

UNIVERSITY OF TARTU
Faculty of Social Sciences
School of Economics and Business Administration

Hyeonji Yoon

IMPACT OF DIGITALIZATION IN ACCOUNTING
ON REMOTE WORK

Bachelor Thesis

Supervisor: Ülle Päril, Associate Professor in Economic Modelling

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I have written this Bachelor Thesis independently. Any ideas or data taken from other authors or other sources have been fully referenced.

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Introduction

IT (Information Technologies) or digitalization was first used in the 1960s, and relevant fields and studies have been further developed and expanded as the frame of the world has changed. The effect of the digital revolution on enterprises has led to the accumulation of digital assets in recent years. (Kuusisto, 2015) Nevertheless, adjusting people to virtual circumstances was not easy, particularly at work.

Technologies faced a turning point due to the unprecedented pandemic, bringing inevitable changes in the work environment, and working structure. This demonstrates the importance of digitalization, which played the most critical role in surviving unpredicted conditions. Eurostat (2015) reports that remote working rates have been stable between 5-6% in the past but have now increased by 12% in the 20-64 age group in the European Union. Due to the COVID-19 restrictions, people were also isolated from acquaintances and society. In the midst of chaos, companies had to find a way to remain functional. Therefore, they formed virtual workplaces, as well as transferred transactions onto the Internet. The accounting field also reacted to the situation flexibly. PwC, one of the big four firms (Deloitte, EY, KPMG, and PwC) insisted on a hybrid work model and announced that 40,000 of its workers can now work from home (Maruf, 2021). The recent changes in working methods show that digitalization is an irresistible trend at both individual and organizational levels to let people free from the physical place limit. Its effectiveness becomes more crucial over time, changing the landscape. In view of the digitalization process, the question arises as to how this process impacts remote work, which elements of the remote work environment and the profession quality have been altered correspondingly, and how enterprises view this transformation.

Prior studies discussed the effects of digitalization, future software program functions, and controversial opinions regarding remote work. In this paper, we analyze the relationship between digitalization and remote work and the impacts of digitalization in accounting on remote work, covering both positive and negative sides and organizational perspectives on future changes. In the empirical part, the sample size will be limited to Estonia. In this bachelor thesis, Estonian businesses will be investigated, and a one-off interview will be conducted. To achieve the aim, research tasks are established as follows:

- To define digitalization and application in accounting,
- To the development of digitalization in accounting,

- To examine the meaning of remote work in accounting,
- To review the relationship and impacts of digitalization on remote work,
- To review empirical studies researched on the given topic,
- To discuss the measurement methodology and the sample,
- To conduct the empirical study and interpret the result.

This thesis consists of two main chapters. The first main chapter deals with a theoretical review following four sub-chapters, and the second main chapter handles the empirical analysis following two sub-chapters. The theoretical part focuses on digitalization and its application in accounting and its connections. It is followed by the meaning of remote work in the field and the relationships and the effects of digitalization in accounting on remote work. It also covers a review of previous studies to introduce relevant concepts. The empirical part of the paper explains the measurement methodology and sample, including the scope, barriers, and size. It analyses the results based on the collected data. Lastly, this thesis ends with a general statement and future research opportunities.

The author is deeply grateful for the support from the school, enterprises that participated in the empirical studies and offered information, and supervisors who helped get this paper out.

Keywords: Accounting, Digital accounting, Information Technologies (IT) and digitalization, Remote work, Estonian businesses

1.Theoretical review and analysis of digitalization in accounting on remote work

1.1. Definitions and development of digitalization in accounting

Definition of the terms

Bhimani and Willcocks (2014) argue that every single aspect of mundane businesses involves digital technologies which implies that it is already diffused in society. Technologies have been constantly advanced throughout history. This part will start to define the applied term ‘Digitalization’ in this paper and its development in terms of accounting.

Scholars have divergent perspectives on definitions of ‘digitization’ and ‘digitalization.’ Some researchers suggest it is possible to use them interchangeably depending on circumstances. Nevertheless, the others insist there are discrepancies in the meaning of those words, and so it is inappropriate to use them, swapping the meanings of the words. This section focuses on the divergence of substances between the terms.

Firstly, digitization is defined as “the technical process of converting analog signals into a digital form, and ultimately into binary digits.” (Legner et al., 2017, p. 301) By emphasizing the simple process of converting information, the concept does not require any changes to the business model or corporate strategy. (Gobble, 2018) It mainly involves modifying the data technically, and it enables efficient storage and transfer of information (Schmacher et al., 2016). The commonality among theories is to convert the existing analog data to digital form and limit its effects on the data system and the business model. It focuses on the technical transformation rather than the concomitant results entailing changes to the organization.

Table 1.

Comparison of definitions on ‘digitization’

	Data transformation	Existance of changes	Functions
Legner et al	X		
Gobble	X	X	
Schmacher et al	X		X

Source: Compiled by the author

Secondly, digitalization is defined as “the manifold sociotechnical phenomena and processes of adopting and using these technologies in broader individual, organizational, and societal contexts.” (Legner et al., 2017, p. 301) It originates through differentiated actions and

changes in the organization based on the knowledge brought by digitization (Gobble, 2018). In addition, it carries all the impacts or results that digitization possibly provokes. (Schmacher et al., 2016). Observations suggest that it implies a broader scope and includes broader phenomena, such as the use of digitized information to change and improve outcomes, as well as the pre-digitization steps.

Table 2.

Comparison of definitions on 'digitalization'

	Usage of technologies	Relevant changes	Digitization assumption
Legner et al	X		
Gobble		X	X
Schmacher et al		X	X

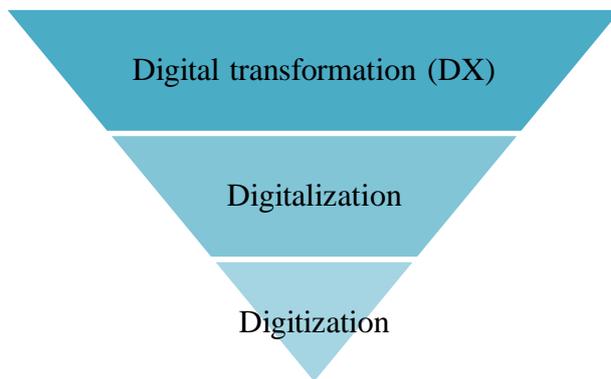
Source: Compiled by the author

Generally, the transition towards a more digitalized capacity begins with digitization while converting the information into a digital form, and the concept of digitalization assumes digitization before transformation with subsequent changes in the organization, strategy, and the systems etc. Most recently a new term appears in this area which is digital transformation (DX) covering the broadest scope and its phenomena. It ratifies inventive technologies under the aims of productivity, value formation, and social welfare (Elbert & Duarte, 2018). Moreover, the concept includes at least four changes to the business entity which are the business model, the relationship between the organization and stakeholders, the institutional process, and the higher level of sophistication in the products or services. (Korchagina et al, 2020) In addition to having an impact on the strategic and competitive aims of the company internally, digital technology also has a profound impact on the business models, and competitive advantages, as well as on the company's control over accounting data and management systems. (Mancini et al, 2017) It is recognized that digital transformation requires more enormous alteration to the business operation and the work process through digitalization.

Nevertheless, the author confines the meaning of the term and its level to 'Digitalization' in this research, and it includes the usage of technologies, consecutive changes in the business and work tasks based on the preceding digitization process compiling various definitions.

Figure 1.

Levels of terms 'digitization, digitalization, and digital transformation'



Source: Compiled by the author

Development to digital accounting

As a result of the brand-new financial activities, the necessity of constructive accounting was reinforced, and different measures and approaches are simulated as a part of the revised accounting systems. The market grows over time, so its importance and mandates become increasingly apparent considering current financial legislation and enterprise demands. Accordingly, business entities should handle appropriate accounting duties with varied methods and technologies depending on their conditions and complexity.

In the business world, digitalization is an inevitable transition as it integrates the most basic business functions, such as communication and efficient data transfer. As a business function, accounting is headed in the same direction. (Bogasiu & Ardeleanu, 2021) Modern management and the accounting system were transformed into electronic forms with the advent of the internet and technologies. With the digitized data, a digitalized accounting system, analysis, management structures, and numerous platforms were developed, including triple bookkeeping, engine mega-bookkeeping, accounting platforms, distributed ledger, and permanent recording. As a company moves forward to digital innovation and a higher level of digitalization in the work process, management seeks specific computer programs and software among the hundreds available on the market. (Tkach & Shchemelev, 2017) Furthermore, with constantly evolving technologies, accounting has been kept up with them, and accountants are required to not only accomplish simple tasks such as bookkeeping and documentation but also bring strategic and future-oriented decisions for the organization. By integrating digitalization and automation, accountants can receive support and be able to

utilize the data gathered on the database effectively. (Higgins, 2021) Gulin et al (2019) claim that with digitalized systems and software programs, accountants gain productivity benefits by reducing repetitive tasks in their current work descriptions, and the work process would become more efficient. It is expected that technological innovation in the accounting field will lead to greater efficiency in the perspective of operational management and costs, as well as information quality. It reduces errors and enhances management decision-making. (Botez & Melega, 2020)

In consequence, digitalization in accounting seems imminent and automation has already replaced several duties including invoices, regular payments, bookkeeping, etc. Especially in companies with a substantial scale since those tasks are repetitive and able to encode in the program (Arntz et al, 2017). According to the policy, the management board and accountants are supposed to implement digitalized financial and accounting systems within the business and formulate strategies and long-term decisions based on data processed by electronic systems, and the level of employee acceptance of digitalization without strong resistance in routine work has been achieved. Accountants are not limited to following procedures and maintaining records. It is crucial to interpret collected data to make better long-term business decisions and offer financial advice to clients (Gherman, 2021).

According to the accounting community, methodologies have been developed based on the necessity and complexity of enterprises, and it is evident that these enterprises are moving swiftly toward digitalization at various rates, as it will enhance employee functionality and benefit the employees in the long term. Therefore, disparate qualities and professions are required to process the data and analyze it to help companies be more profitable and sustainable.

Figure 2.

Causality between digitalization and professions in accounting



Source: Compiled by the author

1.2. The meaning of remote work in accounting

Remote work refers to the kind of working system in which employees can flexibly choose where to work outside of the office building, it could be also named telecommuting and working from home (WFH). The author will call this working system remote work (RW) in the paper. A system can have different types, such as partial and complete modes, and when using it or thinking about introducing it to a work environment, the company should regulate the appropriate rules, equip it with electronic devices, and assess its performance. (Gartner, n.d.) No matter what the mode of work is, several examples indicate that companies are trying to accept remote work or integrate it into their systems in recent years due to unprecedented circumstances. As an example, 60,000 workers from the company Morgan Stanley once worked in homes which are approximately 90% of the associated members. (Morgan Stanley, 2020) The question of whether to increase the share of RW or to return to the traditional working environment generally called offices, where workers are accustomed to and nostalgic, is still controversial. This is because there are clear pros and cons to it.

