as they have been formulated based on comparing the data collected from the case company to current best practices.

Due to the limitations of the schedule, it was not possible to interview the respondents on two separate occasions, during the development process and after the final implementation. Instead, to gain a wide understanding of the topic, different change cases at their different phases were selected for the interviews.

It should be noted that the individual interviews focused on change cases in some of the branch offices in distant locations. Therefore, the results are bound to center on the challenges linked to head office versus smaller offices. As seen indicated by the results, there are some major improvements needed for the engagement of the distant sites. As the needs of the branch offices are easier to be overlooked than those of the headquarters, it was important to highlight these challenges. However, the majority of the survey respondents work at the head office, which balances out the results. The same challenges stood out from the interviews and the survey, making it clear that the named problem areas should be acknowledged throughout the organization

As the survey was conducted in order to measure the general impression and experience of changes among the employees, the questions were not directed to any particular change. Therefore, it is not known which changes the respondents have been reflecting on while filling in the questionnaire, or if they have been answering based on an "average" experience from various changes. This was not seen as a disadvantage, as the overall view can often be a result of several changes.

Furthermore, the investigation of theory revealed that there are no easy tricks to succeed in change projects. As the topic of this study, change implementation, has been so widely studied, it was challenging to find a fresh view on it. Nevertheless, this study brings out the importance of the end user perspective in the implementation of changes. Moreover, it presents useful tools for the case company to improve their way of implementing changes. The case company can use the results from this study to improve their procedures of implementing changes in the future and to better succeed in engaging users in changes.

The next step would be to calculate the resources needed for putting the presented recommendations into practice. The cost estimation was left out from this particular study due to the limitations of the schedule. The target project is bound to affect a large part of the organization and addressing the analyzed problem areas would help in reducing the risks of the implementation. Again, not engaging end users in the process can lead to major costs caused by slower adoption of the solution.

Other future studies in the case company could look more specifically into the overall allocation of resources in change projects, to ensure that the budgets are realistic and comprise the actions linked to the end user perspective. Furthermore, the next studies could investigate how the end user viewpoint could be evaluated and measured and added in the KPIs of the changes to come.

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Appendix 1. Survey Questionnaire

The purpose of this survey is to study your experiences and perceptions of change implementations at Neste Oil. The goal is to find out what should be taken better into consideration when implementing future changes.

Change at work can be for example a new system, a changed way of working, a changed process, changed responsibilities, etc.

Your responses will be handled anonymously and confidentially, and they will not be analyzed individually. Responses from all the respondents are gathered together and analyzed in one group.

1) How long have you been working at Neste Oil?
   - Less than 2 years
   - 2-5 years
   - 5-10 years
   - More than 10 years

2) Where are you working in?
   - Supply Chain Management
   - Operations
   - Sales & Supply
   - Customer Service
   - Finance

3) Do you feel that there have been a lot of changes in your work environment at Neste Oil?
   - Too many changes in a short time
   - A reasonable amount of changes
   - There have been only few changes
   - There have not been any changes (move directly to question no 16)

4) Have you got positive experiences from previous changes?
    - Yes
    - Partly
    - No

5) Have the previous changes motivated you in your work?
    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree

6) What has most promoted the success of previous changes?
    - Good planning
    - Benefits to my personal work
    - Good change communication
    - Adequate training
    - Company culture
    - Other:___________________

7) What kind of concerns have you had in previous change situations?
    - Concerns of the change impacts to my personal work
    - Concerns of the increased work load
    - Not fully understanding the change or its reasons
    - I have not had any concerns
    - Other: ___________________

8) What has been the biggest challenge in previous change implementation (choose 1)?
    - Not enough communication
    - The changed way of working is slow or complicated
    - Not enough training
    - The change was not designed to help my work, I did not get any benefit
    - Other: ___________________

9) Has there been support always available in a change situation if needed?

- Yes
- No
- I don't know

10) How has your manager helped to implement the changes?

- Working actively in the new way
- Promoting the benefits of the change
- Asking for feedback & listening
- Giving feedback of my work
- Pushing me to work in the new way
- My manager has not helped
- Other: ___________________

11) Do you trust in good decision making in the company during change?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

12) Have you had an opportunity to influence the changes related to your work?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

13) How have you participated in the development of previous changes?

