

# Managing Digitalization in Public Organizations: The role of managing organizational processes and actors.

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## **ABSTRACT**

We find digitalization all around us in our everyday life. More and more processes are becoming automated, interconnected or simply made easier through technological innovations. Digital transformations are understood as adopting disruptive technologies to increase productivity, value creation and the social welfare and it encompasses the combined effects of certain digital innovations and their interactions with organizational actors, structures or values and the way they shape, affect, replace or complement the existing way an organization is structured, and organizational actors are managed.

In this research we aimed to understand in what way digitalization shapes the way organizational processes and organizational actors are managed in public organizations. In a single case study within a public organization, eight interviews were carried out with both managers and employees from different layers within the organization to gain insights about the implications of digitalization for organizational processes and actors. The case was selected because the organization is in the process of implementing digitalization throughout the organization. The interviewees were selected based on their roles in the digitalization process of the organization or their experience with the transformation.

The main findings were that the digital transformation had led to more data-driven organizational processes, which in turn led to a more coordinated work structure. Further, the management of organizational actors needed a different approach from managers, where a more personal relationship-oriented approach was asked, in order to cope with increases in pressure and job demands.

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## **Keywords**

Digitalization, Digital transformation, Human Resource Management, Implementation, Data-driven, Input vs. output management

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## INTRODUCTION

We find digitalization all around us in our everyday life. More and more processes around us are becoming automated, interconnected or simply made easier through technological innovations. It is impossible to imagine going on without these advancements on which we rely so much nowadays since smartphones, tablets and computers are so integrated in the way we go about our lives (Muller & Hopf, 2017). But these innovations do not only affect us in our personal life. Even greater is the effect innovations in the technological sense have on organizations. Information systems and other technological tools are such a regular commodity in organizations nowadays (Dewett & Jones, 2001) that it is increasingly important to understand their effect on the way our work is designed. And now, with digitalization becoming a bigger part every day, it is crucial to understand the effect of digitalization on the management of organizational processes and organizational actors, since digitalization has a potential to have a large effect on how management functions.

The term 'digitalization' stands for new possibilities provided by the use of more and new types of data, communication infrastructure and computing power (Isaksson, Harjunkoski, & Sand, 2018). This transformation is the result of the impact of the digital revolution, which derives from the extraordinary progress of technology and the opportunity for technology deployments to spread throughout the world (Sanchez & Zuntini, 2018). Digital transformations are understood as adopting disruptive technologies to increase productivity, value creation and the social welfare (Ebert & Duarte, 2018). It encompasses the combined effects of certain digital innovations and their interactions with organizational actors, structures or values and the way they shape, affect, replace or complement the existing way an organization is structured and organizational actors are managed (Hinings, Gegenhuber, & Greenwood, 2018).

Since the structure of every organization is a network that consists of its organizational actors and their relations (Barley, 2015), the way these actors are connected is an important factor in the structure of an organization. Technological developments have had a big impact on this (Colbert, Yee, & George, 2016). Structural changes are shaped by the disappearance of physical or geographical barriers and organizations get more overall integrated (Parker, Wall, & Cordery, 2001). Specific roles employees take on with their colleagues change and the importance and usage of certain relationships and teamwork adapt with these developments (Barley, 2015). These kinds of collaboration are more efficient in terms of both costs and time savings, as well as the fact that organizational actors are able to increase their work output, take on more tasks and assume a higher responsibility throughout the company due to information efficiencies (Dewett & Jones, 2001).

Next to the changes in the structure of organizations, the relationships between organizational actors change as well. The way management is exerted in organizations and the influence managers have changes dramatically through the earlier mentioned technological developments (Schwarzmueller, Brosi, Duman, & Welpel, 2018). For instance, empirical research has shown that leaders of virtual teams instead of leaders of face-to-face teams need to invest a lot more time and effort in to the team to get it to function in the same manner (Purvanova & Bono, 2009). Because of this, more decisions are being made based on collected and stored data through different information tools, instead of relying on the experience and views of more experienced managers.

McAfee and Brynjolfsson (2012) argue that when data is scarce or difficult to obtain, it makes sense to put certain people with

certain skills and relationships in place to make the decisions, based on their past experiences and intuitions. But the digital transformation in companies leads to more accessible data and more standardized models for managers to use in managing and supervising their employees. Employees will be reviewed more on hard facts on their output instead of a certain feeling or a biased relationship (McAfee & Brynjolfsson, 2012). This will lead to a certain degree of self-management, in which organizational actors are granted more autonomy when showing to be capable of taking up more responsibilities. For this kind of behavior and the ability to perform well as an individual within the organization, individuals will need a high degree of confidence and awareness in their own capabilities (Meier, Sachs, Stutz, & McSorley, 2017). Certain types of incentives can be put in place and structured rewards may lead to employees reaching higher levels of motivation, since rewards are based on measurable output instead of a certain feeling, ensuring the work done through these virtual teams is beneficial to the company (Hoch & Kozlowski, 2014).

So, managers are tasked with enabling employees to do their job efficiently and in a qualitatively satisfying way that produces the best results for the company. Therefore, managers are also a key factor in the implementation of new practices. Line managers today are seen as increasingly important in effectively implementing HRM practices (Bos-Nehles, Van Riemsdijk, & Looise, 2013). This means that managers have the task to manage and develop the organizational actors they are responsible for.

The research performed by Schwarzmueller et al. (2018) shows there are certain factors that are important for digitalization. Standardization increases, and employees get set benchmarks to achieve the same results as the company expects every one of their employees in a similar situation to attain the same results. This affects the way managers supervise and assess their employees as well, since more data is available to them. This makes similar assessments on similar performances easier. Also, since most jobs involve a lot of technological tools, collaboration increases because information sharing becomes easier (Gilson, Maynard, Young, Vartiainen, & Hakonen, 2015). In this research I will find out how this is done in a public organizations. The difference between public and private organizations, is that public organizations do not have a profit margin approach but are funded by public money and have a task in maintaining a certain threshold in for example public safety.

All these factors uncovered two macro-level dimensions of change, according to Schwarzmueller et al. (2018). *Structural changes* and *Increased importance of relationship-oriented leadership*. These dimensions focus on the changes in the way work is designed and structured and the way employees are managed.

## 1. RESEARCH OBJECTIVE

The goal of this thesis is to investigate the way digitalization influences and shapes the role of managers in managing organizational processes and employees, as well as investigating how organizational processes change. Since digitalization is such an integral part of our lives nowadays and exerts such a big influence, it is important to understand the effects digitalization has on management within organizations.

This leads to the following research question:

*In what way does digitalization shape the way organizational processes and organizational actors are managed in public organizations?*

This question is made up of two sub-questions:

- 1) *In what way does digitalization change organizational processes?*
- 2) *In what way does digitalization change the management of organizational actors?*

By answering these questions we want to gain a clearer view on the macro-dimensions of change through digital transformation and be able to explain where difficulties in adapting to the digital era lie, as well as being able to recognize the effects of the digital transformations on organizational structures and the management of organizational actors.