In the transition, technologies and the digitalization process play a crucial role in making RW possible. In an age of digitalization and technologies, remote workers can connect in real-time and access data, which has created an environment in which workers can connect more frequently, especially when their jobs require expertise. (Leonardi, 2021) Also, with the recruiting market, the company's scope of candidates expands, especially if it is a multinational business as obstacles like physical presence and visa issues are removed through the virtual place. (Rosalsky, 2020) However, it is impossible to discuss digitalization and RW without mentioning security. Even when large enterprises deploy reinforced security systems, there will be security risks, and when they use the internet, there will be attacks and outages. (Aceto et al,2018) As well, experts suggest that it challenges workers to maintain long-term work-life balance and well-being as a result of decreased productivity and hidden resistance. (Amankwah-Amoah et al, 2021) It is evident that some companies have fallen short of their business model due to their inability to adapt to changes in the environment. These businesses need to continuously adapt to overcome disparities. (Zhang et al, 2019)

Consequently, the management and industries must decide if technology and RW will be used in certain conditions to change business models in a way that balances risks and qualitative characteristics.

1.3. Relationships and impact of digitalization on remote work

The process of digitalization has influenced most parts of organizations and prompted new industrial trends. Along with that, technology has shifted not only the work process but also many professions and the required skills. Different professions are being altered by technical advancements, and accountants are leading the way. Nowadays, the use of software programs and internal systems, which have been invented over the past ten years, has become crucial. (Tekbas, 2018) Therefore, the companies must be able to respond swiftly to market trends and changes to lead and they seek new abilities from the employees correspondingly.

According to a recent study, thriving companies have adopted new technologies and online platforms developing their infrastructure and systems to adjust to the changing circumstances caused by COVID-19. As the pandemic progressed toward digitalization, it became obvious that it accelerated and they found a way to overcome the limitations by amplifying services online, including online teaching and remote work. (Bradley et al, 2020) Further, discrepancies in government regulations or unexpected effects of a pandemic will likely prompt enterprises to accept more digitalization. (Amankwah-Amoah et al, 2021) Following the recent study, it is expected that 26.7 per cent of work remotely in 2021 based in the USA and will gradually come back to the office if it is needed still the majority remains the same. Moreover, experts predict that 32.2 million jobs will be remote by 2025. Only 16.8 million people worked remotely before COVID-19, so this is a significant shift that almost doubled. (Ozimek, n.d.) Despite the trend toward digitization having been present for a long time, it has accelerated in recent years, allowing for more remote work fairly quickly to comply with regulations and urgent circumstances.

When enterprises integrate digitalization into their accounting and financial analysis processes, they will expect to improve their analytical outcomes. It is accomplished by communicating a higher level of automation and consistently reorganizing the system. Several advantages are attributed to a unified digitalized system. These include facilitating management processes, enabling the company to react to external stimuli quickly, increasing customer satisfaction, and accelerating data processing speeds. (Iurieva et al, 2021) Despite the many challenges associated with digitalization, organizations keep striving to get to a higher level of automation and digitalization since they expect improvement and increased efficiency. Another aspect is that the work process and financial services are organized differently taking into consideration the quality of technologies and the development of digital technologies. It considers the way people work and the need for relevant technological knowledge by field officers. It also allows them to get opportunities such as freedom over

where to work. Similarly, researchers emphasized that “The information system comes to improve the company's performance, increasing its competitiveness and turning accounting into the art that "ensures the success" of the company.” (Gehrman et al, 2021, p.111)

Businesses generally use discrete internal and external channels for communication and Leonardi (2021) asserts that work-related communication is delivered via the internet more than 50 per cent of the time, and about 20 per cent of meetings and documents are delivered via the Internet around 10 per cent of the time before the emergence of COVID-19. If the company implements regular RW, all these channels should move to one online pool. The fact that employees use digital tools cannot be changed. They should consider which software and systems to use and how to communicate efficiently with the tools.

1.4. Overview of empirical studies in previous studies

The market demonstrates an increase in remote work and digitalization in the workplace, but varied studies hint at its effects. Phorlaphatrachakorn and Na Kalasindhu (2021) brought the topic in terms of digital accounting and its effects. Whenever a company proposes a digitalization system, it emphasizes the positive effects of the system and the relationships with work elements. The empirical study was conducted with 313 listed Thai companies. The authors tested hypotheses with a structural equation model and analysis. In this report, they conducted a regression analysis to analyze the quality of reporting, usefulness of accounting information, and strategic decision effectiveness based on digital accounting. The results indicated that digital accounting improves the quality of financial reporting and that enterprises are better able to analyze financial data and make better decisions as a result. Given values imply that digital accounting has direct relationships with financial reporting quality, accounting information usefulness, and improvement of strategic decision effectiveness. Eventually, those factors will influence to accomplish the long-run goals and survive in the market. (Phorlaphatrachakorn & Na Kalasindhu, 2021) However, it is questionable whether digitalization in accounting systems contains one-way effects considering various companies' conditions and its feasible drawbacks.

Another researcher introduced different views on the topic asserting that digitalization is beneficial for specific businesses and not for others. The study deals with general financial service industries, which are banks listed on the Shanghai and Shenzhen stock exchanges. It concluded that enterprises with small assets have positive relationships with digitalization and organizational legitimacy. On the other hand, firms with large assets and strong entrepreneurial orientation reveal negative relationships with given variables. (Zhou et al,

2021) Both theories indicate that digitalization plays a critical role in accounting and financial services. Even so, financial management should consider how they organize the digital system and structure it to reduce negative effects and increase organizational sustainability. This is because it brings divergent results due to corporate environments and digitalization processes that require enormous resources and time to restructure. To determine which approach would be most suitable for the organization, the firm must examine the current stage considering internal and external circumstances.

PwC, one of the big four accounting firms, conducted a survey to analyze the use of technology in finance and accounting based in Germany. 76 A total of 76 large and medium-sized companies participated in the study, and its results indicate that the majority of companies (53%) used technology on average compared to similar companies, followed by 'Conservative' with 21%, and 'Progressive' with 14% in 2017. (Jostenhoven et al, 2018) According to the report, many companies can take part in an average level of digitalization in finance and accounting. Nevertheless, some have a head start or lag depending on their strategies and status. Most associations are moving forward rather than backward, and the difference is simply the pace. This opinion has been confirmed by a study by KPMG based on budget data from German companies. In a survey of 146 chief financial officers (CFOs) or chief accountants, more than half said they intended to increase the budget for digitalization projects, followed by 28% who said they would remain unchanged.

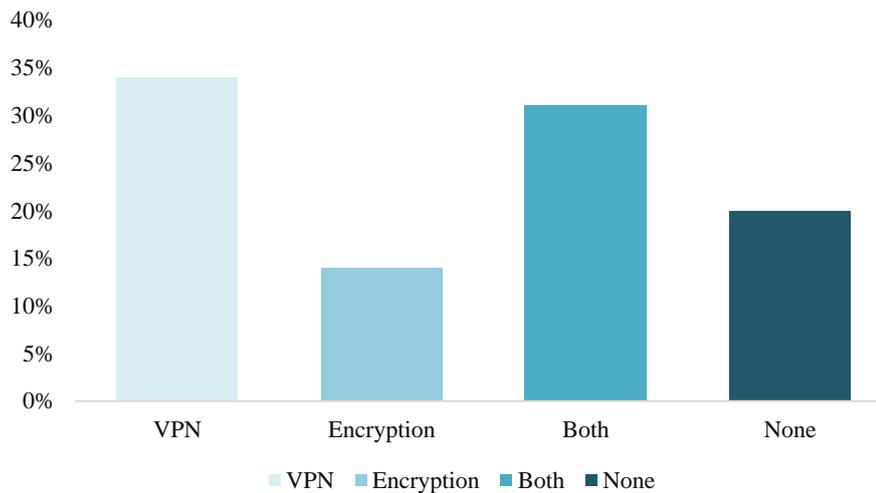
Digitalization in accounting services already have been tested in the firms in the pandemic situation, several transactions can be completed virtually in accounting services, and employees do not need to visit the office to issue invoices, sign transfers, and sign contracts with consumers through the digitalized system. Also, it spotlighted difficulties in communication, unstable VPN (virtual private network), access to the programs, lack of equipment, and internet. (Halina & Magdalena, 2021) These factors hinder the transition to digitalization, and workers moving away from the office reduces work efficiency.

Especially accountants should serve the obligation to protect customer's data as well as the institutional information. Security issues are always involved in digitalization Unlimited users keep pouring data and information on the internet. The growth of usage weakens the security issues, as the original intention of the internet was for communication but not for security. (Deshmukh, 2006) Yet companies should protect the data as if they protect physical assets. The study also encompasses a question about the security of data confidentiality in companies. Interviewees answered that 34% saved the data with VPN, 31% used both VPN and encryption and 14 % with encryption of transferred files. Yet, 20% of

them answered they do not protect the data or do not have the knowledge to secure it. (Halina & Magdalena, 2021) Despite the high percentage of enterprises protecting data, 79% in total, 20% have done nothing, so their data can be leaked at any moment.

Figure 3.

The shares of means for the data security



Source: Halina & Magdalena, 2021

Data is an essential element that can make companies thrive or fail. Digitalization is a guaranteed future movement, and it should call for the appropriate security measurement and training for workers to help them adjust to the new working environment and protect their digital assets. (Halina & Magdalena, 2021) In the second part of the thesis, the empirical study features assessments on digitalization and RW.

Digitalization and its trend are currently present, and a wide variety of industries are on different sides of that trend and face barriers in system-based accounting and financial accounting. This is one of the key findings of previous empirical studies. As some parts of this document lack consistency, the author will examine how it is applied to Estonian companies, aiming to understand the relationships between two factors and to determine whether lessening the hindrances will help enterprises offer better options to workers in which they can work more efficiently.

2. Empirical research of digitalization in accounting on remote work

2.1. Description measurement tool and research sample

In the second part of the paper, the author aims to find how digitalization of accounting is affecting remote work in Estonian enterprises, and which relationships and impact it has. Empirical data is collected using a qualitative methodology, and the author analyzes the collected information to reach a conclusion and interpret it. It is preferred to use the qualitative approach because it is possible to cover extensive contents through preconstructed questions and give interviewees the opportunity to answer subjective questions. Open types of questions - how, why, and what - are best answered using qualitative methods such as focus groups, interviews, observations, and content analysis (Creswell, 2013). Therefore, the author will use the forementioned type of questions to conduct the study. Moreover, it helps to recognize the true stories while listening directly from the interviewees and find outputs such as commonalities and discrepancies regarding the subject by checking and coding. Coding is the interpretive and analytical process by which the author can develop the findings and outputs of the research (Kurasaki, 2000). Specifically, semi-structured interviews with responsible employees in accounting firms and the accounting department in enterprises will be conducted.

