

Digitalisation and Ageing Employees – Change and Learning

Case Company: Viherrakenne Jaakkola Oy



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TIIVISTELMÄ

Tämän opinnäytteen tarkoitus oli tutkia digitalisoitumista pienissä ja keskisuurissa yrityksissä, joissa on ikääntyviä työntekijöitä. Tutkimuksessa pyrittiin selvittämään, onko työntekijöiden ikä esteenä kehitykselle vai löytyykö muita esteitä. Ikääntyvien työntekijöiden suuri joukko on saatava mukaan digitalisaatioon.

Aikaisempi tutkimus Hämeen alueelta osoitti, että pienten ja keskisuurten yritysten johdolla on vaikeuksia digitalisoida toimintojaan. Tässä opinnäytetyössä haluttiin mennä pidemmälle työntekijöiden mielipiteisiin ja asenteisiin ja yrittää löytää selityksiä sille, miksi digitalisoituminen on hidasta.

Digitalisoitumista ei oikein voi toteuttaa muuttamatta työtapoja ja yrityskulttuuria. Siksi digitaalisten sovellusten lisäksi työntekijöiden täytyy oppia paljon muutakin uutta. Kiinnostusta digitaalisiin välineisiin, oppimiskykyä ja asenteita muutokseen tutkittiin hämäläisessä viheralan yrityksessä Viherrakenne Jaakkola Oy:ssä. Teoriaosuus kertoo digitalisoitumisesta, oppimisesta ja asenteista muutokseen ikääntymisen näkökulmasta.

Tulokset osoittivat, että ikääntyvät pystyvät ehdottomasti oppimaan uutta. Oppimiskyky kuitenkin vaihtelee yksilöllisesti, samoin asenteet muutoksia kohtaan. Siksi työntekijät pitäisi arvioida yksilöllisesti ilman ikärasismia. Yritysjohdon pitäisi mahdollistaa digitalisoitumista matalan hierarkian, rajoja ylittävän yhteistyön, avoimen kommunikoinnin ja tiimiällyn avulla.

Avainsanat digitalisoituminen, ikääntyvät työntekijät, oppiminen, työelämän muutos

Sivut 56 sivua, joista liitteitä 3 sivua

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ABSTRACT

The aim of this thesis was to examine digitalisation in small or medium-size companies with ageing employees. The purpose was to find out if the age of the employees is an obstacle to digitalisation or could other obstacles be found. There is a vast amount of ageing employees, and they have to be included in the digitalisation process.

A previous study from Häme area resulted that the management of small and mid-size companies found it hard to implement digitalisation. This thesis intended to go further into opinions and attitudes to find factors that slow the development down.

Digitalisation cannot really be implemented without changing work methods and culture. It means that there is a lot to learn in addition to the digital applications. The employees' interest in digital tools, ability to learn and attitudes to change were studied with a case company Viherrakenne Jaakkola Oy, a landscaping company in Häme. The theory includes digitalisation, learning, and change from the angle of ageing.

The results indicated that ageing employees can definitely learn new things. The capabilities vary individually, though, as do the attitudes towards change. Hence, the employees should be evaluated individually, without ageism. The management should enable the digitalisation with low hierarchy, cross-cutting cooperation, open communication, and team intelligence.

Keywords digitalization, ageing employees, learning, change in the work life

Pages 56 pages including appendices 3 pages

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Appendices

Appendix 1 The Questions of the Starting Interview

Appendix 2 The Questions of the Second Interview

1 INTRODUCTION

Digitalisation is changing the field of competition entirely. It does not affect merely on the companies that can implement digital solutions in their core business, or those that may suddenly find themselves in the middle of international competition. It also affects, in different ways, to small and medium-sized companies that operate in the traditional lines of industry.

Many small and medium-sized companies are left somewhat behind in this progress. In order to keep up with the competition, companies have to adapt digital solutions. Even though their core business might not need digitalisation, the customers want increasingly to utilize digital solutions in the cooperation with their suppliers. After all, digitalisation is used to make things faster, easier and more efficient. Furthermore, turning company functions digital may save time and costs.

According to Suomen Yrittäjät (Federation of Finnish Enterprises), Statistics Finland announces (2017) that the small and medium-sized companies formed more than half of the turnover of Finnish enterprises, and made more than 40 per cent of the Finnish gross domestic product in 2017. Although these statistics include the companies that belong to a concern, the vast majority of small and mid-size companies (94,8 % in 2016) are independent; in other words they are not a part of a concern (Statistics Finland, 2016). At the same time, the work force is ageing at a fast phase. Hence, it is safe to assume that the small and medium-sized companies have ageing employees that rapidly need to be included in the digital change.

1.1 Research Background

1.1.1 Societal Viewpoint

The digital change is inevitable. It requires new skills regarding digital tools, as well as new working methods. The decision-making will spread more widely within an organisation. The low hierarchy does not function with digital work environment. The individual departments cannot work on their own for their own goals anymore. The cross-cutting teamwork is the future way of working. The digitalisation favours the young generation since they have been familiar with the digital world from the early age. The young also feel it easy to learn new ideas and methods.

Meanwhile in Europe, and especially in Finland, the population is ageing at a fast pace. This means that there are not enough capable employees to fill the needs caused by the digitalisation. On the other hand, the existing

employees should stay at working life as long as possible. Also the ageing ones that are now unemployed, should be able to work actively. If this does not happen, there will not be enough working population to cover the pensions.

According to Statistics Finland (2019), the ageing per cent of the population is high, and the birth rate is falling inevitably in Finland. The Figure 1 below shows that the ageing generation forms already a significant share of all the Finnish population.

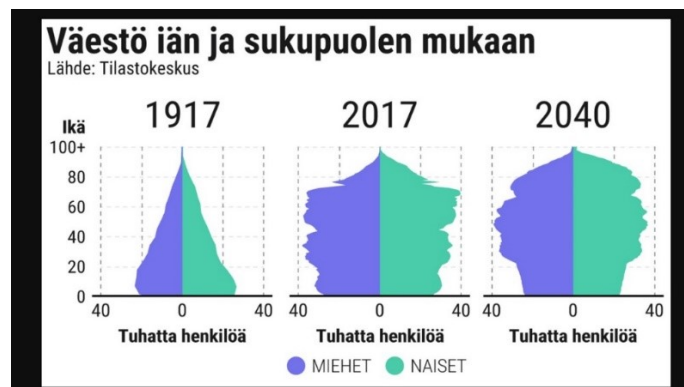


Figure 1. The age distribution in Finland (Statistics Finland, 2018)

Yle News refers to the Statistics Finland research, published in November, 2018, reporting that there are 44 active workers to support each 100 people. The figure 2 below presents the active population by age group.

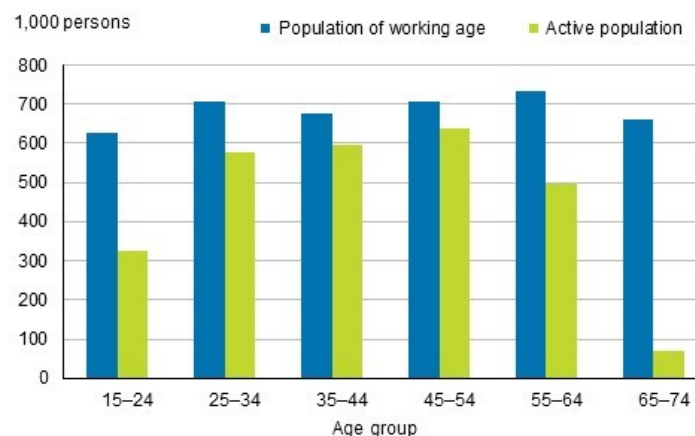


Figure 2. The active Finnish population according to the age groups (Statistics Finland, 2018)

It has been widely accepted that people leave the working life at the common pension age. The figure 2 shows that the amount of employed is small in the age group of 65 – 74. It is clearly visible that the work force decreases remarkably in the age between 55 and 64. A part of the phenomenon in the both age groups can be explained with weakening health. On the other hand, another issue to relate to this trend is learning: It can increase the working years of the ageing and aged population, for

example by enhancing the work performance and increasing the motivation. Furthermore, learning may have positive impacts on employees' working ability and health.

1.1.2 Aspect of Human Resources

Digitalisation changes remarkably the working culture by bringing young people to the key positions, with the feeling of pressure towards the older and more experienced staff to recede. Digitalisation forces the company culture to aim from the strict hierarchy and individual merits towards more democratic and permissive team work. At the same time the work force is ageing in an alarming way. This means that the share of the ageing employees should be rising in enterprises. However, the companies are reluctant to recruit ageing employees, or even invest in the existing ones.

Digitalisation requires constant change and fast learning, and there is a strong prejudice against the abilities of the ageing people. The young generation seems to be far more able and willing to adapt the new working methods and culture brought by the digitalisation than the so called baby boomers. For this reason, the company management may see the ageing staff as problem. At the same time, in a small company, every employee is relatively more important than in large-scale enterprises, and probably has experience and tacit knowledge that cannot be easily replaced.

1.1.3 Starting Points of the Research

The main starting point was to clarify the digital know-how of the key employees in the case company Viherrakenne Jaakkola Oy, a med-size landscaping company in Häme area.

It was interesting to know if the employees actually were unwilling to use digital tools and work methods, and if that was the case, why did they feel that way. Do they reckon that it is unnecessary? Do they find hard to learn new things? Perhaps they want the things to stay as they were? The main purpose of this project was to find out in what areas it is necessary or reasonable to introduce digitalization, what kind of changes should be made accordingly, and how to increase the digital know-how in the organization.

The other starting point was the study of Jouni Rantanen (2015) that concerned the digital know-how of small and medium sized companies in Häme area. His research was made for Smart Services of Häme University of Applied Sciences. In his thesis, Rantanen (2015, 33) summarizes that vast amount of the mid-size companies and its employees are uncertain about what digitalization means and how they could use it in their business and working life. He suggested (2015, 37) that small and mid-size companies have also problems with planning, as well as time and

information management. Rantanen (2015, 41) continued that the company management does not always recognise the existing digital know-how of the individual employees. The study results indicated ignorance and lack of understanding of the impacts of the digitalisation in the small and medium-sized companies. It was unclear how or where to start the digitalization process.

I was interested in finding out if these characters were to be found also in the case company, what causes them, and what can be done to overcome them and to be able to benefit from the digitalisation. The case company is similar to those in above mentioned research, including company size, geographic area, and age distribution: the vast majority of the key persons are ageing. The case company is a small landscaping company whose business idea is based on high quality manual work, so the digitalization does not concern their core know-how at the moment.

1.2 Research Objectives

The main purpose of the study was the need to be along with the digital development in the case company. The reason to this was on one hand, the increasing digitalisation of the customer companies, on the other hand, the urge to enhance functions. First, the company developed its administration and introduced digital tools for different administrative tasks. Soon it became clear that the customers are increasingly applying digital tools and functions, including the interaction with the suppliers. Furthermore, the case company's inner communication and access to data needed improving. These changes require including the six supervisors of the company in the digitalization process.

The research objectives were to find out about the supervisors' digital know-how and attitudes regarding new methods and tools, and on that base develop new working methods to the daily work and communication.

The first objective was to find out:

- the supervisors' level of digital know-how
- the supervisors' attitudes towards digital tools
- whether there is resistance towards changes and why
- what is the most comfortable way to learn for each supervisor
- what work challenges the supervisors would like to solve with digitalization

The second objective was to create instructions and give advice for implementing the digitalisation, based on the theory as well as the supervisors' answers, considering their attitudes, expectations, and learning methods. The idea was to find suitable ways to implement digitalisation in different functions in reasonable time.

1.3 Research Questions and Scope

The main research question was why it is difficult to implement digitalization in a small or mid-size company with ageing employees. The supplementary research questions were:

- Are the ageing employees reluctant to learn digital tools? Why?
- Do the ageing employees resist change? Why?
- Do the ageing employees find it difficult to learn? Why?
- Will other reasons appear during the research?

Since the research population consisted of a small group of supervisors, the results can hardly apply widely to other similar companies. However, they can give ideas how to start developing the digitalization process in a mid-size company with ageing employees. Since a lot of specific information was gained from each individual, the outcome certainly serves the company management and employees in the digitalisation process.

The study did not clarify the health conditions or working ability of the employees, even though they are factors that affect to the work performance of the ageing staff. The employees' motivation towards working itself was left outside the research. The literature review consists of information regarding digitalisation, change, learning, and age, without going deeply into any of the topics, for instance to the technical aspect of digitalisation, lifelong learning as a wider concept, the theory of learning methods, or age and change management.

1.4 Research Methods

The research is qualitative. The interview supported by observation as research methods was elected due to the small target group and the need to get ample information in order to deeply understand the situation, thoughts, attitudes and expectations of each individual regarding the subject.