- Giving improvement propositions
- Defining requirements for the change
- Involved in the planning of the change
- Testing a new solution
- Giving feedback of the change

- I have not participated in the development
- Other: ___________________

14) Has the communication about the change been comprehensive enough during previous changes?
- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

15) Has the background and the reasons behind previous changes been explained to you?
- Yes, in detail
- Yes, to some extent
- They have not been clearly stated
- No explanation at all has been provided

16) What kind of communication do you expect about changes that affect you?
- Team meetings
- Workshops
- Info briefings
- Email
- Intranet news
- Other: ___________________

17) In your opinion, what is the most important thing in change communication?
- Concrete information of the change impacts to my personal work
- Concrete information of the change impacts to the company
- Explaining the background why the change is done and why now
- Presenting the advantages of the change
- Sharing risks and concerns related to the change
- Other: ___________________

18) In your opinion, what kind of training should be provided when implementing changes?
- On-the-job training with a tutor
- Demonstrations in team meetings
- Online training
- Manuals & written instructions
- Other: ___________________

19) What kind of expectations do you have of future changes at Neste Oil based on your previous change experience?
- Positive
- Neutral (no expectations)
- Negative

20) Other ideas of what should be taken into consideration when implementing changes?

Thank you for your answers!

Appendix 2. Survey Results

1) How long have you been working at Neste Oil?

	Response	Number	Percentage
1.	Less than 2 years	8	9,76 %
2.	2-5 years	23	28,05 %
3.	5-10 years	16	19,51 %
4.	More than 10 years	35	42,68 %
	Total	**82**	**100 %**

2) Where are you working in?

	Response	Number	Percentage
1.	Supply Chain Management	18	21,95 %
2.	Operations	22	26,83 %
3.	Sales & Supply	21	25,61 %
4.	Customer Service	7	8,54 %
5.	Finance	14	17,07 %
	Total	**82**	**100 %**

3) Do you feel that there have been a lot of changes in your work environment at Neste Oil?

	Response	Number	Percentage
1.	Too many changes in a short time	17	20,73 %
2.	A reasonable amount of changes	54	65,85 %
3.	There have been only few changes	11	13,41 %
4.	There have not been any changes (move directly to question no 16)	0	0,00 %
	Total	**82**	**100 %**

4) Have you got positive experiences from previous changes?

	Response	Number	Percentage
1.	Yes	23	28,40 %
2.	Partly	53	65,43 %
3.	No	5	6,17 %
	Total	**81**	**100 %**

5) Have the previous changes motivated you in your work?

	Response	Number	Percentage
1.	Strongly agree	3	3,66 %
2.	Agree	50	60,98 %

3.	Neither agree nor disagree	16	19,51 %
4.	Disagree	12	14,63 %
5.	Strongly disagree	1	1,22 %
	Total	**82**	**100 %**

6) What has most promoted the success of previous changes?

	Response	Number	Percentage
1.	Good planning	13	16,25 %
2.	Benefits to my personal work	35	43,75 %
3.	Good change communication	13	16,25 %
4.	Adequate training	11	13,75 %
5.	Company culture	2	2,50 %
6.	Other:	6	7,50 %
	Total	**80**	**100 %**

7) What kind of concerns have you had in previous change situations?

	Response	Number	Percentage
1.	Concerns of the change impacts to my personal work	16	19,51 %
2.	Concerns of the increased work load	25	30,49 %
3.	Not fully understanding the change or its reasons	22	26,83 %
4.	I have not had any concerns	12	14,63 %
5.	Other:	7	8,54 %
	Total	**82**	**100 %**

8) What has been the biggest challenge in previous change implementation (choose 1)?

	Response	Number	Percentage
1.	Not enough communication	25	30,49 %
2.	The changed way of working is slow or complicated	11	13,41 %
3.	Not enough training	20	24,39 %
4.	The change was not designed to help my work, I did not get any benefit	16	19,51 %
5.	Other:	10	12,20 %
	Total	**82**	**100 %**

9) Has there been support always available in a change situation if needed?

	Response	Number	Percentage
1.	Yes	37	45,12 %
2.	No	23	28,05 %
3.	I don’t know	22	26,83 %

	Total	**82**	**100 %**

10) How has your manager helped to implement the changes?

	Response	Number	Percentage
1.	Working actively in the new way	19	23,46 %
2.	Promoting the benefits of the change	26	32,10 %
3.	Asking for feedback & listening	25	30,86 %
4.	Giving feedback of my work	9	11,11 %
5.	Pushing me to work in the new way	13	16,05 %
6.	My manager has not helped	6	7,41 %
7.	Other:	4	4,94 %
	Total		

11) Do you trust in good decision making in the company during change?

	Response	Lukumäärä	Percentage
1.	Strongly agree	2	2,44 %
2.	Agree	37	45,12 %
3.	Neither agree nor disagree	19	23,17 %
4.	Disagree	24	29,27 %
5.	Strongly disagree	0	0,00 %
	Total	**82**	**100 %**

12) Have you had an opportunity to influence the changes related to your work?