All interviewees work in an accounting firm or in the accounting department of a variety of enterprises. The respondents should work in Estonian companies and have experience of working remotely. They should also be responsible for any or all types of accounting tasks. Although the author aimed to examine ten workers from distant companies, merely eight interviews were conducted due to practical issues. Participants will be interviewed via virtual meetings channels including Zoom, Microsoft Teams, and Skype or the written form upon the request from the participants. The data will be transcribed after data has been collected from respondents, and the outcomes will be depicted interpreting the transcriptions and coding the outputs.

Table 3.

Information about interviewees

Interviewee	Headquarter	The number of employees	Business field	Work experience	Meeting
A	Tallinn	26	Accounting service	30 years	Virtual
B	Tartu	40	IT service	27 years	Virtual
C	Tallinn	150	Utility projects	1 years	Virtual
D	Tartu & Jõhvi	8	Accounting service	8 years	Written
E	N/A	1	Budgeting service	22 years	Virtual
F	N/A	40	Accounting service	6 years	Virtual
G	Tartu	50	Accounting service	1 years	Written
H	Tartu	50	Accounting service	7 months	Written

Source: Compiled by the author

The interview questions are built based on the given theoretical chapter. It is comprised of three themes covering: Digital accounting and RW status and trends, opinions based on the respondents' working experience, and conceivable barriers. It starts with the personal information and organizational information such as business types and the size. The first theme delivers digital accounting and RW status and trend. It is divided into two sub-parts which are digitalization and RW. It starts with the question which program or system the company uses for the accounting system. How many percentages of accounting tasks are managed online, and the author will look through examples of digital tasks and the form of documentation. A budget is the most critical tool for running a successful business. In short, it announces a company's strategy and future direction with quantitative measurement and shows management's commitment. (Aru, 2017) Therefore, the budget trend for digitalization will be discussed. The question is followed by RW inquiries. Interviewers are looking for how the share of RW is distributed and how to communicate with co-workers. It will be questioned how employees access the financial and accounting programs while working out of the office. In addition, it will be questioned how they see RW being applied to the digitalization process in the future.

The second part of the interview covers personal experience and opinions on the matter. It starts with an explanation of how the RW system functions in the organization. It also explains how digitalization and RW are related, and the merits and demerits for individuals while working out of the office. The assumptions about the necessity of digitalization and the ideal working environment will be outlined.

Lastly, the empirical research examines relevant technical barriers to RW. Similar to the last section, it begins with the personal experiences and what made it challenging for employees to work remotely. The main issue with both digitalization and RW is security. In the digital era, many companies are reliant on IT services, which means the three factors of quality, reliability, and security must be maintained to thrive (Abolhassan, 2017). Respondents will answer how they protect confidential information and organizational intangible assets. Moreover, when they need authorization from the enterprise, how the company grants the authorization will be scrutinized. The importance of regular backups cannot be overemphasized. The author will measure how the company backs up and manages the data. Possible interruptions to access financial and accounting programs will be handled.

Upon completion of all the planned interviews, it will be possible to infer theories based on the outcome and determine commonalities by analyzing the transcripts and drawing conclusions.

2.2. Analysis of empirical research results

Although a target sample of ten interviewees was intended, not all organizations responded, and as a result, there were only eight responses. All of them are in professional accounting services or in the accounting department in different enterprises. On average, they had approximately 11.95 years of experience in the field. Part of the group has its headquarters in Tartu, and the other is based in Tallinn and Jõhvi except for unknown organizations.

The analysis follows the sequences of the interview questions. In the first part, it shows that the companies use numerous accounting software and programs. Among them, the half of the groups selected the local software called 'Directo'. Directo is a web-based software solution with a broad suite of functions: in addition to finance there are the Stock, Time Management, Human Resources, Project Management, Document Management, Cash and CRM applications." (BDO, n.d.) In the following places, they used the ones named CostPocket, Noom, MeritPalk, StandardBooks. Other than these, following programs were

mentioned during the interviews, Xero, Microsoft software, Google sheet, SAP (System, Application, and Processing), Eeva, Navi, P2P, NAV, BC, Procountor and an internally developed program.

Table 4.

The usage of main accounting software

Software	A	B	C	D	E	F	G	H
Directo	X	X	X	X	X			X
CostPocket	X			X			X	
Noom		X			X			
MeritPalk				X			X	
StandardBooks				X			X	

Source: Compiled by the author

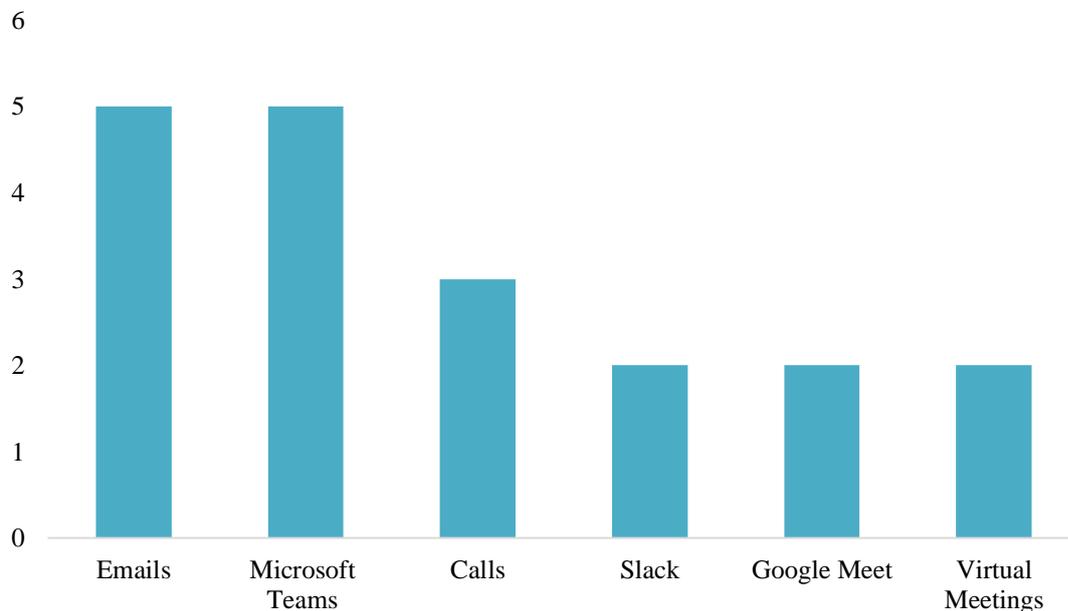
Seven groups of respondents said 99-100 percent of accounting tasks are already managed online. Therefore, it is possible to conclude that almost all accounting processes and tasks are digitalized. Five groups said relevant documents while working are fully transferred into electronic form, and one group insisted its share is over 90 percent. Thus, it means the form of documents is already in electronic form. Based on these percentages, it proves that the preparation for digitalization has already begun in various organizational systems. By contrast, the budget for digitalization shows a conservative attitude towards future opportunities. Three parties argue that they would keep the budget amount for the digitalization purpose, and they generally spend 10-15 percent from the total budget. The result differs from the sample in Germany in which more than half of interviewed chief financial officers design to increase the budget on it. (Kreher et al, 2017)

Among many schedules, people tend to work remotely once a week, the most by three of the groups. The other schedules such as every day, three to four times a week were equally selected from the interviewees. For the communication channels outside of the office, email and Microsoft Teams took first place. Other channels such as call, Slack, Google Meet, virtual meeting, and meeting were also cited. Each channel offered its own functionality and workers chose them to depend on the situation. For example, when workers need to attach documents or send files, they send them via email. Nevertheless, when they wanted to hold a virtual meeting, they decided to use Microsoft Teams. One of the reasons that lots of people

use the software among countless virtual meeting apps is that most companies pay for a Microsoft license, and it is included in the license package.

Figure 4.

The frequency of communication channels



Source: Compiled by the author

Their access to financial or accounting programs is conducted through cloud-based, web-based, ID verification, and a designated laptop. Each organization selected a different method for giving employees access to confidential information. In addition, the interviewees predicted the future share of RW in the company differently. Two of the groups indicated that their share would increase or remain the same as now. Others have emphasized the necessity of flexibility, and the organization is trying to return to pre-pandemic schedules. It is also found that each respondent has a different interpretation of trend for the RW.

The next section is about employees' opinions on digital accounting and remote work. In terms of RW, all interviewees had experience ranging from one to ten years. Each company adopted its own RW procedures. The method for measuring performance was diverse, including task-based measurement, the number of hours worked, using pre-installed software, using only designated equipment, and following the same schedule as in the office. Various opinions about the relationship between digitalization and remote work, where these two elements inherently relate to each other and make it possible for RW to occur. They explained the pros and cons of digitalization. Since the real-time financial data is available in real-time, the accountants can analyze accurate information, the working process gets

standardized, and it is environmentally friendly and makes RW possible, as mentioned earlier. It also saves time and money since the digitalized systems are efficient and user-friendly. Lastly, it lets employees have access to the internal information, and they can find the necessary file without digging into a pile of documents. Meanwhile, security and communication are considered cons. Since financial and accounting information contains critical transactions, which can decide the success or failure of businesses, it should be kept securely. However, online based, or digitalized systems are not free from security issues. When everything is digitalized, it removes the necessity for human contact. When people do not interact with each other, it can cause misunderstanding due to the limitations of digital communication and lack of conviction. Furthermore, they face several indirect problems since they cannot build a strong community.

Table 5.

Pros and Cons of digitalization

Pros	Cons
Real-time information	Security
Standardization	Communication
Environmentally friendly	
Remote work	
Accessibility	
Efficiency	
Time saving	

Source: Compiled by the author

After being asked about further digitalization, three of the groups replied that automating the tasks is necessary since there is still a lot of manual labor even though the system is already digitalized; however, the rest said they would keep the current system and would not want to overdo it.

The next question was about pros and cons of RW. The respondents pointed out that it is beneficial to have freedom in choosing workplaces. If they need an office environment to focus on work, they can go to the office. In any case, they need a cozy and comfortable environment. They can stay at home or at their preferred place. Furthermore, they are able to manage their time efficiently. For example, when they have plans during the day, they can work in the morning and at night. Even when working in a stricter schedule, it is more flexible than the traditional office work schedule. The flexibility of RW is both in space and

time since it allows people to get out of the office and does not require a specific location. Further, they can spend more time with their family because it saves commuting time and they can spend lunch time with their family. On the contrary, it lacks community. As a result, it is difficult to create a community and they would not engage in the company's work or events. When they work by themselves, they do not see the bigger picture, rather they only focus on their own work, which can create problems with individual work. People get motivated by others working hard, but they easily lose motivation when they work alone at home since there is no partner to encourage them. Communication was also cited as there is less conviction when they communicate online and less interactions as well.

