Table of Contents

1. Problem Statement

The foundation of the project asserts from globalization as a historical and supranational transformation within economic, political, technological and social society (Sagini 2015, 12). On the one hand, globalization can be understood as a set of institutions, networks and technologies operating within the contemporary social, cultural, political and economic spheres mentioned above. On the other hand, it is the evaluation and interpretation of those spheres that brings globalization into being (Schirato and Webb 2003, 19). Globalization has made the world change significantly over the twentieth century. Much of this change can be associated with the technological development of modern society and particularly new technologies are seen as a game-changer for the way, the world works. The reduction of time and distance on everyday life and businesses structures are paramount outcomes of faster transmission, higher mobility and bigger capital erupting from globalization (Schirato and Webb 2003, 35).

In an ever-changing, fast paced, globalized world, new technologies and digitalization transforms and modifies occupational practices (Harteis 2018, v). New technologies are combined and creates new processes, products and business-models. Digitalization will eventually affect all industries and create new ones. However, researchers suggest that the digital revolution is still slow in coming (Harteis 2018, 39). Even though complex software already shapes communication and has shown the path for new technologies, such as intelligent robots and fully-atomized factories, it still cannot replace human qualities (Harteis 2018, 39).

As of now, the discourse on digitalization has been dominated by contributions of technological supremacy. However, digitalization is not only a topic of software-engineering and robotics, but increasingly more so a topic of interdisciplinary interest and relevance (Harteis 2018, v). Therefore, digitalization of business-practices is to be discussed at the individual, organizational and societal level. In continuation hereof, there lies an importance in digitizing business structures and functions with focus on internal factors and in organizational contexts. Successful implementation of technologies and new processes evolving therefrom, plays an important role for businesses in adapting to the digitalized global world. However, such implementations have been a great challenge to many organizations, as it brings along organizational change (Nair and Reddy 2017, 20-21).

The concept "organizational change" has often been investigated through various organizational change theories related to change management, employee-organization-relationships, organizational trust and so on. We ourselves have been working with many different aspects of organizational change throughout projects, where the focus has been on the individual employees´ mindsets and readiness to change and how managers should deal with this matter. Latest, we have been cooperating with Aalborg Renovation through their change process in the aftermath of the municipal strategy "Aalborg uden Affald", which promoted making Aalborg a greener city. Surprisingly, we found that it was not the personal job satisfaction level, the mindset of employees, the fact that the employees were blue-collar workers or such aspects that influenced the outcome of the change. Instead we came to the conclusion that it was the need for having an ambassador of change to teach new technology that was important for the employees at Aalborg Renovation in order for them to carry out their jobs in the best possible way, thereby aligning with the purpose of the change (Christensen and Karrenbauer 2017).

In this project we want to pick up on the case and go further into depth with the change at Aalborg Renovation. Thereby this project does not stress management´s challenges with blue-collar change readiness and motivational factors in relation to adapting to new technology. Instead it presents how new organizational procedures and processes, which are unavoidable outcomes of technological development, can be facilitated through the employees. Though literature, of theorists such as John P. Kotter, Kurt Lewin, Jeffrey M. Hiatt and more, recognize organizational change as a comprehensive topic consisting of many different aspects, hardly any articles or scholars mention change in a socio-technical context intertwined of people, organization, processes and technology. Thus, the purpose of this study is to fill this void in literature, by examining how the value of digitalization can be leveraged in an organizational context through the employees in center of the new organizational processes. Once again, the core of this project represents the impact and consequences of megatrends on a tangible level. Hence, the project provides a highly relevant and timely insight into the way digitalization shapes and transforms business structures (Harteis 2018, VI). Thus, the problem formulation is as follows:

1.1. Problem Formulation

"How can digitalization of organizational processes be facilitated through employees?"

2. Theoretical Apparatus

The scope of the project is to investigate, how digitalization of organizational processes can be facilitated through employees. To answer the problem formulation, the following theoretical apparatus is based on literature carefully selected in order to fill the void established in the problem statement. Therefore, instead of going with few theories in their full length, the theoretical apparatus consists of bits of existing theories and relatively new articles written by various researchers and scientists within the field of research. Thereby, the theoretical apparatus presents already existing ideas on the topic, which we challenge and expand in order to build a solid theoretical foundation for the project. The theoretical choices and the constant review of literature makes it possible to create a more precise and problem-orientated framework for the following research design.

2.1. Theoretical Considerations

As mentioned in the problem statement, this project is an extension of our former research at Aalborg Renovation conducted in spring 2017 (Christensen and Karrenbauer 2017). Due to our pre-knowledge, we can approach the core issue more directly this time, as we already have identified, which theoretical aspects being more relevant and advantageous for academically approaching the challenges at Aalborg Renovation. In the following chapter we present and discuss various theories and scholars in trying to grasp the complexity of the problem formulation. As academia has little knowledge about the matter of attention, we seek to find broader understanding and insight by "picking and choosing" amongst former theoretical explanations and scholars related to the socio-technical interrelatedness. At the core of the given problem statement is of course the change at Aalborg Renovation, which is why we start off with a brief introduction of the *Thoughts on Change Management*. Hereafter *Organizational Capital* will be presented, as it refers to explicit and implicit occupational routines enabling an organization to utilize resources, including technology, in a productive way. Then the attention will be draw towards the research on *Implementation of ERP-Systems*, as it promotes the importance of the socio-technical relationship in changes stemming from digitalization. Moreover, *Corporate Knowledge Sharing* is introduced, as it refers directly to the employees, which are the center of attention in the problem formulation.

2.2. Thoughts on Change Management

Starting off, we briefly present some thoughts on change management, as we find it important for contracting the sense of the problem formulation. Taking our point of departure in change management, we recognize change as key to the problem formulation. We have chosen to take our point of reference from the perspective of *organizational* change management (instead of *individual*), as it focusses on a broader perception of change management practices, which emphasize communication, training and the overall value system of the organization (Hiatt and Creasey 2003, 10). We will not go into depth with CM-tools, as it does not support the aim of the project further. Instead we want to challenge former pioneer models in an attempt at bringing them up to date with present society.

It is commonly known that many theories and models speculate on, how to deal with change and that many factors influence organizational change. Present models of change management are based on change management experts' former experiences and figurate as a set of steps or takes form as a process. Some models have even been created with the idea that they are applicable in any setting, which in our eyes, is a naive perception, as we want to argue that change processes are context specific (Hiatt and Creasey 2003, 13). As an example, it has been a common perception that change readiness is influenced by collar colors. Some scholars emphasize that blue-collar workers to a higher extend tend to react on behalf of their emotions, and that their cognition influences their job commitment and performance (Rozell, Pettijohn and Parker 2011). As blue-collar workers often are less educated than other work groups, scholars argue that change influencing blue-collar job-routines are likely to have a lower success rate, than what is the case with white-collar job-routines, as white-collar workers would normally respond to change on behalf of factual knowledge (Gagnon, Jansen and Michael 2008).

However, results from our previous project made us discover that it is far from reality to research change on behalf of presumptions and stereotypes, such as the ones presented above. Instead we want to stress the importance of recognizing that change management contains elements of proactively helping people through knowledge of processes, tools and techniques. In this way, organizations can foster employee self-help and self-learning and thereby achieve organizational outcomes on behalf of the employees' subject to the change (Hiatt and Creasey 2003, 11-13). When talking about

organizational outcomes, we found it important to theorize the exact concept, which is why we will present the idea behind organizational capital in the following.

2.3. Organizational Capital

To understand the concept of organizational capital, we start off by dividing the term into its two components; organizational and capital. As James Coleman popularized the concept of social capital back in 1988, relating it with human capital, we argue that the same properties are valid for organizational capital. Capital is referred to as productive resources, which are invested in to produce a certain value outcome. This holds true for all kinds of capital; financial, human, social and so on. Therefore, we expect the same of organizational capital. The organizational part, like the social, emphasizes that the capital belongs not to individuals, but to a common ground, namely a group within an organization. Thereby organizational capital has its roots in social constructs and in the *relationship* between actors and their common contributions (Koput 2010, 16).

Organizational capital thereby, is the collection and use of individual employee information to enhance company efficiency. It refers to explicit and implicit occupational routines enabling an organization to utilize resources, including technology, in a productive way. Theory argues that organizational capital typically is embodied in the organization; the employees, the organizational culture and organizational structure. It is the knowledge used to combine human skills and physical capital into systems for producing a successful outcome (Li, et al. 2017, 2-3). According to Ludewig and Sadowski organizational capital refers to:

> *"The written and implicit routines that enable a firm to combine all other resources including technology in a productive way."*
> (Ludewig and Sadowski 2009)

Hence, organizational capital can be defined as the value created when factors such as leadership, strategy and organizational structure creates synergy across all resources and thereby enables a company to fulfill their strategy (Miles and Van Clieaf 2016, 56).

Organizational capital extends the idea of human capital to the organization. This means that whereas human capital is closely related to employees' knowledge, abilities and skills, organizational capital refers to the productive resources existing in organizational structures and relationships (Harteis 2018, 42). Organizational capital, among other, includes employees' willingness to cooperate, increase of knowledge-sharing and enhanced improvement of work practices and routines. Human and organizational capital are closely linked and often overlap – and in combination they allow a company to utilize inputs, such as technology, in more productive ways (Harteis 2018, 43). It is important to recognize organizational capital, as it promotes the value and productiveness of employees' hands and minds, which makes workers a resource worth investing in. By doing the right investments, organizations have a huge potential in taking advantage of the individual workers' human capital. The combination of individual employees' knowledge and competencies will eventually strengthen the overall organizational capital and thereby increase productivity and effectiveness among workers (Harteis 2018, 42).

Some of the assets that are crucial for productivity gains today stems from digitalization and even though IT capital is one of the most intangible assets in doing business today, it is also one of the more qualitatively better capitals to invest in. For companies to gain advantage of the new digital technologies, and for IT capital to unfold its´ productivity effects, it is argued that the different facets of IT need to be complemented by human and organizational capital (Harteis 2018, 40). As Brynjolfsson and Hitt argues:

> *"New technology will not unfold its full potential unless it is combined with training, new work organization and appropriate management techniques."*
> (Brynjolfsson and Hitt 2000)

Moreover, it is argued that for every euro invested in IT, the tenfold needs to be invested in intangible assets such as human and organizational capital (McAfee and Brynjolfsson 2014). To follow the train of thought from above, literature emphasizes that working with technology is a blue-collar field of the future. As an increasingly part of economy becomes automated, human jobs will gradually be affected by technology. It is most likely that blue-collar workers of the future will need a new set of skills, supplementary to the skillset expected of them today (Duggan 2017, 1).

A research by Farrington and Alizadeh furthermore suggests that digital collaboration tools support innovation across organizational boundaries. Like Brynjolfsson and Hitt, Farrington and Alizadeh acknowledge that more leaders and facilitators, with specialized training in the new technological tools, will be needed as the digital tools develop (Farrington and Alizadeh 2017, 26). To leverage the opportunities of emerging digital tools, organizations need to change. Moreover, new roles and leadership commitment are required to support these tools (Farrington and Alizadeh 2017, 30). The digital collaboration will eventually provide rapid access to important capabilities, specialized expertise, central know-how and contributions from employees with different educations, backgrounds and skillsets. The collaboration between white and blue-collar workers, enabled through digital tools, will lead to more informed staff and improved organizational capital (Farrington and Alizadeh 2017, 28). Consequently, organizational capital will also be negatively influenced through insufficient individual and organizational learning. For companies to join the digital revolution, they therefore need to adjust their organizational capital (Harteis 2018, 40).

To show how important the focus on digitalization in the workplace is, it should be mentioned that the issue of the digital revolution´s effect on future work even topped the agenda at a panel discussion in Geneva in 2017. Here it was stated that new advances are likely to result in extra costs for businesses as they adjust to technological change, and that certain businesses are likely to change the composition of their workforce over the coming decades. In the future, financial technology will allow more flexible work arrangements, and therefore the future focus must be on looking at innovative ways to ensure technology to support, rather than replace, workers (Valodia 2017). Consequently, digitalization in the workplace is a question of maximizing benefits and minimizing drawbacks in order to create new developments that benefit humanity. An example hereof is technology assisting environmental organizations (Valodia 2017).

To go further into the technological advances, we have chosen to focus on implementation of ERP-Systems in the following theoretical section.

2.4. Implementation of ERP-Systems

Enterprise Resources Planning (ERP) Systems are IT-driven initiatives allowing a flow of real-time information across organizations. Used in the right way they can empower organizations and their stakeholders and provide them with a better basis for precise decision-makings. IT-systems, such as the ERP, have evolved to more boundary-less and cross-functional tools for organizations. Yet ERP-systems are a challenge to many organizations (Nair and Reddy 2017, 20). Nair and Reddy argue as follows:

"ERP as an application-software is distinguished from other general software due to the tangible and intangible benefits it can bring about by its organizational impact. (...) Even though ERP is application-software its implementation should not only consider technical perspectives but interactions with social factors in an organizational context."

(Nair and Reddy 2017, 21)

During the past fifteen years, there has been a change in the perception of ERP-implementation - an evolution from technology-based to human-integrated systems. The change in perception is illustrated in the scheme below.

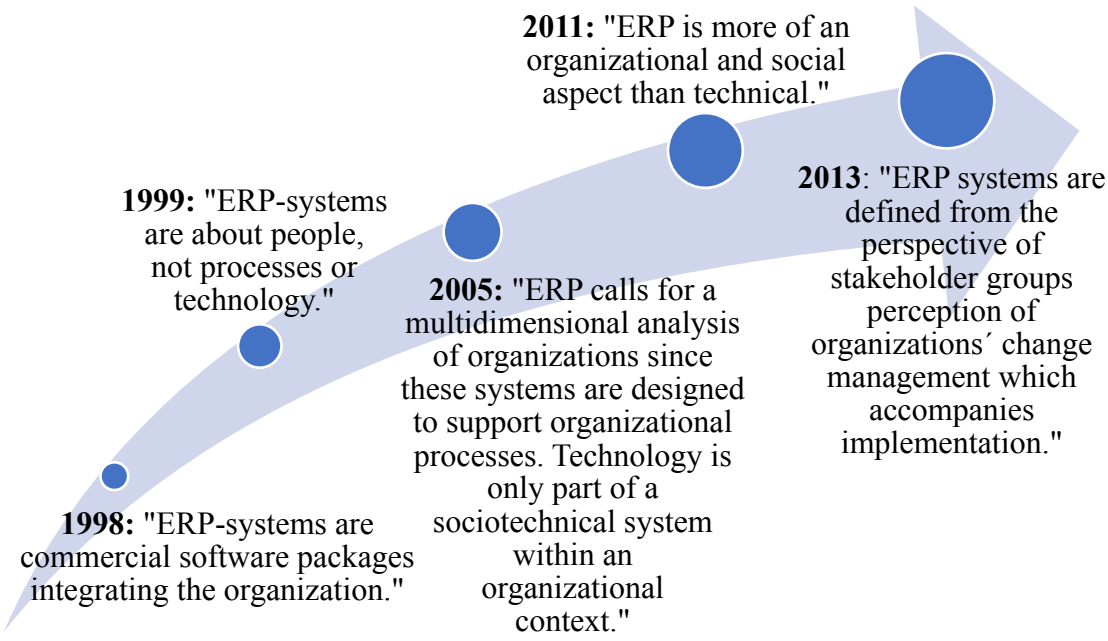

Figure 1: Model of the evolution of the definition on ERP as in (Nair and Reddy 2017, 21).

By recognizing ERP-implementation in a socio-technical context intertwined of technology, people, organizational context and processes, we align with the idea that successful ERP-implementation depends on each unique organization and is thereby organization-specific. In line with our theoretical statement about not including already existing change management models for our research, we have chosen to take point of departure in a research made by Jessy Nair & D. Bhanu Sree Reddy, as their research support the theoretical standpoint of the project. In an attempt at creating a model for successful ERP-implementation, Nair and Reddy also account for the pitfalls of existing models such as "Kurt Lewin's three step model", "The six step MIS-implementation model by Kwon & Zmud" and "Markus & Tanis' four step model for ERP-implementation processes", shown in chronological order in the models below (Nair and Reddy 2017, 23).

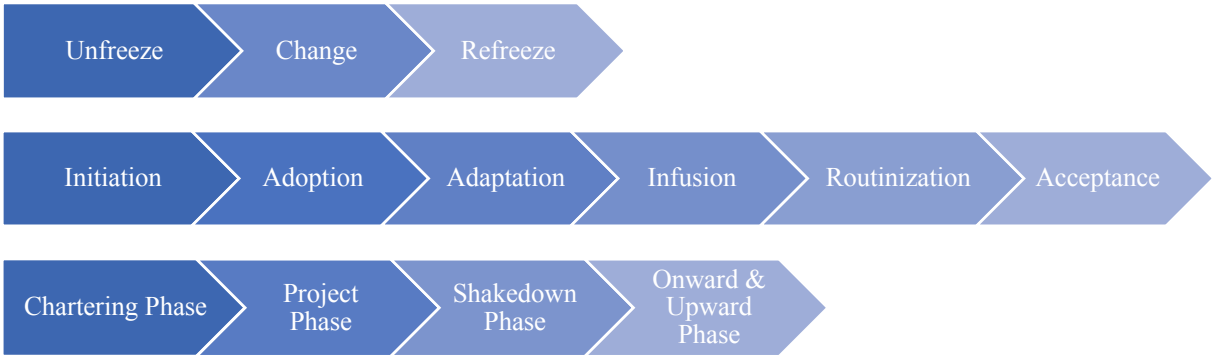

Figure 2: Models of existing step-guides as in (Nair and Reddy 2017).