Typical to qualitative research is that it is comprehensive gathering of the material gained in natural environment. The purpose of a qualitative research is not to test existing theory as such, but with complex and detailed examination to find or reveal unexpected facts. The starting point in this kind of study is to describe real life with a holistic approach. In the qualitative study, the researcher trusts more their own observations and discussions with people than any measuring devices. Still, a researcher may use forms when gathering information. The target group is not elected randomly, and the research plan may change along the research. The research material is handled considering it unique. It is not possible to reach absolute objectivity in a qualitative study, because the researcher and research information cannot be separated. (Hirsijärvi, Remes, & Sajavaara, 2010, 161, 164.)

1.5 The Structure of the Study

The thesis includes five main chapters. The introduction describes the topic and background of the research, as well as the purpose and objectives of the thesis. Chapter two consists of the literature review related to the study. Chapter three opens the case study, while chapter four presents the results. Chapter five consists of the conclusions and the recommendations for the further development of digitalisation.

2 LITERATURE REVIEWS

2.1 Digitalisation in a Business

2.1.1 Digitalisation as a Term

There are different views about what the word 'digitalisation' means. It is hardly a surprise, considering that digitalisation has an impact on such a many areas of life, for example business, academic field, and everyday social life.

According to Gartner IT Glossary, "digitalisation is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business".

Bloomberg (2018) stresses that the term digitalisation has a different meaning from the term digitisation. The latter means simply changing something from analogue form to digital one. From what he sees, the word digitalization does not have a definite meaning, and it includes automation, transforming business processes, and social interaction around digital technologies.

Bloomberg advises not to mix the word digitalisation with the term digital transformation, which means strategic business transformation towards, not just implementing digital technology, but also basing the business on customers' needs, as well as creating cooperation between separate interests and departments within an organisation.



Figure 3. Difference between digitization, digitalization and digital transformation. (Coresystems FSM, n.d.)

2.1.2 Implementing Digitalisation in a Company

There are examples of cases where factories invested largely on ICT technology but retained the traditional procedures. As a result, the productivity did not increase. The companies that also changed functions and made updates while implementing the new technology, managed to increase productivity. (Lehti, Rouvinen & Ylä-Anttila 2012, 117.)

According to Ilmarinen and Koskela (2015, 24-25), regardless in what way or areas a company wants to utilise digitalisation, the common feature is that all companies use digitalisation to restructure company strategy and procedures, concerning all areas, levels and functions. So it is safe to say that digitalisation should not be implemented without changing the company culture, management style and the working methods.

Digitalisation lowers the hierarchy passively. Those employees who are interesting in digital tools and methods, become unofficial leaders. Their expertise makes the others want to go to them with their digital problems, which questions the influence of the official managers, and thus shatters the hierarchy on its part. Due to digitalisation, communications managers or IT department do not own the information anymore but it is spread around the organisation in an unstructured way. (McConnell, 2015.)

2.1.3 Main Obstacles in a Digitalisation Process

McConnell (2015) summarizes the biggest obstacles in the way of digitalisation process:

1. slow or stopped decision making due to different reasons. There can be obstacles in the working atmosphere, such as internal instructions or methods, pecking orders, or an effort to get unanimity.

2. considering the business value of digitalisation with traditional ROI calculations without getting proof. This can cause the management to doubt the process.
3. keeping the main focus on technology. The focus should be on the people and working methods.
4. the decision-making level's inability to put things from theory to practice.
5. the management's obsession to control the central functions, and inability to trust the employees' moral and self-discipline, regarding the use of digital tools.

The figure 3 below presents that cultural and behavioural challenges are by far the most difficult ones in a digitalisation process.



Figure 4. Culture is the most significant barrier to digital effectiveness (McKinsey, 2016).

According to McConnell (2015), the organisation can get over the obstacles by developing the work culture. She sees that the obstacles can be alleviated with following means:

- having and communicating a strong shared sense of purpose, direction and value.
- giving the employees freedom to experiment, which enables them to evaluate and change the ways of working.
- lowering the hierarchy of decision making by distribution. It means giving all the employees a voice and including them in the process.

- letting external influences into the organisation. Open companies are more up to date regarding the trends of the external world and have a wider perspective on their work.

2.1.4 First Steps in Digital Transformation

Charles-Eduard Bouée (2015) introduces three steps for company management to carry out digital transformation. Firstly, it is important to clarify company's goals and why the digitalisation is needed to achieve them. The management has to find out how it affects the staff and what kind of training has to be organised, and whether recruitment is needed.

In spite of the fact that ageing people often find learning to use digital tools irritating, time consuming, and difficult, many have gradually accepted them as necessary devices. People may take care of everyday things and communicate with friends and family with them.

As the second step, Bouée challenges the company management to take this fact into consideration, let the employees use their existing digital skills in their work practices, and urge them to experiment more. Bouée's third step comprises a gradual change in the company, towards multidisciplinary and cross-functional teams. He suggests the management increase autonomy with the help of digital tools, and empower middle management.

2.2 Digitalisation and Employees

2.2.1 Digital Skills Needed

OECD launched a policy brief on the future of work in 2016. The main message was that in the world of digitalisation, three types of skills are needed:

- ICT specialists skills for innovations and supporting tasks
- ICT generic skills for using the digital technologies
- ICT complementary skills like leadership, communication and teamwork skills

According to OECD (2016), one quarter of working population will have to face the fact that some of their tasks will be turned digital, which will force them toward the tasks that cannot easily be automated. They suggest that measures have to be taken in order to enable learning new skills for everyone. According to OECD statistics (2016), in Finland is within the top five countries regarding people with more advanced ICT and cognitive skills. On the other hand, a vast amount of Finnish people have no ICT skills or have only the very basic skills.

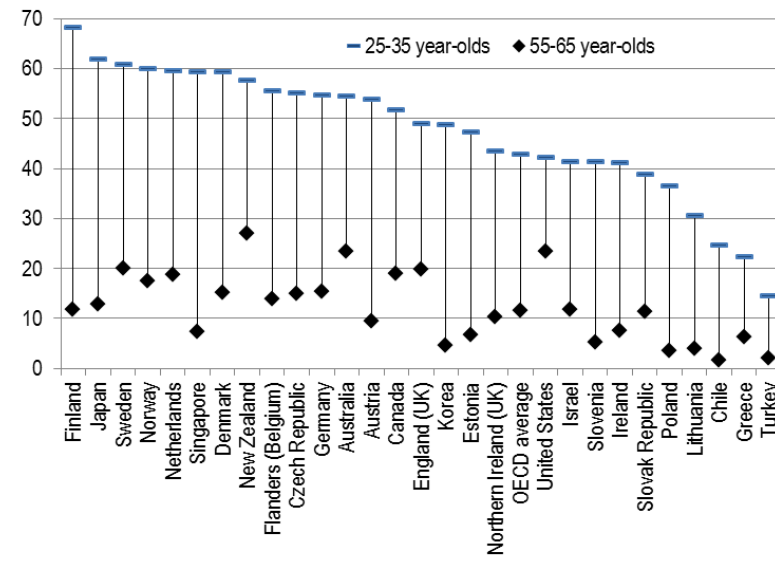


Figure 5. Younger people are better prepared for the digital working environment than older people (OECD, 2016).

The figure above presents the share of 25-35 and 55-65 years old performing at Level 2 or 3 in problem solving in technology-rich environments. It is clear that digital skills are very age-related. The vast amount of 25-26 year olds can execute complex tasks with specific technology applications. However, this does not apply to all the young people. The figure indicates that there is not such a big gap between age groups in generic ICT skills that there is regarding ICT specialist skills.

2.2.2 Digitalisation Changes Almost Everything

According to Lehti et al. (2012, 13, 116), digitalization may cause inequality among employees. The differences of productivity can vary tremendously between employees depending on their ICT skills. However, they see many tasks in the future that need human input, such as understanding unpredictable problems, as well as for example ability to invent, and understanding of ethics. McKinsey (2017) suggests that by adapting existing technologies, not so many occupations can be fully automated yet.

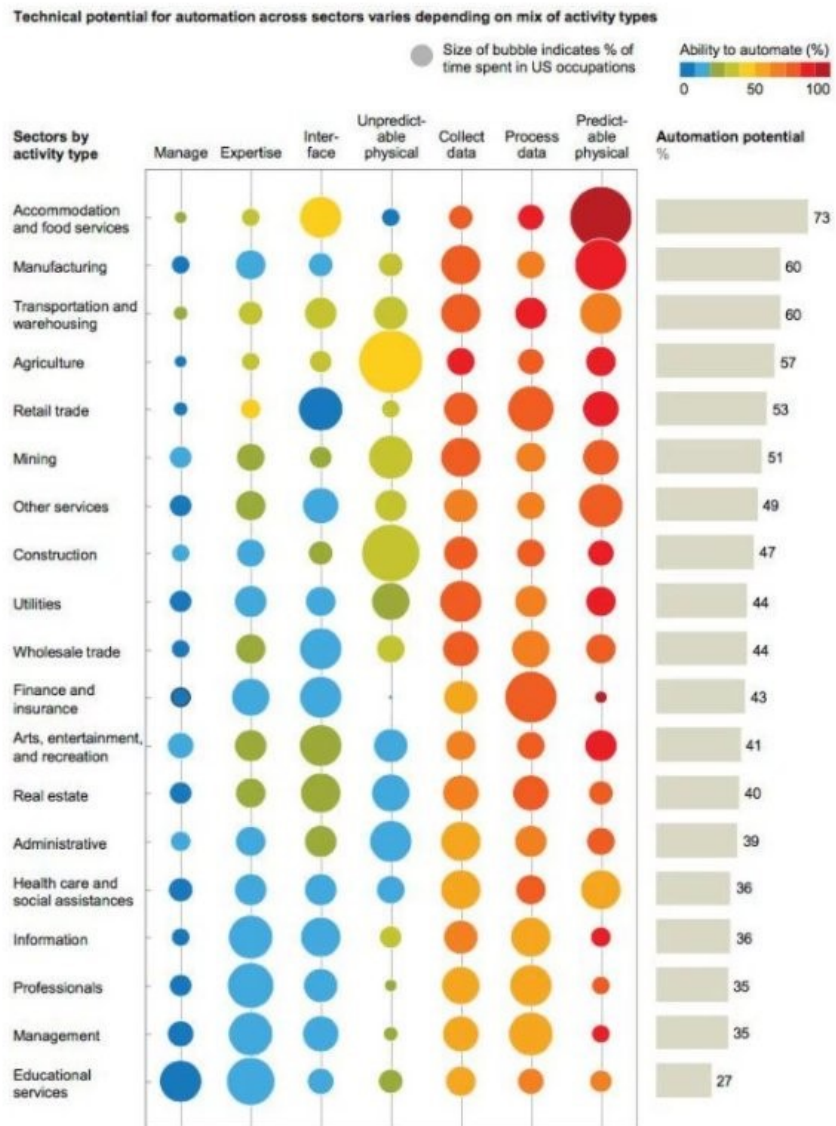


Figure 6. Technical potential for automation (McKinsey, 2019)

To continue business in the traditional way is not an option any more, but there are still things that will not change due to digitalisation. On one hand, digitality makes processes more efficient and helps to solve more rapidly the problems and needs that arise from the changing business environment. The agile and flexible businesses will outweigh, and that is why no company can afford not to go along with the digitalisation. On the other hand, there will always be valued assets that cannot be beaten with digital solutions. The clients are people and they appreciate human contacts and human understanding of their needs. (Kaupan liitto. 2016.)

2.2.3 Digitalisation as a Threat

As its best, digitalisation gradually sets employees free from monotonous routine tasks and gives them time to do more intelligent work. But is it

really realistic to think that the average human brain can surmount technology in the future? Especially when thinking of artificial intelligence, in other words programming the computer to manage functions that require intelligence typical to the human brain.

Even the most careful estimates suggest that only in ten to fifteen years, computers can naturally interact with customers in various media, in different languages, analysing customer feedback and product data, calculating for the best measures to gain the customer's interest. Only the creative decision will be made by the employees. (Hiila, Tukiainen & Hakola, 2019, 24, 25.)

2.2.4 Information Security

Digitalisation forms a significant threat considering Information security. Lehti et al. (2012, 11) worried seven years ago especially about the safety of cloud services and centralizing data. They saw that storing all the data and the computer programs in the cloud could cause danger. In year 2016, Jori Virtanen (2016) sees three already existing risks with cloud services having become very common:

1. A common risk is an employee who accidentally places confidential data into a wrong file, where it is shared all over, or shares work related data using services like One Drive without thinking that it is a cloud service.
2. The other risk is lurking in the terms of use of the cloud service. Some cloud services insist that they own the data stored in the service.
3. The cloud service itself can form a risk with inadequate information security.