Table 6.

Pros and Cons of remote work

Pros	Cons
Freedom in choosing workplaces	Lack of community
Time management	Lack of process understanding
Flexibility	Lack of motivation
Family oriented	Communication

Source: Compiled by the author

Individuals differed in their ideal system and way of working. Some prefer to go to the office two to three times per week, and some prefer to go to the office two to three times per month. Though they have different preferences, they agree that it is crucial to come into the office regardless of frequency and follow up on work and interact with colleagues. The last part in the interview, people pointed out the significant barriers while working remotely goes as follow (Compiled by the author):

1. Communication
2. Separation between professional and private work
3. Unstable internet connection
4. Lack of motivation
5. Lack of help for professional knowledge

There was mention of communication as a major disadvantage of remote work. People are physically in different places, so they have some difficulties communicating.

There are time gaps between questions and answers, and written and oral language without body language increases the possibility of misunderstanding. Moreover, some employees struggle to separate their professional and domestic responsibilities. When they work at home, they are directly affected by the surrounding environments. As an example, if a child spills juice on the floor, the employees are tempted to clean it and get distracted by the child. However, they failed to separate the work properly, so they became overwhelmed and could not complete the professional work that should have been done. Also, a stable internet connection is not always guaranteed. People are less likely to help or encourage them when they lack motivation, and when they struggle with their work, it is harder to get assistance from their co-workers.

Table 7.

General coding table

Interviewee	Theme 1: Digital accounting and RW status and trend					Theme2: Personal experience and opinions					Theme3: Technical and relevant barriers			
	Code1: Full online tasks	Cde2: Electronic documents	Code3: Unchange the budget	Code4: Web and cloud base	Code5: More digitalization	Code6: Task based	Code7: Close relationship	Code8: Feasibility of RW	Code9: time saving	Code10: Lack of community	Cde11: Communication barrier	Code12: VPN protection	Code13: IT authorization	Code14: Cloud base back up
A	X	X	X	X			X							X
B	X		X	X		X	X	X				X	X	X
C	X										X	X	X	
D	X						X		X	X	X			
E		X	X	X		X	X	X	X	X	X		X	X
F	X	X		X		X		X	X	X	X	X		X
G	X	X			X								X	
H	X	X		X						X		X	X	

Source: Compiled by the author

As soon as digitalization is discussed, a security issue arises. Since it offers many benefits such as accessibility and transparency, it is also vulnerable to security. The most effective way to ensure data confidentiality is through VPN and mobile IDs which is corresponding the outcome of the previous studies by Helena and Magdalena (2021). Employees implement encryption, multi-factor authentication, a confidentiality contract, and do not allow internet access. The use of VPN is more common when the task is directly related to capital and payroll systems. When workers need additional access, the IT department of most companies needs to grant authentication. There are other ways to do it such as using the coded equipment and another department, such as the customer management team. To ensure that their internal data is regularly backed up, most of them use an automatic backup system using cloud-based software or a cloud-based backup system. In this article, a variety of factors are highlighted that interfere with digitalization of individual processes and accounting programs. Some claim that nothing holds up the digitalization process. Another argued that technical issues such as unstable internet connections, VPNs, and losing IDs, which are necessary for verification, were to blame. Another side is that they lose human contact and communication with coworkers. In general, it is shown that digitalization and RW share similar disadvantages.

As a result of the pandemic, the digitalization of the world has accelerated and RW is no longer a novel concept. It took people a while to get used to it, regardless of their willingness, and now most people are familiar with RW. As a result, they found out what they liked and took away some lessons. While individual opinions cannot be generalized, it was possible to gain a better understanding of digitalization and RW in accounting and how it is implemented in practice. Upon completing RW, certain points are delivered. Most respondents referred to the importance of working together. When employees work outside of the office, they lose contact with their coworkers, and one of the interviewees explained that full remote working was not a business goal. Workers should come to the office every so often. However, the hybrid mode offers flexibility which is a plus for both employees and the organization. Further, job applicants could gain more possibilities and opportunities through RW because it eases the physical presence restrictions, and they can keep studying while working. In addition, it is crucial for them to keep a schedule for themselves to work efficiently, especially at home because there is only one of them managing the tasks and that means more individual responsibility is required.

Conclusion

In this study, this topic is examined: 'Impact of digitization in accounting on remote work'. The author specifically targeted Estonian businesses, and interviewees were recruited who are working in Estonian enterprises and have experience in remote work for the empirical part. It was originally structured to interview ten accounting workers, but it ended up with eight respondents owing to practical difficulties in conducting the interviews. As most interviews were conducted via virtual meetings, and some written interviews were conducted at respondents' request, the conversations were recorded online.

While digitalization is defined in a different way, the author uses the term to describe the processes in which people use technologies at work. This changes organizational tasks and structures as a result. The companies transformed the documents into electronic form, showing their readiness for further digitalization developments. Seven out of eight groups (Interview A,B,C,D,F,G,H) of the sample answered it was already entirely electronic, so it was unnecessary to print the hard copy. Yet there is a lot of manual work in accounting as specified "We can say that there is some sort of an electronic stone age everybody's using software at these days, but the software is not the best, so you have to do a lot of manual input and manual work and to get the results." (Interview A, 2022), so further automated processes are being developed. "It can be better with automatization, can be better than the automatization in this field like." (Interview E, 2022) Though employees are worried about the rapid shift toward digitalization, they will be able to work more efficiently. They will be able to focus on more critical aspects such as financial analysis and human tasks. Remote work (RW) is a type of work in which employees decide where, when and how to work. By eliminating physical presence as well as time constraints, employees are given more freedom. Despite the advantages, organizations have different opinions about whether the system should be adopted actively. Some businesses that incorporate RW into their business model by setting a minimum threshold, but others set stricter rules and do not allow employees to work from home. Moreover, it changed the paradigm of the job market and demanded professional skills including technical skills and communication in online.

The previous studies explored a wide range of aspects that may be impacted by digitalization and RW. One of them emphasized the quality of reporting which can influence the achievement of goals, especially the long-term ones, while the other was to learn how large and medium-sized companies respond to the issue. It hypothesized that digitalization and organizational legitimacy have a positive relationship only when the organization is small under a certain level (Zhou et al, 2021). As a result of research, an interviewee mentioned

that when the scale grows, it is challenging to manage fully online, and it does have limitations. Therefore, the management feels the necessity for regular office meetings. (Interview A, 2022) As digitalization speeds up, some lag, but most try to go forward rather than lag. The previous study examined how businesses secure data confidentiality when they are moving to a more digital business model. The author conducted an empirical study with small-mid size companies in Estonia since these companies are not targeted or based in Estonia since the previous studies did not target or examine companies based in Estonia. However, it limits one-off interviews and continuous changes might cause discrepancies.

To get a thorough understanding of this subject, semi-structured interviews were conducted. It comprises of three themes, digital accounting and RW status and trend, personal experience and opinions, technical and relevant barriers. The first theme investigated that the digitization of documents has already been completed, which means companies are prepared for further digitalization and automation as mentioned in the interview “We are very pro-digitalization and are trying to make our program more automatic.” (Interview H, 2022). Despite this, they do not plan on budgeting more than they already do, as they do not see the need to overinvest in technology since it requires a huge initial cost. Interview C (2022) stated that “Of course, this cannot be fully digitalized. But overall, I don't see a reason to overdo it as well. If something is needed in a...in a paper format, which is a very rare case, but this isn't a problem for anyone so.” Many companies choose to use web and cloud-based software to access financial and accounting data. The second part of the empirical part examined the task-based nature of RW. Therefore, employees could have more flexibility and most respondents answered digitalization and RW are closely related to each other, and digitalization could increase the feasibility of RW. Interview C (2022) voiced as follow “Now I have the possibility to evolve and have jobs inside my education. Then because everything is already digitalized in in most companies.”. Both of these elements help them save time, but these two lack human interaction and support, since they do not need to interact with each other physically. Most interviewees chose communication barriers as the most severe issue, and most used VPNs and IT departments for information confidentiality, and they also chose cloud-based platforms to back up the data automatically.

With a wider scope, the future study opportunity could be applied in different regions, and if bigger sample size is available in Estonia, the quantitative method on a specific subject or diagnostic method can be applied on the same topic.

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APPENDIX A

Semi-structured interview questions

Introduction

- 0.1. Can you tell me your name, age, position (incl. work tasks), company name, and where does the headquarter locate?
- 0.2. What does the company deal with?
- 0.3. How big is the company? Can you tell me the approximate employee numbers?
:Small business (less than 50 employees)
Mid-market enterprise (less than 250 employees)
Large enterprise (over 250 employees)
- 0.4. How long have you worked in the company, and do you have any experience of working remotely?

Theme 1: Digital accounting and remote work status and trend

- 1.1. What kind of program do you primarily use for accounting work? E.g., Oracle, internal system.
- 1.2. How do you think the accounting tasks are managed online? Can you indicate its share in percentage?
- 1.3. Can you tell me any digitalized processes or tasks? E.g., invoices, signing transfers, signing contracts.
- 1.4. How many documents are written and transferred electronically?
- 1.5. How does the company budget for digitalization, and what's the future direction?
- 1.6. How often do you work remotely? Can you express its share in percentage?
- 1.7. How do you communicate with other colleagues?
- 1.8. Can you tell me the main channels that you use for the communication? E.g., apps
- 1.9. How do you access the financial and accounting programs while working remotely? E.g., financial and accounting systems, email, network drives, internal communicators, intranet
- 1.10. How would you predict that remote work will be applied to the company with digitalization process?

Theme 2: Opinions on digital accounting and remote work

- 2.1. How long have you worked remotely, and how often?
- 2.2. Can you describe how it works? E.g., where to get the equipment, operating schedule, working system
- 2.3. How do you think digitalization and remote work are related to each other?
- 2.4. What are the pros and cons of digitalization? E.g., the quality of financial report, data analysis, better decisions
- 2.5. Do you think more digitalization will be necessary for your company?
- 2.6. What are the pros and cons of remote work?
- 2.7. What would be the best form or schedule of work and how does the organization see the situation? E.g., working remotely or back to the office.

Theme 3: Technical and relevant barriers while working remotely

- 3.1. What do you think are the most significant barriers that you felt while working remotely?
- 3.2. How do you secure data confidentiality with the implementation of remote work? E.g., VPN protection, encryption, both.

3.3. When granting authorizations to financial and accounting systems, how does the company verify the methods of doing so? E.g., Remotely by the IT department, independently by an employee remotely, There is a need to go to the IT/ IT services, N/A.

3.4. How do you back up the data, and how often do you do it? E.g., N/A, done by IT, automatic, disk, a copy to the server, software producers, or in the cloud.

3.5. Can you tell me which factors interrupt the digitalization of individual processes and accounting programs? E.g., lack of Internet access, lack of corporate equipment, lack of online access to corporate programs, unstable VPN connections, difficulty in remote communication.