Thereby they also challenge the existing models on change. Process approaches like these find understanding by following the models step by step. The problem with such models are that they present the idea that a step only becomes relevant when the previous step is "fulfilled". However, in reality, it is likely that steps overlap or appear in another order than illustrated in the models above. As argued by Nair and Reddy:

> *"(…) phase models are limited because they portray only one possible sequence of events through which all organizations are expected to progress."*
> (Nair and Reddy 2017, 24)

In line with this statement, we want to argue that the usage of these models complicates the process of monitoring whether the change is a success or failure, since the result will not become evident until all steps are complete – and at time modifications will not be of any difference.

On behalf of the review presented above, we have chosen to take the newly developed theory by Nair and Reddy into account. Nair and Reddy also try to grasp the complexity of implementing new technology and argue that existing models are outdated and does not correspond or cooperate with the new technological wave. Their model originates from Harold Leavitt´s diamond model. Instead of being a step-by-step guide, Leavitt´s diamond emphasizes, how the four factors; task, structure, technology and actors, are interrelated. Nair and Reddy present the same model but with new terms, as seen in the model below.

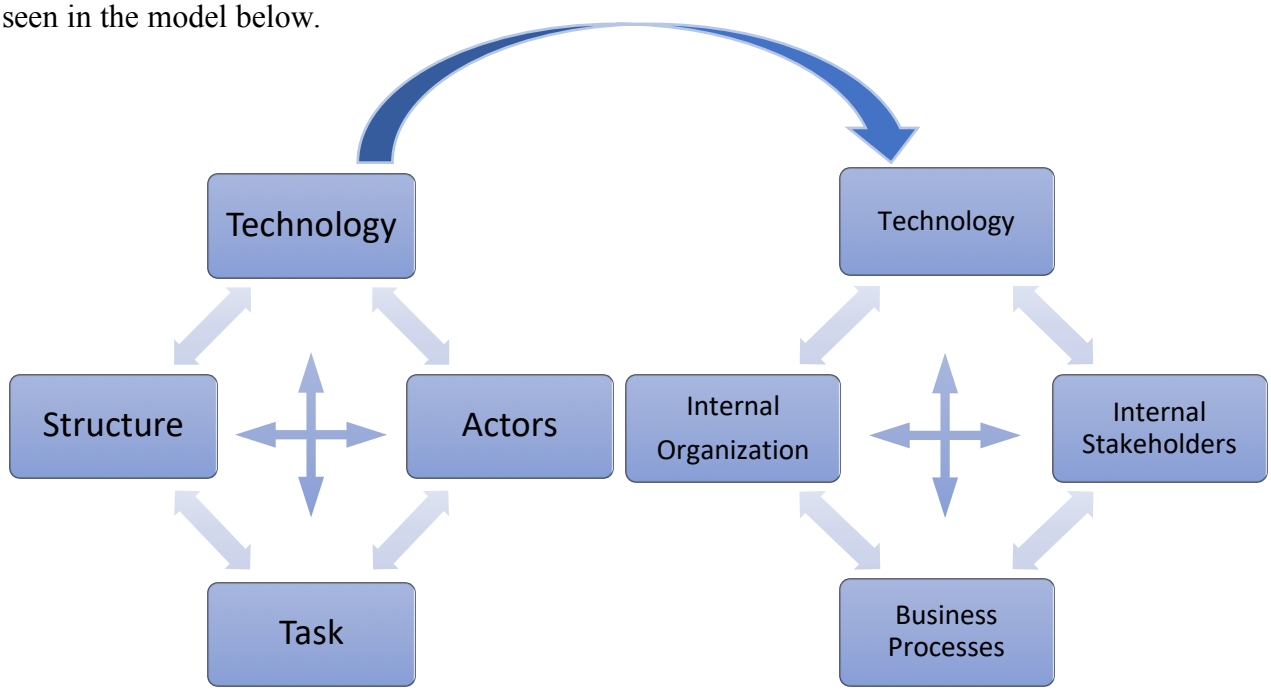

Figure 3: Illustration of Leavitt´s diamond model transformed into Nair and Reddy´s model as in (Nair and Reddy 2017, 27).

The four interdependent elements of Leavitt´s model are described as follows:

- **Tasks** are defined by the organizational foundation and objectives. Tasks can be functions or work-related duties, that needs to be performed. Therefore, it also refers to the expected outcomes of the goals set within the organization.
- **Structure** is the basis on which the organization operates. It is the structure that serves as a framework for the organizational division of labor. It therefore implies the need for systems of communication, authority and workflow.
- **Technology** is understood as machines, methods and programs and the related work processes and administrative procedures. It is the know-how and tool for carrying out the tasks.

- **Actors** are the people employed by the organization. They are characterized through their set of values, skills, know-how, beliefs and attitudes. They are the ones performing the tasks (Leavitt 1962).

However, by redefining the elements in the way Nair and Reddy has done, the socio-technological construct becomes more evident. The social factor is represented through "internal organization" and "internal stakeholders", whereas the technological factor is represented in "technology" and "business processes" (Nair and Reddy 2017, 26-27). By adopting this framework, a symbiosis of the social system and the technological system is created. It shows that employees who orients to the technological side should communicate and coordinate with employees orienting to the human side to create successful organizational change (Nair and Reddy 2017, 32). By operating on behalf of Nair and Reddy's refined model, the four elements are now described as follows:

- **Business Processes** is referred to as the process in which companies streamline the data flow through the organization. This is done by reengineering the former software systems and thereby making the new ERP-system fit the process that it was intended to manage. This also implies forgetting as-is business processes and instead moving on with new to-be business processes.
- **Internal Organization** is defined as the inner organizational context planned for the ERP-implementation. This implies to make employees aware of the implementation and its affects, both on the employees themselves and the organization as a unit. As this is often an overlooked aspect in ERP-implementation processes, it is important that decision makers plan resources to optimize the performance of the ERP-project.
- **Technology** is defined as the combination of raw technology and the way it is being handled and processed by the organization. As ERP is developed on behalf of best-practices of other organizations, it is important that organizations reengineer their processes and customize the software to meet the requirements of the organizational processes instead of standardizing their processes to meet the needs of ERP. Technical systems cannot stand alone and most align with the organizational surroundings and the employees. Therefore, it is important to establish a fit between technology and processes.
- **Internal Stakeholders** are defined as any group or person within the organization having an opinion towards the desirable features of the new ERP-system. It is any person affecting or

being affected by the new technology. Besides top management, project management, administrative staff and so on, vendors and consultants can also be identified as internal stakeholders as their involvement in the process begins well before the implementation stage (Nair and Reddy 2017, 32-35).

In short, the technical factors are concerned with tasks and technology which are needed to transform inputs to outputs, whereas the social factors are concerned with the employees and authority structures. It is assumed that the joint collaboration between these two factors leads to successful ERP-implementation. The model further highlights the need for a change agent such as a clear and visible leader, management team or consultant, who can understand and predict the interaction between the socio-technical components (Nair and Reddy 2017, 32).

The socio-technical interaction presented through the chapter, is important in relation to understanding the important factors when digitizing business structures. Hereafter, we want to present how businesses, who digitize their organizational processes, can benefit from corporate knowledge sharing.

2.5. Corporate Knowledge Sharing

Knowledge sharing, organizational learning and corporate knowledge are all terms covering the same area of social research. Theorists point toward the idea that organizations who are good at learning, have developed routines and systems that allow them to apply, store and develop knowledge systematically. Mutual organizational routines are argued to be at the core of the organization, as they make it possible to modify existing routines and adapt new knowledge into the organization. Dyer and Nobeoka define these learning routines as:

> *"A regular pattern of interactions among individuals that permits the transfer, recombination, or creation of specialized knowledge."*
> (Dyer og Nobeoka 2000, 347)

It is exactly this specialized knowledge we as researchers are interested in, especially related to what Dyer and Nobeoka define as "production networks" (Dyer og Nobeoka 2000). Consequently, our

point of interest is the routines *collectively* developed and applied by the production network within the organization. To create a network within an organization, the individual worker needs to identify with the collective. This demand feeling a sense of shared purpose, value or goals and shared patterns to create a common framework for interaction. If a network can create shared identity, knowledge sharing becomes easier. Dyer and Nobeoka further argue that if the network is good at creating the shared value without interference of management, the costs of knowledge sharing can be lowered (Dyer og Nobeoka 2000, 351-352). We therefore want to argue that organizations may not have to invest the tenfold in HR when implementing new technology, but instead that it is case specific and depends on the individual networks existing in organizations. To go further into this manner, we want to put emphasis on worker autonomy. Worker autonomy is defined as:

> *"The degree to which the job provides substantial freedom, independence and discretion in scheduling the work and in determining the procedures to be used in carrying it out."*
> (Brey 1999, 16)

Individual autonomy has long been argued to be essential to the well-being and self-development of humans. It can be described as the self-governance or freedom over choices, action and plans regarding the workplace. In other words, it is the control or independence that workers have on their own work situation and task elements. Task elements refer to methods and pace of working, procedures and schedules, work criteria and goals, the workplace, working hours and the type and amount of work. Moreover, workers should be able to realize their own goals and promote their values in relation to the organization. Therefore, the freedom of self-governing tasks is argued to be of great importance for worker´s self-realization and in order to do a fulfilling and meaningful job. Besides promoting their own values, workers should have the opportunity to contribute to organizational objectives. This means giving shape to organizational goals and coming with inputs and evaluation criteria in relation to the job they do (Brey 1999). Nonetheless, in most cases, this is easier said than done, as workers are often employees of an employer, who have a higher position in the company and thereby initially would have the "right" to shape the overall goals of the organization (Brey 1999).

Moving on, as the point of interest is knowledge sharing, it is important to mention that most scholars divide knowledge into two categories; explicit and tacit. Whereas the explicit knowledge is easy to transmit, as it often includes hard data and facts, tacit knowledge is harder to codify, as it includes

personal and often complex know-how. We therefore argue, that even though literature suggest that knowledge sharing depends on codified routines and system, there may lie a challenge in systemizing and storing tacit knowledge. As Dyer and Nobeoka suggests, tacit knowledge, compared to explicit knowledge, is often more likely to result in sustainable advantages in the long run (Dyer og Nobeoka 2000, 348). However, we argue that both explicit and tacit knowledge are important for the organization. As developing and applying learning routines can increase the efficiency of the entire production network, we argue that such routines should be seen as any information shared between organizational members. We argue that it depends on the situation, the employees and the organizational structure whether it is necessary to write them down or not. But how to "store" tacit knowledge and create knowledge sharing if the organization works better through unwritten rules of communication?

In an attempt at theorizing knowledge sharing through the lens of digitalization, we take our point of departure in the chapter "Digital networks and worker autonomy", which is part of Brey´s article (Brey 1999, 17-19). Even though it is no comprehensive empirical research, Brey mentions three factors, which should be considered major opportunities for making digital networks enhancing worker autonomy. Of the three, we will use "enhanced communicative" powers and "improved informedness" and focus on the internal factors described under these headings (Brey 1999, 17).

Under the heading "enhanced communicative patterns", Brey argues that digital networks offer better communication lines throughout the organizational structure, both amongst co-workers in the same department both also between departments from employee to management and vice versa. Brey focuses on the E-mail, which for instance enables a medium that creates less division, spreads information quicker and informs the whole organization. As Brey´s theory is from 1999, we want to add other technological medias to his research, such as ERP and other inter-organizational IT-systems. IT-systems make it easier for workers to communicate with remote divisions, exchange work and plan joint events. The enhanced communicative powers utilized through digital networks, may help workers from all departments to influence and be part of decision-makings. Moreover, under the heading "improved informedness", Brey mentions that digital networks may assist workers in being more informed about facets relevant for their job and their position in the company. Through the digital network, information is easier accessible and thereby the goals and strategy of the organization becomes more transparent and tangible for the workers. Hence, they will get a better perception of the way the organization works and why. By offering workers the possibility of controlling some of

the aspects of their daily work, the combination of enhanced communicative powers and improved informedness will eventually enhance job autonomy. Therefore, Brey strongly suggests empowering workers and appeals employers to give employees more authority. He further argues that well-informed workers, who are knowledgeable of the wider context of their work, are more likely to increase their responsiveness, effectiveness and efficiency towards the organization (Brey 1999, 17).

With the different theoretical aspects being covered, we want to move into the final theoretical framework, which is our own development. It is built on behalf of the active choices taken through the literature review of the theoretical apparatus presented above and gives a precise overview of the most important elements departed from the theories above.

2.6. The Employee Self-Facilitation Model - Own Development

By combing findings from former literature and relatively new research, we have built a solid foundation for a theoretical framework supporting the scope of the project. Before moving into the final framework, we want to highlight some important factors and considerations, related to the theories presented throughout the theoretical apparatus, which occurred during the literature review process. To answer the problem formulation: *"How can digitalization of organizational processes be facilitated through employees?",* and to use it in a case specific context, we want to stress, how the different theories are linked to each part of the problem formulation.

2.6.1. Foundation for the Employee Self-Facilitation Model – Own Development

As the problem formulation originates from the interplay between people and technology, we found it important to use theories supporting the socio-technical relationship. In relation to the ***"digitalization of organizational processes"*,** we found a theory examining this interrelatedness. Though the theory is presented in the light of implementation of new ERP-systems, we found that the solid research behind the theoretical statements explained in the ERP-implementation theory, were extremely relevant and applicable for the case at Aalborg Renovation, as the same parameters made sense to use in relation to the introduction of any new IT-system, which causes digitalization of organizational processes.

Furthermore, we found it important to shift the focus from management tasks in relation to change processes, and instead focus on the employees carrying out the change. Therefore, we wanted to investigate how the process could be enabled ***"through employees".*** To study this we introduced the chapter about organizational knowledge sharing. This chapter was combined of several researchers' opinion towards making groups a complete unit. Amongst others, the chapter introduced the concept of worker autonomy. Thus, worker autonomy normally focusses on the individual´s eager to control one's own tasks, we found the basic idea behind autonomy applicable for work groups as well.
The chapter about organizational capital served the purpose of explaining what the "goal" of the problem formulation is, and why it is interesting to investigate the given case at all. Of course, the purpose of change management in one way (through managers) or other (through employees), is to get a beneficial organizational outcome, this being increased performance, efficiency, competitiveness, market share, innovation etc. We found that the theory about organizational capital gave us the possibility of describing the organizational purpose of the case specific change process in the best way. Through the theoretical review, we developed the following model, which describes the idea behind facilitation in this specific context, and thereby answers the last part of the problem formulation, namely, how digitalization of new processes can ***"be facilitated"*** through employees.

As previous change models are often comprehensive and diffuse, we have chosen to create a model consisting of more basic parameters. Hence, we want to argue that the model is easier for both us as researchers to work with, as well as for the organization to understand and make use of hereafter. In an attempt at simplifying a model for, how organizations can work with socio-technological change, the following model contains three parameters, which we on behalf of our theoretical apparatus found vital for employee self-facilitation. In section 2.2, we stated that the project derives from:

> *"(...) organizational change management (instead of individual), as it focusses on a broader perception of change management practices, which emphasize communication, training and the overall value system of the organization".*

These are the same practices that we find in our model below. Communication is part of "Supporting Work Group Autonomy", training is part of "Enabling Organizational Processes" and the overall value system is part of "Contributing to Organizational Capital". The structure of the model is described hereafter.

In the light of the given problem formulation, the employee self-facilitation model is created from a social-technological perspective on change. This means that the three parameters in the inner circle are applicable for research in this specific area of change. This relationship is shown through the structure of the model. The outer circle enclosing the parameters shows that we operate within technological change. Moreover, the fact that the three inner circles are equally sized and overlap, shows that the parameters are equally important and that they are interrelated. The employee self-facilitation model furthermore has the shape of a circle to illustrate that the parameters are not dependent of time or events, and that they instead can be influenced over time and adjusted accordingly. Consequently, the model shows the path for researching change in a new way, as it differs from former step-by-step models, which are time and event dependent. The model is illustrated below, and the different components and their connection is described afterwards.