In theoretical terms, the goal of this research is to further explore the effects of digitalization on organizational structure and the management of organizational actors. For many of the themes mentioned in this research there is some literature, but many of these articles were either written before the great increase of technological usage, or during the earlier stages. This means that situations might have changed, since the past few years technological developments have emerged and developed extremely quickly.

In practical terms, as many organizations are not capable or are having problems with making the most out of the digital transformation (Fitzgerald, Kuschwitz, Bonnet, & Welch, 2014), research on the topic may aid organizations in understanding where the fault lies, or what they can do to improve the transformation's success. By looking at the different themes and dimensions described in this research, organizations will be able to assess their development in these dimensions and possibly recognize where improvements have to be made.

The macro-dimensions of change that emerged from the recent research by Schwarzmüller et al (2018) are dimensions that have been largely neglected in research on the topic and provide the framework on which this research will build. The goal will be for organizations to be able to get a grip on what is necessary to prepare and adjust to the current fast-moving transformation into the digital world in work-related perspective.

## 2. LITERATURE REVIEW

### 2.1 Organizational change

Every organization's structure is a network inscribed by the relations among its members (Barley, 2015). This means that the way its members are connected is an integral factor in the way the organization is structured. And the way that work is structured and carried out has been heavily impacted by technological developments (Colbert et al., 2016). Most of these developments are of a positive kind. Nowadays it is easy to reach all the information one needs through the digital tools often provided for by the organization itself. Information Technology and mobile devices are able to grant employees direct access to information (Oldham & Da Silva, 2015). This, in conjunction with the possibilities offered for collaboration through different digitalized tools offer endless opportunities for sharing and gaining information and knowledge. Also, different cost-technical benefits for the companies themselves are present, since with the emergence of digital usage in our day to day lives, more employees grow up being comfortable with technology. This gives organizations a low-cost, replicable solution for skill development through technology based instructions (Colbert et al., 2016).

Organizations change with the technological developments, since barriers between departments disappear and organizations as a whole become more integrated (Parker et al., 2001). The new developments trigger a change in the specific roles employees have with the organizational members around them and the way they interact with them (Barley, 2015). Teamwork in the regular sense is often being replaced by virtual teamwork (Gilson et al.,

2015). It is also less standard and less necessary for people to be located in the same location, since the virtual workplace makes communication and collaboration depend on the connectivity of the organizational actor, instead of its geographical location (Gilson et al., 2015). This in turn means the virtual collaboration systems, such as for example Google Drive, are both important and very useful (Colbert et al., 2016). But employees are also constantly connected because of the same reason, whether that means connected to work on personal time (constant connection through e-mail etc. when at home) (Mazmanian, 2013) or connected to your private life (family and friends through social media) when at work. It is clear that digitalization has a great effect on the way jobs are designed and that it shapes different organization processes. But it also changes the way employees have to be managed and therefore it is important to look at the perspective of the organizational actors as well.

### 2.2 The role of organizational actors

All of these new developments in the digital area also greatly impact the way management is exerted in organizations and with the earlier mentioned information technology, the level of power and the influence leaders have changed dramatically (Schwarzmueller et al., 2018). But managers in different layers of an organization have different roles they have to take on, based on their responsibilities. These roles are shaped by the nature of their work and the relationship with their employees.

In terms of manager tasks, new technologies will be in place to assist employees through all kinds of processes, such as decision making. Most decision-making processes are becoming based on certain types of data analysis and decision models already in place, instead of decisions made on own experiences. As mentioned in the introduction, McAfee and Brynjolfsson (2012) argue that the digital transformation in companies leads to a certain degree of self-management, in which organizational actors are granted more autonomy when showing to be capable of taking up more responsibilities. Managers expect more of their employees with regards to showing initiative in successfully adapting changes but also introducing different possible changes (Petrou, Demerouti, & Schaufeli, 2018). Needless to say, manager tasks will change but the necessity for good managers that are able to lead and support their employees remains very important. This is mentioned by Ernest Wilson III in his article on leadership in the digital age (Wilson III, 2004, p. 1): *'In this highly dynamic environment, leadership innovation and adaptability are critical, especially the leader's capacity to channel the right knowledge to the right people at the right time in the right place'*.

### 2.3 Themes of change

In order to be able to create a theoretical framework on which to build on, we will focus on the themes recognized by Schwarzmüller et al. (2018) (See appendix A) in their research towards changes in work design and leadership resulting from digital transformation. These themes encompass different aspects of not only organizational structure, but also the effect on individual employees and how this affects their work performance. These themes are:

- 1) Changes in the work-life and health domain
- 2) Use of information and communication technology
- 3) Performance and talent management
- 4) Organizational hierarchy

From these four key themes, Schwarzmüller et al. (2018) found 2 macro-level dimensions of change.

- 1) Structural changes of jobs
- 2) Relationship-oriented leadership

These themes are the basis from which the interview questions will be derived. The research will be predominantly focused on the macro dimensions of change: *structural changes* (in what way does digitalization change organizational processes?) and *increased importance of relationship-oriented leadership* (in what way does digitalization change the management of organizational actors?) which link up with the sub research questions.

### 2.3.1 Structural changes

This macro-level dimension encompasses the changes in the existing jobs, as well as the emergence of new jobs. Changes in current jobs mostly encompass automation, such as time recording or holiday requests, whereas the new jobs can emerge for issues such as online marketing, the development of apps, etc.

But structural changes are also a consequence of changes in the work-life setup and the increase in job demands due to these changes. With the technological changes, employees are less bound to a regular work space (Schwarzmueller et al., 2018). Wireless-enabled devices, such as the smartphones and laptops, that are connected through the internet, have changed the boundaries between work and personal life (Li & Yuan, 2018). The importance of overcoming these social and geographical limitations was recognized by Steve Jobs and essential for the success of the company NeXT (Avolio, Sosik, Kahai, & Baker, 2014). Leaders in this digital age will need to be flexible and have a widespread willingness to search out new knowledge and possibilities (Wilson III, 2004) to avoid falling behind on the competition.

There are also changes in the way employees work. Due to more data, data analysis and supporting programs employees are able to have control over a larger amount of processes and are able to make more informed decisions following this information (Dewett & Jones, 2001). The work processes become more standardized to ensure the same or similar output. On a longer-term vision, employees with certain tasks will be able to be replaced by technology, as processes become more automated, since the increase in intelligence of machinery and the machine-to-machine communication is able to create networking systems that are able to function without the need of human interaction (Montori, Bedogni, Di Felice, & Bononi, 2018). This has led to the fact that the greatest value adding attributes are not based on understanding and using data, since this is an increasingly routine task. The focus has shifted towards more creativity and innovating ideas when adding value as an employee. The biggest change that this encompasses is the fact that employees must be able to keep learning and developing in order to keep up with the exponentially growing use of technology.

### 2.3.2 Increased importance of relationship-oriented leadership

Even though the digitalization and technologization of work leads to more automation and standardization of processes, a high relationship-oriented way of managing seems to remain to be essential. Some leadership characteristics remain important in the new digital society and are able to motivate and support employees in a rapidly changing environment. Characteristics such as commitment, discipline and charisma are still essential for better performing employees (Wilson III, 2004).