Conclusion

4.1. Before wrapping up the interview, what did you learn the most while remote work was regulated in the past years? And what can we learn from this unprecedented situation?

APPENDIX B

Interview transcripts

Interview: A

Date: 29/04/2022

Meeting: Virtual

Length of interview: 51 minutes

Length of transcriptions: 9 pages

Question: Can I start to ask you some questions?

Answer: Sure, of course.

Question: Before starting, my name Hyeonji studying in the University of Tartu right now I'm a senior, hopefully graduating this semester.

Answer: Great and I'm ... Manager of ...

Question: Can you tell me your name and your company positions etc. by yourself a bit?

Answer: So ... is my name and ... is the company we founded five years ago in Estonia, and ... does accounting services only, nothing else.

And also I have a role of chairman of the board in ..., which is the only official representative of accounting profession here in Estonia. And also I have some stakes in startups and so. And from my background, I have been 30 years in accounting software industry dealing with E-invoices, E-receipts all kind of digitization, so this is my, let's say main topic and right now last five years we have been trying to digitize accounting services as much as possible and I see quite many opportunities here. Because it's not the ideal solutions mix what we have today in accounting industry.

Question: How big is your company? Is it like? How many employees there in my questionnaire if there's like?

Answer: We are small business. We have just 24 employees at the moment plus two partners. So 26 persons involved and some outsource partners as lawyers and tax advisors which we do not count as employees. And to put it into perspective, then in Estonia there is 5900 companies who deal with accounting. Who provide accounting services and we rank in top 25 with this 26 persons impressive. 99.9% of companies is just a single entrepreneurship and we call them 'Lady and the cat style' business. So there is only 40 accounting companies here in Estonia who has more than 10 employees, so only 40 from 5,900. You can imagine. So we are small.

Question: So the headquarter is in Tallinn right now?

Answer: Yes, right now the only office we have is in Tallinn. In... street, the same building as Coca Cola. So we have a actually office, which is in two separate spaces. One is a silent workspace, and the other is a cosy cafeteria and meeting area.

Question: Sounds really nice. You said you started to do sort of remote work even before COVID. When did you start to do that?

Answer: My partner ... actually started nine years ago and she had the idea that all the work we do will be remote so that she can sit somewhere in...or wherever and the accountants will sit at their homes, and everybody is working remotely only. So we actually started ... five years ago kind of merging her business into this ... business and she had two accounts at the moment in 2017 when we started, so those two accounts were working remotely from home offices. We didn't have any office in the beginning. We used to have a coworking space Now this ... was specifically. And I think it was 150 persons working there in the shared space. So we had a one table in the corner which was like our so called office. And later when we started growing when we had already 10 employees that was like third year. Then

we still sat in this coworking space. So the remote work was like 3 days remotely 2 days. In this coworking space for meetings and stuff. And when COVID started, back in March 2020 and then we kind of quit going to coworking space for obvious reasons, because there was a lot of other people and a lot of risk. So everybody was grounded to their home offices and we had discussion with ... that maybe we should have our own office finally. So that's why we rented our own office because of COVID actually and we did it in autumn 2020 and we started with just one space. And then we figured out that OK, this COVID will go on and we actually need some people to work at home a longer time, which created some problems because we couldn't control what this going on and we still had to come to the meetings to the office. But there were some periods where actually the contamination risk was too high and last year starting from let's say, February something. We actually started to hire more and more people and also some old stuff left. And actually, I think the remote only work wasn't the situation for several employees who didn't have the proper home offices, so. We kind of lost seven or eight persons because we couldn't kind of manage them and they couldn't manage their work and we were not happy with them, and they were not happy with their remote work and so on and so on. But anyway, this period was in the end of last year we hired a lot of new accountants who were more confident in hybrid work. So couple of days in office as well. And today we have an interesting mix and a couple of people want to be always in the office because the office is a clear working culture space, so they don't want to mix their home business and rail. I would say employment. So they fancy our new working space, where is all the talks are forbidden and it has to be complete silence and so on. So other people are the guys who want to be working remote only, but we don't allow this. So we have fired everybody who wants to be 100% home offices. And this is because of the management problems. What I just stated earlier. So today we have this kind of everybody can choose when they come to office, but at least one day a week when they have team meetings, they have to be at the office. OK, long talk.

Question: That's really interesting because I thought. Because of COVID most likely lots of companies decided to do remote work, but like you chose the opposite.

Answer: Exactly.

Question: Directions like OK, that makes sense, but like I didn't expect this so.

Answer: And to be honest, as I already said, there are very few large or let's say larger accounting companies here. Then most of those small ones they work from home. They have already worked from homes in start. And a lot of accountants do have the accounting practice as the sidekick, so they have a proper workplace somewhere in larger company and they have a small sidekick, their own company for providing some services, but those who do accounting professionally like us then most larger ones have offices. If they have, let's say more than five employees. But I do know several offices accounting companies which intentionally stay only at home, so when they meet customers then they go to cafes or something like that. Yeah, but this kind of arrangement is, I think up to five employees. It's working if you have like 10 employees then you need a fixed space where to come together and have their team meetings and management and customer meetings and stuff. And by the way, several customers have claimed that it is very nice that you have office where we can come to visit you and so it's very stupid to be in the open space in Cafe where everybody could overhear what you're discussing with your accountant. So I think office is a sign of professionalism and the hybrid regime is the sign of flexibility and keeping everybody happy.

Question: So you think the size of the company impacted a lot to decide the form of work?

Answer: Definitely OK. The larger the company, the harder it is to manage the remote workforce, and as ... we have chosen the model, which is kind of different from almost all other companies in Estonia accounting industry. We have chosen this team-based approach. So there is one senior accountant, couple of accountants as assistants and some union

accountants. They're working as a team. So typical way how Estonian accountants are working is that one accountant handles all the customers 100%, so they haven't kind of teamed up to serve the accountant. But everybody has their own portfolio, which means that let's say company with 500 customers it is, let's say. 50 employees, everybody handling their own portfolio. So basically, you can't tell that it is a proper company. It's like a society of accountants working together and we call these like a...OK, in Estonia it sounds funny, but anyway we call those like 'Societies' so not professional like counting bureaus. And say I think personally, that in Estonia there are like 1,2,3,4,5 accounting companies which we can call our clearly professional their own office and their own teamwork. And so on. But mostly it's like one person shows, and maybe sometimes they come together and form a company.

Question: OK. Um...So in the interview there are like three parts, so the first part is about digital accounting, remote work and the second is more about your personal experience and the third part is mainly about barriers.

Answer: Printed out so I can read the questions from here. So if we go with yeah keep one digital accounting. So the first question is what kind of program do you primarily use for accounting work?

Question: I think I'm sorry, The internet wasn't that good, yeah? So which program do you usually use in your company?

Answer: Here's a mix. OK, we use a mix of software. Mainly we use local Estonian cloud-based software called Amerit octava. And then we use Xero, which is international accounting package and we also use accounting package called Directo and Estonian made package as well. So those three are the main accounting software packages. What we're using and for digitization we use services of Cost pocket. Most pocket is an app which allows to take a picture of receipt or send purchase invoice for digitization if it comes in PDF format. So we use a mix of software.

Question: So how do you think the accounting tasks are managed online? Like how many percentages are doing online? How many percent of tasks are arranging by you know the paper work.

Answer: We are 100% online and there is no paperwork so the only paper you can see is your questions here. Just print it out for being more convenient. But from the start from the beginning in 2017, we have only used cloud-based software and we have nothing installed in our servers. We even do not have any servers. We rely on cloud-based services only. So all the file handling is done by Google Drive and we have G suite and shared drives on Google. And all other software, specifically task management, and we use also cloud based software which is locally made called UAQ(Uku). And this is also used by very many accounting companies here in Estonia for task management. So Dropbox. And that kind of file handling file sharing environments are sometimes used for customers who require that. OK, we should use that Dropbox for getting some electronic documents.

Question: So the next question is like which tasks are done by digit...online, but they think like 100% is online.

Answer: 100% we have the printer as well, but nobody's doing it. Exactly.

Question: That's interesting, yeah.

Answer: No folders, no shelves, so that kind of bookshelf. It doesn't exist in our office. OK, there is for flowers and that kind of stuff.

Question: That when you budget things for your company, how much portion do you spend for digitalization, for example? Like electronic devices, programs. Is it big or just small?

Answer: Some 10 to 15% and we buy the laptops and monitors for everybody and keyboards and mouse and so on. And of course, we have to pay for cloud-based licenses. At approximately 10 to 15%.

Question: How do you predict the future budgeting amount really? Do you think the amount is going to be increased? Or is it going to be same?

Answer: We think that we should increase the budget for digitalization and at the moment we are kind of happy with the software mix, but there is no better alternative because no accounting software provider is specialized on accounting industry. So today what we are missing is something what allows us to do flow accounting. Flow accounting means that you don't work with one specific company, your customer data, but you work with the, let's say, flow of specific kind of documents. Electronic documents for all customers. So if you want to handle, let's say reconciliation for all customers, then it should be in one flow, not that you sign into one company then sign into other company and so on. So this thing has been missing and I have been asking from accounting software vendors that when can we have it? Everybody says that we have to rewrite our software and no go and this. Nobody wants it except you and... Kind of business. So my idea is that when we get wealthier then we might start developing our own software. Because that's really two companies are already developing their own accounting software and one is ... and the other is ... concept. That's on it. Perhaps you are going to interview ... there as well. OK, he's part of the based so close relations with Tartu University.

Question: OK, that would be really nice. So how often do you work remotely? Like

Answer: if we look at the accountants then they mostly work remotely unless they have a team meetings or office days.

Question: So they go to the office like once a week or.

Answer: Something like that.

Question: And do they need to stay in the office the whole day or?

Answer: Nope, it's. Just need to check it. Depends on the agenda. If there are, let's say three meetings, then for those meetings you can be at the office. And if you want to leave after lunch time, then you are free to go. So it's totally flexible for us. The only thing what we require is that the work is done.

Question: OK. And how do you usually communicate with other colleagues?

Answer: Slack and email. Slack is asynchronous because. You don't always want to get a response at the same moment, and everybody knows that. OK, accountant has to sometimes focus on something, and you can't disturb so in slack. We have this code system that. I'm busy right now. I will answer later. But Slack and email. Email specifically because some customers want to send us emails, so we have to forward emails to each other.

Answer: And meetings by the way, virtual meetings are in Microsoft Teams.

Question: Do you have any preference like is it? Do you think it works the best compared to other ones?

Answer: No, not really. We have used for communication with our customers all kind of communication channels Google meet or Skype or Zoom or whatever and it doesn't really matter. Teams which chose because we are using Microsoft platform Microsoft Exchange for emails and office. Software Microsoft Free is 65 Excel, PowerPoint and that kind of stuff so it's easier to have one platform and we have one specific IT vendor which provides Microsoft related services and handles our equipment as well.