Virtanen refers to the survey of information security company Skyhigh Networks regarding cloud services. The findings suggest that companies are so impressed by the advantages of the cloud services that they do not really pay attention to the risks. Although there are Cloud Access Security Broker services (CASB) that makes the use of cloud services more secure, Skyhigh Networks recommends security training for all the personnel of a company about what you can and cannot do in the cloud.

According to Laaksonen (2018), the platforms of cloud services are secure, but information security management is not as good as it should be. He emphasises that the management has to know what cloud services are used in the company and how. In his blog (2019) Laaksonen writes that in many companies, individuals use different cloud services even though the company has not intentionally taken any cloud service into use. Laaksonen describes a new threat: Hackers do not have to break in; they simply sign

in the system. In other words, the cloud service is reachable from anywhere, and strong customer authentication (SCA) is needed.

According to the new EU directive, strong customer authentication is already in use. Laaksonen (2019) also stresses, that there are lots of cloud based solutions to improve information security. So it looks like the threats can be overcome. Of course, as technology evolves, there will always be new risks and dangers.

Mikko Hyppönen, in Ilta-Sanomat article (Kärkkäinen, 2017) warns that the internet of things will enable collecting user information from different devices, since all the electrical devices will be on the internet in ten to fifteen years. More alarming is his outlook on the revolution of artificial intelligence. It might save or destroy the humankind depending who gets to use it first and how.

2.3 Team Intelligence

2.3.1 Team Intelligence Surpassing Digital Technology

Technology is about to steal the strictly predefined jobs from people that then are supposed to do more intelligent tasks. However, they all might not have the education or preparedness to solve problems that demand creativity, high intelligence, and decision-making skills. So how will they cope? To meet this challenge, Hiila et al. (2019, 62) introduce team intelligence. A company utilising team intelligence, does not work like traditional team work. It enhances the personnel's ability to intelligently function as a part of different teams that start, end and change according to their purpose.

The core idea of team intelligence is that a team is more valuable than its members. Everyone does not have to know everything. In teams, individuals can contribute with their strengths, so that the team is more capable of diverse and creative thinking than any of the team members alone. The team members also develop by learning from each other. In the team of different skills and viewpoints, mistakes will be noticed rapidly and mended accordingly. Also the results are seen quicker, provided that the team work is well organized. (Hiila et al, 2019, 67-68.)



Figure 7. Team emotional intelligence framework (JCA Global, 2016).

Simon Sinek (2016) talks about team work in an inspiring way: “Life changes for the better when we realize that we don't have to know everything, and we don't have to pretend we do. This is the reason for teams. It's not simply about capacity; it's about our diversity – diversity of ideas and diversity of strengths. As individuals, we are just ok. But, together we are remarkable.”

2.3.2 Enabling Team Intelligence in a Company

Hiila et al. (2019, 77-78, 93-94, 100, 115, 120, 142) go deeply in the key requirements regarding team intelligence. Recognising and utilising both the individual and team strengths requires self-knowledge. A common direction with properly clarified goals is essential. The common motivation is needed and it can exist in spite of team members' different positions, talents, age or experience. The management has to interpret the purpose of the company to the personnel as well as their meaning in the big picture. Every individual has to know how their work connects to other people's work, how the team connects to the company, and who is supposed to do and what.

One of the management's tasks is to provide the team with permissive atmosphere that allows opinions, experiments and mistakes. Giving authorisation with responsibility to the teams is necessary to accomplish the results. This calls for lower hierarchies. Positive interaction is a big part in team intelligence. Choosing the right digital tools for each piece of information helps to avoid misunderstanding. Empathy, listening, reciprocity, common good, and creating a functioning feedback system should outweigh individual credit and competition. (Hiila et al, 2019, 146-147, 170, 194, 220.)

2.3.3 Management's Role in Developing Team Intelligence

The company management has an extremely important role in adopting team intelligence in the company. They have the power to make it happen. The manager can act as an example to the employees and develop team intelligence with common direction, permissive working climate, and

interaction that intends to lift, inspire and support people. It is important that the management communicates the core meaning of the company: Why do we exist, why do we do this? When the company has a well premeditated meaning based on the truth, it makes the personnel feel that they belong to something great and meaningful. This only works, if the management truly believes in this meaning themselves and act accordingly. Only the management, or in a strict hierarchy, the one manager, can make permissive working atmosphere. So, before even starting to think how to develop it, the manager has to learn the new behavioural model and again, give a strong example. (Hiila et al. 2019, 225-226.)

2.4 Change

2.4.1 Why Change?

Digitalisation cannot be successfully put into practice without changing the working methods. But Digitalisation itself may not be the reason for the change. As the theory above shows, digitalisation is the way to make changes in the organisation in order to keep up with the competition, meet customer needs, fasten processes, enhance inner and outer communication, or save costs and time. The first step in organisational change is to think why the change is necessary.

According to Stenvall and Virtanen (2007, 48), the most important thing is to clarify the basic purpose of the change. It includes deciding whether this is the right change, what the object is, what the organization is capable to execute, and how the change improves the present situation and organisation culture.

2.4.2 Change Communication

The reason for the change has to be communicated very clearly within the organisation. It requires more transparent management. According to Jari Stenvall and Petri Virtanen (2007, 13-15), change requires open communication and trust. Everyone that is affected by the change should be properly informed of the goals of the change. The correct information also helps to understand the need of the change itself, as well as the realisation process, and succeeding in the execution of the change.

Communication during the change is important because it supports the execution of the change. It also gives an opportunity to profile the change as positive. The content and goals of the change have to be informed. With communication it is possible to engage employees with the changing process and its objectives and get them on the same side with the organisation. Communication also enhances interaction. (Stenvall & Virtanen, 2007, 67.)



Figure 8. Top tips: Communication of change (The University of Sheffield, n.d.)

2.4.3 Change and Ageing

Young people have accustomed to changing environment, they learn fast and accept changes easily. But not all of the ageing people are reluctant to changes. It depends on the individual. It is ageism to assume that no-one over 50 years is capable of developing themselves professionally or interested in new ways of working. But if the company management thinks that way without giving them a chance, ageing employees might soon turn into an unmotivated burden merely waiting for the pension age.

According to Ilmarinen, Lähtenmäki and Huuhtanen (2003, 110) ageism exists in recruitment, employee training, career advancement, and appreciation. They suggest it is high time to start treating employees individually despite of their age, find out about their strengths, know-how and interests in work life, and thus include them in the business improvement processes.

Ilmarinen et al. (2003, 87, 88) see that age management includes recognising the individuality of each employee in different ages. They argue that the level of know-how and life situation should be taken in consideration, as well as recognising different kind of motivations regarding incentives. They believe that this would decrease competition and increase cooperation within the personnel.

2.4.4 Resisting Change

Pekka Mattila (2008, 54-55) describes the two typical ways to react in a conflict: exit and voice. When younger employees might leave for another employer, the older employees often raise their voice and criticize the change. This is not a bad thing at all, because critical thinking helps to improve the quality of procedures and thus increases the possibility to succeed in the change process. Furthermore, handling the criticism right makes the relationships stronger within the organisation. Taking employees seriously in what they have to say gives way to further changes, too. It is important to explain the change considering the critic's arguments that make perfect sense to them.

The management itself may cause resistance by excluding some of the personnel from the change process, based on a supposition that they do not want to participate or are more trouble than useful (Mattila 2008, 40-41). Every employee should be given a possibility to participate.

Petteri Kilpinen (2008, 206 – 207) lists three key points of successful change with minimum resistance:

1. Giving honest and realistic information of the current situation so that it leads thoughts to the change being a necessity, but also an opportunity and not a threat.
2. The employees have to be included at an early stage. This is inner marketing that enables the management to inspire the personnel. The marketing has to be constant and positive. No news is bad news, and badly formatted messages will be misinterpreted.
3. All the details have to be decided in the beginning, including schedules and persons in charge for every different stage of the changing process.

One reason for change resistance is fear. All the personnel may be afraid of the new situation, but an ageing employee may doubt their ability to cope with learning and adapting new things caused by the change. Strong communication and individual approach help to clarify what expectations the management has towards each person and for example what strengths the employee can utilise in the process.

2.5 Ageing and Learning

A successful digitalisation process requires changes within the organization. Change is all about learning. When procedures change, one has to learn away from the old ways of thinking and working, and learn the new methods to replace the old ones. The use of digital tools require learning. The ageing individuals who are interested in learning new things cope well in the working life. The others may have to learn to learn.

2.5.1 Ageing and Work

The terms ageing and aged employee do not have a specific age-related definition. Ilmarinen et al. (2013, 39-40) use the term 'ageing' when talking about employees over 45 years, and 'aged' meaning employees over 55 years. This is based on the average state of health and working ability. They use these terms regarding the chronological age. There is also individual age that indicates how people get old individually.

Living and working environment together with the individual way of life affect more to the process of getting old than the genome. Engagement, as well as work motivation increase with age, not to mention having more time after the children have started their adult life. Individual differences start to appear with age: experiences, defeating problems, and physical changes make each person different. The differences between individuals in capacity and everyday work performance are bigger than the differences between age groups. (Ilmarinen et al. 2013, 39-40, 42.)

In addition to the above mentioned engagement and motivation, there are other similarities connected to the ageing employees. The experience in work and life, resulting good work performance is characteristic to ageing employees (Ilmarinen et al. 2013, 127-128). Leenamajja Ojala (2002, 160) lists more features common to the ageing: The human deduction and ability to consider remain with age, and regarding a healthy person, they can improve along the increasing experience. Ability to learn and vocabulary increases until the age of 60. Creativity is at its best at the age of 45. The social performance depends on the genes, but can be enhanced with the help of experience. Ojala (2002, 162) mentions also physical exercise that helps learning and receiving information, and continuous learning that helps to keep good mental capacity as long as possible.

2.5.2 Learning at Middle-age or Older

The company management and co-workers may think that ageing employees cannot or will not learn new things. This is, however, a false assumption. Ilmarinen et al. (2003, 125) see that continuous training is quite possible, even up to age of 80. But the ways of learning differ: The young can learn new information easily; whereas the ageing improve in perceiving things widely. The ageing people learn if they are motivated. The motivation is high if the new know-how is directly applicable to their work. Ilmarinen et al. (2003, 86) claim that with the suitable learning methods and customized training, the ageing employees can easily learn to manage the digital applications related to their work.

Joris Wiitakorpi (2006, 43) emphasizes that the methods of on-the-job-learning support the ageing employee in the natural environment but it is important to the supervisor to create good learning atmosphere. Wiitakorpi (2006, 41) reminds that there are theories for and against the

life or work experience improving the capability to learn new at the older age, and underwrites the individual approach. Wiitakorpi (2006, 91) introduces an interesting viewpoint that changing company culture with lower hierarchies, fragmentation of responsibility, and open communication actually helps ageing employees, by increasing opportunities to on-job and lifelong learning.

According to the survey of Statistics Finland (2018b), in 2017, 1,6 million people, aged between 18 and 64, participated in adult education, and 1,2 million of them took part in work-related education. The survey presents that the employers supported the majority of the work-related education. It had not been analysed how many of them could be called ageing persons. Still, one can say that there is a positive adult learning culture in Finland.

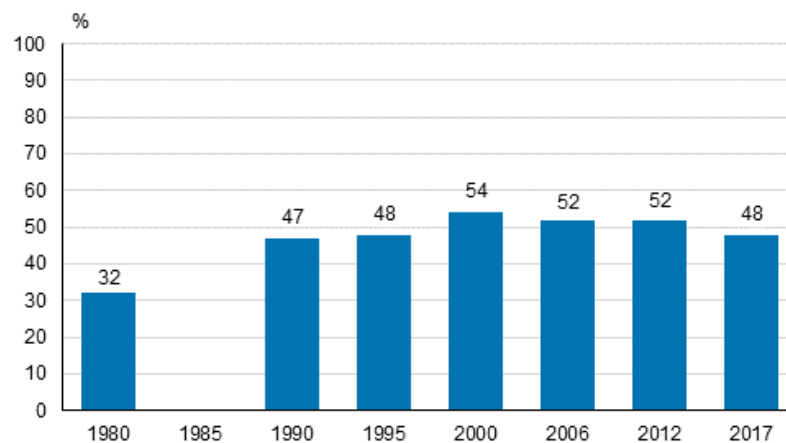


Figure 9. Participation in adult education in 1980, 1990, 1995, 2000, 2006, 2012 and 2017 (population aged 18 to 64), % (Statistics Finland, 2018b)

Tove Midsundstad and Roy A. Nielsen (2019) investigated how increasing the formal education level at middle-age (age of 40 – 54) affects the participation in working life in Norway. They discovered a connection of accomplishing formal education at later age with staying longer in the work-life. Midsundstad and Nielsen (2019) continue that achieving new know-how may increase work orientation and job satisfaction, and argue that attaining a formal education increases the number of day per year in active employment.