In their work field, managers have more support than before due to the increase in data usage and systems in place to help managers perform their more routine tasks. This is necessary due to the increased complexity of their job in the other departments. The technologization of work also facilitates managers in their communication with employees, since there are more technological systems in place that are able to reach more

employees in less time. This might lead to a less personal relationship between managers and their employees, since more communication flows through digital systems.

Therefore, the traditional way of a manager being in the office and overseeing his or her employees does not suffice anymore. Managers have to be able to lead their teams from a distance, using the necessary tools and systems to supervise. Their competencies shift towards being able to take on a broader overview of the output, regardless of for examples differences due to geographical distances. Managers need to be able to cope with changes more quickly and decisively, in line with the time pressure and need for constant learning and change. They have to be able to recognize the need for and understand change and have the ability to implement this, in order to support their teams in doing so. As stated earlier, managers become more focused on actual output results because of standardization, technologization and more transparency throughout organizations. This makes it clearer for all employees in an organization (managers included) who does what and who performs better or not good enough. There is a shift towards the usage of knowledge and data as a focal point within production (Wilson III, 2004) which has a large influence on the way leadership is exerted.

## 3. METHODOLOGY

### 3.1 Research design setup

Following the literature review and predominantly the work of Schwarzmueller et al. (2018) on the themes of change, the following research question was set up.

*In what way does digitalization shape the way organizational processes and organizational actors are managed in public organizations?*

To answer this research question, the decision was made to perform an explorative-qualitative research. Due to the lack of much information and published research on the effect of digitalization on organizational processes and organizational actors in public organizations, it is necessary to focus on explorative research. Research in an exploratory manner looks to build theory instead of testing hypotheses (Dooley, 2009). Also, going into the research with prior hypotheses that might be false due to lack of up-to-date research on the subject, due to its actuality, might lead to false assumptions. Therefore, starting the research with an open mind is also very important.

Qualitative research refers to the research that is based on observations rather than statistical results of a test (Dooley, 2009). It involves going into the field and observing the actors and processes and linking the findings to the theories found. This way we will be able to not only assess the existing theories, but this also opens up a way to find if in our field of study different factors, influences or even theories arise.

From here, the interview questions were derived. These are the themes that address the way digitalization shapes the organizational processes and the way organizational actors act in public organizations. The set of interview questions will aid the research in answering the research question(s).

This empirical investigation was conducted in a governmental organization tasked with maintaining the safety of the society. This organization was selected for this research because the it intensively uses digital resources in the management of organizational processes and organizational actors. This is essential to discover the effect of digitalization on the organizational processes and the way employees are managed and supervised. This organization has recently adopted a large digitalization process, which is not yet completely implemented.

The results we found were used to create a framework of our own, which was compared with the one created from the work of Schwarzmüller et al. (2018).

### 3.2 Interviews

For the interviews a variety of employees of the organization were selected. The employees had to be involved in the digitalization process the organization was undergoing and therefore have experience with the way the organization operated before, how the digitalization process is being implemented and have ideas on how digitalization might influence the organization. We required employees from different layers and departments throughout the organization. For the specific names we asked our contacts in the organization, who are mainly responsible for the digitalization process, to deliver suitable interviewees. All of the employee names were provided by them. A total of 9 interviews were conducted with employees, line managers and department heads who were involved with the digitalization processes within the organization.

All of the interviews were semi-structured and took place at different locations of the organization or at the University of Twente. The interviews took around 60 minutes on average and followed similar questioning. In addition, two interviews were conducted over the phone because of the fact that the selected interviewees were not able to meet in person due to personal reasons.

All interviews focused on how digitalization had influenced organizational processes or the management of organizational actors, as well as what the interviewees saw as potential ways in which digitalization could have an impact in the future.

### 3.3 Coding

In order to be able to compare and analyze the data gathered from the interviews, they were transcribed and then coded. The basis for the coding schemes was built on the theoretical framework created by Schwarzmüller et al. (2018). These two main themes, concerning the work structure and the management of organizational actors, were recognized during the coding process as well. Aside from these themes, a clear code group became apparent that was concerned with the drivers, both internal and external. The last theme that was found elaborated on the necessities and main concerns with the digitalization processes.

A total of 22 second order categories were identified within the interviews, divided between 4 main themes (figure 1). A more readable version of the code scheme can be found in Appendix B. These codes provide the basis of the results and the framework that has been created. Each second order category is made up of one or more codes that were identified during the processing of the interviews. All of the interviews have been thoroughly analyzed and the relevant data has been used to provide with a view of the current state of the organization when it comes to their digitalization process.

Figure 1. The coding scheme

First order categories	Second order categories	Key themes of Digitalization
Improve the quality of work	External drivers	Drivers of digitalization
Increase in transparency	Internal drivers	
Input vs. Output based		Implications for work structure
Working uniformly		
Decisions made concerning collaborative meetings	Changes in collaboration	
Usage of different information systems	Changes in the way of working	
Standardizing tasks	Changes in hierarchical structures	
Increase in coordinating layers	Flexibility of work locations	
Differences in work locations	Implementation of a new inspection system	
New information system	Performance evaluation	
Formal performance evaluation systems	Result/output-oriented work	
Changes in what employees are evaluated on	Risk-oriented work	
Shift towards risk-oriented work	Work-supporting digital systems	Implications for actor management
Increase in information support for employees	Changes in autonomy	
Less degrees of freedom	Changes in job competencies	
Increase in job demands	Changes in workload	
Eagerness to learn and deal with changes	Constant connectivity	
Increase in work pressure	Decision making involvement	
Decrease of boundaries between work and private life	Differences in employee generations	
Involving employees in decision making processes	Who is in the lead?	
Digital adaptation by older generations	Employee communication	
Employee in the lead	Job pride	
Manager in the lead		Factors influencing the implementation of digitalization
Importance of personal interactions		
Quality of communication		
Pride in the work employees do		
Pride in the organization employees work for	Concerns with Digitalization	
Implementation speed		
Decrease in autonomy		
Lack of functioning information systems		
Getting employees on board with the changes		
From input to output		
Give the time and space for adaptation	Necessities for successful implementation	

## 4. RESULTS

The organization that has been analyzed is an organization tasked with ensuring the safety in the society by executing inspections and maintaining legislation. The organization operates nationwide and is organized by the government. Recently they have adopted certain new systems and they implemented changes in organizational processes and the way they work. These changes have been driven by certain factors that will be explained in a more detailed way in the ‘drivers of digitalization’ part. There is one main new system that has completely overhauled the way the executing employees work, which is the biggest portion of the work performed by organizational actors. This system replaces most paperwork and enables employees to have more information at hand to execute their job.

The results of analyzing the interviews have led to the distinction of 4 main categories. (1) Drivers of digitalization in the organization, (2) Implications for work structure, (3) Implications for actor management and (4) the factors influencing the implementation of digitalization.