2.6.2. The Employee Self-Facilitation Model – Own Development

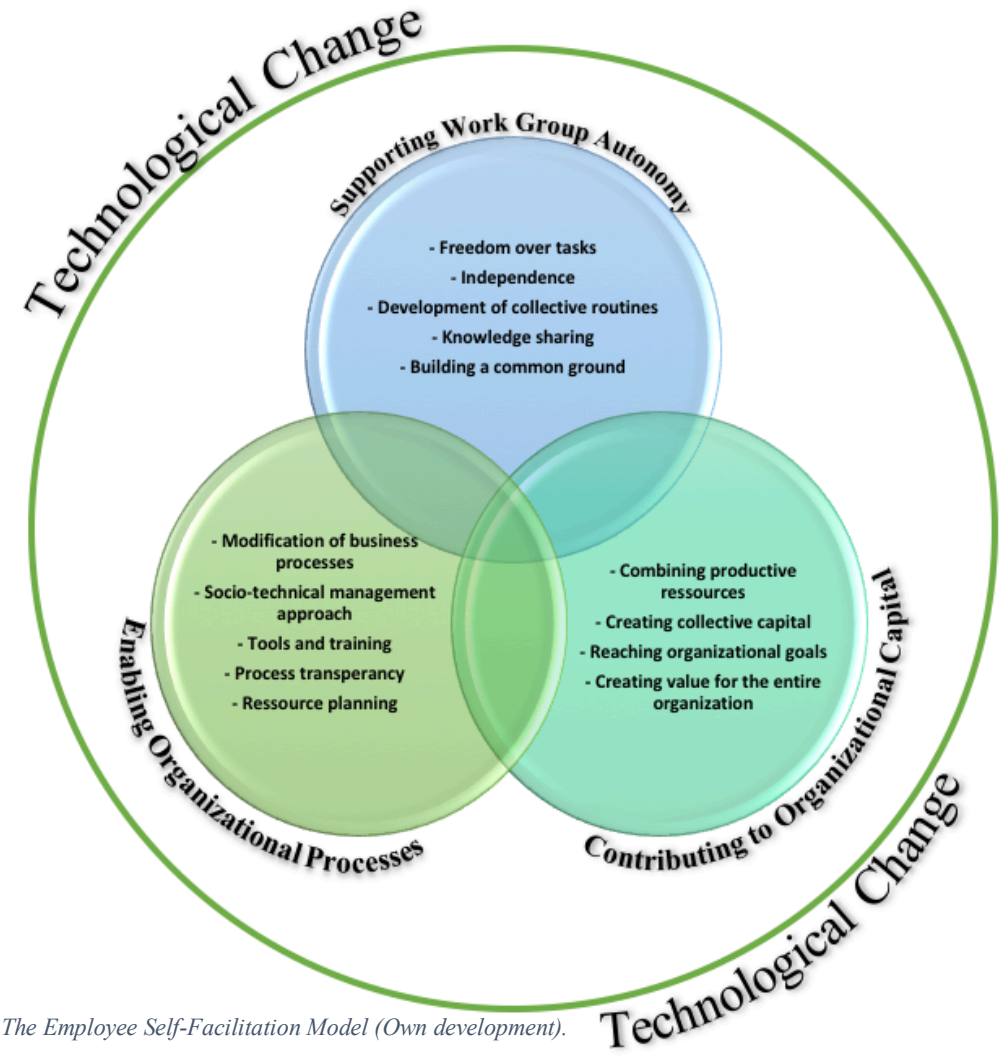

Figure 4: The Employee Self-Facilitation Model (Own development).

2.6.3. The Theory Behind the Employee Self-Facilitation Model

Supporting Work Group Autonomy

Important for employee self-facilitation is of course that the work group, which consists of the group of employees in a certain department, are made autonomous. Autonomy means that workers have the freedom over their own tasks. This includes freedom and independence to schedule and decide procedures and methods for carrying out their job. Important for work group autonomy is that the employees develop collective routines and that they interact and share both explicit and tacit knowledge across all members. Employee self-help and self-learning are important for achieving organizational goals and thereby enhancing organizational capital. Explicit and implicit knowledge is important to share, as it provides access to essential capabilities, specialized knowledge and know-how, which can be used by all organizational members. Knowledge is shared among the work group either by writing occupational rules and systems down or by talking about them in plenum. For autonomous work groups it is important that a solid and common ground is built, where everyone can share their opinions. In relation to technological change in particular, knowledge can with benefit be shared through IT-systems as they create cross-functional tools. Digital networks often create better communication lines throughout the organizational structure and thereby creates a mediator between departments (and even to remote division) and across the hierarchy in the organization.

Enabling Organizational Processes

In relation to technological change, new organizational processes occur and challenge the daily as-is business. Processes then need to be modified in order for the new system to cooperate with business standards. Adapting to technological change implies a socio-technical approach, where time and effort is taken both to implement and understand the new technology, but even more important, to communicate the changes to all organizational members. Digital collaboration tools such as ERP-systems or other IT-systems, improve processes across organizational boundaries – but only when it is managed correctly. As managers, leaders and facilitators have specialized training in change processes, they have the responsibility of providing tools for employees and training them in new organizational processes evolving from the new IT-system. A way for managers to assist employees, is to make use of the digital network, ERP-system or alike, to inform them about facets of the new processes, which are relevant for their job. When information becomes more accessible, the common goal becomes more transparent, and the employees have a better chance of adding to the

organizational capital. Consequently, even though organizational goals will always be set by someone in a leading position, the organizational processes will almost always be carried out by the employees on the floor. Therefore, resources should be planned in a way where the employees have a possibility of adapting to the new organizational processes.

Contributing to Organizational Capital

By sharing knowledge about organizational processes, employees contribute to organizational capital. When employees share knowledge, they combine the productive resources existing in the organizational structures and relationships, thereby creating collective capital, which can be used by the entire organization. It is the combination of leaders, who enables organizational processes and employees, being responsible enough to self-facilitate that creates this synergy across all resources, including technology, in the organization. The common ground and the occupational routines embodied in the organization, creates a value outcome. IT-capital is a huge asset for organizational capital today, and as IT becomes a blue-collar job of the future, their hands and minds are worth investing.

2.6.4. Evaluation of the Employee Self-Facilitation Model

From the model it becomes obvious that the three parameters of the employee self-facilitation model are closely connected and interrelated. The existence of each parameter depends of the existence of the two other parameters, as none of those can stand alone. This is also why the three facets, communication, training and the overall value-system, on which the model is build, in one way or another are represented in all three bubbles of the model. Therefore, the tasks described in each of the three parameters overlap. As an example, employees will only become good at self-facilitating and creating work group autonomy, if tools are provided and organizational processes are communicated by management. Meanwhile, the autonomous work group needs to show that they are capable of self-facilitating their tasks, before management will trust them and create an environment based on autonomous work. As stated by Brynjolfsson and Hiatt earlier in the project;

"New technology will not unfold its full potential unless it is combined with training, new work organization and appropriate management techniques."

This statement is strongly supported in our self-developed model and framework. In relation to the model we want to argue that if the workers on the floor will get just the slightest influence on the organizational goals and become up to date with organizational processes, they could be granted more autonomy in relation to their work. It would enhance cooperation, increase networks and organizational learning, whilst at the same time save the organization money, as limited organizational time and resources would be needed if workers where self-facilitated. Therefore, employee self-facilitation is desirable for both for the individual worker, and for the organization as unit. Consequently, it would enhance worker well-being, motivation and creativity whilst at the same time increase job performance, effectivity and flexibility, hinder resistance and cut costs.

With the theoretical foundation explained, there will be given an account for the scientific foundation of the project in the following chapter.

3. Theory of Science

In the following sections the ontological and epistemological standpoint will be presented in order to give an account for the scientifically considerations, research ethics and approaches made in relation to the problem formulation. Moreover, the research design will be presented in order to provide the reader of the project with insight to the chosen case and its usability for cases alike.

3.1. Ontological Position

When researching social phenomena, it is important to establish the ontological position of the research, as it describes how we scientifically look upon the phenomenon of investigation. In relation to the human and socio-technical aspect of the problem formulation, it makes sense to consider the research area from a social constructivist point of view. The ontological position of social constructivism opens for social science analysis based in human interaction and relations. This also means that reality or "truth" is socially constructed, shaped and changed by humans, their relations, interactions, speech and text. For this type of research, it is important to seek understanding instead of explanation for peoples' actions in relation to the given phenomenon (Collin and Køppe 2014, 419). Therefore, research within the social constructivist paradigm is based on feelings, thoughts and

actions as these are the components shaping reality and as they are key to all social constructs. As the problem formulation operates within a larger socially constructed tendency or so-called megatrend, including societal change in technology, using social constructivism opens for implicit and explicit knowledge and interpretations of the people at the core of the phenomena (Mittelstaedt, et al. 2014, 254). As we acknowledge human interpretations as vital and as a true source of information for the project, it is important to give account for our epistemological position below.

3.2. Epistemological Position

As we have chosen to view the project in the light of social constructivism, the epistemological position which we have chosen to apply is that of interpretivism. The social complex phenomenon, which is accounted for in the problem formulation, naturally leads to an epistemological position allowing for interpretation of human interaction, text and speech to be analyzed. Interpretivism gives us as researchers the possibility to interpret on behalf of our personal understanding of the empirical data. Thereby, interpretivism supports our choice of the ontological position being that of social constructivism, as they both find the human factor as the core value when studying phenomena in the social world (Bryman 2012, 28). Given the prevailing ontological and epistemological choices, data sampling and processing is based on subjective understandings and interpretations of the data.

3.3. Research Design

To investigate and understand the complexity of how digitalization of organizational processes can be facilitated through employees, it made sense to operate from a research design grasping the different facets of the problem formulation. As the problem formulation is very case specific and tries to take a snapshot of a specific moment in the timeline of a current organizational change, we have chosen to operate on the basis of the single case study.

3.3.1. The Single Case Study

A case study is a detailed and intensive study of a specific case. Hence, comparison of cases is not central to the research design. Instead, the case study supports the idea that the context is vital for collecting information. In this project we have chosen to do a study of a single organization, thereby investigating the context within a *single* case study. Accordingly, we are aware that the outcome

applies for this case only, as the single case study is analogous to a single experiment (De Vaus 2001, 50-51). However, the theoretical framework, the methodological foundation and some of the findings are still applicable to cases alike. This will be further explained in the section "Transparency, validity and generalizability". As we investigate, how the digitalization of organizational processes can be facilitated through employees, and as the single case study seeks to understand the complexity of a given social phenomenon, we found the design appropriate for the problem formulation, as it naturally entailed in-depth knowledge based on the people within the social phenomenon, namely the employees (Bryman 2012, 66). Hence, we want to emphasize that the single case study suits the methodological considerations of the project. This connection will be further explained through methodology section. The single case study is preferred in this project as the project arises from a very specific problem formulation. Consequently, we are testing our theory within the prevailing conditions at Aalborg Renovation.

3.3.2. Case Selection

We have chosen to base our study upon Aalborg Renovation, as we have been working with the organization in a previous project from May 2017. As Aalborg Renovation has undergone major change within the past two years, we found it highly relevant to investigate the background of the change and the challenges they have encountered alongside it. In the project from May 2017 we focused on the more basic elements of change management. This has made it possible for us to get insight into the organization, we however felt that we were not fully able to find the core of the problem. However, we found a strong relationship between the group of dustmen, which sparked our interest in further investigating the case at Aalborg Renovation. Based on the presumption that the dustmen represent an ideal constellation of a good network for knowledge sharing and worker autonomy, we decided that our problem formulation should take its point of departure in this particular group. As Aalborg Renovation has undergone technological change, it furthermore was of great importance to investigate, how they were facilitating the digitalization of their organizational processes. Therefore, we took the possibility of getting further into depth with the change situation and get richer knowledge based on our pre-knowledge. To enlighten the reader of the project with the background for the present research, there will be given a resume of the findings from 2017 below.

3.3.3. Resume of findings from 2017

In the research from 2017, it was investigated how middle-range management could influence the blue-collar workers at Aalborg Renovation's readiness for radical change. The radical change, which normally is referred to as change transforming entire organizations and bringing with it new technology, products or markets, in this case presented itself as a new technology for optimizing household waste collection. The new system was called RenoWeb and was introduced as a part of Aalborg Municipality's strategy "Aalborg Uden Affald", which should ensure a higher resource utilization of municipal waste and make Aalborg a greener city.

Of course, the theoretical apparatus of the 2017-project, was based upon organizational change. Furthermore, we worked from the hypothesis that the organizational structure and the division between white and blue-collar worker was key for the lack of strategic commitment, readiness for change, trust and motivation. Through interviews with middle-range manager, Louise Vineke, and the dustmen, Peter Kristensen, Martin Olesen and Bill Bengtsen, it became evident that the Achilles of the change was the lack of management skills and communication throughout the organizational structure and not the dustmen´s motivation. It moreover became evident that the dustmen were not motivated by money, as management thought, but instead they were motivated by doing a good job. We established that a general confusion of role was present at Aalborg Renovation as well. The dustmen did not discuss the challenges of the new system with Louise Vineke, but their staff manager, Jan Pedersen, who had no technical knowledge about RenoWeb. Moreover, Student Assistant Christian Møller Jensen, was involved in the change process, as he studied "Techno-anthropology" and therefore had great insight in such processes. From the 2017-project we concluded that due to the premature introduction of the new IT-system, the outcome of the change effected the whole organization negatively and created organizational disorder (Christensen and Karrenbauer 2017).

The 2017-research was focused on the first phase of an implementation plan, whereas the present project is focused on phase 2. To give the reader a broader understanding of the different phases, a short explanation is given below.

3.3.4. The Three Stages of the Change

Phase 2 of change taking place at Aalborg Renovation, is slowly reaching its final chapter in these months. It was originally structured as a process consisting of three different phases. The major difference between the stages, is basically the magnitude, as first stage was originally thought of a being a test-phase. As we wrote our first project about Aalborg Renovation in early 2017, the organization had just encountered some of its first major issues, in trying to implement the new RenoWeb-system, which is an IT-system specifically structured and produced to fit the needs found in the waste collection industry. By using the RenoWeb-system, the dustmen can report directly to the administrative staff at Aalborg Renovation about the status at specific addresses in Aalborg municipality, just using an iPad.

During the first stage of the change, the brand new RenoWeb-system, had to stand the test, as Aalborg Municipality began rolling out its new initiative "Aalborg Uden Affald". An initiative whit the goal to optimize the recycling process of waste in Aalborg Municipality, in trying to match the national standards set by the Danish government. In the first stage, the change process involved only a small percentage of the staff at Aalborg Renovation, as only the dustmen responsible of collecting recyclable materials, such as plastic, paper, cardboard and glass, had been chosen as the guinea pigs who were going to start using the new technology. The idea behind testing the new RenoWeb-system on a much smaller scale before launching the second and third stage of the change, which would eventually involve the entire administrative staff and all of the dustmen at Aalborg Renovation, was to identify possible errors and faults in the system, and thereby make the transition between the stages as smooth as possible. Nevertheless, no one could have imagined how difficult this transition ultimately turned out to be. Disputes and misunderstandings between the dustmen and the management at Aalborg Renovation quickly became the center of everyone's daily concern during the first stage of the change. The dustmen expressed concerns about RenoWeb, a system they did not see as a finished product, but instead as a constraint in their daily work. Some of the problems they encountered were:

- The GPS used for the RenoWeb-System was unprecise, and thereby the dustmen were unable to find the dustbins they were supposed to empty

- The tagging-system that the dustmen used to report why certain dustbins were left unemptied, did not have the required features (e.g. loose dog, overfilled etc.)
- When the dustmen used the tagging-system to report broken lids on containers no one was sent to fix the lids. Hence, they saw no importance in further reporting damages etc.
- Alongside RenoWeb the dustmen were introduced to new two-chambered vehicles, which made them unable to empty certain bins. As they were not emptied, citizens had no other choice than throwing their garbage beside the bins (Christensen and Karrenbauer 2017).

Despite of the errors of the RenoWeb-system mentioned above, Aalborg Renovation have had no other option than to move on to the second stage of their change in trying to abide by their own time schedule of when the implementation has to be finished. In the second stage of the change, normal household waste collection has been integrated into the RenoWeb-system. This stage is much more advanced than what was initially thought. Firstly, because the second stage of the change involves the entire staff at Aalborg Renovation. Secondly, due to the fact that the implementation of a complex technological system has proven to be much more complicated than expected. The third phase of the change at Aalborg Renovation will include commercial and industrial waste. For now, there is no timeline for when the third phase will be implemented.

In relation to the case study at Aalborg Renovation, we found it highly important to account for the transparency, validity and generalizability of the case. This is done in the following section.

3.4. Transparency, Validity and Generalizability

Some of the most criticized aspects of social research are transparency, validity and generalizability. As we have chosen to operate on behalf of the connection of social constructivism, interpretivism and the single case study, we are aware that it is essential to account for the three factors mentioned above. A great deal of discussion in centered around these concerns, and researchers such as Allan Bryman, Robert K. Yin and Robert E. Stake even argue that parameters such as internal and external validity, reliability, and replicability are barely mentioned in cases comparable to our case study at Aalborg Renovation (Bryman 2012, 69-71). However, as stated by Bent Flyvbjerg, the above concerns are some of the most common misunderstandings of the single case study (Flyvbjerg 2006). The question is, how a single case study can be representative so that its findings applies more generally and for other cases as well. This we want to answer by taking up Flyvbjerg´s thesis of generalization:

"If it is valid for this case, it is valid for all (or many) cases."
(Flyvbjerg 2006, 230)

With the thesis of generalization, we want to state that the findings of our research can be useful in similar cases. By placing our own case in the thesis, this becomes even clearer;

"If it is valid for the case at Aalborg Renovation, it is valid for cases a like."

We have chosen to insert *"cases a like"*, as we want to state that not all findings can be directly transferred to any other case, as each organization is unique. As the problem formulation; "how can digitalization of organizational processes be facilitated through employees?" first gets context specific when an organization is applied, we still find that the case study is applicable for the problem formulation. Flyvbjerg states that single case studies are generalizable and therefore also are capable of contributing to scientifically development. We argue that this is also the case with the case study at Aalborg Renovation, as we use the single case study to investigate a yet rather uninvestigated side of socio-technical change. Instead of verifying theory, the single case study seeks to understand and develop on social phenomena, which corresponds with our epistemological standpoint of social-constructivism. Furthermore, as Flyvbjerg argues, practical knowledge is just a desirable as theoretical knowledge, which is another reason for investigating social phenomena in the real world (at Aalborg Renovation) through the single case study. (Flyvbjerg 2006) Hence, we want to argue that in accordance with Flyvbjerg´s statements our single case study at Aalborg Renovation is transparent, valid and generalizable.

To shed further light on the way empirical data for the project is gathered, the following chapter illuminates the methodological choices.

4. Methods

In the following section there will be given an account for the applied methods in relation to sampling and handling of data and respondents. As the problem formulation orients from a social science perspective, we have chosen corresponding data and sampling methods, which will be presented below.