	Response	Number	Percentage
1.	Strongly agree	5	6,25 %
2.	Agree	36	45,00 %
3.	Neither agree nor disagree	18	22,50 %
4.	Disagree	16	20,00 %
5.	Strongly disagree	5	6,25 %
	Total	**80**	**100 %**

13) How have you participated in the development of previous changes?

	Response	Number	Percentage
1.	Giving improvement propositions	30	36,59 %
2.	Defining requirements for the change	18	21,95 %
3.	Involved in the planning of the change	20	24,39 %
4.	Testing a new solution	24	29,27 %
5.	Giving feedback of the change	37	45,12 %
6.	I have not participated in the development	17	20,73 %
7.	Other:	2	2,44 %

	Total		

14) Has the communication about the change been comprehensive enough during previous changes?

	Response	Number	Percentage
1.	Strongly agree	0	0,00 %
2.	Agree	27	32,93 %
3.	Neither agree nor disagree	22	26,83 %
4.	Disagree	31	37,80 %
5.	Strongly disagree	2	2,44 %
	Total	**82**	**100 %**

15) Has the background and the reasons behind previous changes been explained to you?

	Response	Number	Percentage
1.	Yes, in detail	6	7,32 %
2.	Yes, to some extent	48	58,54 %
3.	They have not been clearly stated	25	30,49 %
4.	No explanation at all has been provided	3	3,66 %
	Total	**82**	**100 %**

16) What kind of communication do you expect about changes that affect you?

	Response	Number	Percentage
1.	Team meetings	55	67,07 %
2.	Workshops	37	45,12 %
3.	Info briefings	42	51,22 %
4.	Email	22	26,83 %
5.	Intranet news	13	15,85 %
6.	Other:	4	4,88 %
	Total		

17) In your opinion, what is the most important thing in change communication?

	Response	Number	Percentage
1.	Concrete information of the change impacts to my personal work	22	26,83 %
2.	Concrete information of the change impacts to the company	9	10,98 %
3.	Explaining the background why the change is done and why now	40	48,78 %
4.	Presenting the advantages of the change	10	12,20 %
5.	Sharing risks and concerns related to the change	1	1,22 %

6.	Other:	0	0,00 %
	Total	**82**	**100 %**

18) In your opinion, what kind of training should be provided when implementing changes?

	Response	Number	Percentage
1.	On-the-job training with a tutor	47	59,49 %
2.	Demonstrations in team meetings	35	44,30 %
3.	Online training	10	12,66 %
4.	Manuals & written instructions	25	31,65 %
5.	Other:	3	3,80 %
	Total		

19) What kind of expectations do you have of future changes at Neste Oil based on your previous change experience?

	Response	Number	Percentage
1.	Positive	36	45,00 %
2.	Neutral (no expectations)	36	45,00 %
3.	Negative	8	10,00 %
	Total	**80**	**100 %**

Appendix 3. Summary of the Interview Results

The interviews were recorded, transcribed and checked by the respondents. In order to protect the identity of the subjects, the detailed notes are not attached to this Thesis.

	A	B	C	D	E	F
Advantages of the change	Have not seen the benefits	Has not seen any value of the change	Benefits for other teams only	Possibly reduces time of working	Standardized processes	Systematic way of working
	Only benefits for upper level	Advantages for other teams		Less manual work		Reduce manual work
Disadvantages of the change	Increased workload	Possibly duplicating the work	Double work	Need to check that information is correct in two systems	Some quick solutions had to be made: still not working properly	Missing some reports
	More monotonous work	Need to continue the old way in parallel with the new	Need to continue the old way in parallel with the new			System error during implementation
Communication during change	Not showing any benefits in daily work	Missing a clear presentation of the change: why, benefits, goal	No clear explanation of the reasons behind	Benefits should be better informed	Some changes were not informed early enough	Not enough communication
	No concrete information for the users yet			More communication from the head office needed	Missing direct communication and a contact person	Not clear what will change at the beginning

Involvement	Fully involved in testing and reports	Not in the initial decision	Involved in the requirements definition and testing	Involved in the requirements definition and testing	Involved in the requirements definition	Involved in testing
	Others not willing to participate because of negative experiences	Involved in the requirements definition and testing			Views were being listened to for system change	
Challenges	Increased workload during implementation	Managers too high make the decisions to change, not understanding the practical implications	Training for the change	Lack of communication	Role division: not clear what is expected from users	Defining local requirements
	Negative experiences from changes: users have negative attitudes	Not enough management of change	Thinking instructions through before implementation	Previously: external consultants not understanding business	Weak communication	Timeline, actual roll-out
	Needs of the users are not really listened					