Learning ICT skills is difficult for adults, especially those aged 55-65 who have not grown into the digital world, because they have done their tasks with the telephone, pen, and paper. Using ICT takes their attention away from the actual task they have executed successfully for years, and forces them to focus on the digital tools. Most people feel this frustrating. Also the struggle with the devices and programs often make them feel embarrassed. So the learning of ICT is very age-related. On the other hand,

the capability to learn digital methods depends also on education, participating in educational training, and the general level of digitalization in the home country. In Finland, like in most other Nordic countries, the level of digital know-how is better than average also with the higher age-group. This suggests that the Finnish are able to develop their ICT skills, irrespective of their age. (OECD,2015.)

2.5.3 Lifelong Learning

Statistics Finland (n.d.) defines that

“Lifelong Learning (LLL) is defined as encompassing all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences, within a personal, civic, social and/or employment-related perspective”.

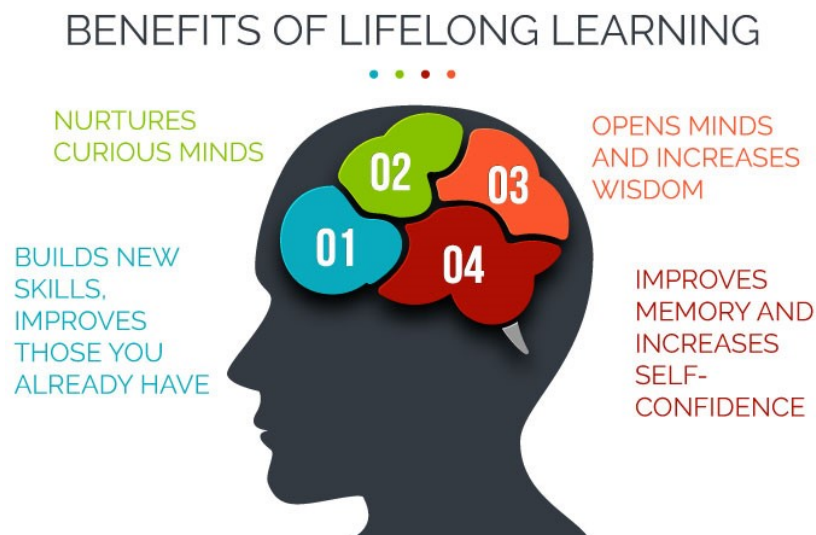


Figure 10. Benefits of lifelong learning (CILC, n.d.)

Lifelong learning is considered as a key factor in today's changing work-life. Continuous learning is necessary in order to keep up with the ongoing change of work and technology. In addition to the fact that learning has positive impacts on employees' well-being at work, it increases social equality. For example, it answers the challenges of work productivity due to ageing employees. (Kankainen, 2019.)

According to (Sitra 2019, 7-8), when the term lifelong learning was earlier connected with personal focus, civilization and developing as a person, today it is also widely connected to the idea that every person's existence is connected to productive work. Hence, everyone needs continuous learning in order to fulfil the requirements of working life. In organisations, lifelong learning is all about competitiveness and skilled employees.

Sitra is involved in a three-year development project of lifelong learning with 30 social operators to find out, what can be done to give every person the possibilities to participate in lifelong learning. Also the Finnish Government (2018) is studying the requirements and development needs considering lifelong learning, due to the critical period of work-life. There are questions about how to arrange the formal and non-formal education, and who is responsible for the learning, for instance a company or an employee.

3 THE CASE STUDY

3.1 Case Company

The case company is a small landscaping company in Häme area. The company was founded in 1969 and it is now managed by the original founder's two sons. The company has been divided into two business units; the landscaping unit and garden centre. The business has gradually modernised from strict hierarchy and traditional methods towards today's ways of working. However, there are still possibilities to develop digitalisation, low-hierarchy decision-making, cross-cutting cooperation and communication.

This study concentrates on the landscaping unit of the company and its supervisors, who work both as Team Leaders and in the operational tasks on the construction sites. The Managing Director, too, participates in the operative functions, in addition to managing and acting as Responsible Site Manager. The employees' versatile roles are very common in small companies with limited human resources. The green construction is a very season-sensitive field, resulting that there are several seasonal workers from early spring to late autumn. The core know-how of the landscaping unit can be found in for example stone installations and planting.

In the company, it is understood that digitalisation makes many administrative functions more efficient. During the past couple of years, the financial administration and bookkeeping of the company have been transferred on a cloud-based application. The offer calculation has changed significantly during the past few years, from pencil, notebook and large sheets of paper to cloud-based excel calculation and sharing pdf-drawings with the customers. Microsoft cloud-based Office 365 that had been purchased earlier, has been put to better use, first as archive for different kind of documents.

It is easy to introduce new digital solutions in the administration, since the administrative personnel have some digital know-how. The purpose of this

study was to include the supervisors in the digital evolution and find out their digital know-how, attitudes, expectations and ideas.

3.2 Research Process

The research process started with finding the subject that would solve a present problem or challenge in the case company, but would also be current in other similar companies, as well as in today's society. The research problem became clear when exploring the relevant theories. After that, the most suitable research method was elected.

The research process continued with individual face to face interviews at the company office. It was a quiet place compared to the construction sites where the supervisors work every day. The target group included all the supervisors, since the whole idea of the study was to include the supervisors in digitalisation in order to make their work and communication more effortless. The age of the supervisors varied between 27 and 61, but the vast majority were aged between 43 and 57 years.

The gathered information was typed along the interview and saved on a laptop. The researcher asked clarifying questions straight away, in case the meaning of an answer was ambiguous. The researcher emphasized that individual answers would not be shown to the management or in the study, so that the interviewees would feel free to answer the questions honestly.

All of the six supervisors participated in the starting interview. The interviewees were given an option to withdraw from the research after the starting interview, and two among the oldest supervisors used this opportunity. Still, good information was gained also from them about the baseline.

The next step in the study was to give each supervisor a tablet to be able to use them both at work and in their free time. The idea behind this was to let them get to know the device and programs at their own pace: The construction season was very busy, and the management did not want to put any more pressure on the employees. The employees were given instructions about how to use the tablet, how to go to Office 365 Sharepoint files, and how to take, save and send pictures. The research started in the beginning of the green construction season in spring. During the construction season, the observation was carried out to find about supervisors' reactions, questions, and requests for help.

When the green construction season was about to end in the autumn, the second interview was organized, in order to find out, how the supervisors felt about using the tablet and whether they had suggestions or ideas regarding the use of it and utilizing digitalisation in general. The second

interview was also executed in person, typing the answers immediately. Again, the clarifying questions were made, when needed, in order to get the true meaning of each answer. The question forms for the both interviews can be found in the appendix of the thesis.

After all these measures, the answers were separated, according to the research questions, to three categories: digital know-how, attitudes, and learning. The report was written, giving guidance and development ideas for the company. The results are revealed generally and commonly, keeping in mind that the purpose of the study is to find out the level of digital know-how, attitudes towards change, and abilities and willingness to learn new things within the company. The results are supposed to lead into new work methods, and improving the company culture and communication.

3.3 Research Methods

The research was qualitative because it suited well in the development project of a small company with a small target group. The idea was to gather detailed information and understand each individual's viewpoint in order to support them in digitalisation, change and learning in the future.

The interview as a method, supported by observation in between the two different interviews, gave additional information about the situation of each interviewee. The interviews were conducted in Finnish language, since it was the mother language of all involved in the research. The interviews were structured but gave all an opportunity to answer widely to each question. One problem in the research may be the politeness of the interviewees. There was a slight doubt that that the individuals give a little too positive an impression about their attitude towards digitalisation and changing methods. This is one of the reasons why the observation was included in the research. It was interesting to know if the supervisors tried to use the tablet, if they tried to learn for example to take pictures with it at the sites, and if they asked for help or further instructions.

The analysis was inductive, because the purpose of the study was to get individual information in order to form new working methods with an idea of helping the target group that participated in the study. The main purpose was not to find valid generalisations for all the similar companies. Still, it can give signals about the problems of ageing employees in small and medium-sized companies and may give ideas more widely about where to start the digitalisation process.

4 RESEARCH RESULTS

4.1 Starting Point of the Target Group

The first interview was supposed to give information about the supervisors' level of digital know-how, attitudes towards change and learning, and ideas regarding digitalisation. The questions can be found in the appendix.

4.1.1 Existing Digital Know-How

Only one of the supervisors had to use digital devices at work. All the interviewees had used computer at some point in their life, and almost all had visited internet. Two of them had used smartphone, two of them laptop, and three of them tablet. Four of the supervisors used these digital devices daily, and one of them almost daily. The use of the devices included taking pictures, editing them, reading news and magazines, playing and producing text with Word.

Almost the whole target group had heard about applications like Word, Excel, and PowerPoint, and half of them had used Word or Excel at school or at work. Everyone who had used any digital device, had also used electronic mail, and paid bills on their bank's website. Half of the target group had made hotel reservations or got any kind of tickets digitally, or bought something from an online store.

The interviewees were asked to describe how they see themselves as users of internet and digital device. The answers varied between average and worse than average. Also such issues as being wary, fallen behind regarding the digital tools, or not having used such devices for ages, came up. Only one of the answerers expected to cope well with digital-related things. The others expected to cope badly, somehow or with the help of younger people. One of the target group had not thought about it.

To summarize, the overall level of digital know-how of the target group is not the worst, considering that the vast majority of them belong to the ageing population. The result is in line with the theories explored: Firstly, ageing employees should be evaluated individually due to individual differences within the age group. Secondly, there often may be digital know-how gained on free time, even though the person does not have to use digital tools at work. Thirdly, ageing people can be interested in new things and learn them if they are motivated.

4.1.2 Attitudes Towards Change

The supervisors were asked about their feelings regarding things going digital in general: bank, tax authority, public healthcare, reservations,

purchases, up to date information about important issues etc. Being able to easily take care of everyday issues in the internet was seen as an advantage. Some of the interviewees were worried for the senior citizens, and some liked to hold papers in their hands. The majority of the answerers complained about losing the face to face contact, which increases misunderstanding. Also the security of the internet caused fear.

The interviewees were asked to describe how they would feel if they had to learn to use tablet and internet as a part of their work. All of the test subjects reacted to the idea with an open mind. Some preconditions came up in the discussion: help and training is needed, and the use of tablet would be acceptable only to a certain extent. It was noteworthy that no-one was really enthusiastic about the possibility.

The target group was asked about their fears and worries regarding the tablet. Most of the people were worried that the device might break or get stolen. Also the internet security came up as a threat. The half of the target group had expectations for the use of a tablet: To make their work easier and more efficient, enhancing the communication, and the accessibility to information from anywhere. On the other hand, the other half of the group could not mention anything regarding their hopes or expectations.

The supervisors were asked several questions regarding the potential use of the tablet the company:

1. **Interaction:** Would you consider taking a video call to your supervisor or colleague and show them a detail or a problem on the site?

The target group had learned to use telephone and would have called first and then sent the picture as text message. On the other hand, some found that it would be useful and clarifying to be able to show something simultaneously, that is if you really can see something from the screen. It was also considered a good way to be posted and make things more clear.

2. **Pictures:** How you feel about taking a photograph of the construction site, for example if it is not in the promised state for you to start working. You could archive it immediately in common archive, to be used as evidence if necessary.

The majority of the target group found the idea very good. In the phone, you might misunderstand the message. Also, the picture can be used as evidence; for example picture of the completed surface can prove that the work has been done in case someone else ruins it later. Someone pointed out that it is a good thing if it helps the Site Manager to reach mutual understanding with customers. Some resistance was found, though: Taking pictures

and sending them by email can be done without the tablet. Some irritation was to be seen regarding so many people taking photographs and other people ending up in them.

3. **Green construction plans:** Would you find it useful to be able to open the green construction or location plan with your tablet, and zoom any point in it whenever or wherever you are?

The interviewees found it useful, but many considered the paper version better: it is easy to keep a piece of paper in the pocket and take it from there rapidly. You can also draw on it. Some did not like the fact that the digital plan is not in scale. On the other hand, paper gets damaged during time, and then it is easier to see the digital version of the plan. Furthermore, being able to zoom the digital plan and check things was considered a great advantage. One can find for example separate thin lines very close to each other but look like one thick line in the paper version. Or when you have to know the species of a certain tree on the site, you can zoom the plan and easily find it out.

4. **Work instructions:** Would you like to find the work instructions on your tablet to be able to check things right away?

The majority of the interviewees considered it useful because the instructions include a lot of information that does not become clear from the green constructing plan. However, carrying a tablet around on the construction site was considered tricky.

5. **Contact information:** Would it be useful to find the contact information connected to your site regardless where you are?