4.1. Qualitative Data

The research on Aalborg Renovation is based in qualitative data as this kind of data typically focuses more on the spoken words, rather than the quantification of data (Bryman 2012, 380). The qualitative research is very versatile in nature. Among other data used in qualitative research, in-depth interview, observations and written documents stands out as the most common, however, nearly any information which can be captured that is not numerical, can be considered as qualitative data. In an attempt at answering the problem formulation of this project, we chose to gather our empirical data through the qualitative method. Ultimately, due to its nature, we decided that it would be the most suitable way for us to gather as rich empirical data as possible about the change at Aalborg Renovation. Not only would it be hard to understand the true complexity of the change at the organization by quantifiably measuring something, but by using qualitative data we will actually be able to understand the "whys" of the given situation. As the ontological and epistemological stances of this project is that of social constructivism and interpretivism, qualitative data helps us in forming opinions and interpret the prevailing conditions at Aalborg Renovation, as the qualitative method emphasizes descriptive answers and subjective opinion forming (Collin and Køppe 2014, 538). Qualitative research is concerned with trying to understand human behavior and how the people involved in a given phenomenon analyzes and perceive the actions that takes place around them. This context is exactly what we want to examine as we plan to interview people within a social construct. Moreover, the qualitative data supports our ontological and epistemological standpoint.

As quality interviews are crucial to the enhancement of social science research, we have chosen the qualitative interview as research method (Gubrium, et al. 2012, 63). We will account for this below.

4.2. Interview

The aim of the project is to investigate how digitalization of organizational processes can be facilitated through employees. Therefore, individual interviews are used to gather information on behalf of personal attitudes and beliefs. Moreover, gathering empirical data on behalf of interviews, are particularly helpful for generating intensive and detailed data when a particular case is being examined (Bryman 2012, 66). Thereby the interview supports both the choice of the single case study and the following choices of data sampling. Below, we will go further into depth with our choice and the advantages interviewing provides.

As the data used in the following project, has a qualitative approach, interviews have been chosen as our primary method to collect empirical data. Using interview as our method in trying to collect data, creates the basis for rich empirical data and allows us as researchers to go in-depth, when analyzing the opinions and thoughts of the staff at Aalborg Renovation. By conducting interviews, we will be allowed to understand the people involved in the change, as it allows us to present the interviewees with a widespread range of questions within our theme of interest, while pursuing other vital information that may help us in grasping the complexity of the process.

It is of great importance for the project that people stemming from both ends of the organizational latter at Aalborg Renovation will be interviewed, which is why both the dustmen and the management will be interviewed. This will allow us to examine the change from different angles and perspectives, which eventually will help us in gaining a much broader understanding of how digitalization of organizational processes can be facilitated through employees. Through our previous project at Aalborg Renovation and due to the fact that one member of our group used to work there as a student assistant, we have gained a professional relationship with some members of the staff. We see this an advantage as we seek to make use of a specific type of interview, namely “in-depth interviewing”.

4.2.1. In-depth Interview

The information being exchanged in an in-depth interview commonly concerns the interviewee’s personal matters, lived experiences, values and perspectives (Gubrium, et al. 2012, 100). Therefore, in-depth interviews are a distinct type of interview. On the one hand, it requests a very intimate sphere between interviewer and interviewee, as the themes being discussed and explored are sensitive. At

the other hand it is important that the researcher obtains the knowledge he/she was set out to find. Therefore, the in-depth interview is a question of approaching the inter-human interaction both with thought on the ethical perspective but also the academic matter of attention. Therefore, the in-depth interviewing technique seeks to find deeper knowledge than what is usually found in other research techniques, such as surveys or focus group interviews. It is argued that each different research project demands for the interviewer and the interviewee to be active parts of making sense, creating consensus and interpret what is being seen and heard in the research context. This is also why, it is important for us as researchers to be aware of "how to do" qualitative in-depth research and always have the goal and the purpose of the research in mind. As the research is based on human interaction and as the research is set from a social construct and interpretivist standpoint, we find the interviewer´s moral commitment, ethical imperative, assumptions and common sense as crucial resources for interpreting what is heard and seen in the interview (Gubrium, et al. 2012, 101). Thereby, we also accept that the interviewees´ answers are based on their "stock of knowledge" and that they do not necessarily hear and see the same things as us. Due to our ontological and epistemological standpoint, we work with "truth" as a concept constructed in the interaction, instead of promoting the more positivistic train of thought where only one truth is accepted. Therefore, the in-depth interview suits the problem formulation and the research area in question, as it seeks answers of the explanatory and descriptive type. It helps us as researchers to explore context and mechanisms, given the emphasis on group experiences. (Gubrium, et al. 2012, 99-101).

As the interviews conducted for this project are used as a standalone research method, we appreciate the possibility of using in-depth interviews to capture deep information and thereby rich and descriptive data. To enhance the possibilities of gaining as rich empirical data as possible, we will carry out the interview through the interview form of a semi-structured interview.

4.2.2. Semi-structured Interview

To make a guide for the interview, we have chosen to take our point of departure in the semi-structured interview form, as we see various strengths in composing the interview through the semi-structure. Firstly, the semi-structured interview is an interview form, where the questions are composed in advance of the interview. The structure is often based on the theoretical framework of the research and research assumptions or hypothesis. Because of its semi-structure, this interview type allows

questions to be adjusted gradually as the interview unfolds. Thereby, it allows for the interview to move in any given direction within the set of predetermined themes and categories. The intention of using the semi-structured interview as a guideline for our research is to get the interviewees to talk in their own terms and from their own state of mind, whilst having a "hidden agenda" to structure the interview after. Therefore, questions tend to be open-ended, thereby allowing for the responses to be subjective and personal in their responses, aligning with the ontological and epistemological stance of the project. However, as argued, the interview will never totally depart from its initial purpose, as the agenda is set by formulating the question on beforehand. On basis of its qualities, the semi-structured interview is not only a good way for exploring new facets of the research and raise vital and critical questions, it can also be used to test the interviewee´s general conviction of what he or she is saying. It leaves us as interviewers with the control to steer the interview in the direction which supports the research question and with the possibility of defining the interview, whilst at the same time leaving the opportunity of asking questions which to a higher degree exist upon descriptive answers, something which is highly valued as we have chosen to use the in-depth interview. More explanatory answers often provide the researcher with more detailed empirical data and thereby deep information, which also was described in the section above. The guideline of our semi-structured interview appears from the appendixes and is further explained in the chapter "Interview Structure".

Lastly, due to its semi-structure, this interview form gives us as researchers the possibility of using both our pre-knowledge from the former project from 2017, but also the knowledge obtained through the present interviews to validate statements as well. Firstly, the knowledge obtained in our project from 2017 entails that we as researcher have some basic knowledge about the change process, the employees´ positions and the technical terms used at Aalborg Renovation. This we see as a great advantage, as we to a higher degree can focus on the essence of our research, and do not have the need for making the interviewees clarify these things, as we are already "into the matter" on beforehand. Secondly, both due to the semi-structure and due to the ontological choice, we have the possibility to adjust the interview structure accordingly. As an example, new questions occurred as we conducted the first interview. These new questions we incorporated in the following interviews as well. Moreover, we cross-checked information obtained in the first interview in the following interviews, in this way checking if more than one interviewee could relate to the same feelings. Furthermore, we used the conclusions drawn in the project from 2017 to follow up on the process and ease the comprehensiveness of difficult questions. In relation to this, it can be argued that the first

interview will always be less informative compared to the last interview, as we as researcher adjust the interview continuously and become increasingly informed from interview to interview. Therefore, we also chose to conduct the interview with department manager, Jan Pedersen, as the first interview, as we want to argue that the interviews with the employees central to the change as well as the interview with the technical project manager, had higher potential to contribute.

In line with the choices made throughout this chapter, it made sense to interview the employees subject to the digitalization of organizational processes at Aalborg Renovation. Hence, an account for the choice of respondents is given below.

4.3. Choice of Respondents

To carry out the interviews and to get as rich and deep empirical data as possible, we have chosen to select our respondents on behalf of their relations and their positions at Aalborg Renovation. Each respondent and their importance for the scope of the project is presented below.

- **Christian Møller Jensen** (29) Project Manager for the implementation of RenoWeb

  Christian has a three-year long history at Aalborg Renovation. Christian started of his career at the organization as a student assistant, answering phone calls and E-mail but approximately six month ago, he was appointed as the project leader in charge of implementing RenoWeb at Aalborg Renovation. However, Christian has had huge influence on the change process since the beginning - due to his educational background he quickly became "the one to go to" when questions and issues with the new RenoWeb system started occurring. Naturally Christian is interesting to interview as the scope of this project matches with his profile. Christian has his educational background from Aalborg University and finished his master in techno-anthropology during the summer 2017.

- **Jan Pedersen** (51) Department Manager / Responsible for Staff

  Jan Pedersen is staff manager at Aalborg Renovation and has a long history at the organization. Jan's long history at Aalborg Renovation, can be attributed to the fact that he used to work as a dustman himself. A career he had to put on standby due to a back injury. Jan is interesting for us to interview as naturally he has a close relationship with the dustmen, both

due to both his current and former position at the organization. During our former project at Aalborg Renovation, we did not interview Jan as we had our focus elsewhere, however, it became clear to us during that project, that he has a vital role in ensuring the overall satisfaction of his staff.

- **Finn Faigh** (58) Dustman

  Finn Faigh has a long history at Aalborg Renovation and is one of the most respected employees at the organization. Finn has been working as dustman for more than two decades and his knowledge about the craft is well-known be his colleagues. Finn is among the few of the dustmen which was included in the process of implementing RenoWeb from the very beginning. Moreover, Finn has been in charge of training his colleagues in how to use the system. Interviewing Finn will provide us with knowledge about how the change process has been carried out from the beginning.

- **Peter Andreasen** (37) Dustman

  Peter Andreasen has been working as dustman at Aalborg Renovation for more than fifteen years and has a broad knowledge about the organization. Peter is known by his colleagues as a smiling and happy guy with a positive mindset. Like Finn, Peter was a part of the first group of dustmen, which was introduced to the new RenoWeb system back in the beginning of 2017 and he has been heavily involved in the initial stage of the change. Peter is one of the dustmen, who has been a huge part of shaping the RenoWeb system into what it is today, as he has been testing the system right from the beginning.

Besides selecting the respondents from their position at Aalborg Renovation, it was furthermore important for us that different age groups were represented, as opinions and attitudes towards the digitalization of organizational processes could vary both on behalf of their background, age and period of deployment at the organization. Therefore, to make as representative a sample as possible, we selected the respondents on behalf of these characteristics. Moreover, we found it important to look at the employees' subject to the change from both their own perspective as well as from the perspective of their daily leader and lastly from a more technical and consultative point of view. In this way,

it is ensured that the overruling socio-technical aspects of the problem formulation is covered properly.

To ensure the quality of the interviews we made a conscious choice in relation to the selection of dustmen. As it will become evident from the analysis, there exists a grouping of dustmen tending to have more negative attitudes in general, and one grouping tending to be more positive. As the former research from 2017 at Aalborg Renovation focused on the more negative perspectives, we have chosen to interview two dustmen of opposite opinion. We wanted to show that there is more to organizational change than just reluctance and negativity. By interviewing dustmen of more positive mindsets, we have a bigger opportunity of finding unforeseen aspects of research, as focus shifts from change un-readiness till employee self-facilitation of technological change in business structures. By interviewing the more positive group of dustmen, we argue that a more solid foundation is built, for investigating whether or not there is basis for employee self-facilitation at Aalborg Renovation.

With the methodological elements explained, we will go further into the coherence of the project elements in the following section.

4.5. Operationalization

In an attempt at connecting the partial elements of the project, this section provides transparency to the elements and adds a more holistic approach to the overall scope. To create transparency, we will start of by taking point of departure in the problem formulation. As argued in section 3.1 of the project, the problem formulation consists of three components; 1) the digitalization of organizational processes, 2) the employees and 3) the facilitation. These three components have been the focus point throughout the theoretical apparatus, and finally they are also reflected in our own theoretical framework and model. In an attempt at finding the core of the components it was important to get under the skin of the people involved. In the theoretical section about corporate knowledge sharing, we amongst others refer to a “network”. We have tried to investigate the network, as they are the center of attention. Besides interviewing the network itself, namely the dustmen, we have also interviewed the department manager, as he can provide an overall overview over group dynamics that the group of employees may not be aware of themselves. Also, we included Christian, as he functions as what

we in the theory about implementation of ERP-systems refer to as an internal stakeholder, and thereby he can provide us with more process-oriented information.

The different parts of theory seek to illuminate the three components from the problem formulation mentioned above and they shall determine whether Aalborg Renovation´s network of dustmen is capable of self-facilitating. To make the abstract theories even more tangible, we see it as an important asset for both our own understanding, but also the interviewees understanding that we have made use of our pre-knowledge of Aalborg Renovation throughout the entire project. Our pre-knowledge of personnel, previous happenings, terms and technical expressions from the former research at Aalborg Renovation in 2017 creates a way more solid foundation for the present research. Thereby, we also use the knowledge from the former interviews upon staff and events to expand the horizon of the research and investigate the change more carefully in relation to the new technological perspective that we have applied. We find that the pre-knowledge improves the validity, enhances transparency and creates more facile operationalization both for us as researcher as well as for our respondents. This we believe creates a better setting for the interview and a better relationship between interviewer and interviewee, which is what we strive for as we have chosen the quality focused semi-structured interview for data sampling. This choice will also become even more evident from the interview structure.

4.5.1. Interview Structure

To make sure that all corners of theory are covered, the interview structure acts as a guideline both for us as researcher and for the reader of the project, as it functions as the best way for operationalizing the abstract theoretical elements into elaborate and tangible questions. To make the above more tangible, the example below shows, how the structure illustrates which part of theory we are covering.

Research Questions	Interview Questions	Back-up Questions
SUPPORTING WORK GROUP AUTONOMY		
Freedom over tasks (task elements)	Føler du, at du har frihed over dine opgaver? Er din friheden blevet større eller mere begrænset af det nye system?	I hvor høj grad er du medbestemmende over fx: Arbejdsmetoder/procedurer Arbejdstempo/Arbejdstider Arbejdsplan/vagtplan

Figure 5: Example of the interview structure.

Besides making theory the constitutive element of the interview structure, we have drawn parallels to our former study of Aalborg Renovation from 2017 as well as used our pre-knowledge in an attempt at being more precise in the formulation of questions. This has also strengthened the validity of the project, as it clarifies the meaning of the question for the interviewees, in this way making it easier for them to relate to the questions. It has been possible to operate like this, as we work from the ontological and epistemological position of social constructivism and interpretivism. Moreover, we find the interview structure suitable in relation to the choice of interview type, namely the semi-structured interview. As we focus on stating critical questions to illuminate new aspects of the problem formulation and the change situation at Aalborg Renovation, the preparation of the research question, interview questions and back-up questions are vital for our research. The interviews are structured with the research question, the interview question and the back-up question. The research question serves the purpose of clarifying, how the given question is related to the theory. The interview question, is the question the interviewee should answer. This is also why, we formulated the question in "everyday words", instead of using theoretical terms. This gives the interviewee a better foundation for hearing and understanding the question and seeing the purpose of it, which is important for the consensus of the interview, as stated in the section above. The back-up question is an extra tool for further explanation of the interview question. As each of the interviewees have their own specific position in the company, not all interview guides will look exactly the same. For example, some questions about technological tools are more relevant to ask Christian Møller Jensen about, whereas some question relating to daily routines are more relevant to ask the dustmen about.

As it will become obvious from the analysis and discussion below, we have chosen to refer back to the 2017-research throughout the analysis, to validate or invalidate statements and trace present events back to former events in an attempt at clarifying the impact of the change. These references will become evident through citations. Moreover, to keep the project transparent, we have chosen to present the findings of the analysis in the same order as they appear in our own theory. However, some points of discussion are presented along the way, where parallels are drawn to other theoretical sections as well. As the elements of our theoretical framework are closely connected, the elements will naturally overlap in the analysis. We perceive the aspect of overlapping as a strength for the project, as we see this as evidence for coherence between theory and praxis.

With the above account of the foundation for the methodology of the project, the idea behind each choice has been clarified. On behalf of the choices made throughout the whole project, the analysis will be carried out in the following chapter.

5. Analysis and Discussion

In the following chapter, we will provide an in-depth analysis of the interviews with Project Manager; Christian Møller Jensen, Department Manager; Jan Pedersen and the two dustmen; Finn Faigh and Peter Andreasen. When the interviewees are quoted, they are cited with surname and timeframe of their answer. The quotations are translated freely into English and repetitions and interjections are left out. This has been a conscious choice as we, in compliance with our ontological and epistemological position, focus on the content of the interview, and as we are not analyzing discursively on words and pauses. This is also why quotes will have a relatively prominent role throughout the analysis. Moreover, the analysis will provide the project with points of discussion and reflection. The analysis is carried out below.

5.1. Supporting Work Group Autonomy

5.1.1. Freedom over Tasks and Independence

According to theory, aspects such as freedom over tasks, independence, development of collective routines, knowledge sharing and the foundation for building a common ground are paramount factors for supporting work group autonomy. As Jan Pedersen is department manager for the dustmen and head of day-to-day operations, we must assume that he is capable of providing us with a detailed description of how work group autonomy among the dustmen is reflected at Aalborg Renovation. He amongst other describes Aalborg Renovation as an organization with high ceilings and room for own ideas (Pedersen 2018, 04:00-04:11). He further states:

"Of course they have some routes, which they must comply with, where the clients are involved, as they can enter the system and check the plan for when their dustbins will be emptied. This they must comply with on a daily basis. But how they administrate it, they completely decide themselves in relation to pace and time."