### 4.1 Drivers of digitalization in the organization

The first category, ‘Drivers of digitalization in the organization’ describes the reasons behind the digitalization choices in the

organization. Why a need for a more digitalized way of working was recognized and what the organization's current state is. There are also potential future applications of digitalization which encompass the ideas interview respondents have on the potential benefits and the applications of digitalization that have the potential to change the way the organization works in order to improve the overall output of the organization.

One of the main drivers is the pressure from the government to improve the quality of the work the organization delivers. The government requires the organization to deliver more reliable data and take on a more proactive than reactive approach, keep the safety of the society in high regard and be transparent about their operations. Therefore, the organization feels a strong need to strengthen their information position. The feeling is that data and analysis is often weaker than they would want it to be in order to ensure the safety of the society. Governmental authorities in general shift towards transparent operations and in order to do so, your data and processes have to be organized correctly to ensure the fact that the data is both attainable and correct.

*'Much more than in the past, organizations like ours, and governmental in general, shift towards making it very clear and very transparent what exactly it is you do, and that means that you, for example, make your inspection data public.'* (DH2)<sup>1</sup>

So, as a government authority you need your data to be correct when you show data to the public, especially because of the fact that organizations like these are under constant scrutiny. As a governmental authority the organization is tasked with the safety of the society and therefore has great responsibility. And in that case, it is very detrimental to the organization and its credibility if the published data is incorrect. And as a governmental authority, credibility is important to maintain compliance levels.

*'In order to be able to make better analysis, in order to be able to recognize trends better. And also, so that you can give quicker answers to questions from outside and that if you answer them you can be certain that you have given the correct answer.'* (DH3)<sup>2</sup>

These outside drivers are complemented by internal drivers. Organizational actors take great pride in their work and their responsibility for the safety of the society. So, their general goal is to improve their work and shift towards a quality-focused approach, instead of the quantity-focused approach they have used in the past. To improve quality and efficiency, managers and department heads want to take on a proactive approach instead of a reactive approach through the usage of data for risk-prediction models. These trends, and the analysis of these trends, is essential for the organization to change the way they work, and work towards a more risk-predicting way of working. But the analysts are not able to do so in a dependable manner if data isn't comparable or trustworthy.

*'Instead now I have to make sure, is the information I get, from the different systems we have, am I able to compare those with*

*each other? So, the trustworthiness of our data is just small.'* (LM4)<sup>3</sup>

This way the organization will be able to be quicker in recognizing dangerous areas instead of having to react to a situation after it already happened. In order to be able to collect, compare and analyze data and create these risk-prediction models, it is necessary the different actors and processes within organization are in line with each other. The organization is a result of many mergers which has led to the organization having many different systems that make it difficult to compare data. In order to make the organization more efficient and internally comparable, it is necessary to work in a more uniform manner.

This change in the way the organization operates is a recurring theme within multiple interviews. A risk-predicting way of working is a potential application multiple managers see positively. This is driven by a discrepancy managers recognize between the goal of the organization and the way the organization is organized. A general consensus within the organization is that the organization is organized input based. A quantifiable method where the amount of inspections, for example, is assessed and the number of hours spent by a department is assessed. Whereas most managers would prefer a result- (or output) oriented way of working where departments or teams are evaluated more on the result or quality they deliver, instead of the quantity they deliver.

*'We come from a situation, and we actually still are, where we work very input based (...). While you actually want to steer towards what I call, output-based working. Yes. Because I want to see what results it delivers, what products we deliver, what deliverables there are, and we are actually directed much less on that'* (DH2)<sup>4</sup>

The organizational need for better analysis and the organizational need for better data are the two main drivers of digitalization within the organization and are driven by both outside and inside requirements and goals towards a safer society. But these changes have their implications towards the way the organization is structured and how organizational actors have to be managed.

## 4.2 Implications for work structure

This theme encompasses the implications digitalization has on the work structure within the organization. This consists mainly of the way the work is structured, as well as what the organizational goal is and how they achieve this goal. Or, how digitalization shapes the way organizational processes are managed.

Managers recognize that working uniformly might lead to more coordination through a more hierarchical structure with more intermediaries, because of more units of control being implemented at each stage, which might negatively impact the efficiency and employee autonomy, on which I will elaborate more in the next chapter on the managing of organizational actors.

*'The more uniform it all becomes, more coordination will be needed. And if you don't arrange that accordingly, you can suffer*

<sup>1</sup> *'Veel meer dan vroeger zijn we met organisaties als de onze, en de overheid in zijn algemeenheid, die bewegen zich in de richting van heel duidelijk en transparant maken wat je precies doet, en dat betekent dat ook dat je bijvoorbeeld je inspectiegegevens openbaar maakt.'* (DH2)

<sup>2</sup> *'Zodat je betere analyses kunt maken, dat je beter de trends kunt zien. En dat je ook op vragen van buiten ook sneller antwoord kunt geven en dat als je het antwoord geeft dat je dan ook zeker weet dat je het juiste antwoord gegeven hebt.'* (DH3)

<sup>3</sup> *'Nu moet ik juist kijken, is de informatie die ik krijg, uit verschillende systemen die wij hebben, kan ik die wel met elkaar vergelijken. Dus die die betrouwbaarheid van onze data zijn gewoon. Ja klein.'* (LM4)

<sup>4</sup> *'wij komen uit een situatie en dat is eigenlijk nog steeds zo, dat we behoorlijk input gestuurd werken. (...) Terwijl je eigenlijk veel meer toe zou willen naar wat ik output sturing noem. Ja. Want ik wil graag zien welke resultaten levert het op, welke producten leveren we, welke deliverables zijn er en daar wordt eigenlijk veel veel minder op gestuurd.'* (DH2)

from the coordination. And if it doesn't work properly it will only lead to more hierarchy. (LM4)<sup>5</sup>

The expected benefits of working uniformly might have a negative impact when they are not structured in a satisfactory fashion. Working uniformly should be nothing more than providing the frameworks within which teams or employees have to work. Within that framework, autonomy should be granted, and employees should be able to have a say in how these goals are attained. And the goals and boundaries, those are set.

One element of working uniformly and a better comparable way of structuring data and digital systems the organization uses is found in the implementation of the new system. This can be seen as the embodiment of the digital transformation the organization is going through, as it is the most influential change noticeable on operational level.

*'Obviously we have the big change trajectory around the new inspection system, in which we try to provide inspectors with the information they need to be able to perform their inspections well and on the other hand to make the research more uniformly. So, people take on matters in a more structured way.'* (DH3)<sup>6</sup>

This new system ensures comparable data, which is important for the better employment of data usage, data analysis and work structuring, but also improves the information knowledge for the operational employees. These are standardized tasks supported by digital systems. All of these factors improve efficiency and quality of the product the organization delivers by supporting the inspectors in their work.

This type of standardizing of work also has its implications on the way employees or team collaborate. Because of digitalization, the boundaries for set workplaces or working hours are blurred. Employees live very spread out through the country because of the fact that the organization used to be regionally based. Now that the organization is more centralized, this provides difficulties for people who are based in the outskirts of the country. Therefore, the organization enables different working environments, such as working from home. This is a result of digitalization, but it also needs a well laid out digital structure in order to facilitate collaboration on different hours or locations. This also means people become more dependent of good information and good data from each other. They must rely on one another to deliver good work.