Question: That makes sense. And the next question is, how do you access the financial and accounting programs while working remotely so? Do you use like VPN or?

Answer: We don't use VPN at all because it doesn't make sense for us because everything is cloud-based anyway. And all the Internet banks. They have their own HTTPS and secure lines, so we don't use VPN.

Question: Hmm, so you may you mainly use those clouds to work.

Answer: Yes, everything is in the cloud anyway, so no need for VPN. And most software what we use, they don't even have this IP based controls. So if we had we have VPN. Then it would do a much extra.

Question: OK, and how would you predict the remote work in your company? Will you increase the amount or just keep as it is right now?

Answer: I think we have a perfect mix right now and in the future it might be that we are hiring remotely. Let's say gig workers who do some specific tasks but are not working for us are not employed by us. Similar to Bolt or any other company which is not hiring taxi drivers but giving the task to them. But for this we need a specific platform which doesn't exist, so this is a future idea.

Question: And now it's time to get on the second topic. So how long have you worked remotely? Some like since company.

Answer: From the start company in 2017 and ... nine years. So Remote work is already coded into our business.

Question: Then can you describe how it works like when you start to work or.

Answer: Our routine is that when the new employee comes to ... then we hand over the laptop. We use Lenovo laptops standardized and all the software is already preinstalled. They have no administrative rights and they have to use the only this laptop for working with us for home office. We provide a large screen as well. I think it is 24 inch, so it's not very large, but anyway they have their own good screen, typically Dell. And all the software is preinstalled if it needs to be preinstalled, but basically the only thing what has to be installed is Slack and Microsoft 365 and all the accounts are opened by our IT service provider. So everything is kind of fixed for new employee, so they get the laptop and can go start working right away. And of course they have to sign the papers of confidentiality and IT technology usage in ... and that kind of paperwork. Of course, electronically.

Question: So the working time is fixed? Or is it just if you finish the work done? It doesn't matter when you.

Answer: Work you can work at late night or in the early morning hours or whenever you feel comfortable working. The only thing what we looked at is the number of hours you have been working with specific customer tasks and this Uku task management is counting the hours so everybody has the tasks on the screens. If they take on that when I start working on specific tasks with specific customer and then I have to specify that OK, I'm handling purchase invoices for our next three minutes and then I do reconciliation for another customer for next 10 minutes and so on. So Uku gives us a complete statistic about how many hours or minutes our accountants have been working on specific customers and this we use for. team management, so if we see that the team is let's say. Over working too much hours, then we reduce the workload. If we see it's too few hours or they have spare hours then we put some more customers into this team so everybody knows and everybody has access to those figures of course. So that kind of management via this Uku task management tool.

Question: And the next question is, how do you think digitalization and remote work related?

Answer: I think they are closely related because you can work remotely only if you are a cloud-based and everything is digitized. If you have to handle anything on paper, then you have to have somewhere to put those papers on like this. So it's very closely related.

Question: You think is like a prerequisite to remote work. Yeah, so digitalization should be done to do the remote work.

Answer: Yes, you can do remote work as well with the papers and folders and those style stuff, but then it is a lot more difficult to organize data exchange and that kind of stuff. So digitalization in accountancy has been an issue for I don't know 50 years. So remote started with Internet, so digitization comes first and then moved.

Question: And then can you pick up one pros and one cons for digitalization?

Answer: Definitely more pros because everything is real time online, and cons might be that you have to be pretty careful with data and you have to be. Let's say looking at cyber security issues and all the related risks with Internet connections and that kind of issues. Of course, digitization means you have to standardize a lot more. You have to work in the similar way you have to use the routines the same way and so on.

Question: And so standardization you think is cons or pros.

Answer: Standardization is pro when you do it properly and if everybody starts their own standards then it is and this is why we use this teamwork approach in our company because we think that if accountant use her own model of working her own routines, handling her own portfolio and the other accountant next to her in the same so-called company uses. Not the same reproach then. They can't even share their customers if it is required. Let's say one accountant goes to three-week vacation. Then somebody has to handle the customer. So if they are not standardized, if they don't use the same routine, same software, same stuff, then one can't exchange the workplace with the other. But in team model you can always rely on your team members so you can switch customers easily and. And it's a lot (more) easier, and you can also grow a lot more. Faster because team can handle new customers faster than this old approach. And specifically, all the approach does not allow to grow, because if one accountant can handle let's say 25 to 50 customers depending on their size and complexity, then it is the upper limit. So you can't handle 100 customers per accountant. But with team you can kind of switch the tasks and you can be a lot more efficient. And of course, digitalization and standardization. Means that you can handle a lot more customers with the same time compared to the accountants working the old-fashioned way.

Question: I think the next question is really straightforward.

Answer: Yeah, sure we can say that there is some sort of an electronic stone age everybody's using software at these days, but the software is not the best so you have to do a lot of manual input and manual work and to get the results. So I call it electronic stone age because you have to get to automated new digitization era. And in the accounting industry, it hasn't happened yet. And so everybody talks about artificial intelligence and machine learning and all those new things. But it's not been accounting. Industry isn't happening here. It may be a self-driving cars by Google and Tesla and so on, but not in accounting. It is in a way.

Question: you know one day it will happen.

Answer: I think there is a problem with the accounting industry as such if you. Imagine that globally all the accounting and auditing industry is at max. \$1 trillion. Then one trillion is just a 1% of global GDP. So it's very very small segment for a large companies like Google for instance. Otherwise, there would be a Google accounting instead of Google Self driving cars. But car industries is 10s of times larger than accounting industry which means no use to put very much deep deck involvement into accounting. While you can do interesting things with, let's say, transportation or logistics and other areas. And of course, taxation is very local issue, which means it is. A little bit difficult to standardize. Let's say artificial intelligence globally they take care of German or the United States taxes or Estonian taxes in the same manner. Yeah, so that's why we have 10s of thousands of accounting software and tax and software and tax advisors and so on and.

Question: So on and like taxes they're changing all the times so they cannot program every time, yeah.

Answer: Fortunately for Estonia, we have pretty good taxes, and they are pretty simple rules that we have to follow. But compared to, let's say the United States, then it's a lot messier.

Question: It's my first time coming to the States and then like each state has different tax laws. So for example, for example, if I go to Pittsburgh and I buy clothes, I don't need to pay

any tax. But here I need to pay 7%. So like everything's so different, it's just like 30 minutes driving. But like taxes or completely different issue.

Answer: And if you know Estonian personal income tax, then the tax declaration is automatically filled in by tax authorities. So you only have to go through it and see if everything is correct and just digitally sign it and done. I actually use usually spend some 5 minutes on my personal tax declaration. OK, absolutely easy.

Question: And the next question is what would be the best form or schedule of your work?

Answer: In ..., the team days are shared in a way that every team has their own day. When they come to the office, the others can come to the office and work in the silent zone as well. But the team day means that this team has to be at the office, but that's the only basic rule about being remote or at the office.

Question: You personally go to the office like once a week when you have team.

Answer: Day, yeah, exactly. And as a partner I am in the office, the office two or three days per month when we have a general meeting, then everybody has to come to the office. Then we have cake and poke bowl or sushi or whatever. So that kind of stuff once per month and. Basically that's it.

Question: OK. And it's our last. And what do you think the most significant barriers that you felt while working remotely?

Answer: The main issue has been that people personally cannot manage their workload. And what we saw last year as we had to fire some people or somebody left, and so on. Then many people had burnout symptoms. And at least one person was actually diagnosed that she had depression or something. So the problem is that if you work only at home then you kind of mix home tasks and all those work working tasks. And sometimes it feels overwhelming that you can't handle both things well and then you get problems in your family and so on. And we can't help as a company to handle your home issues because it's kind of private, fair and we can't interfere. So we can't even do anything if we even see that. OK, she's not, well, please go to the doctor. We can't tell her. But of course, for all our employees we have health insurance from our office and then we have something called web doc 'Minudoc' which is a over the web consultation where they can have all kind of health issues to be solved. Psychological, physical, whatever, they have problems. So that's kind of things. What we have done from ... side as a company. So if you have any problems then you can use those services for free or let's say on our account. But this is the main issue with remote work. Remote work that people simply do not manage that time properly.

Question: Do you think it's more personal management? So like they kind of fail to manage their personal tasks and the work tasks.

Answer: What we started this year is actually giving some management trainings for our team managers which started from. At first you have to manage your own tasks so. How you manage your own tasks actually influences how you managed the tasks for the others. So you have to be a very good task manager for yourself. You have to be confident you have to feel happy and so on. So that's why we are doing every week for the team managers, some special trainings which is about let's say well-being management skills working together and that kind of issues. So we have different outsourced consultants giving advice. So this is something what we expect to give a more confidence for our team managers and more confidence to everybody who's working in the teams.

Question: And the next question is, how do you secure data confidentiality with the implementation of remote work? So do you, I remember you said about the contract.

Answer: Yeah, we have a confidentiality contract. Everybody has to sign the NDA. And of course, there are specific rules what they have to sign as well. For instance, you can't use open Internet, which means if you go to cafe for instance, please use your own. What do you call it? iPhone Internet for instance?

Question: Ohh hotspot.

Answer: Yeah, hotspot exactly. I haven't been using it for years. Yes, so I'm working in the cafes. But anyway, if you work with customer data then you have to take very special care of where you are and what you do with this data. So you can't share it with anyone over open networks? You know just those specific file sharing environments like this G suite for us and so on. And of course, we have cyber security rules as well. You have to use multifactor authentication wherever it is available. Unfortunately, the accounting software doesn't have very good authentication these days, but very many services in Estonia, for instance, are strong authentication based, so you have to have your ID and you have to use your mobile to log in to some specific, let's say Internet bank or taxation E-services or statistics or wherever. So the only problem is with accounting software which still use the old fashioned username, which is typically your email which everybody knows, and then password, which is kind of no go. But this is something that we can't do anything against. We have advised all these accounting software vendors but please start using mobile ID or smart ID or whatever possibilities. There are two factor authentication. Do complicated.

Question: We need to program again.

Answer: Yeah, exactly.

Question: OK, and when you're granting authorizations to financial accounting systems, how do you do that?

Answer: We have a customer management or customer handling team, and they have a CRM(Customer Relations Management)software where they actually register all the authentications or accesses to whatever systems. So if let's say employee has to access some specific system, what our customer uses, for instance some invoicing system, billing system or whatever, then customer gives the access and we register it and we kind of over view that our employee uses this specific access only according to the rules. What we have contracted with the customer. Sometimes customers require from us specific contract that. We are handling that data according to GDPR(General Data Protection Regulation) and other official requirements. So then we electronically sign those papers as well with customer.

Question: So if I'm correct, CRM is customer relations management.