(Pedersen 2018, 04:16-04:28)

From the above statement, it is clear that the dustmen have a high degree of self-determination in relation to their tasks. Jan Pedersen perceive work pace and working hours as aspects of self-governance, which aligns with the task elements described in our theoretical apparatus. The dustmen support this point of view, as they mention self-determination in relation to e.g. work tasks, routes and planning (Faigh 2018, 01:45-01:53) and (Andreasen 2018, 01:45-01:59). In relation to their freedom over tasks, they furthermore state:

"Actually, you are part of it all, it is up to yourself to control everything."
(Faigh 2018, 01:55-01:59)

"Obviously, it makes the day-to-day operations both easier and better that we have the freedom in walking around and taking care of things ourselves."
(Andreasen 2018, 02:30-02:38)

The freedom of choice was also rated the number one motivational factor by the dustmen in our former research from 2017 (Christensen and Karrenbauer 2017, 45). Throughout the interview with Jan Pedersen, it also becomes obvious that there is created a natural work-environment, where the dustmen are subdued to the motto "freedom with responsibility". Those are also the exact words both Jan Pedersen and the two dustmen, Finn Faigh and Peter Andreasen, use when they independent of each other describe the dustmen´s working-environment at Aalborg Renovation (Pedersen 2018, 04:12-04:14) and (Andreasen 2018, 01:59-02:00) and (Faigh 2018, 02:05-02:06). This natural existence of freedom with responsibility, is also described by the two dustmen as one of the key aspects for job satisfaction and for being in the same job in respectively 16 and 26 years (Andreasen 2018, 02:20-02:40) and (Faigh 2018, 02:02-02:23). As argued in theory, individual autonomy is essential to the well-being and self-development of humans. Consequently, from the above findings, it becomes clear that the autonomy of the work group of dustmen is highly visible, which is why we value the aspect of task freedom and independence at Aalborg Renovation as prominent.

However, Project Manager Christian Møller Jensen, points toward the fact that the feeling of freedom is perceived differently from person to person, especially after the introduction of RenoWeb. He states:

"I think there are individual experiences of how much freedom you are given (...) I think someone experiences that it drifts further and further away, as you start registering their work (...) Contradictory, someone experiences a freedom in getting their things automatically documented. It is especially some of the first ones, who starts to experience that now."
(Jensen 2018, 05:47-06.14)

In the above, Christian Møller Jensen describes that there are diverse opinions towards the extent to which the dustmen´s freedom is influenced by the change of procedures following the implementation of the new system. Additionally, he explains that a look in the future will raise further questions in relation to worker independence, as dustbin discharges will become more dynamic due to new procedures. In the future, Aalborg Renovation plans to empty dustbins only whenever they are full instead of on a weekly basis. This means that the dustmen in a near future will have little to no influence on their routes. Moreover, optimizing work routines internally amongst the dustmen will become extremely difficult as there will no longer exist a fixed schedule of what and when to empty.

On behalf of the above, it can be discussed whether Aalborg Renovation is to face an even bigger challenge as what has been the case with the implementation of RenoWeb. In order for Aalborg Renovation to match the environmental standards set by Aalborg Municipality, a standard which requires more focus on data collection, sustainability and green transition, organizational processes need to change radically. Corresponding with theory, suggesting that technology is a blue-collar field of the future, the findings from the above indicates that the future for waste disposal organizations, including Aalborg Renovation, moves toward more atomized standards demanding registration and awareness on data collection to a higher extent.

During the interview with Jan Pedersen, it becomes clear that he divides the group of dustmen into two segments; one supporting the technological change and the digitalization of organizational processes entailing it and one fighting against it (Pedersen 2018, 45:45-46:11). We will go further into this division later in the analysis, but for now we want to argue that Peter Andreasen and Finn Faigh

are part of the more positive group of dustmen. When Peter Andreasen is asked whether or not he feels that the implementation of RenoWeb and the digitalization of organizational processes is interfering with his sense of freedom, he states:

"I just think it would be part of the new work practices, to accept that this is how things are now. You actually do this a little already with the things happening here, getting used to the different mobile phones – well that we have never been used to before. So that is just part of the job we have and then you accept things the way they are."
(Andreasen 2018, 02:59-03:24)

Finn Faigh supports Peter Andreasen´s attitude towards the dustmen becoming more dependent on technological resources in relation to their job tasks. He states that the introduction of RenoWeb has not affected him, neither regarding his freedom nor in relation to his work routines (Faigh 2018, 02:34-02:39). Actually, he states that RenoWeb has made things easier for him and the daily work. He amongst other mentions that the iPad has made the planning of discharge-routes a lot easier, compared to the previous paper-based system (Faigh 2018, 00:49-01:05).

In relation to the above discussion about technology gradually becoming an integrated part of blue-collar jobs, we want to argue that the group of dustmen being positive towards the technological change are better prepared for the future. Besides that, their attitudes are to a higher extent supportive of organizational goals, as they can see the reason for changing the way Aalborg Renovation works. Firstly, the statement by Peter Andreasen shows that he is aware that technology and other changes are becoming a natural part of organizations. In regard to Aalborg Renovation, the change has been decided on a municipal level and as part of an overall goal, which is to make Aalborg a greener city. The RenoWeb system plays a role in this overall strategy, as it is a system for tracking data on municipal waste. Secondly, the statement by Finn Faigh shows that by using RenoWeb, the former paper-based system with the dustmen's´ logbook, containing hundreds of pages each day, is being shelved. This is an important step for Aalborg Renovation, as their objective is to become a paperless organization. On behalf of the example above, we can conclude that the initiatives entailing RenoWeb are of great importance for achieving organizational goals. Therefore, the dustmen can first and foremost be seen as pioneers and the most important link for being a sustainable organization

achieving both internal goals and external standards. This is a discussion we will open up for later in the analysis as well.

Summing up: Given the answers from all four interviewees, we can conclude that the dustmen work from a relatively high independency and that they have freedom to manage own tasks. According to our theoretical apparatus, this freedom is one of the main foundations of creating successful work group autonomy. Moreover, during our interview with the dustmen, it has come to our notion that their freedom and independence is something which is highly valued. From the interview with the Department Manager, Jan Pedersen, it becomes obvious that management at Aalborg Renovation supports the autonomy of the workers. However, Project Manager, Christian Møller Jensen mentions an increase in technological change in the near future. Consequently, we want to argue that Aalborg Renovation has an important role to play in preparing the dustmen in a way, where they can still feel free and independent. With the feeling of autonomy, a solid foundation for development of collective routines, knowledge sharing and a common ground is built.

5.1.2. Development of Collective Routines, Knowledge Sharing, Building a Common Ground

According to theory, as well as freedom over tasks and independence are important for the individual worker´s work-life satisfaction, development of collective routines, knowledge sharing and building a common ground are elements which should be supported by the organization to obtain work group autonomy. From Department Manager, Jan Pedersen´s perspective, the challenges with RenoWeb, goes back a year or two, even before RenoWeb was introduced at Aalborg Renovation (Pedersen 2018, 09:45-10:00). During this period, all dustmen at the organization, were told to make sure that the data from their log-books correspond with the "real world". As an example, if the data from the log-book said that a given address was registered with two garbage bins, the dustmen were told to make sure that this was actually the case on site. If this was not the case, they should report the difference to the administrative office, who then corrected it in the former renovation system, Xellent. However, even though this was the organizational practice agreed upon, some dustmen did not follow the procedure of error-reporting. Ultimately, this led to insufficient and invalid data becoming part of the system, which then led to a flow of false information between Aalborg Renovation and the customers. As theory suggests, besides fostering work group autonomy, the organizational reason behind

creating knowledge sharing between employees is to strengthen organizational goals such as increased competiveness, turnover, image etc. Consequently, we want to argue that Aalborg Renovation´s goal (actually established by Aalborg Municipality) of contributing to make Aalborg a greener city becomes harder to reach, when organizational members do not carry out their jobs according to organizational practices. This also indicates that no collective routines, no knowledge sharing and no common ground was present either before the change from Xellent to RenoWeb or during the first phase of it. Christian Møller Jensen, which now is project manager of the change, supports this point of view, as he argues that the challenges with RenoWeb is caused by inadequate preparation. He states:

"Ideally, in phase 2 we should have used two years on cleaning up the Xellent, the old system, before, if you ask me (...) We should have used two years as a minimum – and then you could start considering putting RenoWeb into operation."

(Jensen 2018, 51:39-51:55)

From Christian Møller Jensen´s statement it seems that Aalborg Renovation has not been fully aware of the proportions and impact of changing their ERP-system. The lack of time and preparation seems to have had an undesirable outcome, when we take a further look on the statements from the dustmen, Finn Faigh and Peter Andreasen. Alongside a premature implementation, the dustmen are not using RenoWeb correctly. Finn Faigh and Peter Andreasen further argue that some of their colleagues are not stepping up to organizational standards. They refer to the same division in the group of dustmen that Jan Pedersen referred to in the section 5.1.1 of the analysis. Peter Andreasen furthermore explains how some dustmen´s lack of preparation for the new RenoWeb system limits their possibility of using RenoWeb to its full potential. He elaborates:

"We talk a bit about how well their (red.: system) functions on the different vehicles, as it varies a lot. (...) Today we have been registering over 90%, and I know of others registering between 10 and 20% as an example. Well, that is a huge difference. We also operate with it every day, whilst others are not using it at all."

(Andreasen 2018, 10:20-10:38)

All teams or cars at Aalborg Renovation has a number of containers and dustbin to empty on their route each day. The percentages Peter Andreasen refers to are the percentage of containers and dustbins being emptied correctly corresponding with the information in RenoWeb. This means that according to the system his team empties 90% of all containers on their route and other teams only 10%. This is due to the fact that his team has prepared for RenoWeb by updating information from their old log-books and have reported errors such as "missing dustbin on location" or "false location" etc. The other team might have emptied all their dustbins and containers as well, but as they have not updated the errors on their route in the system, the system will only show the 10% which are correctly tagged in the system. Finn Faigh further elaborates on this matter, as he states that personal attitude (or the lack hereof) is key to the incorrect tagging and registrations in RenoWeb.

"I think it has something to do with attitude – a lot about attitude, I believe. I think they still have that thing about just getting done and then just home instead of spending some time on it (...)"
(Faigh 2018, 06:38-06:58)

According to Finn Faigh´s statement, it can be discussed whether such problems are due to insufficient knowledge of organizational procedures or lack of motivation. In relation to our former research at Aalborg Renovation from 2017, we could draw the conclusion that the dustmen were motivated by doing a good job rather than coming home early, however a year later, it seems that for some dustmen their interest has changed (Christensen and Karrenbauer 2017, 46). Moreover, this research features new interviewees, which might be looking at the commitment of the change in a different way than the interviewees from the former research. These different perceptions of the dustmen´s commitment to the change and to the new system also draws a picture of a divided work group – something which neither makes it easy to establish a common ground for developing collective routines nor something that supports the idea behind knowledge sharing. Department Manager for the dustmen, Jan Pedersen, further elaborates on the different attitudes of the dustmen at Aalborg Renovation. He clearly states that the lack of commitment from a specific group of dustmen has been an obstacle for creating a united work group affecting the successful implementation of RenoWeb. He amongst other mentions that a group of the dustmen tend to react more negatively than others, as he states the following:

"The exact team where it (red.: RenoWeb) was implemented first, was maybe the most negative people I am dealing with out here. (...) If they win 10 million in the lottery Saturday, I believe that

they would be dissatisfied about not having won 20. (…) Exactly the team where RenoWeb was implemented first, namely in the recycled waste program, we just have some negative people spreading a little negativity to other people, that is for sure."

(Pedersen 2018, 14:10-14:38)

During the former research the aspect of work group motivation was investigated in relation to step 1 of the change process at Aalborg Renovation. At that time, now former Project Manager on the implementation of RenoWeb, Louise Vineke, gave the impression of a similar division of the dustmen. At that time, she stated:

"They (red.: the dustmen) had some issues within the group due to the fact that some of the employees were willing to take extra hours and others were not."

(Christensen and Karrenbauer 2017, 44)

Besides making it clear that there is a division between the dustmen, this exact statement from Louise Vineke, comes to play an important role in the present research. During the interview with Jan Pedersen we encountered another obstacle for knowledge sharing amongst the dustmen, namely the difference in remuneration of the dustmen. In the interview with Jan Pedersen, he elaborates on the dustmen's work agreement – or lack hereof. During the interview it becomes obvious that there exists no equal work agreement, but that some dustmen are on an hourly wage and others are paid per piecework. Jan Pedersen elaborates:

"We are challenged by someone having a piecework contract, which means that they have a norm they should reach during the day, and then they are off. Then we have others working 37 hours. Then we have some who thinks that they are working on piecework contracts, who feels that they are on a piecework contract, because it has become normal practice."

(Pedersen 2018, 06:48-07:02)

If the dustmen work from different work agreements, it can be argued that they have differing interests as well. Some of the dustmen will naturally work with the prospect of getting home early, whilst other will work with the improvement of the RenoWeb system in mind. This is exactly what seems to be the case, when we analyze the statements from the different interviewees. Consequently hereof,

it is hard to implement collective routines and create knowledge sharing on behalf of those routines, when the foundation for the common ground is non-existent.

In relation to the above, we want to discuss whether managements´ attitude towards the dustmen has become a bit too laissez-faire either throughout the years or through the change process. With the following statement from Jan Pedersen, we will discuss this issue:

"Then we have had the discussion about, what we should do to create uniformity. (...) Should we determine that it is a 37-hour workweek with the conflict this will entail, because it is obvious that we then have to fight against a very old history in a company like ours (...)"
(Pedersen 2018, 07:07-07:20)

Jan Pedersen mentions the history of the organization´s work agreement. The dustmen have always been used to work from a daily norm, telling them which and where to empty dustbins and containers. When these were emptied, their shift was over. Because of this agreement, the faster the pace of work, the earlier they were off. As things have changed at Aalborg Renovation, and as new dustmen were employed through other agreements such as being paid on hourly wage, it can be argued that it has become harder to streamline on behalf of agreements. Naturally, the dustmen working on a contract which states that they are off whenever they reach their daily norm, may not be as willing to put in the extra hours to improve the new system, as the dustmen working on a 37-hour contract. The latter naturally becomes part of the change to a higher degree, as they are more present and as their work tasks to a higher extent are determined by management than what is the case for the norm-workers. As an example, management cannot "force" the norm-workers to attend meetings or schoolings, as this eventually will postpone their schedule. Consequently, one of the biggest challenges for knowledge sharing at Aalborg Renovation is the division of norm-workers and 37-hour-workers, as the setup makes it extremely hard to set an organizational standard and streamline work processes and routines.

In relation to the above, we also want to stress that management looks extremely vague in this situation. Any organization trying to implement new routines and systems must expect that change takes time and effort and that a successful implementation demands both full organizational commitment and support as well as new ways of doing things. It seems from Jan Pedersen´s statement that

management is afraid to interfere with the dustmen´s routines and their freedom. Historically, the branch is known for its short but intensive work days and the freedom over tasks. However, in times of change, and especially in times of technological change, we consider the change of routines key to successful implementation. According to theory, adapting to technological change implies a socio-technical approach, where time and effort are taken both to implement and understand the new technology, but even more important, to communicate the changes to all organizational members. We will go further into this manner in the following section, however we want to argue that management has been too indefinite in their communication. We want to question that if workers are negative and unwilling to adapt, are they then capable of supporting organizational goals and contributing to organizational capital? In many organizations, adapting to change is the number one quality asked for when employing. On the one hand, it can be argued that technology has become a blue-collar field and that blue-collar workers have to adapt on equal terms with white-collar workers, and that if they are dissatisfied, they are free to leave. When Jan Pedersen is asked what the solution is, if the dustmen are not willing to contribute to the organizational capital in terms of optimizing RenoWeb, he states:

"(...) if they are not willing to do so, then this is not the place for them to be."
(Pedersen 2018, 54:47-55:00)

On the other hand, theory suggest that digital collaboration tools such as RenoWeb or other IT-systems, only improves processes across organizational boundaries when it is managed correctly. With the following statement from Jan Pedersen, this seems not to be the case at Aalborg Renovation:

"(...) Especially the negative people here, I do not want to use a lot of resources on. I want to use my resources on the positive people, who wants this."
(Pedersen 2018, 52:35-52:41)

On behalf of the above it can be discussed whether or not the dustmen who does not actively seek understanding of the new system should be a part of the organization at all. They are neither doing their job in relation to organizational standards nor contributing to a work environment based on responsible self-facilitation. It can be argued that the negative group of dustmen influence the change process in a manner which is harmful both for the knowledge sharing community of dustmen, Aalborg Renovation as an organization and Aalborg Renovations as a municipal institution.

During the interview with Jan Pedersen it becomes obvious why Aalborg Renovation has chosen to keep things the way they are, as he states:

" (...) we are challenged by the fact that it is a labor market which is booming at the moment (...) this is also why we, as something completely new, have looked for labor to direct employment. Normally we have a process in which we hire people in as holiday-covers, who then get extended and then gets employ afterwards. For the first time ever in history, we are seeking labor for direct employment in our staff consisting of holiday-coves, to ensure qualified labor. I said, we have to do this otherwise we will not be able to get the right guys into the organization."

(Pedersen 2018, 12:32-12:56)

As seen from Jan Pedersen´s statement, it seems that as RenoWeb was introduced, Aalborg Renovation suffered from notable labor shortage. This has caused a situation where, even though some employees were constantly negative, counteracted the new RenoWeb system and hindered both knowledge sharing and development of collective routines, they still contribute to make day-to-day operations function. It seems to use that during the whole process of the change, the focus has not been on implementation and facilitation of organizational processes and socio-technological tools. Instead focus has been placed on making the everyday function thereby choosing to supply Aalborg Renovation´s core service to the citizens in the best way possible at the time. As a result of labor shortage and shift in focus, the change process seems to have been neglected and postponed multiple times on multiple organizational levels.