*'Through digitalization for, let's say, doing things more unambiguously, it means that you also are dependent of each other and that means that coordination points become increasingly important and will be expanded a lot'* (LM4)<sup>7</sup>

Furthermore, results of the interviews show that managers find it important to implement a certain structure in communication to ensure that employees, and managers, see each other at least one time each week. It is an active choice to plan these kinds of weekly meetings, often as the 'start of the week', but essential to

<sup>5</sup> 'Hoe uniformer het allemaal wordt, hoe meer coördinatie er dus nodig is, en als je dat niet goed inregelt. Dan krijg je alleen maar last van die coördinatie. En als je, als het dus niet goed werkt is dan krijg je alleen maar meer hiërarchie' (LM4)

<sup>6</sup> 'We hebben natuurlijk de grote omslag traject rondom het nieuwe systeem, waarin we proberen inspecteurs de informatie te geven die ze nodig hebben om goed te kunnen inspecteren en aan de andere kant om het onderzoek in uniformer te krijgen. Zodat mensen via, ja, meer gestructureerd zaken aanpakken.' (DH3)

<sup>7</sup> 'Kijk door digitalisering voor het, zeg maar, het veel meer eenduidig dingen doen, betekent het ook dat je ook afhankelijk van elkaar bent en dat betekent dat coördinatie punten alleen nog maar belangrijker worden en heel erg uivergroot gaan worden' (LM4)

keep the personal interactions between employees, but also between employees and managers. Managers also need this in order to have an idea of the employee performances that go further than only output based factors. Managers indicate that they use actual output mostly as a formality in the formal staff performance evaluation. Therefore, the way employees are evaluated hasn't changed content-wise.

*'I believe that, in the core, it hasn't changed because I have always been used to look at the competencies people have and not necessarily judge people on an amount of this or that.'* (DH2)<sup>8</sup>

This factor is strengthened by the fact that most managers, as mentioned before, want to shift towards a more result, or output-based structure instead of an input-based structure. This would ensure that the quality of the result is the most important factor of output for an employee, team, or even the organization. It would also ensure a better alignment between organizational goals and the operational work. The mission and the vision of the organization are clear, but the way the operational activities are assessed is not always in line with these. If work were to be assessed on the contribution towards the organizational goals, quality would improve, as well as employee satisfaction. This more result- or output-based view, gives way for a different systematic the organization is looking towards. A system where risks are assessed and the biggest threats, or biggest risks, are targeted. This also focusses more on the end result instead of the amount of inspections or number of hours put into the inspections.

*'You rather want to aim more towards the front [of the process] because you mostly want to inspect the companies where there is a chance of a risk for the civilian, you rather want to inspect those, because that is where you can make a difference.'* (DH2)<sup>9</sup>

By building these risk-predictive systems and being more oriented towards the organizations that provide the biggest risks, the operations can be executed in a more efficient fashion, as well as the fact that such a system would allow the company to explain their choices and how they expect to improve consumer safety, whilst inspecting less companies.

*'By developing a kind of risk-predicting model, you can increase your risk-predicting abilities. And then you can make more calculated choices on which companies you inspect.'* (DH2)<sup>10</sup>

### 4.3 Implications for actor management

This theme encompasses the implications digitalization has on the management of actors within the organization. Actor management involves the way jobs have changed in terms of workload, autonomy, competencies, the amount of involvement actors have in decision making processes and the employee satisfaction levels. It also regards personal relations and communication factors. The biggest implications seem to lie in the degrees of autonomy employees keep. The idea of digital systems is that they support work and facilitate in executing your

<sup>8</sup> 'Dat is eigenlijk niet veranderd omdat ik altijd al gewend was om heel sterk naar de competenties te kijken die mensen hebben en niet af te rekenen op aantal van dit of dat.' (DH2)

<sup>9</sup> 'Je wil natuurlijk liever meer richten aan de voorkant [van het proces] omdat je vooral die bedrijven wil inspecteren waar (...) de kans dat er risico's zijn voor de burger, dat je die het liefst wil inspecteren, want daar kun je het verschil maken.' (DH2)

<sup>10</sup> 'Door er op een bepaalde manier naar te kijken, en op die manier eigenlijk een soort risicomodel te ontwikkelen, kan je risicovoorspellend niveau omhoog gaan. En kun je op basis daarvan onderbouwd keuzes maken bij welke verkooppunten je gaat inspecteren' (DH2)

work. But in some cases, this might work counterproductive. One line-manager said the following:

*'A complaint coming from the group that was the first to adopt the new system was that they felt like they were being steered, that they couldn't take on anything different if they observed something.'* (LM2)<sup>11</sup>

Part of the reason employees might feel like this is the way the organization has operated in the past. Employees often had the freedom to deviate from agreements based on personal assessments. This is difficult to regulate and also makes it difficult to explain, due to the earlier mentioned transparency issues. But due to the fact that employees were used to a different way of working, this leads to resistance and less motivation. This is recognized by managers and head of departments alike. The fact that there is a risk in the fact that employees feel they are not valued in their professionalism.

This leads to one of the biggest challenges the organization faces. The organization employed people who are very involved and proud of the work they do. But these employees are a lot less involved with the organization itself, and the way the organization operates. This is strengthened by employee research the organization has conducted.

*'What you see is that people, in general, are very proud and involved with the work they do. But a lot less with the organization itself. So, there is some kind of 'gap' there.'* (DH2)<sup>12</sup>

This gap that is mentioned between pride towards the result of the work they do, and the organizations operations is recognized by manager of all layers. Less involvement amongst the employees will lead to a less successful adoption of the digitalization processes. These reduced levels of autonomy further indicate the increase in hierarchical structures the organization is facing at this moment. And it makes it harder to manage the increased levels of workload employees face. It is mentioned that certain managers would like to be able to give their employees more decision-making freedom.

*'Because I experience that people, to get there, work 10 percent harder. Because they feel like: 'this is mine'.'* (LM3)<sup>13</sup>

From the interviews it becomes clear that the managers and head of departments all want employees to be included and have the feeling they are valued as they recognize this is important to be able to successfully implement the new way of working within the organization. More so with the high workload there is. Even though digitally supporting systems should support and therefore be able to reduce or at least keep

workloads at the same level, this is not the case. But this does not necessarily mean this is because of digitalization.

*'They have cut back a lot on underlying, supporting tasks over the course of time. The inspector has to do all of the administrative tasks himself now. And what we see is that that creates a huge amount of workload.'* (LM4)<sup>14</sup>

So, what comes forward from the interviews is that even though digitalization and the consequences thereof make certain tasks easier to perform, this often leads to an increase in work in other areas. An example that is mentioned is that though it is beneficial in certain areas to perform certain tasks in a more efficient and smart manner, the current state leads to an increase in controlling tasks in other areas.