This questions shared the opinions in half. Some liked the idea that contact information for ordering goods would always be available. The other half did not like the idea. Someone said that contact information can be just as well on the paper.

6. **Map:** Would you need a tablet size map when you are going to a new construction site?

The idea was considered mostly good. One of the interviewees said that it is a good thing, especially with a free navigation system. They also pointed out that the internet connection had better be good. Another interviewee thought that it would facilitate moving from a site to another, and finding the shortest route. Someone pointed out that the dirt and dust goes inside the phone on the construction site, so it would go into the tablet as well. Two of the interviewees thought that a paper map or a rough drawing is sufficient enough.

7. **Emergency situations:** Would you use internet to find the nearest repair shop, tool store, Health centre, or hospital, and the driving instructions? Or would you use tablet to contact the office with a problem?

Two of the answerers would first call their supervisor. Furthermore, on a construction site, there is always a barrack with first-aid kit and the address for the case of emergency. However, when the project is finished and you go there for maintenance, it is not there anymore. Some found internet useful when trying to find a repair shop or health clinic, but one of the answerers argued that they know all the repair shops in the area and that one should try it first to know whether it is useful.

8. **Working hours:** How do you feel about reporting your and your team's working hours on your tablet for example on the way home?

Except two of the answerers, no-one would not even consider it. It takes effort to even remember what tasks you have carried out during the day and for how long. Having to reporting the whole team's hours was an idea that caused strong resistance.

9. **Inner communication:** What do you think about being able to save important issues for example in a discussion forum, where all the personnel sees them immediately and where you would get information from the others? It could include problems, claims, good and bad feedback, Incidents, development proposals etc.

The interviewees found the idea good but problems were found. If an employee has not used to type it could take too much time. Text and pictures instead of talking were considered as good improvement regarding documentation. It is difficult to maintain the message original if it goes orally through several people, for example from the customer's Site Manager to the green construction management via one or more people.

10. **Salary and Human Resources:** Would you like to take video calls to the office personnel?

The majority found it unnecessary and preferred telephone. Some found that video call would take too much time.

11. **Ideas:** What ideas or suggestions do you have regarding the subject? What should be digitalized in our company?

The interviewees could not say much at this point. However, the need for information in digital form about the sites were emphasized because there

could be much more information than the papers that you can carry on you. Regarding maintenance work, a list of dead trees were asked for. The necessity of good guidance came up; if you don't learn to use it, it will become a burden instead of benefit.

4.1.3 Ability to Learn

The interviewees were lead to the subject with a question of the most recent time they had learned something new or achieved something exceptional. Everyone remembered such a situation. When asking how the process was, the answers varied between challenging, not so challenging, and 'I just tried and it went well'. Almost all had felt very happy after achieving the goal.

The supervisors were asked, what their best method of learning new things was. The answers were:

"Someone has to take time and show me first how to do things. Then I can try myself a couple of times, and I will get there. There must be someone I can ask for help if things go wrong, though."

"It depends on what I am doing. Mere listening is not a good way to learn. I should read or try myself. If I have to watch someone to do it, then I will have to try it myself. I need to learn with peace and quiet. Sometimes you need a lot of time, sometimes you don't. It depends on the interest in the subject and the degree of alertness."

"Trying by myself after someone has showed and guided and given instructions."

"Trying myself while someone guides beside me."

"Doing myself while someone guides me. I learn fast."

"Trying by myself, with the help from my friends"

It is noteworthy that no-one questioned the learning itself. All the supervisors found it normal to learn new things, regardless their age. All the answers included guidance with trying. Some wanted to try alone after been given guidance and instructions, and some wanted to try with the mentor present. All the interviewees indicated seemed to have a positive attitude towards learning new things in general.

4.2 Observation

4.2.1 The Researcher's Notes Prior to the Interviews

When the starting interviews were about to start, the Managing Director held a supervisor meeting, and discussed about the company's difficult situation. It was a poor year for the Finnish construction. Still, the Managing Director showed that he is fully behind the digitalization project. In the very next year, the construction field started to recover rapidly, enhancing the company situation, but also keeping everyone very busy.

The starting Interviews were executed on the 15th of April, 2016. Before that it had been agreed that all the 6 supervisors can participate in the research and would get the tablets. No employee rejected it at first, and all the supervisors seemed to be quite open minded about it.

On the 4th of May, the researcher was still waiting for the Managing Director to ask two of the supervisors if they really wanted to be committed to the digitalization project. He did not believe that these two people were going to use the device. He had been continuously reminded to ask them so that the right amount of tablets could be ordered.

Here we can see that the top management can resist the change unintentionally by delaying the start of the project. Still, the Managing Director told me that he was very open minded and glad about the project. He was also the only one of the supervisors that had not arrived to my starting interview yet.

The Managing Director works in many different roles, which is very typical to small companies, but it obviously limits the time available for new projects that do not belong to the core functions of the business. This is quite understandable. However, the management should be the first to prioritize development projects and be an example for the employees who are supposed to take the changes seriously.

It is clearly visible that the goals and thoughts are not always in line with the real life and its priorities. At this point, it would be useful to reconsider the Managing Director's time and tasks. Delegating all the tasks possible to other employees or outsourcing them, in order to get more time to do the management tasks should be seriously considered.

4.2.2 The Observation Diary Between the Interviews

Between the two interviews, the researcher used observation diary to find out if there were any indications about the employees using them. The researcher wrote down everything considering the tablets: problems, questions, needs for further instructions etc.

On the 6th of May, it was definite that two of the supervisors did not want the laptop. Although both of the employees who rejected the study were ageing employees, only one of them was clearly related to the high age and potential retiring plans for the near future. The tablets were ordered the same day. The Managing Director, acting as one of the supervisors in the study, wanted to use an existing laptop instead of the tablet. He also had a smartphone already. The only thing to do regarding the laptop was to get it from the company Garden Centre and take it to the IT provider to be updated.

On the 19th of May, the tablets finally arrived with the sim cards for the internet connections. The last starting interview delayed due to other important things. On that date, there was a researcher's note in the observation diary that it is very important to communicate the change all the time and that the management should be reminded about that. The communication could be executed on the discussion area of the Office 365 Sharepoint, at least in the beginning. However, because no agreement about who is responsible of the communication had been made, the communication remained basically non-existing. This is why the theory explored emphasizes that there have to be clear decisions in the beginning about who does what. The rules of the interactive communication should be explained to all as well, to encourage the staff to communicate freely.

On the 26th of May, the researcher noted:

"The Garden center manager still has not remembered to bring the extra laptop from home to the company so that it could be fixed for the manager of the Green Construction unit. If the process starts much more slowly than expected, It might be that the employees start to resist the change, because it is nothing they have been promised. It seems that even though the MD is fully behind the project it is unlikely that he can show much supporting leadership towards the supervisors regarding the digitalization. This is because he is fully occupied with the operating work and the limited amount of the managing work that he can be involved with during this very hectic starting period of landscaping season." Again, it was a question about the lack of time.

Another observation was written down on the same date:

"I suggested in the spring that the Managing Director should delegate more of the site manager work to the supervisors but he refused. It leads to a suspicion that he does not believe they can do the work properly, or that they would not even want to do it. The current situation puts the MD to an impossible situation: He should be at different construction sites at the same time, because he has named himself as Site Manager to all the projects there are. Due to this, the managers of the client companies want

to discuss with the official supervisor on the site and complain that the Site Manager (=MD) is never on the worksite.

My suggestion would be that the supervisors would be named as Site Managers of their own sites. Importantly, the client companies should be informed about the new situation properly. Of course, the new Site Managers would need MD's Support to some extent but this way they would be the persons that the client companies can discuss and make arrangements with.

Regarding the above mentioned issue, I even suggested in the mutual meeting with Managing Director and the supervisors that the Managing Director could be named as the common Responsible Site Manager of all the sites and the supervisors would be named as Site Managers of their own site. The supervisors said nothing. The Managing Director expressed his worry about supervisors getting angry calls from the clients and having to attend different kind of meetings all the time. I am positive that this whole process could be organized differently, and I wonder if the Managing Director has time to attend all the meetings himself in this situation."

Having said that, the researcher is not a green construction professional and does not have a clear picture of what happens on the construction site with its procedures. On the other hand, based on the researcher's wide experience from several small and medium-sized companies, it is safe to say that it is very typical for the managers to try and control every detail in a small company. When a company grows, the tasks build up increasingly on the management, until all the functions suffer from the lack of time. Regarding to the theory, the management should lower the strict hierarchy, spread the decision-making, encourage the peer cooperation, and let the employees experience with the management support.

It was clear that there were two distinct issues that slowed the process down: the lack of time and the contradictory attitude to change, both considering the top management. The Managing Director also saw the fact that the supervisors would have much less time for the operational work and leading their team in case they had to attend the meetings and have discussions with customers. This indicates that some of the operational work should be transferred from the supervisors to the actual operative staff.

The Managing Director was also clearly concerned about the often stressing situations with clients that require decision-making, too. Perhaps the real reason behind all this is that the supervisors themselves do not want to be forced in that position. In that case, the resistance of change was caused more by the supervisors than the top management.

On the 4th of October, the researcher told about helping one of the supervisors with the problems raised in the site maintain work. The supervisor asked for help already in summer. However, solving the problem required face to face contact with personal training. Because of the extremely busy season, resulting that everyone was needed urgently in their own tasks, there was a long delay regarding the required training.

The busy green construction season caused a big gap between the observations. The supervisors did not have time to discuss about digital problems, when the operative work took all their time. Also the researcher was busy because of the same reason.

The problems with the tablet were looked at on the 4th of October. The first problem was with the password. The IT Company sorted that out. The other problem was that the supervisor could not take the pictures straight into the right file. There had been an update that had changed many of the functions with the tablet. One had to try and experiment to find the new way to do it. So the instructions had to be changed and all included had to be informed. No other supervisor reported the problem, so either they had figured it out themselves, or they had not used the tablet after the update. Another problem was the difficulty of moving the pictures from the gallery to the construction site file. The third issue was the list for withered plants that need to be changed by the maintenance staff during the guarantee period. PowerPoint and Excel solutions were experimented.

Here we can see that the old method of writing instructions down and distributing them does not work anymore. Things change all the time, and one simply has to learn everything all over again by experimenting. This is a new work method that has to be learned. It is also easy to understand that people feel embarrassed trying to do simple things without succeeding straight away.

On the 10th of October, the new instructions for the tablet were published in Sharepoint, despite of the fact that they would be updated again at some point. Still, it was good to have instructions in the beginning of the process. All the supervisors were informed with a text message.

On the 17th of October, the researched reported: "No-one has commented my information of the new tablet instructions. I understand that the supervisors are very busy doing their actual work but cannot see why they don't check the Sharepoint for example in the vans when coming home from the sites. I will have to ask them that. I placed the updated list for the withered plants in Sharepoint and informed the supervisor in question with email and also on Sharepoint newsfeed page."

4.2.3 Ideas Based on the Observation Diary

Some thoughts that might also help other companies thinking about digitalisation process stood out regarding the above mentioned experiments.

One person has to be officially named responsible for the digitalisation process in the beginning. This person has to have time to push it forward, train and organize peer training, develop the communication and sort out the problems as soon as they appear.

It is not enough to find out about everyone's digital know-how. It should be utilized in mentoring others. A peer training practice should also be created in the very beginning of the digitalisation project. This would enable the employees to get information and assistance directly from the peers who have used the devices and programs more. Peer training is better than training by someone outsider because in the company there is the shared information about what is being done and why. Time for the training should be organized for every employee. They should be able to check the chosen media daily.

It would be useful to know how willing the employees are to learn the tablet during their spare time, also by doing things they enjoy. The line between work and leisure time is going to blur anyway in the future, so could it be a good idea to develop the company culture towards that direction?

If a company can organize meetings including all those who have something to do with the digitalization process, the time for that should be arranged. Maybe once a week in the beginning, face to face or with video calls. In the case company, it is very difficult because on the high season, the work days last ten hours, and the compensatory days-off are meant for resting.

The company culture has to be developed towards sharing information and mutual benefit as opposed to encouraging competition. The digitalisation budget should include all the device, education etc. needed in the beginning, and the company should be able to arrange a lot of time for the project in the beginning.

4.3 Experiences from the First Season

Since two of the supervisors had given up the research after the first interview, the remaining four were interviewed in the second interview. The questions are shown in the appendix 2.

4.3.1 General Use of the Tablet

Everyone had used the tablet during the green construction season, mostly for taking pictures and filing them in Sharepoint. Information searching and offer related task were carried out, too. The internet connection functioned well, but regarding one supervisor, it worked better at home than at the worksite.

All but one had had problems with the password. It expired during the busiest time of the summer. Some had problems when changing the password. The update caused a lot of confusion. Some of the target persons tried different things and managed to find the things they wanted. The downside was that after trying multiple times, they did not remember how they got there.