When we align the case above with theory, we want to argue that resources should have been planned in a way were both groups of dustmen were accommodated and trained properly in the new digital tools. This could have changed the negative perception of the system as well as have united the group of dustmen into one unified group working together. Instead of shifting focus, management should have taken action earlier in the process. However, in most change cases this is easier said than done. Specifically, for Aalborg Renovation we fear that the lack of knowledge in relation to approaching a change this big has costed them loss of interest and willingness from the dustmen. The technological training and the role of management will be elaborated further in the following section.

Summing up: It seems that there is a lot of confusion, unspoken dilemmas and other challenges which have not been dealt with in relation to the change. Even though there is a larger group of dustmen being complimentary towards the new system and the new organizational processes it has entailed, we argue that their support is not enough. We see the positive group of dustmen being highly capable of building a community of dustmen based on knowledge sharing, which is the foundation for building a common ground and develop collective routines in order to make the new organizational processes become effective. Nonetheless, due to the group of dustmen with negative attitudes and the lack of process control from the side of management, at this particular stage we argue that there is still a long way for making the dustmen self-facilitated. It seems that Aalborg Renovation are not giving the dustmen the right prerequisites for adapting to change. This manner we will go further into depth with in the following chapter.

5.2. Enabling Organizational Processes

5.2.1. Modification of Business Processes, Resource Planning and Process Transparency

According to theory technological change brings along new organizational processes, which implies forgetting as-is businesses and moving forward with new to-be businesses. In times of such change, communication and transparency are key to a smooth transition. From the previous points of analysis, we argue that these key aspects have not been fully met at Aalborg Renovation. In relation to the change of organizational processes due to the implementation of RenoWeb, the biggest difference between the old system, Xellent, and the new RenoWeb is the inclusion of citizens. Jan Pedersen states:

> *"In relation to inquiries from citizens, it is a clear advantage that we have this thing (red.: RenoWeb) (...) If it works efficiently, it is a really good tool fo citizen-enquiries. That is really, really positive."*
>
> (Pedersen 2018, 27:35-27:55)

From the statement it is clear that for the administrative staff at Aalborg Renovation the new system has eased the process of handling citizen enquiries, and also for the citizens the schedule for dustbin empting has become more transparent. As an example, during public holidays, the citizens have previously been used to receive an extra garbage sack a couple of days in advance. Hereafter the garbage has been collected on a random date after the holidays. With the new system, the citizens are informed per SMS with the exact date of when their garbage bins will be emptied during public holidays. As Jan Pedersen also argues, this has put extra pressure on the dustmen, as they now have to empty in accordance with the messages distributed through the SMS-system. As the citizens have become used to the new procedure, it increases the chance of enquiries, when the dustmen, due to unforeseen delay, are not emptying the dustbins at the exact date stated in the SMS (Pedersen 2018, 28:10-28:48). Besides the feature of smoother handling of enquiries, the systems look very much alike, only with one major difference, namely that RenoWeb differs can track and trace different kinds of data to a higher extent than what Xellent was capable of.

From our former research at Aalborg Renovation in 2017, we also know that implementing a new renovation system for tracking routes and sampling data (in this case RenoWeb) has been a demand from Aalborg Municipality. The implementation and the change in organizational processes has been divided into three phases;

1) Waste for recycling, paper and cardboard
2) Residual and municipal waste
3) Commercial and industrial waste (previously controlled in the Libra system)

We consider it a vital factor for the successful implementation of RenoWeb that the employees at all levels of the organizational latter at Aalborg Renovation are familiar with these different stages of the change process. In our former research at Aalborg Renovation in 2017, Louise Vineke argued that things like vision become too abstract for the dustmen. She furthermore stated as follow:

"The words are too fluffy."
(Christensen and Karrenbauer 2017, 35)

It can be argued that the phases are part of the overall vision set by Aalborg Municipality, namely to make Aalborg a greener city. The disinterest in the organizational vision, is also described by the

interviewees of the present research. From all the present interviews it seems that the lack of interest is still evident at Aalborg Renovation. This becomes extremely obvious with the statements below:

"Especially in this preliminary phase, were we have been challenged, we called them in at 05:30am to a talk about the challenges they meet during their work-day (...) but then we see that 6:05-6:10 everyone is waiting to get finished, they want to get out before morning traffics hits the city."
(Pedersen 2018, 20:22-20:53)

" (...) I see that some people sits there waiting to get finished like, `well now the time is 10 minutes past or quarter past and actually we want to get going´."
(Andreasen 2018, 12:34-12:40)

"Yes, they want to leave, yes (...) I think it is annoying if they (red.: management) is just forced down our throats. But they (red.: the other dustmen) do not want to listen."
(Faigh 2018, 14:50-15:19)

"There exist some kind of complexity in the fact that the dustmen has a fundamental wish of not wanting to participate in meetings. They want to get things done, get off and get home. So, if we plan a meeting in the morning before they leave, they sit there waiting to get finished and to get out of the door before traffics hit – and if you want to catch them before they get off, they just want to go home."
(Jensen 2018, 20:27-20:50)

From the statements above, we want to argue that there seems to be a general perception of, at least some of the dustmen, being unwilling to participate in meetings concerning bigger organizational values, goals and visions. According to theory, the employee awareness of organizational goals is important for contributing to organizational capital and for management to rely on the employees being capable of self-facilitating. Yet, we want to discuss what is meant whit the statement "employees should be aware of organizational values, goals and visions". We want to argue that it is neither about employees having to know the wording of the vision by heart nor about them participating in every single meeting about the municipal strategy or alike. Instead it is about bringing the vision down on a more tangible level, thereby operationalizing the abstract vision into physical, touchable

organizational processes for the dustmen to work with. We want to argue that the dustmen are not obliged to be interested in the overall goal of the change, but that it is extremely important that they know what their role in the process is and when and where in the different phases, they will be included. This way of making the organizational vision transparent and tangible seems not to be a solution, which has been considered at Aalborg Renovation. When the dustmen are asked whether they know of the three phases of the change, they appear to be extremely surprised about the fact that such three phases exist. Finn Faigh briefly responds in a puzzled manner, that he is not familiar with the phases at all (Faigh 2018, 15:30-15:57), whereas Peter Andreasen states the following:

"Actually, we are not that familiar with what the different phases involves, so actually we just smoothly go along with it. I do remember that they (red.: management) talked about it, but I cannot explain that this or that belongs to (red.: phase) 1 or 2. So actually, I do not know about it."
(Andreasen 2018, 08:48-09:06)

From the dustmen´s answers, we argue that the transparency of the phases of the change has been low to non-existent. As argued in the theoretical framework, organizational goals will almost always be set by someone in leading positions, however the organizational processes will almost always be carried out by the employees on the floor. On behalf of this, we want to argue that it is a mistake of sizeable proportion that the dustmen are not informed about the phases, as it concerns their "domain", namely garbage collection of the 3 different waste-types; 1) Waste for recycling, paper and cardboard, 2) Residual and municipal waste and 3) Commercial and industrial waste. According to theory, when information such as the coherence of vision and organizational processes becomes more tangible, the common goal or vision becomes transparent for the employees, thereby giving them a better possibility of adding to organizational capital through the processes they conduct. As we argue in our theoretical framework, it is the combination of leaders enabling organizational processes and employees being capable of self-facilitating that creates synergy across resources such as technology all the way through the organization.

As Jan Pedersen was our first interviewee, we have not been able to clarify whether or not the management intentionally has refrained from informing the dustmen about the different phases of the change, solely because they share the opinion of Louise Vineke, namely that such an information would be too fluffy for the dustmen to cope with or that the dustmen are simply not interested in such

managerial decision makings. However, during our interview with Jan Pedersen, we clearly got the impression that all of the employees at Aalborg Renovation would be familiar with these different phases of the change, their substance and at what phase they would be involved. This impression is based on the fact that Jan Pedersen throughout the interview naturally jumps back and forth between the different phases, as he tries to answer our questions to the best of his abilities. Though this is the cases, at the same time Jan Pedersen himself and Christian Møller Jensen clearly states that sharing information about RenoWeb to the dustmen, to a much higher extend in the early stages of the change, would have been beneficial in securing an easier implementation of RenoWeb as well getting rid of the misunderstandings which presented themselves during the initial phases of the change. This becomes evident through the statements below:

"No, we could have been better at it. Someone, especially in phase 1, had the perception that it (red.: RenoWeb) was a monitoring system."
(Pedersen 2018, 36:36-36:46)

"Generally, it is something we have talked a lot about in our department called Project & Development (...) that we want to do more, in terms of informing about the projects, what is going on and what will happen in the future? I do not think that has been done enough previously. (...) If you bring in a dustman, who is familiar with phase three, already before starting up phase one and tell him: ´Three years from now, this is going to happen´- then again, things can also change a lot in three years."
(Jensen 2018, 18:42-19:26)

As argued in the theoretical framework, resources should be planned in a way where the employees have a possibility of adapting to the new organizational processes. According to the statements above, this has not been the case at Aalborg Renovation. Firstly, we want to argue that this has been due to the lack of focus on changing organizational processes, which we accounted for in section 5.1.2. As the focus has been on getting the daily operations running smoothly in the transition phase, it seems that there has not been the time or the resources to plan the implementation accordingly. Secondly, the issue of labor shortage adds to the challenge of changing procedures, as Aalborg Renovation has undergone huge substitution in the administrative and managerial staff. Due to these circumstances there has been no clear person in charge of the change up until now. As an example, the former

renovation-officer, Carsten Iversen, had launched a lot of innovative changes, only then to leave the organization few months after, causing the projects to go down the drain. This issue was also mentioned by the dustman, Martin Olesen, in the research from 2017 (Christensen and Karrenbauer 2017, 37). Jan Pedersen further elaborates on the recent substitutions by stating the following:

> *"It was Johnni who was the RenoWeb-guy here, who suddenly was not here from one day to another – Mette who chooses to go on maternity leave right up to the implementation of phase 2."*
> (Pedersen 2018, 19:15-19:23)

Furthermore, Jan Pedersen mentions Louise Vineke as a key person for the change, which is problematic as she also left for maternity leave shortly before the launch of phase two (Pedersen 2018, 19:45-20:00). He also states that Carsten Iversen might have been too innovative with his ideas for an organization like Aalborg Renovation, which primary focus is on daily operations (Pedersen 2018, 40:45-40:50).

However, from the present interviews it seems that Aalborg Renovation is gradually becoming aware of this issue, as they have taken precautions in relation to the further development of the change in organizational processes. For example, they have positioned Christian Møller Jensen as project manager, as well as employed a new logistic-employee to fill the spot of Johnni Tannebæk Larsen, the former RenoWeb and IT-man. The new position of Christian Møller Jensen and the new initiatives regarding the change in organizational processes will be elaborated in section 5.2.2.

From the analysis above, it seems that things are starting to fall into place at Aalborg Renovation. However, we want to discuss why it has taken nearly a year to get to this point. Even though undergoing change always is a major upheaval for organizations, it puzzles us why the change at Aalborg Renovation has been deadlocked for almost a year. From the interview it seems that there has been no major modification of business processes. The dustmen themselves states that it is the same tasks they carry before and after the implementation of RenoWeb. As Peter Andreasen is asked whether the business processes have changed with the implementation of RenoWeb or whether it is the same daily routines he carries out as before, he clearly agrees with the latter:

"Yes, it is actually the same way it runs. Of course, it is in another way we do some things but otherwise it is actually just the same way things are running."
(Andreasen 2018, 19:30-19:39)

From Peter Andreasen´s point of view, it seems that there has been no major modification of business processes. He even argues that new organizational procedures and processes based on new technology, is only something which can be expected to become a natural part of working as a dustman. Even though the quote is used previously in the analysis, we quote it below, because as Peter Andreasen is asked about the new organizational processes, he states:

"*You actually do this a little already with the things happening here, getting used to the different mobile phones – well that we have never been used to before. So that is just part of the job we have and then you accept things the way they are."*
(Andreasen 2018, 03:11-03:25)

Based on Peter Andreasen´s statements, it seems odd that the change at Aalborg Renovation has only now started to unfold positively. However, in the interview with Jan Pedersen it becomes obvious that this perception of technology is not shared by all organizational members, as he states:

"We also have employees here, who has been exempted for using E-boks, even at the age of 40, that for sure wonders me. So, we struggle with these people too, people who have that kind of look at systems in general (...) We are going to struggle with that for many years."
(Pedersen 2018, 10:40-11:00)

From Jan Pedersen´s statement it becomes clear that a part of the employees at Aalborg Renovation are not fully equipped for the technological development. It seems that management at Aalborg Renovation has accepted this factum, as they exempt some employees from using technological tools. In relation to the following statements, it can be discussed whether the same exemption is happening with RenoWeb.

"I am in the same vehicle as a few people who have a hard time accepting (...) things as they are and maybe also because, well, this thing about technology is not quite

their thing – so it is easier just leaving the phone in my hands or the iPad (...)
So it has been easy just leaving things in my hands."
(Andreasen 2018, 04:41-05:03)

"I do not want to say that they cannot figure out how to drive after an iPad,
I believe that it is because they do not want to. I think it is more about the latter,
because I really believe that they know how to do it."
(Faigh 2018, 04:45-04:52)

With these statements, we want to argue that some dustmen may have been exempted from using RenoWeb, because they have told management that their technological skills are insufficient. However, when we take the above statements into consideration, it seems that they have been using their lack of skills as a bad excuse to being exempted of using RenoWeb.

This is also backed up through the following statement of Peter Andreasen. Even though he argues that technology and change in organizational processes are becoming part of daily operations, also on a blue-collar level, he seems to share opinion with the dustmen´s staff manager, Jan Pedersen, when the issue about using technological tools concerns his colleagues.

"I have been used to the different (red.: things) to a higher extent in relation to technology than for example the ones I am sharing vehicle with. They have a hard time managing it in relation to why we have to do it and how we have to do it."
(Andreasen 2018, 05:58-06:13)

Once again it becomes obvious that there exists a separation between the dustmen. This time, not necessarily between negative and positive minded dustmen, but between one group of dustmen with technological understanding and interest and one without. This argument is also backed up by project manager Christian Møller Jensen. He states as follows:

"I think it is hard for some of them (...) it is a question of age – 100%. It is not only the older ones, it is also some of the young ones, who does not have the interest or because they have chosen to be dustmen because they have difficulties

with it (red.: technology) - because it is a job where they could have avoided it.
(Jensen 2018, 31:50-32:25)

In relation to the statements above it can be argued that the spectrum between as-is processes and to-be processes is slightly narrow. On the one hand this might minimize transition-issues when moving from the old to the new system. On the other hand, it might become hard for the employees on the floor to perceive and understand why business processes had to be modified in the first place. From what we know until now, the latter seems to be the case at Aalborg Renovation. This is also why process transparency becomes even more essential in relation to the digitalization of organizational processes at Aalborg Renovation. Namely, to ensure that the employees carrying out the change is onboard with new organizational standards and procedures.

Summing up: From the above analysis, it seems that it has been hard for Aalborg Renovation to plan their resources correspondingly with the change. Even though business processes have not been modified to a high extent, it seems that Aalborg Renovation has not been aware of the proportions of the change. Meanwhile they have been struggling with both the technological ignorance and lack of interest or skills, primarily from the dustmen´s side. As we accounted for earlier, the labor shortage has also played its role, as the focus has been on running daily operations instead of focusing on the challenges of the change. We see this as one of the main reasons for the lack of resource planning. In the aftermath of lacking resource planning, lack of process transparency naturally occurs. Consequently, we want to argue that even though business modifications have been modest, time and resources have not been adequate, culminating in low transparency. Moreover, it seems that the role of technology and the digitalization of organizational processes has been neglected and postponed indefinitely. This we base on the fact that some employees at Aalborg Renovation are exempted from using RenoWeb and other digital tools, and the fact that Jan Pedersen already now argues that this is something Aalborg Renovation will have difficulties with henceforth. From the analysis, it has become evident that Aalborg Renovation is not ready for the coming digitalization. However, as we argued in this chapter and from what we will see in the following chapter, Aalborg Renovation has started to take action and precautions in relation to the issue of digitizing organizational processes.

5.2.2. Socio-technical Management Approach, Tools and Training

According to theory new organizational processes occurring from technological change needs to be modified in compliance with socio-technical management skills. Training employees and giving them the right tools are furthermore important for self-facilitation.

In the research from 2017, we interviewed Louise Vineke, at that time project manager of the change at Aalborg Renovation, alongside a total of three dustmen. During that research, on behalf of the statements from our interviewees, the center of attention in relation to the implementation of RenoWeb turned towards, at that time student assistant, Christian Møller Jensen. As stated previously in this project, Christian Møller Jensen has a master's degree in techno-anthropology, an educational background which makes him a specifically interesting interviewee for this exact project, as he has a broad knowledge about the interplay between humans and technology. Not only has Christian Møller Jensen been mentioned as the guy with the technical skills to training and assist the dustmen during the initial phase of RenoWeb, some of the dustmen which was interviewed for the 2017-research even mentioned him as the manager of the change (Christensen and Karrenbauer 2017, 31).