*'In some areas I recognize that it can really help if you take on work in a smarter fashion. In particular the technical / administrative side, in order to have more time for the other work. But in different areas you see the exact opposite. There you find a large amount of control on what we do.'* (DH2)<sup>15</sup>

What is said, and that is reinforced by findings mentioned earlier in the implications for work structure, is that the digitalization in this organization leads to more control tasks and a tighter set of rules employees have to follow. Findings are that the preparation of inspections, in a more risk-predicting model, takes up more time and that unavoidably this will lead to the organization to be able to do less of them. Qualitatively the inspections will be better focused on higher risk companies, but as it stands, in the preparing phase the work costs more time due to the more controlling environment. And even though this should free up time in the executive phase, this is not the case. This is because of a few different factors. First of all, a not fully functional reorganization, also encompassing the addition of the new digital systems, has led to employees having to work with workarounds in order to be able to perform their jobs. Furthermore, cuts in the personnel has made it so that other employees had to work extra time in order to keep the organization running. As mentioned before, the organization contains a lot of employees that are very much involved with the work they do. Because of this, many employees take on too much work.

*'Because of the loyalty they do too much. They take on extra tasks, because they feel like they have to do more.'* (DH1)<sup>16</sup>

<sup>11</sup> 'een gehoorde klacht vanuit die groep die als eerste ging over naar het nieuwe systeem is dat ze dachten dat, nou ja, dat ze heel erg gekneet worden, dat ze niks meer kunnen oppakken als ze dingen zien.' (LM2)

<sup>12</sup> 'Wat je daar in ziet, is dat de mensen over het algemeen heel trots zijn, en betrokken zijn, bij het werk dat ze doen. Maar veel minder bij de organisatie als zodanig. (...) Dus daar zit een soort 'gap' tussen' (DH2)

<sup>13</sup> 'Want ik krijg dat mensen, om daar te komen. 10 procent harder lopen. Omdat ze zeggen van dit is van mij' (LM3)

<sup>14</sup> 'ze hebben natuurlijk in de loop der tijd ongelooflijk bezuinigd in die onderliggende, ondersteunende taken. Administratieve taken, hè, dat moet de inspecteur allemaal zelf doen nu. En wat we zien is dat daar een gigantische werkdruk door ontstaat' (LM4)

<sup>15</sup> 'In sommige gebieden zie ik dat het echt wel kan helpen als je zaken slimmer aanpakt. Met name de technisch/administratieve kant, dat je meer tijd overhoudt voor het andere werk. Maar op een ander gebied, daar zie je juist het omgekeerde. Daar komt zo'n enorme controle toren op wat we doen' (DH2)

<sup>16</sup> 'vanwege de loyaliteit draaien ze eigenlijk te veel. Ze nemen te veel op zich, ze vinden dat ze nog wat dingen moeten doen' (DH1)



This situation, where employees do not communicate clearly about the extra tasks they take on and the workload that becomes too high, is an unwanted one according to all of the managers. But the responsibility lies in two areas. The first being the employee being in the lead and the second is about the manager being in the lead. Very important for this are the interpersonal relations and the quality of communication leading to those relations. According to the managers, this starts with the employees being in the lead, personal leadership. Employees are expected to be upfront about their work in order for managers to be able to truly assess the workload and be able to manage this accordingly. This type of personal leadership is wanted also in order to increase professionalism levels which are needed for a more digitalized environment to flourish.

It is therefore increasingly important employees themselves assess and understand their responsibilities and what is expected of them with regards to output. By executing their own tasks primarily instead of assisting colleagues, to not jeopardize the end product a department has to deliver. This does not by any means indicate they aren't allowed to help out colleagues, but it is important for them to prioritize correctly. On the other side of the spectrum the responsibility of managers comes in to play. As a manager, one is responsible for both the output of work and for their employees. These managers have to be wary not to over encumber their employees, since the earlier mentioned burnouts negatively impact the organizations output. It is increasingly difficult to assess employee's health when certain employees have such a large sense of responsibility and loyalty to their job, as they might not communicate clearly about it.

But in order to have this type of knowledge of your employees and to really know how they are performing, and how heavy their actual workload is, digitalization has the benefit that will enable managers to have a clearer view of the aforementioned performance and workload. Managers hope that the time they gain can be put to use towards the personal relations they have with their employees. This builds relationships and trust and will positively benefit the effort employees put into their job. Those kinds of relationships are essential for adopting new processes or technologies. Also, it will ensure managers are aware of where an employee will perform well and what not.

#### 4.4 Factors influencing the implementation of digitalization

This theme encompasses the biggest concerns with digitalization processes recognized by managers and employees in the organization and the necessities that have to be considered for successful implementation.

<sup>17</sup> 'omdat de mensen eigenlijk van tevoren niet al in een soort werkwijze zaten wat je gaat automatiseren. Nee je gaat 'm automatiseren en dan probeer je de mensen in die werkwijze te krijgen, ..., wat gebeurt er dan: eigenlijk dat de mensen de oude werkwijze proberen in het nieuwe systeem te proppen.' (DHI)

The main concerns that were recognized are about the speed in which digitalization processes have been implemented and the speed in which the organizational processes and the organizational employee formation have been impacted. The systems and organizational processes have been changed before the way of working has been adapted.

*'Because people weren't in some kind of different way of working which you then in turn automate. No, you first automate and then you try to fit the people into that way of working. What then happens: the people try to cram their old methods into the new system.'* (DHI)<sup>17</sup>

The result is that these digitalization processes have not entirely led to a different way of working, but towards a situation where employees can't get their 'old' way of working to work within the new systems. Changing the way of working at the same time as changing the organizational processes through digitalization is a difficult challenge. This is amplified by the organization that has been reducing the employee workforce already as an expected outcome of digitalization. But since the impact of the digitalization processes has not been as expected, the workforce that in reality needs to be larger to cope with the arising problems, is decreasing. This, in turn, delivers an enormous amount of pressure on both the organization as a whole, as the individual employees. These amounts of pressure on individual employees leads to employees not being able to deliver the same quality of work, let alone a higher quality of work, which is one of the focus points of the organization.

*'We are already shrinking the employee formation, while we actually need more people because it is not going the way we thought it would go at all.'* (DHI)<sup>18</sup>

An addition to these concerns is the dependency on different persons and systems that the digitalization has brought. Problem solving is often long-winded due to the fact that it has to go through multiple external actors in different departments. Aside from that, when a certain system of program doesn't work or isn't compatible yet, some processes directly stand still. This degree of dependency is also found in experiences mostly line managers recognize. The feeling prevails that the system is the goal instead of a supporting tool that should make work easier.

*'Every now and then I get the feeling we are working for the system and not in order to make our work easier, but that we are being led by the system and not by the purpose of the work.'* (LMI)<sup>19</sup>

Dependency can also be found with employees that have to take on extra tasks when other colleagues take on too much work. Executing employees want the result of their work, societal

<sup>18</sup> 'we zijn al aan het krimpen met formatie, terwijl we eigenlijk meer mensen nodig hebben omdat het helemaal niet gaat zoals we dachten dat het zou gaan' (DHI)

<sup>19</sup> 'ik heb af en toe de indruk dat we werken voor het systeem en niet om ons werk gemakkelijker te maken, maar dat we geleid worden door het systeem en niet door het doel van de werkzaamheden' (LMI)

safety, to be as high as possible, so they will take on extra work in order to maintain this. What this leads to is that when people take on too much work and don't communicate this clearly enough with their managers, they run the risk of burning out. And when employee's burnout, the same cycle starts over.