The whole target group found it challenging when the layout changes and things change places, or things are suddenly done differently:

“It is irritating when you have just learned the previous way to do something, and then it changes. You feel, again, that you do not know.”

“If you learn were certain links or things are on the screen, and then they change, it is difficult to find anything.”

“You have to start searching. First you look from the point you have used to look. Then you have to try different places. Then you have to call for help.”

“It slows you down in the beginning. It kills the routine.”

There were several other things that the supervisors found difficult. Some had never used a tablet before. It took time to learn how to use it. The size of the device caused problems. It was difficult to find certain things, for example excel sheets. Those who experimented more, found more puzzling things. Some of the target group would want new instructions every time there is an update. Some realised that you can always try things; it is there somewhere.

4.3.2 Learning the Functions

Some interviewees found it frustrating having to spend time to learn things that keep changing. “Idea: Take quickly a picture. Reality: it takes 25 minutes to take it right. It should work just like that. You walk to the car to take the tablet. Then you can’t manage to take the picture and file it. I got a smartphone and used it, but felt irritated to use my own device.” Some did not mind taking the time. One of the target persons pointed out that it

is no use to stress with it. “If you don’t find it at once, leave it. It is not my job. But if you need something urgently, it makes you furious.”

The whole target group considered it extremely important that they can immediately reach someone for help. Someone thought that it would be better to have one designated person who is always available, but all the other interviewees felt that peer support would be a very good way to learn and get help. Some of the interviewees had actually already utilized the peer support, because there are always younger employees who know how to do such things.

All the interviewees told they have the courage to try until they find the changed function. One of them pointed out that there might be a moment when you are afraid of breaking something. The target group would have liked to get more help and guidance during the green construction season. However, the majority thought that there was no time for it. Regarding the guidance in the low season, the answers differed strongly. Everyone saw that it is easy to ask for help in the organization. They also found it personally easy to ask for help, although some wanted to try first by themselves before asking.

4.4 Evaluation of the Elected Methods

4.4.1 Usability of the Device

All the interviewees kept the device in the van, and some found it acceptable. The problem was that it was difficult to carry it around with conditions of dirt and dust. Some thought that the device was too far from the site being in the van. It was inconvenient to go and get it from the car, but once you had taken the picture it felt useful.

When planning the digitalisation process in the beginning, the tablet seemed a better option than a smartphone. The management rose the fact that ageing people do not see very well, thus the size of the tablet would be sufficient. The other concern was that the keys of the smartphone would be too small. However, only one of the target group mentioned in the second interview that the size of the tablet is good because you can see well. Others, especially younger ones, complained the big size, because the smart phone could be easily carried around in the pocket. The smartphones have developed considerably in three years, and some of them are quite big compared to those in 2016. So if the process started now, the smartphone might be elected over the tablet.

The navigator and map was generally considered useful. One of the answerers had searched for a pharmacy when one of the employees had got sick. No other emergency situations were reported. The construction sites are often on a new area, and the map service cannot find the address.

Sometimes there are not a proper address for the site. In that case, an address located near the site should be in the site file to be found beforehand.

All the target group took pictures and tried to save them in Office 365 Sharepoint. Some found the instructions useful. Some succeeded with trying. Some managed only to save them in the memory of the device. Some used their own iPhone and did not get them to Sharepoint.

4.4.2 Usability of the Cloud Based Application

Office 365 had already been purchased, so it seemed the best option to start the digitalisation process with. The administration personnel knew how to use it. Sharepoint was introduced as archive, since it was easy to create files there and designate the users for each file. Also the newsfeed area was considered as good starting point for common discussions.

Most of the interviewees had had problems with electric mail. The majority felt they do not really need e-mail. The target person who needed excel sheets wondered where they go and where one can find them again. Everyone had visited the newsfeed area, and someone had problems seeing the dates of the messages. Someone did not get the newsfeed area work at all but was too busy to learn more. The majority had not written anything there but everyone knows now how to write there. Some found it easier to send a text message. Suggestions for improvement appeared: A general claim file should be created. There was pondering about where the reference file should be. It was also suggested that the maintenance team leader should be responsible for taking the reference photographs, since they arrive to the site also when it is finished.

4.4.3 Site-Specific Plans and Instructions

The majority of the target group found seeing the plans on the tablet useful. Sometimes the paper version did not contain the whole site or the explanations, and in the digital version everything was to be seen. There had been problems with accessing Sharepoint itself, as well as the site files. The plans may be updated several times during the season, and the supervisors get a paper version of the update. Administration should keep asking the customers whether there are new updates available and change them into the site files accordingly.

The list of the withered plants was found useful to the maintenance group. The idea was good. The PowerPoint version did not work, though. The Excel version worked but arrived little too late regarding the maintenance of this season. So, the lack of time could be seen again. All the supervisors that needed site specific work instructions had read them. All the sites did not have work instructions, even on the paper. Updates appear also

regarding the instructions, so the administration should continuously ask customers for them during the season.

4.4.4 Discussion Area

All the interviewees had been to the discussion area, in other words the Newsfeed space in Sharepoint. The opinions varied significantly. One problem that was seen was the fact that it took a long time before the Managing Director first used the space. One of the interviewees suggested that now that everyone has the access to it, everyone should inform about the customer feedback. Also everyone could write a report of the day there for the Managing Director, instead of calling; it should become a routine.

The others did not take such a positive attitude. Some did not know what to say, and some preferred the phone or text message regarding the means of communication. The telephone was considered fast, and the electric mail useful only if there was no hurry and the message was personal.

4.5 Contact Information

The target group called for significant improvements regarding contact information. In the beginning of the construction, each site file should contain information on all the suppliers regarding each product, with their contact persons and telephone numbers. Now, the contact information was searched from the internet or given by the site manager. All the supervisors did not have each other's telephone numbers, so that should be sorted out, too.

The contact information should be gathered for each site the by the administration before the start of the green construction work. Usually the Managing Director has the contact information in his phone, e-mail, and different documents. The information about what to purchase from where regarding each construction site, may be only in the Managing Directors head. Hence, a good practise should be developed for gathering all the pieces of information together for everyone concerned to see.

4.6 Information Flow Within the Company

The whole target group thought that it is easy to share ideas and opinions. There were many kinds of information the interviewees wanted to be shared with everyone:

1. The Managing Director should share the information gained in a site meeting to everyone, preferably in Sharepoint Newsfeed. At the moment, he usually tells someone, who tells it forward and so on. A Part of the information disappears on the way.

2. The plans and schedules. The information about when the green construction has to be finished. A general schedule is not sufficient. More information is needed along the season, since the supervisors have several sites to worry about.
3. The duration and the schedule of the maintenance work. When the inspection of the plants takes place.
4. The Prices of the materials that have to be ordered. You could compare price, for example regarding the amount of the material.
5. Different kind of applications, regarding weather, and nearby service stations and diners or restaurants. These could be shared for everyone to see.
6. The areas of the different surface materials regarding each site. It would help to estimate the amounts of material that needs to be ordered.

The administration should categorize the information on the discussion area to the appropriate files, so that for example a note about a certain site could be found later in the right site file.

4.7 Time Management

The majority of the interviewees felt that there was not enough time to learn the tablet and programs during the working day. The reason for this was other tasks at work. Prioritising, using the discussion area, getting e-mail training and simply using the phone were the solutions suggested.

Some learned during their free time. No-one really used the tablet in the van during the commute, because in all teams, the supervisors were those who were driving.

4.8 The Overall Feeling After the Season

The general feeling after the first green construction season was positive. In the beginning, many felt that it is not working, though. Taking pictures was one of the positive things. Target group was glad that the process had started and things are developing. There were expectations towards the better use of the discussion area in the future. The experiment with the tablet inspired all supervisors to learn also other device or programs.

There had been a lot of discussion about the subject. The supervisors told that the Managing Director had been very encouraging and reminded actively for example of taking pictures. The rest of the working community reacted positively. Everyone took pictures. If there was a problem, it was solved with peer support. The young employees felt important to be able to help the supervisors. Also the tablets were considered as benefit because they could be used during the free time as well.

5 CONCLUSIONS

The study was executed in order to get a little deeper in the phenomenon of small and medium-sized companies in Häme area not implementing digitalisation sufficiently in their business. The focus was on the ageing employees because of the age distribution in Finland today and in the future.

According to the theory, digitalisation cannot be successfully implemented in an organization without changing the company culture, lowering the hierarchy, and spreading the decision-making. The digitalisation requires also more transparent communication and cross-cutting cooperation within the organization. The company management cannot control all the information and know-how any more, since digitalisation enhances peer learning and communication.

Digitalisation may be implemented in a company due to the pressure from the customers or competitors, or it can be used as a way to make the company functions more efficient. Whatever the reason, to get good results, significant changes affecting the working methods and company culture must be made.

Change always requires learning. There are strong prejudices against the ageing employees' abilities to learn and change, which creates a contradictory situation: The companies are stuck with ageing employees, due to the current age distribution. The company management may doubt those employees' ability to change along the digitalisation and expect strong change resistance. However, this way the management actually resist the change themselves by having prejudices against their own employees and acting accordingly.

The theory explored indicated strongly against the common prejudices related to the ageing. The theory presents that the willingness to learn new things or change work methods does not depend on the age but is an individual feature. Also the ability to learn differs individually, depending for instance on a person's experiences, attitudes and health. This leads to the conclusion that each employee should be evaluated individually and their strengths utilized accordingly in the process of digitalisation and change. The theory of team intelligence suggests that even those who are reluctant to learn new, can manage in the new type of work environment, with peer support, cross-cutting cooperation and transparent communication.

The study results were in line with the theory. The attitudes towards changes and learning did not depend on the age. The majority of the target group was interested in the new work methods, and showed their willingness to be included in the improvement process. The few employees

that refused to try the new methods, were not totally against the digitalisation. They also can be carried along with the peer support and cooperation. However, there were similarities in the age group, for example in reactions to the required learning methods of the digital devices and applications. This suggests that specific learning solutions are needed for the ageing employees. The target group was very small, but the study tried to deeply understand the individuals in this situation, and thus may give indications regarding their difficulties and the potential means to overcome them.

5.1 Answers to the Research Questions

The main research question was why it is difficult to implement digitalization in a small or mid-size company with ageing employees. Below, each of the supplementing research questions are examined one by one in the light of the case study.

5.1.1 Attitudes to Learning Digital Tools

Based on both the theory and the case study, ageing employees are not reluctant to learn digital tools in general. However, there is a wide range of individual attitudes. Treating employees individually regardless their age is the only way to get forward in the digitalisation process in a company. To find out which employees already have digital skills, use the digital tools in their free time, or are interested in using them is a good start towards digitalisation.

All the supervisors, except the two that gave up the study after the first interview, were interested and excited to learn the use of the tablet and the applications. Reluctance appeared in situations, where there was no time to learn but something had to be done immediately. This also caused frustration among the employees because they felt that they should learn fast and on the other hand there was no time to do it in the real situations.

5.1.2 Attitudes Towards Change

In today's working environment, the only thing that is permanent is the continuous change itself. In the case company, the reluctance to change was not clearly visible. Nevertheless, the majority of the supervisors preferred phone as the primary tool, in spite of understanding that it would be better to have pictures and text. They understood the significance of documentation and the importance of invariable information shared by all. Most of the target group were quite enthusiastic towards changing things, and many of them had also suggestions for the development of working methods. The resistance appeared when it was a question about skills that the employees did not have or see as their actual job. Such skills were for example typing to use

the discussion forum, and taking a picture rapidly. Again, the lack of time was emphasized regarding the change.

The Managing Director was very favourable towards the change when talking about it. However, the interviews and observations included some opposite indications between the lines. The management's reluctance towards lowering the hierarchy and giving the supervisors more official responsibility and authorization could be seen to some extent. However, the supervisors felt that the Managing Director was very supportive, and continuously reminded them to try and take pictures to the site files.

Some of the supervisors had clearly more responsibility but it was unofficial, which prevented them somewhat from doing some tasks efficiently. According to the interviews, the supervisors have to face difficult situations with the clients, but it seems that without the authority, they cannot solve the problems in question. In a construction site, the Responsible Site Manager is designated in the contract and is the one that the customer company should do all the agreements with.

The above described task hierarchy causes an undesirable situation: The customer company cannot put many things forward with the supervisor on the site, because the agreement might not be valid. As a result, the customer asks something from the subcontractor's supervisor on the site, then the supervisor tries to reach the busy Managing Director and asks the same question. The Managing Director gives an answer, or calls directly the customer company and then calls the supervisor to tell how to continue. By the time the problem is solved, the hierarchy has caused delay and potential distortion of the message going back and forth.