Since our 2017-research, Christian Møller Jensen has been appointed as project manager of the implementation of RenoWeb due to multiple substitutions and exits in the managerial staff at Aalborg Renovation. Something which makes him even more interesting for the scope of the project. It seems that with the appointment of Christian Møller Jensen as project manager, things are starting to fall into place at Aalborg Renovation. Even though theory suggests that the goal of the current change is to make employees self-facilitating, theory also suggests that for this to become effective, a visible leader is necessary. Due to staff substitutions and exist, this leader has been rare commodity. Jan Pedersen, the staff manager of the dustmen, further argues that Christian Møller Jensen has been the key person for getting the change back on track. Jan Pedersen argues that Christian Møller Jensen has the overarching view of the process and states:

I would say that Christian has been in control of the process. Without him, and if we had not been able to recruit him to the organization, we would have been in big trouble. Then we would have been under a huge pressure, let us just put it that way (…) We would have been under a huge pressure if we had not managed to hire Christian. He has functioned as a collective figure."

(Pedersen 2018, 18:57-19:29)

During the interview with Christian Møller Jensen we find more reasons as to why he is important for the successful implementation and the further proceeding of RenoWeb. Amongst others, he promotes the concepts of knowledge-sharing and key-persons whilst reflecting over premature decision-makings when going from as-is to to-be processes. We want to argue that for the first time during both the interviews from 2017 and 2018, we encounter a person at Aalborg Renovation proving to have the right amount knowledge for working with the change at Aalborg Renovation. We want to state that it is not necessarily his educational background nor his use of terms that makes him a better leader of the change, however, we want to argue that on behalf of these aspects, Christian Møller Jensen naturally has better prerequisites for understanding both the human and the technological side of change. Thereby, we support Jan Pedersen´s statement about Aalborg Renovation being worse off without Christian Møller Jensen as project manager.

As mentioned above Christian Møller Jensen is the first person to come up with a solution for the changing processes, other than "forcing" the dustmen to do their job. He is also the first to trace responsibility back to management. According to theory, managers, leaders and facilitators with specialized training are vital for change processes, as they due to their practical knowledge and former experiences, are capable of providing tools and training in e.g. modified organizational processes evolving from new IT-systems. The focus of the 2017-research was placed on the dustmen´s readiness and motivation for change. As important as this aspect may be, we however found that change readiness did not only come down to the dustmen´s motivation (Christensen and Karrenbauer 2017, 38-41). Instead, the question of considerable character was change-leadership. It can be argued that the prevailing conditions for change-management has not been evident at Aalborg Renovation. As we argued in the research from 2017, the project manager at that time, was not equipped to carry out the task (Christensen and Karrenbauer 2017, 49). We want to argue that the combination of lacking managerial tools and a premature decision-making, which we will account for hereafter, has been the reason for the extended implementation phase at Aalborg Renovation. From the interviews with Jan Pedersen and Christian Møller Jensen, it becomes evident that the new RenoWeb system has not meet organizational expectations. They state:

"At times, I am a bit disappointed with the system, I have to say, when so many different municipalities have been using it before us. However, as far as I have been told we are there biggest client ever, but that the system is not more clean and ready to use, that wonders me in an operational department like ours."

(Pedersen 2018, 14:53-15:08)

"It is really aggravating, and that is also something which I have discussed a lot with Sweco – or at least I have made them aware and told them; `do you guys know that before we started using RenoWeb, it was talked about as being God's gift to the renovation industry, why have you guys allowed them to do that? Of course, RenoWeb cannot solve all problems, nothing can´. But that is how is was presented and talked about: `soon it will come, it can do everything, it will solve all of our problems – everything will become smarter, everything will become faster´ (...) and then it has turned out to be the exact opposite."

(Jensen 2018, 1:01:04-1:01:36)

From the statement it is clear that the staff manager and the project manager are dissatisfied with RenoWeb. Like Jan Pedersen and Christian Møller Jensen, we wonder how a new IT-system can be so deficient, when it has been used by organizations alike in other municipalities. However, this becomes evident in the interview with Christian Møller Jensen. He argues that Aalborg Renovation has bought a standardized product, which does not satisfy the needs of the organization and the dustmen. In fact, the system has not even been purchased by Aalborg Renovation themselves, but by some members of the municipality. As Christian Møller Jensen states in the interview, looking back, there were more sufficient ways of going about the purchase of RenoWeb or another similar system. One of the options mentioned by Christian Møller Jensen is based on the idea of competitive bidding. Aalborg Renovation could have made a list of desired features and elements, which they wanted to be part of the new IT-system and which should ease organizational processes. By going about the process in this manner, Aalborg Renovation would have been ensured a product which to a higher extent would oblige to their needs. Another option which is mentioned in the interview with Christian Møller Jensen, was the option of signing a development contract with Sweco in advance of the implementation. By doing so, Aalborg Renovation could have lowered unforeseen costs in relation to later modifications of the RenoWeb-system (Jensen 2018, 12:15-12:40).

As argued, from the very initial stages of implementing RenoWeb at Aalborg Renovation until now, there has been low to no requirements in relation to neither change leadership nor to the content of the system. We want to argue that this is the reason for the lack of socio-technical management, and furthermore the lack of tools and training in the new system. Hence it has negative affect on employee self-facilitation of changing organizational processes stemming from the new system, as management has not been capable of informing the dustmen about the facets of the new processes, which are relevant and beneficial for their job and their routines. Assisting employees in making use of digital networks such as RenoWeb is, according to theory, one of the main tasks of management, as it is vital for the outcome of the change that employees feel the need for the change. It can be argued that due to the lack of information, the dustmen will feel that they are adjusting their work procedures to the system, instead of the system adjusting to them. As argued in the theoretical section, the system should be supportive of organizational processes and not the other way around. If the dustmen feel that they have to change their routines to fit the system, the entire idea behind introducing a new system will dissolve itself. However, both the dustmen and Christian Møller Jensen state that the adjustment goes both ways:

"I think that it might be a mixture of both, to make it function, both parts have had to compromise to make it more adaptable, I think."
(Andreasen 2018, 18:30-18:43)

"I am not really too sure. I guess both parts need to adjust."
(Faigh 2018, 19:41-19:45)

"Until now, I think the dustmen are the ones who have adjusted the most. But I think that things are starting to change slowly, and then it will be the other way around"
(Jensen 2018, 12:50-13:01)

Surprisingly, although the implementation of RenoWeb has meet many challenges and negative attitudes, the dustmen seem to have a certain sympathy and understanding of the process. Even though, theory suggest that it is the system which should adjust to the employees, we want to argue that the dustmen´s statements about the adjustment going both ways, shows that they do not feel overpowered by the system. Their statements show that humans and technology work together, even though IT can

be challenging at times. This means that the very important socio-technical relationship is evident. Moreover, Christian Møller Jensen states that in the near future things will change, so that it to a higher extent is the system which must adjust to the dustmen. The new initiatives he is referring to, will be presented later in this chapter.

In relation to the socio-technical relationship, it is further important to note that, at the moment, a lot of money goes to improving RenoWeb. This becomes evident in the interviews with the two managers. Still a year after the introduction of RenoWeb, Aalborg Renovation are pouring money into the system to modify it so that it meets organizational wishes and so that it can become more supportive of the dustmen´s daily routines and towards the overall organizational processes. Christian Møller Jensen states:

"You always find new things that you want to do with RenoWeb, you just keep investing money (...) is the system not capable of doing that, we need it to do that. So, budget is in some way or another an alien concept (...) because, initially, a standardized product has been bought, and nobody have related themselves to what functions it should have and then it is hard to keep the budget. (...) I think that it starts frustrating Jan a bit: `Do we really have to spend money on that as well, why is the system not capable of that already?´. It might have been capable of that, if we had made certain demands right from the beginning."
(Jensen 2018, 1:00:05-1:00:44)

We want to argue that even though it is a huge problem that Aalborg Renovation still has to correct and modify the system a year after its implementation, it will benefit them in the end. What usually is the case in change processes, is that something goes wrong and the company stop focusing on the problems and stop pouring money into modification and instead just declare the change failed. Aalborg Renovation shows that they are willing to make it work. As Jan Pedersen is asked whether Aalborg Renovation ever has comprised with updates and new solutions for the RenoWeb system due to economic costs, he states:

"No. (...) if Christian came up and asked: `Can we get that´. Hell yes you can (...)
I do not know what the annual budget is or what our yearly salary budget is,
I guess around 70mio. or so. If there is a need for using 50.000 for

Something to optimize things, I am thinking let´s just do it. (...)
If we need to use 100.000 or 200.000 extra on something
for RenoWeb to make it more useful, then we also do that."
(Pedersen 2018, 33:29-33:56)

Alongside, the constant improvement and development of new functions and features for the RenoWeb system, more socio-technical aspects have begun to be taken into account at Aalborg Renovation. This has been done as an attempt at improving the connection between technology and the employees within the organization. Department manager, Jan Pedersen, has newly introduced a new initiative enabling the dustmen to get up to date information about RenoWeb, alongside a present report about the system and some of the challenges ahead. This new initiative is a newsletter, which is published on a monthly basis. In relation to theory, the newsletter can be seen as the first real platform that is in fact RenoWeb-related, and it allows for the dustmen to share their thoughts and concerns as well as their success stories with their colleagues at Aalborg Renovation. Through our interviews with the two dustmen Finn Faigh and Peter Andreasen it became evident, that such an initiative is something which is highly condoned by the dustmen at Aalborg Renovation.

"Well, I think it is issued once a month or so, where the most important things are stated.
(…) It tells us what has happened and what the future brings."
(Faigh 2018, 13:58-14:05)

"Well, I actually think that it is nice when they are issued. (...) You get an easy update
on what had happened the last week and the bullet points which are listed,
well then you get that focus on them. (...) it is a good way to do it."
(Andreasen 2018, 13:02-13:14)

The introduction of a newsletter would might prove to be insufficient under different circumstances, as it does not provide the employees with an open forum, where they can discuss their issues openly. However, as we found out previously in the analysis chapter, a huge group of the dustmen are not interested in investing the time that would be needed for an interaction like that. These dustmen are interested in getting their work done in the shortest amount of time and would rather not participate

in any meetings at all, as it naturally will interfere with their working schedule. Hence, we argue that the introduction of a newsletter at Aalborg Renovation, under the present circumstances, is a step in the right direction in terms of establishing some kind of information flow. The newsletter is moreover one of the first initiatives to focus on the socio-technical interplay at Aalborg Renovation. Project manager Christian Møller Jensen also sees the newsletter as a way of showing the dustmen that they have a part to play both in the organizational structure as well as for reaching organizational goals and contributing to organizational capital. He states as follows:

"Jan has introduced a new newsletter for example. So yes, that they (red.: the dustmen) do not feel forgotten in some kind of way and that things are initiated, I strongly believe that means something."
(Jensen 2018, 18:59-19:10)

In relation to theory, we find the newsletter a good way of including the dustmen in the organizational goals, but on their premises. We also want to argue that the newsletter may be an opening for a more knowledge sharing organization. Besides the newsletter, project manager Christian Møller Jensen talks about a new initiative, which will be launching in the near future. As part of the project department and as the only person, who really has been part of both the technological and the human side of the change since its implementation, Christian Møller Jensen sees an opportunity in introducing key-persons. The concept of key-persons aims at creating a more informed staff by promoting change through a "committee" of dustmen selected on behalf of their positive and adaptable mindset. During the interview, Christian Møller Jensen states that a clear hierarchic structure exists between the dustmen. In fact, every team or car has a natural "leader", who functions as middleman in conversations and discussions with management, which is why those persons would be the natural choice for a key-person. However, Christian Møller Jensen also sees an opportunity in choosing key-persons from their interest in technology and in the change process in general (Jensen 2018, 14:30-22:53). Either way or another, we see the concept of key-persons as a way of creating knowledge sharing amongst the dustmen. The higher the knowledge sharing, the better are the conditions for self-facilitation. Thereby, we want to argue that even though Aalborg Renovation has been unsuccessful of providing the dustmen with the right tools and training until lately, knowledge sharing and self-facilitation proves to be the right tools for this specific change. Supportive of theory, Aalborg Renovation seems to have taken the first step in investing in their employees on behalf of their abilities and skills. From

the above it also becomes obvious that Christian Møller Jensen, due to his human and technical skill-set, is the perfect person for promoting and executing the socio-technical relationship at Aalborg Renovation. Christian Møller Jensen gives further examples of future communicative initiatives, as he states:

"We have to work with the way we communicate those things (...) maybe we can have something, maybe even on the iPads they already use or something. I think the newsletter is a good beginning, definitely. But also, well, these keypersons can also be a way to communicate things at, they are going to spread the word, and they should kind of represent it (...) They are going to be part of project meetings, maybe even sit in on meetings with the Steering Committee."

(Jensen 2018, 20:49-21:41)

According to theory, the suggestion about integrating the iPads that the employees at Aalborg Renovation already make use of on a daily basis, can be of great advantage, as the RenoWeb platform has a huge potential of relating programs and technology with work processes and administrative procedures. Thereby a higher amount of know-how is gathered into the system, which then can be used as a tool for carrying out the organizational practices in compliance with organizational goals - thereby adding to organizational capital. This matter will be further analyzed in the following section.

Summing up: until this very moment, it seems that little attention has been given to employee training in the new organizational processes entailing the implementation of RenoWeb. It seems that at some point management has just accepted the status quo. We want to argue that the combination of the change in business structures and the exit of several important staff members, has set Aalborg Renovation on an unavoidable collision course. The appointment of Christian Møller Jensen as project manager, has been the rescue of Aalborg Renovation. His socio-technical perspective has been a vital asset for looking at the change from another perspective. Christian Møller Jensen has been the first to note the importance of investing in the employees on the floor, as they are the ones carrying out the organizational processes. It seems that for the future, Aalborg Renovation can look forward to becoming a more unified organization, working from a foundation based on knowledge sharing and self-facilitation amongst the group of dustmen. The initial groundbreaking step of being taught and learning how to do so has been taken by including the dustmen in organizational goals on their premises. As Aalborg Renovation derives its business from day-to-day operations, is dependent on

the municipality of Aalborg and as the core business is carried out by blue-collar workers, we want to argue that Aalborg Renovation is an organization built on a structure highly distinctive of other large scaled organizations. We want to argue that distinct organizations demand distinct methods, which is why we argue that it is important to create the socio-technical relationship at Aalborg Renovation on other premises than what may be the case with more rigorous organizations.

5.3. Contributing to Organizational Capital

According to theory, organizational capital grows when employees contribute to the organizational goals and values through knowledge sharing. In the case with Aalborg Renovation it is the knowledge shared about the new organizational processes which is the point of interest, as it can be used by all employees on all organizational levels and as it benefits the entire organization in the long run. As the parameter; "contributing to organizational capital" can be seen as the outcome of the two other parameters; "supporting work group autonomy" and "enabling organizational processes", the final part of the analysis seeks to combine all parameters and comment and discuss on whether Aalborg Renovation has provided suitable, favorable and not least sustainable conditions for increased organizational capital.

5.3.1. Combining productive Resources and Creating Collective Capital

Combining productive resources to an output benefitting the organization, demands strong and clear leadership and support from the employees at the floor. From the interviews with the department manager and the project manager is seems that management works hard to reach the organizational goals set around RenoWeb. Jan Pedersen and Christian Møller Jensen elaborates on their roles in relation to creating good conditions for achievement of organizational goals:

> *"We just work extremely hard, we work more than 37 hours per week. Every day we work to optimize and improve everything (...) We listen and are listening a lot to the employees if they face challenges, we take it into account (...)"*
>
> (Pedersen 2018, 55:50-56:13)

"I try, to the highest extent possible, to plan a phase and I try to make space. (...) Having space to be capable of gathering experiences and then adjust the plan in accordance with the experiences. So, as an example, having project kick-offs, where the dustmen sit in on the meeting and give their views on the plan, the process that we are going through, having key persons, having the time to take one car at the time and those things – so, this proper preparation, I believe is the best tool I can address."

(Jensen 2018, 49:00-49:30)

From the 2017-research, it seemed that management just accepted the fact that the employees were resistant to change and that there was nothing to do about it, because the dustmen would never change their mind (Christensen and Karrenbauer 2017, 32). However, a year after, it seems that it has come to management´s attention that they have an important role to play in relation to providing a framework for the employees and break the cycle of negativity and reluctance. We want to argue that the reluctance towards change stems from employees' anxiousness and insecurity that they are not capable of performing their job in accordance with new organizational processes. In the case with Aalborg Renovation this feeling might intensify as the employees suddenly have to work in close cooperation with new technology – a tool which they have never been used to before. As stated earlier by Jan Pedersen, some of the dustmen might even have chosen the job as dustman to avoid such technological advance. Normally, it would be desirable that all employees learn how to use the new system at the same time and that the implementation happens as a smooth transition. On the presumption that this would be desirable for Aalborg Renovation as well, we asked Christian Møller Jensen, whether he as project manager is dissatisfied with the fact that not all employees operate in accordance with the RenoWeb system yet. A year into the change, we assumed that this would be very problematic. However, Christian Møller Jensen states:

"If it makes them happy, then that is fine with me, I do not want to intervene in how they structure their work. Obviously, I want to encourage the others to learn it and be interested in it as well, because it might be that they experience days without him (red.: the one having the skills). But if that is how they structure their work, then I would rather support their freedom to decide what works best for them, as I believe that will create highest value in the end."