But because of the fact that the work of the burned-out employees goes on, other employees have to step in and take over, aside from their already piled up tasks. This accumulation has a negative impact on the employees and their output.

In order to cope with the current concerns, managers have similar ideas. The main concern is the implementation speed and the underlying consequences. The managers have to get the time to be enabled to change the way of working the organization is used to. Then, the digitalization aspects can be used as a supporting tool to that new way of working, instead of the other way around. In order to change this way of working, there has to be room for managers and employees to grow and make decisions.

*'The what has to be determined by our Executive Board and the senior management, but the how not. Within those boundaries, people have to be able to determine themselves within the group in which they are located.'* (LM3)<sup>20</sup>

Managers understand that there are certain frames within which the organization has to perform. This are certain set boundaries and goals that have to be attained. But both managers and employees from different layers and departments feel the need for autonomy within how these goals are attained, whilst remaining within these set boundaries. This would give some autonomy back to the employees that have knowledge on the matter and enables employees and managers the regain their sense of appreciation.

By involving employees in the decision-making processes and ensuring everyone understands why certain changes are needed and the benefits it will entail for both the way of working, as the quality of work, employees can be motivated to make the most out of the new systems. These employees could then in turn become ambassadors of the new way of working towards other colleagues and employees within the organization.

Lastly, the organization needs to ensure the organizational management corresponds with the assessment model and the way the executing departments actually function. A more output-based view where the quality of the performed work is assessed, instead of more input-based views where the amount of inspections is assessed, and not the quality of those inspections.

## 5. DISCUSSION

### 5.1 Theoretical implications

The goal of this paper was to research the influence digitalization has on organizational processes and the management of organizational actors. The base for this research was built on the prior work of Schwarzmüller et al. (2018). The macro-level change dimension found in that research were the pillars of change on which we focused our research.

When comparing the results found with the results found in the research performed by Schwarzmüller et al. (2018) many similarities arise. In terms of structural changes to organizational processes, the findings that job demands and the competency requirements increase are replicated. Yet, in the research by Schwarzmüller et al. (2018), it is argued that employees are granted more influence and autonomy, whereas in the researched organization this wasn't the case. Even though most managers wanted to grant their employees more autonomy and influence, at the current state of the transformation and adaption of the digitalization, this was not possible. The digitalization processes even sparked less employee autonomy, more coordination and control and thus more hierarchy in the organization. Employees feel like they are being stripped from their freedom and that they are being closely steered by the organization's upper layers.

It must be noted that this might be more of a consequence of the adoption process than being a direct consequence of digitalization.

The findings that more tasks are being automated and standardized was also replicated, as more routine tasks and administrative tasks have been standardized and are operated in a more efficient manner.

The results do strongly mention the fact that the organization has adapted towards a very data-driven organization. Many decisions and processes are now based on the use of data instead of past experience and their structure is being digitally transformed in order to make the most of the data they have, as well as gathering more and more reliable data.

In terms of changes in the management of organizational actors, the increase in job demands and the effect this has on employee health is another similarity. Since work pressure increases, the need for high relationship-orientation between managers and employees is needed in order to provide the support for employees to cope with the increase in workload. With digitalization influencing the way employees work and where they work, due to flexible working hours and working locations, the personal relations between both managers and employees, and employees between themselves, this becomes increasingly difficult. This highlights the need for extra awareness and attention from the managers to maintain regular ways of communication and teambuilding, since this motivates employees, which is highly necessary to cope with increased demands.

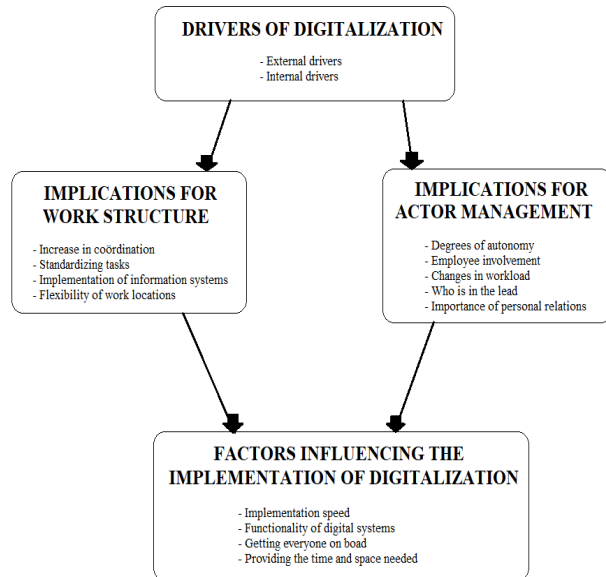
Lastly, the article by Schwarzmüller et al. (2018) mentions an increase in output-orientation when assessing the quality of work performed by employees. Even though this is not the case momentarily at the researched organization, this was mentioned by managers as a wish they held for the future of the organization. The organization as of now has a focus on input variables, and therefore more on quantitative factors. Whereas most managers, and to a certain amount employees, would rather be assessed on their output variables, and therefore on qualitative

<sup>20</sup> *'Het wát moet bepaald worden door onze Directie Raad en het hoge kader, maar het hóe. Binnen die kaders moeten mensen dat zelf kunnen bepalen in de groep waar ze zitten'* (LM3)

factors. This is a logical step since the organization as a whole has a focus on the qualitative sides of their work, improving the quality of their product as a whole.

To summarize the results and the process of the implementation of digitalization, the following framework (figure 2) was created. A larger version of the figure can be found in Appendix C. Here the key themes that were found are visualized, along with the most essential underlying themes.

**Figure 2. Framework, what happens during the implementation of digitalization?**



## 5.2 Practical implications

The main practical implications the research uncovered is that digital transformation is a time-consuming process. The main concern that arose from the research is the speed with which the transformation was being implemented. The process needs to be adopted patiently whilst ensuring the structure of the organizational processes is correct and the goals are attainable. The way the organization functions has to be changed, before the new systems are implemented, as the process of changing both at the same time leads to not being able to implement either in a satisfactory manner. This mainly leads to an increase in work pressure and inefficient processes due to certain systems not working as they should. This might also lead to over encumbered employees, with its own consequences. Managers need to have the time to implement and adapt changes and be able to motivate and explain their employees why certain changes are being implemented.

The biggest advice to organizations attempting to implement digitalization, is that a clear view has to be set up of the current state of the organization, mainly the way processes and work is organized, and the future state the organization needs to be able to successfully adopt new technologies. Digital transformation should be a step in using different tools and programs to aid the work the organization is currently performing, instead of changing the way the organization works altogether. If the organization wishes to work in a different manner, the processes should be in line with the new way of working first, before overhauling the way business operations are conducted. Also, a patient approach is needed since the adaptation of new technology or processes is a time-consuming one, and increased pressure along might negatively impact the way digitalization is adapted.