Answer: Yes, OK, so that's one of those software that is also used internally, so we have a CRM software, task management software, accounting software. Of course, this Microsoft 365 software specific accesses to some specific. Let's say portals Amazon and whatever our customers are using where we have to have access to get reports or any data out. OK, so a lot of software.

Question: And the next question is, how do you backup your data?

Answer: As it is cloud-based and everything is backed up automatically, so we rely 100% on our vendors. Google, of course, is backing up it in real time, but for instance the main accounting software that we are using. They are based on Microsoft 'Azure' which means they claim that Microsoft is backing up everything in real time all the time. But there have been no issues with backup or so. We think that everything simply works, so we don't have to make any special backups for ourselves.

Question: I think that's the really strong point of clouds. Like they automatically back up the data.

Answer: Yeah exactly, and I trust the huge clouds more than having our own servers with our backup software and so on, because all those clouds based huge providers like Microsoft or Amazon or whatever. They have a lot more resources to handle security issues compared to whatever when they're here in Estonia. I know that a couple of software vendors are relying on local telecoms like Telia. But also, Talia has very specific server rooms in specific locations and so on and so on. But anyway, we rely on Microsoft and Amazon.

Question: OK, and I think the last question is, can you tell me which factors interrupt this utilization of individual processes? Or and financial accounting programs. Like in general, like lack of Internet access, of course not in Estonia like equipment etc.

Answer: I think we no interruptive factors because Internet is always there. OK sometimes it doesn't, but these are very very very rare cases when, for instance this house here in countryside has no electricity really. When we have a huge storm then the storm might cut electricity for even a couple of days, but then we can drive to a town and in the town, we have always electricity. No electricity shortages in Tallinn. So Internet is almost always here. All the cloud-based software has. In our experience, worked like 100% time. There has been no shortage. What I know of in accounting software. Not in Saaremaa not in task management. Yeah, everything has been working during five years, no problems. So maybe only if Russians attack then it might be outraged.

Question: Yeah. Big issue.

Answer: Hope not yeah yeah because our Ukrainian colleagues, Ukrainian accountants, for instance, they kind of lost their job totally because there is absolutely no way you can work in accounting bureau in let's say archive or whatever places they bombed. But anyway, let's hope NATO is kind of strong.

Question: Hopefully. Yep. So, you think so you said there is no barrier at all or you think there is something interruptions when you do remote work.

Answer: Nope, we haven't witnessed any interruptions and always our accountants have the option to come to the office where you have fixed lines and so. When somebody can't work remotely at home then always come to the office as...is such a small country you can take an airplane from islands we have. By the way, 2 accountants working in Saaremaa, which is one of our largest islands and they come to the office only. I think once or yeah once per week during the team days, and they take an airplane from Kurressaare to Tallinn, it takes 30 minutes to get into Tallinn. So, these are the remotest remote workers we have.

Question: OK. And before wrapping up the interview, did you learn something while like in the past years of remote work? Yeah, like because the in the recent years the situation was kind of, you know, special in every aspect. And did you learn something from there? Were there any changes in your business?

Answer: Yeah, we can say that COVID is actually showing us that working totally remotely is no go. Because people can't handle their workload and that's why the hybrid work is the best one because you have to have the office people can come together and communicate much more efficiently, and then you have to have the flexibility so that everybody feels happy that OK, it's Friday. I don't want to come to the office. I can work at home as well, so I think this COVID pandemic era kind of strengthened our understanding that hybrid work is the best for accounting industry. OK, and if you want to grow and ... is actually one of the fastest growing accounting companies in Estonia, we have been growing like 50% per annum. All these five years. typically, large companies are growing like 2-5% and this is why we are experimenting with all those remote office or other models of work. So, if there will be something more efficient then we definitely will use this more efficient model, especially if we are wealthy enough to start creating our own platform for getting those remote gig workers on board and so on.

Interview: B

Date: 29/04/2022

Meeting: Virtual

Length of interview: 31 minutes

Length of transcriptions: 6 pages

Question: So for the bachelor thesis, I'm studying impact of digitalization in accounting and remote work and this conversation is going to be transcribed but it's going to be used only for academic purpose. So basically for my bachelor thesis. And uhm, can you introduce yourself like your name, your company, position, etc.?

Answer: Yes, so my name is I am a Chief accountant slash financial manager in IT company called ... and I'm doing everything that is connected to business financing here.

Question: OK. Is the headquarter in Tallinn? Or another city.

Answer: We have only we are only in Tartu, though we don't have any. Uh, yes we don't have any other offices.

Question: So it's based in Tartu.

Answer: Yes, exactly.

Question: OK, and so your company deal with something related to stocks?

Answer: No, as a stock is an IT company that is uh, working with uh, I'm just double checking that I don't do say it wrong. Machine learning and data science. So we are doing projects for customers projects of different machine learning activities. Most of the time.

Question: And how big is your company right now?

Answer: 40 people

Question: OK. And how long have you worked in the company, and do you have any experience of remote working there?

Answer: In that company I have worked for one and half years now and. Yes, I have experienced a remote working because I'm also when I'm on vacation I'm going to. I'm changing continents and time zones, so therefore I'm going for longer than just occasion. So I'm working from different place as you're working now.

Question: OK. So in this interview there are like three parts. The first part is basically about digital accounting and remote work, and the second one is your personal experience and the third one is technical or relevant barriers while working remotely. So, the first question is what kind of program do you usually use for the accounting work or the relevant financial work?

Answer: I use different ones because I also have a like side, Activity, so maybe I'm using. I'm telling only what I have in ... That makes more sense. In ... we are using 'Directo' as a bookkeeping program and 'Noom' as a payroll program. So these two programs are main ones and then we are using bunch of different. like Excel Google Sheets. As a bookkeeper I also keep track in project development in Microsoft Dynamics CRM.

Question: So Directo is Estonian program?

Answer: Yes. Noom is also Estonian program.

Question: OK, and How do you think the counting tasks are managed online? So can you percentile the...

Answer: The you mean how, how, what percentage of tasks are done online?

Question: Yeah

Answer: Like define online because my I think in order to understand the question. This is, uh, web page. This uh Directo is web-based program so we are working with server being somewhere else. The same is payroll program so. From that perspective, everything is online. Hmm, so if you want to know something else, then maybe you could ask differently.

Question: The definition of online is you can do the tasks even if you're not in the office.

Answer: Yes I can, but and also if I'm not in same exact computer. OK, actually payroll program is more difficult because it has different VPNs. I need to open so that is not easy from other computers, but Directo I can open in any computer where I can log in.

Question: Is there any restrictions that you cannot use other computers, but is it still OK to use other computers for Directo?

Answer: there are probably, uh, only restrictions that are connected to, uh, software, like if there is old Windows environment, then probably not. I do not know because I haven't really tried. I have Apple at home that how easy these can be used on Apple, because here we all use PCs, but I believe that once during this one and half years I tried also on Apple. And it works. Just these are a little bit different, so I would say that up to date the environment is a key, so I can't go. I don't know in Central America regular IT, uh.. Cafe was old windows. It might be problematic.

Question: And can you tell me any tasks that are completely done online like invoicing, signing transfers like signing contracts it, which doesn't need hard copies like.

Answer: Everything everything. In Estonia we have everything digitalized and if I'm saying if you are asking or if I may interpret your question the way that how much additional tasks do I need to do? For example, by for invoicing, than if me like our company ...and our customer has this, I can't even. I don't remember what's the word now that the contract was online streaming. Then I create invoice in my bookkeeping program, push the save button and with this button saving it sends automatically out to customer. So invoice when customer doesn't have such. Contract was provider I have to save the invoice to PDF and email this out. So in that sense, there are like more automated things and less automated things, but everything can be done. Not using any papers.

Question: I think the next question is. It doesn't need to be asked. And do you know about budgeting in your company, like how you budget?

Answer: I'm financial manager, yes, yeah, I do budgeting.

Question: And how much do you budget for digitalization and how do you predict its portion in the future? For Example, for example buying electronic devices or like paying for programs, software.

Answer: Hmm OK, so let me think. Paying for different software licenses we it is about 10% of our other expenses. Other expenses I mean other than payroll expenses. So we have like two big groups, payroll and other expenses. 10% of our other expenses are spent on different licenses.

Question: OK, does it include all the licenses or particularly for accounting or financial programs?

Answer: All licenses because we are like our IT guys are using bookkeeping programs. Let me think it is about 1% so 90. Out of 10%. So if you have like 10% I'm just saying 5000 is 10% of actual expenses and.500. A month no. 300 a month is going for bookkeeping program. So out of €50,300 OK goes so you take proportion.

Question: You think budget is going to be increased or is it going to be stable as it is?

Answer: OK, it's going to be stable. Yes, I think this is quite OK market price and we are not. We don't plan to change or replace. Or get finished and anything additional.

Question: And how do you? How often do you work remotely? Is it just your choice or is it regular? Is there any regular set?

Answer: No, it is not regularly set. It is if I feel, or if I need to be somewhere else, then I'm working. Wherever in the bus or at home, but generally. My preference is to work with inside the office.

Question: How about other workers in the accounting?

Answer: I'm the only one.

Question: Hmm OK. How do you usually communicate with other colleagues when you work remotely? Like just emailing or using other apps perhaps?

Answer: It depends on, uh, the urgency and the amount of information or type of information shared. If I have some emergent and quick question and I know that somebody like the respondent is online, like manager. Then I'm using Slack at this chat program, when, uh, when I know that I need to write down more and it has to be responded in a certain way and it has to have links or add attachments. Then I usually send an email.

Question: OK. How do you access financial and accounting programs while working remotely so?

Answer: How do you? How do you call it? We are Internet web page. We are going to. I'm I'm opening new tab and type in the program pass.

Question: OK. Is it like Intranet or VPN?

Answer: We are not using VPN or Intranet, only what we are using. VPN is for payroll program because it has it has one specific uh localized server. When everything else is in cloud.

Question: OK. How would you predict the remote work will be applied in your company? You think the portion of remote work is going to be increased or is it going to be same as it is?

Answer: I would say the same as it is. I don't see why we should change. There is like no need to change. If there is no any, I don't know additional pandemics that prevent us being together because being face to face is given is having their own advantages. If you're working for one company. If you do many different companies, then because it's different.

Question: OK, Here we are on the second stage. And how long have you worked remotely? So when did you start to work remotely since you started your job there or?

Answer: In this. Company, We had an agreement that if I need to do my other voluntary tasks and I can work remotely, I would say I started in 3rd week when I was here. But it means I didn't like sit down in other office, but I was in the move. I don't know. As I said in the bus working while moving.

Question: If it's not in that company considering your entire experience like work experience, when did you start to work remotely?

Answer: I started providing bookkeeping services. In I would say 1995. Yeah. I worked remotely, but that sends the remote means that I was. I was somewhere else but I was using local programs, but I was never in the office so remotely in that sense, if you think how remotely like using cloud, then using cloud in maybe 2010 when I went to international corporation and they had everything in cloud previously, I had local programs in my... I would say 2010.