(Jensen 2018, 35:15-35:35)

We want to argue that this attitude might be based on Christian Møller Jensen´s believe that this is the only way of making the dustmen cooperate; namely giving them the time to figure out things themselves. This mindset is also very correspondent with the idea of making the group of dustmen autonomous and self-facilitating, as it addresses the arrangement of making the dustmen structure their own work. As Christian Møller Jensen states, letting the dustmen "mind their own business" or let them structure their work themselves, might not necessarily be something negative. Finn Faigh argues that there is sense behind "minding one´s own business", as he explains that the fact that the dustmen work in different groupings is due to natural separation determined by the kind of waste type they collect (Faigh 2018, 12:10-12:20). He argues that within the group he is part they are good at sharing experiences, helping each other and talking about their tasks and daily routines (Faigh 2018, 08:45-09:02). However, he finds that despite of the natural division, he would appreciate better co-operation between the different groups, as he states:

"I feel that we are divided into groups (...) I feel that the ones of us that drives plastic/metal have to care for ourselves and the ones driving municipal waste take care of themselves. At some time, you feel a bit alone in those different groups. It does not feel like a united workplace"
(Faigh 2018, 07:55-08:18)

Even though this shows that there is room for improvement in relation to the groupings at Aalborg Renovation, it is evident that self-structuring is an important element at the organization and for the dustmen's well-being. It also becomes evident that this kind of self-facilitation is very natural in relation to educating the dustmen at Aalborg Renovation. As the interviews unfold, it namely becomes obvious that peer-to-peer education is the principal structure for learning new things as dustman at Aalborg Renovation. The peer-to-peer education the interviewees describe can be explained as the selection of one dustman who is responsible of teaching the other dustmen in his vehicle about everything that the job contains. With the introduction of RenoWeb, this peer-to-peer education also includes new technology and changed organizational processes. This concept we see as highly useful for knowledge sharing, self-facilitation and work group autonomy. However, it seems that the guidelines for this kind of self-facilitation are not fully set out yet. On the side of the dustmen, Finn Faigh argues that he supports peer-to-peer education, but only as long as the other party is willing to learn.

On the side of management, Jan Pedersen argues that peer-to-peer education might not be enough. They state as follows:

> *(...) I would like to do that. I have nothing against doing that, as long as people wants to understand. But if people do not want to learn, then I do not want to waste my time. I have had a few different colleagues that did not want to learn it, and then it is annoying when some of us have an interest in it."*
> (Faigh 2018, 26:11-26:27)

> *"(...) In our industry peer-to-peer education is very common. But maybe it is not always enough, we should maybe be better at organizing some seminars. We have been talking about that in the operation department and with Christian about making some scheduled on-going courses from 12:00 to 14:00 for a few days each year, so to say, where they get a basic course on the use of RenoWeb."*
> (Pedersen 2018, 11:15-11:36)

As good as this peer-to-peer education may seem for the self-facilitation of employees, it seems from Finn Faigh´s statement that the conditions for it are not fully there. We support Jan Pedersen´s statement that seminars or courses should support the peer-to-peer education, by providing the dustmen with that basic knowledge about the system and IT in general that they seem to lack.

As Christian Møller Jensen pointed out earlier, we as well see a problematic in the fact that not all dustmen are trained properly in the system, as it may cause incorrect or no use at all of the system. This is why we also want to argue that management still has an important role to play in making initiatives supporting the future self-facilitation of the dustmen. However, we find that when management and the dustmen find a proper solution for combining their resources, organizational capital will start expanding progressively. In the following section we will also account for the future of Aalborg Renovation in relation to the cooperation of management and the dustmen.

5.3.2. Reaching Organizational Goals and Creating Value for the Entire Organization

On behalf of the analysis and discussion points in the sections above, we argue that Aalborg Renovation has entered a stage where the organization is ready to move forward. On one hand it can be argued that new initiatives should be supported by all organizational members to be effective, on the other hand this would be an unrealistic position to take. There will always be some employees who have contradicting attitudes for one or another reason. However, from the interviews there seems to be good conditions for reaching organizational goals in the future. Peter Andreasen for example state the following, when he is asked whether the dustmen feel that they have an important role to play in relation to the bigger picture at Aalborg Renovation:

> *"I hope we do, and that we can be a part of making it function (...)*
> *Hopefully we are an important part of making things function from day to day (...)*
> *Yes, we also have a role to play in the whole, big picture – to make it all function."*
> (Andreasen 2018, 26:55-27:48)

He further elaborates that the dustmen are the face of the company and that it is their responsibility to help the citizens on-site, with subdividing the different waste types correctly (Andreasen 2018, 27:30-27:45). We want to argue that this is a clear evident of value creation. We further want to argue that, especially by the dustmen from the more positive group such as Finn Faigh and Peter Andreasen, value is created as something naturally. Their positive mindset and their view upon their responsibility and role in the company are commendable for Aalborg Renovation as an organization. We want to argue that Aalborg Renovation has been very lucky with the majority of the dustmen, because without having invested anything in employee satisfaction and value creation on a blue-collar level yet, the dustmen create value all by themselves. This is also one of the reasons why we see the dustmen being capable of self-facilitation. Christian Møller Jensen elaborates on the dustmen's´ level of contribution and states that it is something which will be a prospectively focus point:

> *"Some of them have focus on contributing and others rather like to mind their own business – but, off course, as a group they contribute. I would like it to enhance, to make it something we bear in mind. But again, it comes back to when we employ people, you know, maybe make it clear that we*

actually expect that development and change is something which you contribute to, or at least that it is a matter which you give us your opinion towards, when you are asked."

(Jensen 2018, 54:15-54:40)

In relation to the statement above, we want to argue that creating value amongst employees on the floor and making them part of development and changes is a profitable aspect to start focusing on both in relation to organizational goals and organizational capital. However, in relation to the fact pointed out by Jan Pedersen previously in the analysis, the job as a dustman is historically seen not so much a job of adapting and learning new skills, but more so a job of being active and independent. This is also why we want to argue that the best way of creating value is to let it come naturally through the dustmen themselves. Again, this means that we support the idea of introducing key persons, who can spread the word. Then value will be created slowly among equals or peer-to-peer, instead of being forced down the throat by management and their fluffy glossary. As stated earlier and corresponding with theory, it is the unity of employees on all levels embodying organizational processes in the organization that creates a value outcome. We want to argue that the foundation for such a value outcome has begun to manifest itself at Aalborg Renovation. Both management and the employees contribute to this. On managerial side, focus has started shifting from daily operation to process orientation. Moreover, more hands and thereby resources, are set aside for the change and the steering group or the leaders of the change are finally proclaimed to be Christian Møller Jensen, Jan Pedersen and the new RenoWeb-guy Christian. On the employee side, Peter Andreasen and Finn Faigh representing the dustmen, look positive at being included in the process and its development. They state as follows:

"Well, I think it is nice to get that information
or whatever it is that those meetings concern (...)"

(Andreasen 2018, 12:27-12:32)

"I like being nosey and curios about as much as possible, so I would like to
be part of the things they put forward, I would (...)

(Faigh 2018, 15:05-15:10)

From the statement and from the findings of the analysis, we want to argue that both management and employees are ready to contribute to create value and to reach organizational goals. We further want to argue that it is the constant collaboration across the organizational latter that creates this very special synergy. Hence aspects such as communicating, listening and understanding the perspectives, positions and roles of each other are vital.

With the findings of the interviews analyzed and discussed, the final chapter will provide the reader with the conclusions drawn from the research. The conclusion is presented below.

6. Conclusion

The aim of the project was to investigate how organizational processes can be facilitated through employees. With Aalborg Renovation to our disposal, we set out to research this problem formulation through the single case study. With Aalborg Renovation as our organization in focus, we chose to conduct interviews with a handful of people. Both dustmen, as well as managerial staff stemming from each end of the organizational latter was interviewed. The dustmen, Finn Faigh and Peter Andreasen, played an important role as they are part of the employees carrying out the technological change on the floor. Jan Pedersen was important to include due to his position as staff manager for the dustmen, and lastly Christian Møller Jensen provided us with knowledge about more technological aspects due to his position as project manager of the change. The clear focus of the entire research has been the socio-technical interplay between humans, that is to say the employees at Aalborg Renovation, and technology, being the new data system for the renovation industry; RenoWeb. From a previous research at Aalborg Renovation back in 2017, it was concluded that the lack of management was due to change resistance at Aalborg Renovation. However, as the change had not developed during the last year, we wanted to investigate the facet of technology in relation to the change at Aalborg Renovation. Hence, we chose to base our theory in more socio-technological research, which is why we introduced the concepts of organizational capital, implementation of ERP-systems and corporate knowledge sharing. To obtain the most suitable foundation, the theoretical apparatus consciously became a compilation of earlier researchers as well as relatively new scholars. To make the intention of the literature review and the theoretical choice more comprehensible and tangible, we chose to develop our own theoretical framework and model; The Employee Self-Facilitation Model, which summed up the most important aspects of creating employee self-facilitation under the

circumstances of technological change in organizational processes. In that way, the model came to contain three parameters; supporting work group autonomy, enabling organizational processes and contributing to organizational capital. As the theory proposed for in-depth interviews and personal opinions of staff members, we chose to conduct the data sampling through the semi-structured interview and on the basis of the ontological and epistemological standpoints of social constructivism and interpretivism. From the interviews we could conclude the following.

As seen in several cases, change processes are hard to steer and control. The same applies for the change in organizational processes at Aalborg Renovation. As we investigated the first phase of the change in 2017, the dustmen were motivated by doing a good job. Now, a year after, as the second phase is introduced, it seems that a part of the dustmen does not care much about the change. This is the first aspect we want to conclude on. As the change has been dragging out and as there has been no clear leader and no clear plan for the change, we understand that some dustmen might have given up. The analysis has shown that a part of the dustmen is not using RenoWeb or that they are using RenoWeb incorrectly. As Aalborg Renovation is a large-scale organization that has to oblige with municipal standards, the incorrect use of RenoWeb is the first hinder on the road to enhancing organizational capital and achieving both the organizational goals set by Aalborg Renovation themselves but most importantly by the Municipality of Aalborg.

Moreover, we can conclude that there exist multiple examples of groupings in the network of dustmen at Aalborg Renovation. These groupings presented themselves in different shapes and sizes such as attitudinal behavior towards change in itself and such as technological flair and interest. Moreover, groups existed as an outcome of which car the different dustmen belonged to and what type of waste they collected. On the premises of those factors, the dustmen were clearly divided into groups or teams instead of functioning as a unit. In relation to this we initially thought that we had to conclude that there was low to no possibility of creating knowledge sharing at Aalborg Renovation. However, as the renovation industry historically always has been characterized as an autonomous profession, we must conclude that the groupings are the outcome of self-facilitating employees, who have managed to steer their daily work independently and only interfere with the other groupings if it makes sense in relation to the work they carry out. This is also why we conclude that there exists a solid basis for creating an even more autonomous work group amongst the dustmen. Moreover, we see this aspect as key to future knowledge sharing.

In relation to the phases and the leadership of the change, the conditions could have been better at Aalborg Renovation. Circumstances such as the exit of important change agents have been fatal for the lack of proper training and preparation of the dustmen. However, with the positioning of Christian Møller Jensen as project manager, things are starting to fall into place. As much as it would have been desirable for both management and employees at Aalborg Renovation that elements such as knowledge sharing, the foundation for a common ground, training, resource planning and so on had been a fundamental part of the daily routines at Aalborg Renovation before implementing new organizational processes through self-facilitation, this has proven not to be the case.

The lack of a project leader with a socio-technical mindset and with the skills to encourage the dustmen to seek a broader understanding and interest in RenoWeb and its interplay with them as employees at Aalborg Renovation combined with the external pressure of Aalborg Municipality has shifted the focus from process orientation and socio-technical management to pure day-to-day operations. As a result, we must conclude that the organizational framework behind implementing new organizational processes has only lately started to take its form. However, as the third and last phase of RenoWeb is yet to come, we see Aalborg Renovation being much readier to handle the coming changes. Firstly, because they have learned a lot from the previous experiences. Secondly, because the organizational framework is ready and more transparent. Lastly, because Aalborg Renovation decides when they will start the third phase, meaning that they can prepare better than what has been the case until now.

We must conclude that Aalborg Renovation has suffered from being left behind by technological change. We believe that from the experiences they made the past year, it has become obvious that even though the digital revolution may be slow in coming, it has had it impact on the organizational processes at Aalborg Renovation. If anything, they have experienced the digitalization of blue-collar jobs at close range. However, we want to finish of the conclusion by arguing that the solution we thought would be right for Aalborg Renovation, is the same result that they have uncovered along the way; namely that self-facilitation based in autonomy and knowledge sharing supported by management is the way to make the employees self-facilitate the organizational processes and achieve organizational goals and contribute to organizational capital.

7. Bibliography

Andreasen, Peter, interview by Mike Christensen and Julia Karrenbauer. 2018. *Interview with Dustman Peter Andreasen* (May 3).

Brey, Philip. 1999. "Worker Autonomy and the Drama of Digital Networks in Organizations." *Journal of Business Ethics* 15-25.

Bryman, Alan. 2012. *Social Research Methods.* New York: Oxford University Press.

Brynjolfsson, E., and L. M. Hitt. 2000. "Beyond Computation: Information Technology, Organizational Transformation and Business Performance." *The Journal of Economic Perspectives* 23-48.

Christensen, Mike, and Julia Karrenbauer. 2017. *An Analysis of the current Change Process at Aalborg Renovation.* Semester Project, Aalborg: Aalborg Universitet.

Collin, Finn, and Simo Køppe. 2014. *Humanistisk videnskabsteori.* Copenhagen: Lindhardt og Ringhof Forlag A/S.

De Vaus, David A. 2001. *Research Design in Social Research.* London: SAGE Publications.

Duggan, Wayne. 2017. "Blue-collar Workers Must Adapt to Survive." *Benzinga Newswires* 1-3.

Dyer, Jeffrey H., og Kentaro Nobeoka. 2000. »Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case.« *Strategic Management Journal* 345-367.

Faigh, Finn, interview by Mike Christensen and Julia Karrenbauer. 2018. *Interview with Dustman Finn Faigh* (May 3).

Farrington, Ted, and Azar Alizadeh. 2017. "On the Impact of Digitalization on R&D." *Research - Technology Management* 24-30.

Flyvbjerg, Bent. 2006. ""Five Missunderstandings about Case-Study Research"." (Qualitative Inquiry) 219-245.

Gagnon, Mark A., Karen J. Jansen, and Judd H. Michael. 2008. "Employee Allignment with Strategic Change: A Study of Strategy-supportive Behaviour among Blue-collar Employees." *Journal of Managerial Issues* 425-443.

Gubrium, Jaber F., James A. Holstein, Amir B. Marvasti, og Karyn D. Mckinney. 2012. *The Sage Handbook of Interview Research: The Complexity of the Craft.* Årg. Second Edition. California: SAGE Publications.

Harteis, Christian. 2018. *The Impact of Digitalization in the Workplace.* Cham: Springer International Publishing.

Hiatt, Jeffrey M., and Timothy J. Creasey. 2003. *Change Management - The Peoples Side of Change.* Colorado: Prosci.

Jensen, Christian Møller, interview by Mike Christensen and Julia Karrenbauer. 2018. *Interview with Project Manager Christian Møller Jensen* (May 4).

Jick, Todd D. 1979. "Mixing qualitative and quantitative methods: triangulation in action." *Administrative Science Quarterly* (Administrative Science Quarterly) 602-611.

Koput, Kenneth W. 2010. *Social Capital - An Introduction To Managing Networks.* Cheltenham: Edward Elgar Publishing Limited.

Kvale, Steinar, and Svend Brinkmann. 2014. *Interview.* Copenhagen: SAGE Publications: Hans Reitzels Forlag.

Leavitt, Harold J. . 1962. *Applied Organizational Change in Industry: Structural, Technological and Humanistic Approaches.* Carnegie: Carnegie Institute of Technology, Graduate School of Industrial Administration.

Li, Peixin, Frank Weikai Li, Baolian Wang, and Zilong Zhang. 2017. "Acquiring Organizational Capital ." *Finance Research Letters* 1-13.

Ludewig, O., and D. Sadowski. 2009. "Measuring Organizational Capital." *Schmalenbach Business Review* 393-412.

McAfee, A., and E. Brynjolfsson. 2014. *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies.* New York: WW Norton & Company.

Miles, Sandra Jeanquart, and Mark Van Clieaf. 2016. "Strategic fit: Key to growing enterprise value through organizational capital." *Science Direct* 55-65.

Mittelstaedt, John D., Clifford J. Schultz II, William E. Kilbourne, og Mark Peterson. 2014. »Sustainablility as Megatrend: Two Schools of Macromarketing Thought.« *Journal of Macromarketing* 253-264.

Nair, Jessy, and D. Bhanu Sree Reddy. 2017. "Leveraging Enterprise Resource Planning Systems to Digitize Business Functions." In *Enterprise Information Systems and the Digitalization of Business Functions*, by Madjid Tavana and Igi Global. Pennsylvania: Hershey.

Pedersen, Jan, interview by Mike Christensen and Julia Karrenbauer. 2018. *Interview with Department Manager Jan Pedersen* (May 2).

Rozell, Elizabeth J., Charles E. Pettijohn, and R. Stephen Parker. 2011. "White vs. Blue: Does the Collar Color Affect Job Attitudes and Behaviours?" *Academy of Strategic Management Journal* 65-80.

Sagini, Meshack M. 2015. *Globalization.* Maryland: University Press of America.

Schirato, Tony, and Jenn Webb. 2003. *Understanding Globalization.* London: SAGE Publications.

Undervisningsministeriet. 2017. "Leavitt´s diamantmodel." *emu.dk.* July 7. Accessed March 26, 2018. https://www.emu.dk/modul/leavitt%E2%80%99s-diamantmodel.

Valodia, Imraan. 2017. "News." *Phys Org.* September 28. Accessed March 24, 2018. https://phys.org/news/2017-09-tech-advances-impacting-skilled-white-collar.html.

Yin, R. K. 2009. *Case Study Research: Design and Methods.* Los Angeles: SAGE Publications.