## 6. CONCLUSION

This research paper sought to answer the following research question:

*In what way does digitalization shape the way organizational processes and organizational actors are managed in public organizations?*

In order to be able to answer this question, the main research question was split up in two sub-questions.

- 1) *In what way does digitalization change organizational processes?*
- 2) *In what way does digitalization change the management of organizational actors?*

Organizational processes are heavily influenced by digitalization. The focal point is that more processes and decisions are being led by the use of data and facts, instead of experience. This leads to a more coordinated work structure where employees are expected to work in a uniform manner to ensure similar output with similar input variables, as well as standardizing more tasks and being able to perform tasks in a more efficient manner due to new technological systems and the use of more attainable and trustworthy data. Since this does lead to a more coordinated work structure with more units of control, this in turn leads to more hierarchy within the organization.

The management of organizational actors is influenced by digitalization through the need for a different approach from managers. With the increase in job demands managers need to take on more personal relationship-oriented approach, in order to be able to communicate and motivate their employees to be able to enable them to cope with the increase in pressure and demands.

## 7. LIMITATIONS

There are a few limitations to the research. First of all, the interviews were mostly conducted with managers and very few were conducted with employees. For a more complete overview of the implications, it could prove beneficial to gather information from all layers and involve lower employees.

The other limitation is that the results of the interviews can be seen as a snapshot of the situation the organization itself is in. Since the organization is in the process of implementing and adapting to the digital transformation, part of the outcomes might be the result of the adaptation process, rather than the result of digital transformation. To cover this, a possible solution would be to return to the organization on a later date, in order to see how the influence of digital transformation processes has turned out.

## 8. ACKNOWLEDGEMENT

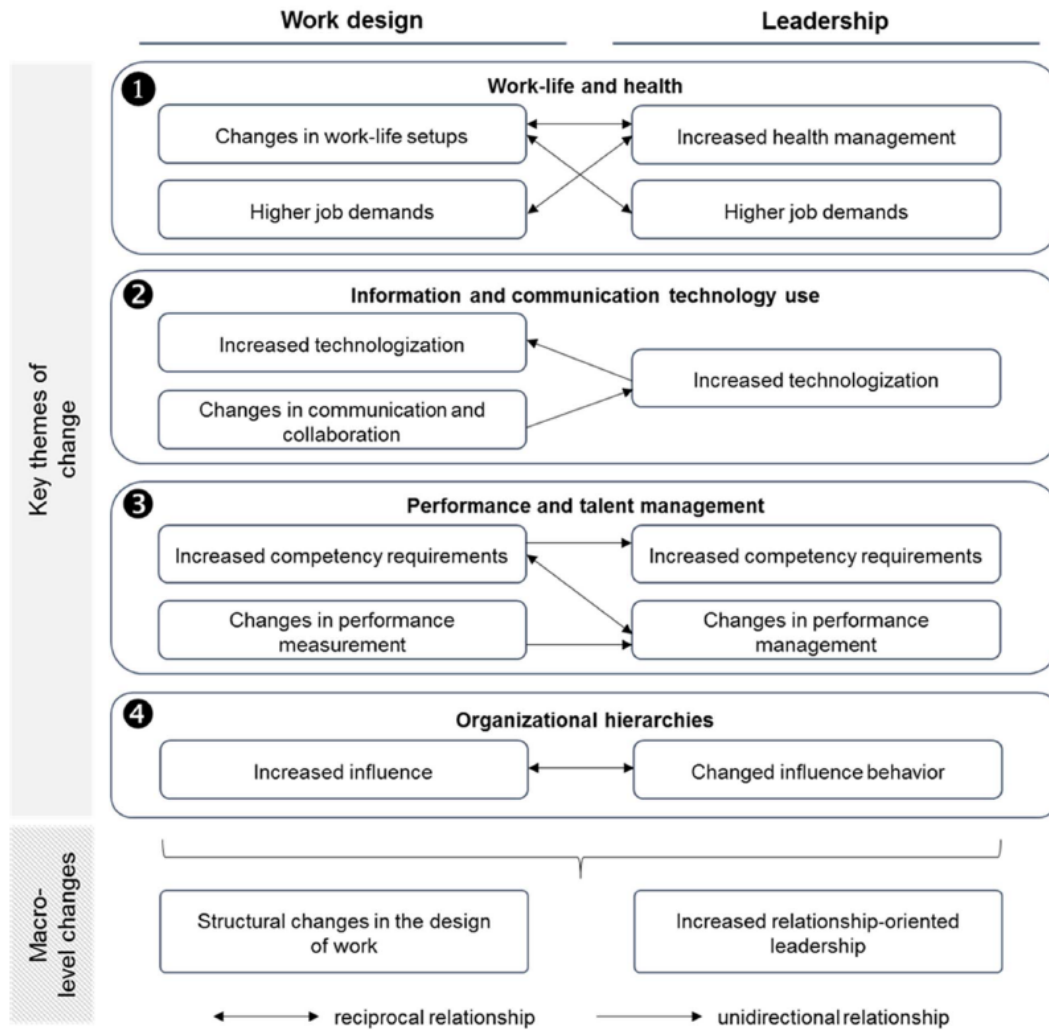
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# APPENDIX

A. Schwarzmüller et al. (2018). Key themes of change



## B. Coding scheme

First order categories	Second order categories	Key themes of Digitalization
Improve the quality of work	External drivers	<b>Drivers of digitalization</b>
Increase in transparency		
Input vs. Output based	Internal drivers	
Working uniformly		
Decisions made concerning collaborative meetings	Changes in collaboration	<b>Implications for work structure</b>
Usage of different information systems	Changes in the way of working	
Standardizing tasks		
Increase in coördinating layers	Changes in hierarchical structures	
Differences in work locations	Flexibility of work locations	
New information system	Implementation of a new inspection system	
Formal performance evaluation systems	Performance evaluation	
Changes in what employees are evaluated on	Result/output-oriented work	
Shift towards risk-oriented work	Risk-oriented work	
Increase in information support for employees	Work-supporting digital systems	
Less degrees of freedom	Changes in autonomy	<b>Implications for actor management</b>
Increase in job demands	Changes in job competencies	
Eagerness to learn and deal with changes		
Increase in work pressure	Changes in workload	
Decrease of boundaries between work and private life	Constant connectivity	
Involving employees in decision making processes	Decision making involvement	
Digital adaptation by older generations	Differences in employee generations	
Employee in the lead	Who is in the lead?	
Manager in the lead		
Importance of personal interactions	Employee communication	
Quality of communication		
Pride in the work employees do	Job pride	
Pride in the organization employees work for		
Implementation speed	Concerns with Digitalization	
Decrease in autonomy		
Lack of functioning information systems	Necessities for succesful implementation	
Getting employees on board with the changes		
From input to output		
Give the time and space for adaptation		

## C. Framework. What happens during the implementation of digitalization?