These kind of problems could be solved by lowering the hierarchy and giving the supervisors recognized authorisation in the tasks they already carry out to some extent. This way, the customers could sort out day-to-day problems with the supervisor on the site and get the work forward rapidly. That would benefit the both parties. To answer why this is not the practise, one has to look at the role of the Managing Director. As shown in the theory part, the management is the only party that can spread responsible and authorization. The question of whether to treat employees individually or as a uniform group arises here again, and may be behind the management's reluctance.

5.1.3 The Ability to Learn

The theory part presented that ageing and aged people are perfectly able to learn new things. The best results are achieved when people are motivated and when the subject is related to their work. Given that individual differences get stronger along the ageing process, the ability to learn must be evaluated individually. The theory also suggested that the

ability to learn can be improved, which means that ageing people can learn to learn.

In this study, the whole target group that were included in the tablet experiment, learned to take pictures, save and file them, as well as how to use the discussion forum or e-mail, find and read the site-specific documents. They all succeeded at least to some extent, in spite of the fact that the time was really limited due to the busy season. Because of the lack of time, the target persons did not always ask for help in a problematic situation, resulting that they did not get the help when they would have need it. So, the study results are in line with the theory.

The difficulties in learning digital tools were connected to the fact that there are not so many written instructions available. The users are expected to try and learn. When the first computer programs required following detailed instructions for moving along the pre-planned path, the new technology offers multiple options for finding the same application or file. Furthermore, these options keep changing along the continuous updates. This is very different from what ageing people have used to and causes general confusion. The new ways to find things on the screen, including touching and dragging, make it hard to find all the clever functions. This causes frustration and embarrassment, not to mention the excessive time spent.

The joy in succeeding in a new task was visible in the research. It certainly makes the target persons feel good about themselves: Although the beginning was hard, they made it. Experimenting positive experiences improves the persons' attitude to their work in general. The supervisors are interested in continuing the digitalisation process and, considering their answers, also in taking part in the development. To conclude, learning may be hard but it is possible. The end result is rewarding and thus enhances the well-being at work.

5.1.4 Time as an Obstacle in Implementing Digitalisation

According to the theory, interview and observation are research methods that may bring something unexpected to the results. In this study, the role of the time was not considered beforehand but it appeared in the research continuously. Time had to do with everything. Learning new tools and methods was challenging without the appropriate time. Asking for help was often delayed due to the lack of time. The Managing Director of a small or mid-sized company often struggles with time issues, participating in the operational work and trying to execute so many tasks by himself. It is difficult to change functions in order to arrange time, because the time passes while extinguishing small fires here and there. These fires appear because of the insufficient planning, caused by the lack of time.

The only solution to break the circle of hurry is to reorganize the time management within the company. Before starting to do that, the company management should have premeditated and detailed plans about when to implement the reorganizing process and how.

5.1.5 Communication as an Obstacle in Implementing Digitalisation

Regarding the theory explored, communication of change is necessary in order to succeed in any kind of change. Also communication regarding every day incidents and problems is very important to give the best performance as a company and as an employee. The communication should be constant and flow from up to down, down to up, and back and forth in customer interaction. The communication should be direct and reliable, and the misunderstanding and lost information should be avoided.

Some problems with the communication of the case company appeared in the research. The communication with the customers was partly slow and unreliable. Going orally through several people, the message took excessive time, and there was a possibility that a part of the information might distort or disappear along the way, causing misunderstanding.

The communication within the company at the moment is based on face to face and telephone conversations. Since the discussion area on Sharepoint has not been taken properly into use, a big part of the information is lost. Furthermore, considering the interviews, there is such information that supervisors need but is not distributed to them. Perhaps this has something to do with the seemingly unclear roles of the supervisors.

The supervisors, or at least some of them, need to order materials without the best possible tools. For example, the square meters of each surface area have been measured during the offer calculation. This data could probably help the supervisors with the earth mass calculation in order to order the right amount of the material.

The contact information is regularly being asked for. Some work towards that has been done, though. Since the supervisors have to order the surface material to certain extent anyway, the responsibility could be fully and officially transferred to them, along with the full contact information, as well as information about the amount-related prices for the purchasing persons to make right decisions regarding the amount ordered.

The supervisors are given the overall schedule in the beginning of the green construction season. It shows all the agreed contracts and gives an estimated starting and ending times for each site. However, the schedules change all the time, and more contracts are often agreed after giving the schedule. The interviews indicated that the supervisors need continuous

and up-to-date information about the schedules, especially because the supervisors often have several ongoing sites to worry about. Not knowing all that is going on and where at the very moment, makes the supervisors' work challenging. The problem, again, is the fact that the Managing Director holds all the strings, does most of the things himself and owns most of the information, often unintentionally. This is extremely typical in small companies, as well as in the companies that have been very small and grown without the management understanding the importance of reorganizing the tasks along the growth.

5.2 Reliability and Validity of the Study

In terms of reliability, the research results regarding many research questions are in line with the theory explored. This indicates that several studies executed before gave similar results in the specific areas. Furthermore, in the two different interviews, same type of attitudes and opinions were connected to the same target persons, which gives at least some kind of indication about the results not being random. Of course, the reliability could have been proved with more certainty if two different persons had executed the same research. The research process has been reported carefully and giving as detailed information as possible.

The validity of the report has been reached by thinking about the form of the questions beforehand, explaining their meanings in the interview situations, and asking clarifying questions about the answers if needed. The categorization of the answered is explained. The intention has been to examine the answers in the most objective way, although in qualitative research the objectiveness of the researches is generally questioned. The interpretation of the answers has been done considering the interview situations and observations, as well as the relevant theories.

5.3 Recommendations

5.3.1 Responsibility and Authorisation

According to the interviews, some of the supervisors seem interested and willing to take more responsibility. Finding out individually, which supervisors are voluntary to have more responsibility, or already have more responsibility than others, would get the company forward in terms of lowering the hierarchy. The theory part suggests that all the potential in the company should be taken into use.

If the researcher's assumption about the management's possible disbelief in the supervisors' capability to handle the new tasks is correct, it should be kept in mind that the work teaches the worker. No-one is ready for the new work in the beginning. With the support of the management and with appropriate continuous reporting to the Managing Director, those who are

interested in developing would probably rise up to the level of their new tasks.

In a small company, each individual employee has been recruited thinking about the certain work at the moment of recruiting. So if the employee has been recruited several years ago when the company has been smaller, the employee may have been recruited for example for being a hard worker and eager to do as told, or having a suitable personality for operative work. Now that the company has grown, the very same person has to work in many roles and extended tasks. So it is understandable that having more responsibility and potentially stressful tasks does not suit every employee. However, if there is anyone that would want to develop in their work, this potential should be used. This applies especially to small companies where the human resources are very limited.

Giving the supervisors more responsibility would help the know-how spread wider in the company, which would give the following benefits:

- The Managing Director would be able to focus on his own tasks.
- The Managing Director would have more time for planning.
- In case the Managing Director should get seriously ill or hurt, the business would not stop immediately.
- The supervisors could get day-to-day problems sorted more rapidly.
- The information would be more direct with less misunderstanding.
- The well-being of the Managing Director would improve.
- The well-being of the supervisors would improve, because those capable at and voluntary to have more responsibility would have more meaning in their work, which could also make them stay longer in work life.
- The well-being of those reluctant to take responsibility would enhance, because they would know exactly what their role is.

It is noteworthy to mention, that the task descriptions of each individual supervisor should be properly described in writing, to avoid any misunderstanding and to help all concerned to understand their roles. Every employee accepts their role if they have given a change to affect to it and understand the reasons behind their role.

5.3.2 Time Management

One of the biggest obstacles in the digitalisation process is the lack of time, so something has to be done regarding the time management. The plan for the use of time should be made during the low season.

The management has to consider when to start this process in order not to cause unbearable situation in the company business. The change often

slow things down in the beginning, caused by having to learn away from the old ideas, work methods and functions and adapt the new ones. This might affect the cash flow. The construction field is very unpredictable and the construction may stop very suddenly in general, which affects straight to the green construction as well. Also changes might affect to customer relationships, especially without good communication. This is why the customers should be properly and continuously informed about the changes in the company with the message of how the management supports the customers in the change.

Managing Director should delegate tasks to other employees, to be able to better concentrate on time planning and other managing tasks. All the potential of the whole staff should be taken into use, which requires thorough discussions with employees and careful planning. After first lowering the hierarchy, the other issues could be discussed together. For example there could be discussion about why there are things that spoil the schedules. Why the small sudden incidents that have to be reacted immediately appear, and what could be done to avoid them.

5.3.3 Communication

According to the study, the supervisors need more information about several things related to their work. The digital tools of communication should be taken to use properly, and all the personnel should be engaged in it. The low season would be a good time to improve the digital skills.

There should be discussion about how much to learn at work and how much at free time. The peer learning should be considered carefully. There have also been many young employees at seasonal work, who are very skilled with digital tools and applications. Could some of them be utilized in order to enhance the know-how of digital communication? There are also wide range of organisations with training services for work-related digital training.

5.3.4 Team Intelligence as a Solution

There are definitely supervisors in the company that are left behind in the digitalisation process, which can affect also their work regarding the change. The theory of team intelligence was explored to find solutions for those that cannot or will not adapt the digital tools or new digital methods.

The idea of team intelligence is that no-one has to know everything. So, every supervisor does not have to have digital skills. There are intelligent teams that work in a cross-cutting way, regardless the physical construction teams on the sites. Such teamwork starts when there is a problem to be solved, thing to be done or skill needed. It ends when the problem is solved and the job is done. In addition to that, team intelligence

improves well-being at work because it gives a feeling of being not alone. An individual employee has others to face the problems with.

The team intelligence is all about doing things together: asking and giving help, wondering together, and cooperating. In the case company, the team intelligence is already utilized in many ways. Referring to the interviews peer support within supervisors, as well as between supervisors and other employees, is already in use. The employees feel free to ask questions. The supervisors cooperate with the Managing Director, who cooperates with the administration. The know-how is taken from where it is, and the different strengths complete each other. So, the employees with few or no digital skills will manage well also in the future, with the support of the co-workers. The team intelligence only has to be intentionally enhanced.

5.3.5 Digitalisation Plan for the Case Company

The change has to start from the Managing Director, since he is the only one with the power. Only if the management believes in the change, they can make others to believe in it, too. Based on the theory explored and the study, it is safe to recommend the following plan.

1. The Managing Director should delegate some of his tasks, reduce the operational work and give official responsibility with authority to those who are interested in rising on that level, or already execute this kind of tasks without the official authorisation.
2. The Managing Director should decide when it is the right time to start the change process, so that the company business would suffer as little as possible. Perhaps it could be in early spring before the green construction starts. All the personnel should be communicated about the change in good time before it begins.
3. The personnel has been included in the planning of the digitalisation, and it should continue this way in the future to improve the process. The use of the digital applications should be improved considering the supervisors' suggestions. The administration should improve the support of the supervisors with more data available in the Sharepoint.
4. The Managing Director should consider the existence and the vision of the company, and start to communicate it continuously to the personnel to give a common goal and clear significance to every employee's work. The tools for this could be the discussion area in Sharepoint, the individual discussion, and common discussions face to face.
5. The open and honest discussions, individually with each supervisor, should be organized before the beginning of the next season. This is to find out everyone's potential and interests regarding the work at and

free time, including responsibility, customer interaction, site-specific tasks like ordering materials, and digitalisation. The results of this discussion should be written down.

6. Based on the previous phases, Managing Director should delegate some of his tasks individually to each supervisor, give the specific responsibility and authority officially to the specific supervisor with written task description, and communicate this within the company as well as with the customers. There is no law against the tasks varying individually, depending for example on what degree of responsibility a supervisor wants or what their skills are.
7. The supervisors should start their individually pre-planned tasks with the support of the management, and report daily to the Managing Director. The reporting tool could be the Newsfeed area at Sharepoint, at least in the beginning. The Managing Director should also have interaction with the customers to support them in the change and make sure that everything goes well also from their point of view.
8. The management could gradually change the company culture by encouraging individual learning and mutual peer support, as well as enabling cooperation and open communication.
9. The team intelligence should be continuously enhanced by knowing every employee's (not only supervisors') skills and interests, and by mutual cooperation regarding everyday problems. The management have a reason to support the team intelligence also because it helps the employees handle difficult situations knowing that they are never alone.
10. The communication regarding the everyday incidents should be improved and the discussion area should be taken properly into use. All the personnel should be engaged in the interaction.

5.4 Self-Assessment and Case Company Feedback

The study, supported by the theory was initially meant to help the case company in the changing environment and to increase digitalisation. The other purpose of the study was to find out in general, why it is difficult to small and medium-sized companies with ageing employees to implement the digitalisation, with the changes in work methods and company culture that it brings along. The phenomenon has been recognized in the similar companies in the area. The thesis may give ideas and some guidance also to other small and medium-sized companies struggling with the challenges of digitalisation combined with ageing employees. Having said that, further studies should be executed in the area with a wider target group.

The interviews were held in 2016 and it would have been nice to complete the research a little faster. However, the carefully documented interview and observations together with the continuous relationship with the company helped to complete the work appropriately.

There are things that could have been done differently. It would have helped if the research had been started by first exploring all the theory and the interviews executed after that. On the other hand, the interviews were intended to especially help the company in development, so the guess that they served their purpose. Some of the questions could have been simpler. They consisted quite a lot of information, to give the interviewee an idea about the purpose the digital tools and applications could be used.

Regarding the actual development project, more time and effort could have been invested to the observation between the interviews. The researcher could have contacted the target persons more often and asked about the use of the methods, as well as the problems that had arisen. After this kind of project, there is always the feeling of not having done enough, and there is always room for further investigation.

The case company management was pleased with the study, although they did not agree with all the details. The Managing Director found that there could have been a more detailed description regarding the present use of the Sharepoint, since it has improved significantly for example the offer calculation and reaching all the documents from the site. He also considered the study wide and a well presented viewpoint to the challenges of the small and medium-sized companies generally in the information society.

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THE QUESTIONS OF THE STARTING INTERVIEW

Digitalisaation toteutus viherrakennuskausi 2016 Viherrakenne Jaakkola Oy / Liisa Yrjölä
Alkuhaastattelu, peruskysymykset
Milloin viimeksi opit jonkin uuden asian tai saavutit jonkin poikkeuksellisen tavoitteen?
Oliko tavoitteeseen tähtäävä prosessi vaikea? Tuntuiko välillä hankalalta?
Miltä sinusta tuntui kun opit sen tai saavutit tavoitteesi?
Mitä mieltä olet siitä, että yhä useammat asiat siirtyvät internetiin: pankki, kela, verottaja, julkinen
Miten olet ajatellut pärjääväsi internet-asioinnissa tulevaisuudessa?
Oletko koskaan käyttänyt tietokonetta tai muuta laitetta, jolla pääset internetiin?
Mitä laitetta käytät: tietokonetta, tablettia, älypuhelinta, muuta?
Kuinka usein käytät kyseistä laitetta?
Mitä muuta teet/olet tehnyt laitteella kuin käynyt internetissä?
Oletko kuullut Office-ohjelmista kuten Word, Excel tai PowerPoint?
Käytätkö/oletko käyttänyt sähköpostia?
Maksatko laskuja/oletko maksanut laskuja oman pankkisi sivustolla?
Oletko ostanut tuotteita, tilannut lippuja tai varannut majoitusta netissä?
Jos et ole koskaan käyttänyt mitään tällaista laitetta, miksi et ole?
Mitkä ovat internetin käytön huonot puolet mielestäsi?
Mitkä ovat internetin käytön hyvät puolet mielestäsi?
Millainen olet internetin ja digitaalisten laitteiden käyttäjänä mielestäsi?
Miten opit parhaiten uusia asioita? Kuuntelemalla, lukemalla, katsomalla vierestä, tekemällä toisen
Miten suhtaudut, jos joudut opettelemaan internetin ja esimerkiksi tabletin käytön työhösi liittyvänä
Mitä pelkoja sinulla on asiaan liittyen?
Mitä toiveita sinulla on asiaan liittyen?
Seuraavia asioita on yrityksessämme tarkoitus tarjota työntekijöille netin välityksellä. Mitä ajatuksia se sinussa herättää?
Keskustelu: Voit ottaa Skypellä näköyhteyden esimerkiksi Mikkoon tai jollekin toiselle esimiehelle ja näyttää hänelle jonkin työmaallasi olevan kohdan tai ongelman.
Kuvat: Voit ottaa valokuvan työmaasta, jos se esim. ei ole siinä kunnossa, että voit aloittaa työt vaikka pitäisi. Voit lähettää kuvan saman tien paikkaan, josta se löytyy tarvittaessa todisteeksi.
Pihapiirustukset: Voit hakea laitteellasi työmaasi pohjapiirustuksen ja suurentaa ja pienentää haluamaasi kohtaa milloin ja missä vain.
Työselostukset: Löydät laitteellasi pihatyöselostuksen, josta voit varmistaa jonkin asian saman tien
Yhteystiedot: Löydät työmaahasi liittyvät yhteystiedot missä ja milloin tahansa
Kartta: Sinulla on aina kartta käytettävissäsi uudelle työmaalle mennessäsi, ja se on jopa vähän isompi kuin älypuhelimien näytöllä.
Kriisitilanteet: Löydät helposti netistä lähimmän koneenkorjaajan, tarvike- tai työkalukaupan, Terveystalon tai ensiapupolin ja ajo-ohjeet sinne. Toimistolle voit skypettää ja näyttää, mikä on ongelma, jos et itse ehdi ottamaan yhteyksiä esim. tavarantoimittajaan tms.
Työtuntien seuranta: voit laittaa työpäivän lopuksi oman työmaasi työntekijöiden tunnit/tehtävät taulukkoon laitteellasi vaikka kotimatalla (joku muu voi vaihteeksi ajaa). Muut esimiehet eivät näe sinun tuntejasi ja päinvastoin.
Sisäinen tiedotus: Voit kirjoittaa tärkeitä asiat laitteellasi keskustelusivulle, josta kaikki näkevät ne heti: ongelmat, reklamaatiot, keuhut, uhkaukset, tapaturmat, muut sattumukset, kehitysehdotukset... Saat myös tärkeitä tietoja muilta.
Palkka- ja henkilöstöasiat: Voit ottaa Skype-puhelun toimistohenkilökuntaan
Mitä ideoita tai ehdotuksia sinulla on asiaan liittyen? Mikä muu asia yrityksessämme voitaisiin hoitaa digitaalisesti?

THE QUESTIONS OF THE SECOND INTERVIEW

Digitalisaation toteutus viherrakennuskausi 2016 Viherrakenne Jaakkola Oy / Liisa Yrjölä
Loppuhaastattelu, peruskysymykset
Yleistä tabletin käytöstä
Käytitkö tablettia ja Sharepoint-ohjelmaa viherrakennuskaudella
Jos et käyttänyt, miksi et?
Mitä teit eniten tabletilla ja ohjelmalla?
Toimiko Internet-yhteys hyvin?
Oliko salasanankäytön kanssa ongelmia?
Oliko salasanavaihtamisen kanssa ongelmia?
Laitteeseen tuli päivitys, joka muutti ohjeet, jotka olin kirjoittanut teille, enkä huomannut sitä heti. Aiheuttiko se ongelmia?
Koetko hankalana sen, että ulkoasu muuttuu tai toiminnot vaihtavat paikkaa, tai jokin tehdään uudella tavalla?
Mikä muu on hankalaa?
Haluaisitko uudet ohjeet aina kun jokin muuttuu?
Onko tärkeää, että saat aina heti jonkun kiinni, kun tulee ongelma?
Olisiko hyvä idea, että työtoveri, joka osaa jonkin asian hyvin, opettaa sen muille?
Uskallatko itsekseesi kokeilla niin kauan kunnes saat selville muuttuneen toiminnon?
Turhauttaako sinua, että aikaa kuluu jatkuvasti muuttuvien asioiden opettelemiseen?
Olisitko halunnut enemmän tukea tai opastusta viherrakennuskaudella?
Haluaisitko enemmän tukea tai opastusta viherrakennuskauden ulkopuolella?
Onko työyhteisössäsi mielestäsi helppoa pyytää apua tai neuvoja?
Onko sinulle henkilökohtaisesti helppoa pyytää apua ja neuvoja?
Viherrakennuskauden aikana käytössä olleet toiminnot
Piditkö tablettia autossa?
Toimiko tabletin pitäminen autossa?
Mitä haluaisit oppia ohjelmasta lisää?
Mitä haluaisit oppia laitteesta lisää?
Mikä on olo yhden viherrakennuskauden jälkeen?
Tuntuvatko laite ja ohjelma hyvältä apuvälineeltä, turhalta riesalta vai miltä?
Miten mielestäsi esimiehesi suhtautui uuteen digitaaliseen apuvälineeseen työssäsi?
Miten mielestäsi muu työyhteisö suhtautui tabletin käyttöön?
Miten toimivia olivat mielestäsi seuraavat asiat:
Kuvat: Voit ottaa valokuvan työmaasta, jos se esim. ei ole siinä kunnossa, että voit aloittaa työt vaikka pitäisi. Voit lähettää kuvan saman tien paikkaan, josta se löytyy tarvittaessa todisteeksi.
Laitoitko kuvia työmaakansioon? Oliko ongelmia?
Jos et laittanut, miksi et?
Parannusehdotuksia
Pihapiirustukset: Voit hakea laitteellasi työmaasi pohjapiirustuksen ja suurentaa ja pienentää haluamaasi kohtaa milloin ja missä vain.
Katsoitko piirustuksia tabletilla? Oliko ongelmia?
Jos et katsonut, miksi et?
Parannusehdotuksia
Työselostukset: Löydät laitteellasi pihatyöselostuksen, josta voit varmistaa jonkin asian saman tien
Luitko työselostuksia? Oliko ongelmia?
Jos et lukenut, miksi et?
Parannusehdotuksia
Yhteystiedot: Löydät työmaahasi liittyvät yhteystiedot missä ja milloin tahansa
Etsitkö yhteystietoja?
Saitko tarvitsemasi yhteystiedot?

THE QUESTIONS OF THE SECOND INTERVIEW

Jos et hakenut tai etsinyt, miksi et?
Parannusehdotuksia
Kartta: Sinulla on aina kartta käytettävissäsi uudelle työmaalle mennessäsi, ja se on jopa vähän isompi kuin älypuhelimien näytöllä.
Käytitkö google mapsia tai muuta karttatoimintaa? Oliko ongelmia?
Jos et käyttänyt, miksi et?
Parannusehdotuksia
Kriisitilanteet: Löydät helposti netistä lähimmän koneenkorjaajan, tarvike- tai työkalukaupan, Terveystalon tai ensiapupolin ja ajo-ohjeet sinne. Toimistolle voit skypettää ja näyttää, mikä on ongelma, jos et itse ehdi ottamaan yhteyksiä esim. tavarantoimittajaan tms.
Käytitkö tablettia kriisitilanteissa?
Jos et käyttänyt, miksi et?
Parannusehdotuksia
Sisäinen tiedotus: Voit kirjoittaa tärkeitä asiat laitteellasi keskustelusivulle, josta kaikki näkevät ne heti: ongelmat, reklamaatiot, kehut, uhkaukset, tapaturmat, muut sattumukset, kehitysehdotukset... Saat myös tärkeitä tietoja muilta.
Kävitkö keskustelusivulla katsomassa, onko siellä ajankohtaista infoa. Jos kävit, kuinka usein?
Jos et käynyt, miksi et?
Kävitkö kirjoittamassa infoa, ideoita, kysymyksiä, asiakaspalautetta tms. keskustelualueelle? Jos kävit, kuinka usein?
Jos et käynyt, miksi et?
Mitä ideoita tai ehdotuksia sinulla on asiaan liittyen? Mikä muu asia yrityksessämme voitaisiin hoitaa digitaalisesti?
Sähköposti:
Käytitkö Online Officen sähköpostia? Jos käytit, kuinka usein?
Jos et käyttänyt, miksi et?
Parannusehdotuksia
Käytitkö Online Officen Wordia tai Exceliä? Oliko ongelmia?
Jos et käyttänyt, miksi et?
Parannusehdotuksia
Sisäinen tiedotus
Mitä digitaalista kanavaa haluaisit käyttää sisäiseen tiedottamiseen?
- sähköpostia?
- keskustelualuetta Sharepointissa?
- muuta, mitä?
- minkälaisista asioista yrityksessä haluaisit enemmän tietoa?
Onko mielestäsi työyhteisössäsi helppo kertoa ideoitasi ja mielipiteitäsi?
Mitä kanavaa haluaisit käyttää siihen?
Ajankäyttö
Oliko sinulla mielestäsi tarpeeksi aikaa opetella tablettia ja ohjelmia?
Oliko sinulla mielestäsi tarpeeksi aikaa käyttää tablettia ja ohjelmia työpäivän aikana?
Jos ei ollut, mistä se mielestäsi johtui?
Jos ei ollut, miten mielestäsi ongelman voisi ratkaista?
Käytitkö tablettia tai harjoitteletko tabletilla vapaa-aikanasi (voi olla myös muuta toimintaa kuin työhön
Jos et, miksi et?
Käytitkö tablettia viherrakennuskaudella aamuisin työmatkoilla?
Jos et, miksi et?
Käytitkö tablettia viherrakennuskaudella työn jälkeen työmatkoilla?
Jos et, miksi et?
Oletko innostunut käyttämään myös muita laitteita tai ohjelmia?