Question: Yeah, and when you work remotely, is there specific routines or is it just like you? You just need to do your tasks done.

Answer: There is for bookkeepers...there are always these monthly routines you know when you have to perform what, so, uh, I don't know. Between, uh, last day of the month till end of first week of next month. You're doing payroll and payroll taxes. This is usually for all companies then in between then you will see and check if you can close past months. What is missing? What are like double checking and double checking. What the balance sheet, how does it look like? Is everything in profit loss statement. Then around 20 State 30s tax declaration for VAT (value added tax) So that has to be checked and then final week usually is checking that all previous months is OK. Doing up to like current months, activities, transactions. As much as you need to do what is not done automatically. So yeah, it is quite routine work. You know when there are like more. More important tasks, so that's what, like they say, bookkeepers can't have one-month long vacation because you have either payroll, taxes, or other taxes.

Question: But in terms of daily routine, do you have specific time set? For example, at this time you need to start to work or something like that or no.

Answer: No, Work has to be done.

Question: OK, and do you think digitalization and remote work are related to each other?

Answer: Like it please of course connected to each other. It lets you be free.

Question: OK, so. Using digitalization makes remote work possible?

Answer: Yep. They are interconnected but remote work can be possible also if your company is not fully digitalized, then you just have to like just to transport documents. Somebody can send your I don't know envelope with papers once a week to your post box and then you're working with these. So they don't. They are not the definitely connected, but of course it makes it much easier.

Question: And what can you tell me? One pros and cons of digitalization?

Answer: Pros is, of course, uh...direct visible environmental saving. Of course, we are not looking or I'm not looking at personally, but they showed. Look what is footprint of digitalization of everything like how much servers create carbon footprint etc so. So and so. But yes, not printing out papers, not, uh, I don't know filing them into filing cabinets and waiting for seven years and then throwing them out. It is very like I would say, very good progress because I know I was. I'm cleaning my home archive now. I have never looked during seven or ten years these papers again after I filed them into the files, so what's the point of printing out everything? Plus yes, as we as we talked before you are able to remotely go into the program. Usually when you do bookkeeping, you are making this. I don't know purchase invoice and you attach PDF or whatever file digital file into this line so you can always see what's in there so you can download and take a look at this. Wherever you are, if there is any need or interest.

Question: And do you have any concerns about digitalization as well?

Answer: Uh, bridge yes data uh data theft uh? So what is it? Kidnapping is wrong English word, but I'm using not kidnapping. What is it? Cyber attack yes. So removing our rights to the program and claiming or asking for a fee to restore them. This is a big thing. And this is, I think, have not been used too often, so yeah.

Question: Umm. Can you tell me one pros and cons of remote work as well?

Answer: Pro of remote work is to that you can choose the place where you are located when you do your work. Not always, maybe, especially for bookkeepers, not always the time, but definitely the place. Con is you are not. You may not feel like part of a team because it's, uh, you are losing the human touch. And you may, of course, there is always a question, but not so much actually of misunderstanding of written and, uh, spoken, but actually this is not too big of an issue. For bookkeeping, exactly because bookkeeping is quite routine work. So yes.

Question: The next question is what would be the best form or schedule of your work?

Answer: The best schedule for my work is I start at 8:00 AM and finished at 4:00 PM. I'm morning person.

Question: And you prefer to work in the office?

Answer: Yes.

Question: OK. And the next topic is like about barriers. What do you think the most significant barriers are when you work remotely? What do you feel the most uncomfortable when you work outside of the office?

Answer: Losing the Internet or not having stable Internet. And that is something that I have every so often experienced and this is something especially when work is time sensitive, a big issue.

Question: Do you usually experience that in Estonia or?

Answer: It could be not always, but sometimes you just can't be in the place that you expect. Having good Internet because Estonia is well known for attitudes that this is human right.

Yeah, I was lost in Pärnu, which is like West Coast Estonia in one guest house for conference. I stayed there. They had very bad Internet, so it was like you can't work, so you're spending more time.

Question: Hmm, makes sense. And how do you secure data confidentiality with the implementation of remote work?

Answer: Several level logins. Login was not password but ID card for example or doing that two level authorization of getting into. I don't know Google Drive for example. So all these types of measures we have taken.

Question: Do you also write some sort of contracts related to computer confidentiality?

Answer: We have it in...in our employment contract. This is part of employment contract.

Question: And when granting authorization to financial and accounting systems, how do you? How does the company verify the methods? Umm, I think it's more for like employees like other accountants. Since you're CFO, you are granting authorizations, right?

Answer: Uh, no. Our company has a separate person who does granting authorizations, but this is like one time thing. They make employment contract with me. They verify that it's me because they have ID code and that's me and then they open that that processes for me that I need and then as they're closing accounts when I'm leaving.

Question: You finished the contract when you got in. And. This term is included in the contract or is your start in the beginning?

Answer: No, in the beginning it is employment contracts in Estonia are made, usually with no end date usually. So when you have no end date and then this, anything in this contract is valid as long as contract is valid and when I leave the company we are ending contract. We are ending all access rights also.

Question: Then, for example, if you need another authorization, do they just give you the authorization or how does it work?

Answer: Do you mean that the authorization of some other program relevant for me? Or do you mean?

Question: Yeah

Answer: If I need to get access to for example. As I said CRM program then they give me access. I also have asked me to remove from some programs because I don't need it.

Question: Do you need to go to IT department?

Answer: Or is it just we don't have a department? We have one person in here. We have quite small company but generally speaking yes. IT department is the one who is dealing with it.

Question: And how do you backup your data?

Answer: Cloud is having the data so I don't know how the bookkeeping program is storing data. I haven't, I just have blind trust to them. So because they also have contractual obligation to keep our information, so does payroll program. They are responsible for keeping the data and storing and ensuring that it never gets lost.

Question: And can you tell me which factors interrupt the digitalization of your work? And financial accounting programs, for example, like lack of Internet access or lack of equipment.

Answer: When there is a very like, I don't know out of data equipment and yes it can restrict my access as we discussed before. And if I don't have Internet, then yes, I'm in trouble. That is, I think the main. Or if I don't have or if I don't have like I don't know. I lose ID card and I lose my phone I can't show, to what is it? What authentication? I can't do that; therefore, I don't have access to anything.

Question: And you don't have any problems with communication when you're out of the office or how do you feel?

Answer: No, I don't have any problem with communication.

Question: OK, and we're almost done. Before wrapping up the interview since in recent years like lots of companies had to do remote work. Did you learn from this special period? It's changing or how did the company react to that?

Answer: I would say that our company did not have backlash of this of this, getting them to work remotely, especially from financial finance department sign or yes office subscription department side other departments. Yes, that people cannot. Developers cannot work in same space. Affecting the revenue because they are not able to work with such a quality they need to, but it did not affect me whatsoever. So you specially as I said that we were. We were very remote. Almost never. Admin always came into the office. Uh, the IT people developers. They did not always come, but usually these 3-4 people were always here who are like admin group.

Question: So during pandemic you used to come to the office to work.

Answer: Yes.

Question: OK. I think we're done today.

Interview: C

Date: 29/04/2022

Meeting: Virtual

Length of interview: 30 minutes

Length of transcriptions: 5 pages

Question: Umm... so can you tell me your name, positions, companies if you can?

Answer: My name is ... and I just turned 21 years old and. I'm working as a finance service specialist in accounts receivable for ..., yes.

Question: So the headquarters in Tallinn?

Answer: The headquarters of the ... itself is in Switzerland, Zürich. This is the global headquarters. But for our Estonian branch it is in Tallinn.

Question: OK, what is the company dealing with? What does it do?

Answer: The company deals with construction of utility projects for electricity and telecommunications, so they are striving to be more sustainable and create energy that is more sustainable in the future. And also they provide their business support services.

Question: And how big is the company?

Answer: Overall ... is a global enterprise is a large enterprise and there are employees all over the world approximately 38,000. But in our Estonian branch there is approximately 150 employees.

Question: OK, and how long have you worked in that company?

Answer: Almost a year now I started last summer and, yes, in June it will be one year.

Question: And do you have any experience of working remotely so far?

Answer: Not before this specific position, no.

Question: OK, but like this position you have an experience of working remote working.

Answer: Yes

Question: OK, so like as you know, there are three parts in this interview. And shall we start from the first one? What kind of program do you usually use for the accounting work in your company?

Answer: The most used system is SAP or something or accounting work and we also have our internal systems.

Question: OK. So SAP is Estonian program or is it?

Answer: It is worldwide a national program.

Question: And How much? How many tasks of accounting are managed online? So like do you, is your job usually using online? Does it make sense?

Answer: Yes yes, yes specifically all of my tasks are managed online. I cannot know for sure about other teams because we have a lot of teams and people responsible or then sort of the head of accounting people. I'm not sure about their tasks, but daily activities, that is that are associated with accounting and customer service are on all online.

Question: So it doesn't involve any hard copy papers or anything.

Answer: No, and the only thing that I've encountered so far is my colleague, who has to send out invoices manually via then post. Mostly because customers may not have a direct email address in the system, so the only possible way to do it is then by a by a post, but other than that everything is online. So it doesn't involve any hard copy papers or anything.

Question: OK, and Uhm, do you know something about budgeting?

Answer: Only a little that is specifically associated with my team and this is not related to any work tasks, but more or less about team building.

Question: OK. But you don't know something about budget for digitalization.

Answer: And definitely there are sort of overviews and those types of larger meetings where this is discussed, but as a specialist I am usually not involved in these discussions and don't have the specific overview of that unfortunately.

Question: OK. And how often do you work remotely current in your job.

Answer: I think around like 75% quite a lot. They're trying to sort of move it to 50:50, but with school and just the comfort zone is already at home, then I've been using this as a possibility for mostly all of my time.

Question: And while working, how do you communicate with other colleagues?

Answer: We have our teams, Microsoft Teams and Outlook. Most sort of daily and chit-chat. Communication goes via teams. Emails are then handled by Outlook and depending on what connector sort of communication is needed, but otherwise whenever we have sort of questions, or, uh, need uh, context, and which happens daily, and then we use Teams.

Question: So basically, Teams and Microsoft.

Answer: Yes.

Question: OK, and how do you access the financial and accounting programs while working remotely? And do you use any sort of authentication or network?

Answer: Yes, that work. And while we're working remotely, the only thing that I can say is that the authentication is needed when working from home.

Question: And how would you predict the remote work will be applied in the company?

Answer: I think that it has been a very hot topic, mostly because COVID is sort of I don't want to say over because it's definitely not over, but people are getting used to it and they are still trying to of course bring back the office environment, meaning that they encourage people to go to the office and work in the office, but at the same time there are very flexible in their ethics, and so to say that there are scheduled home office days that, like I mentioned, 50:50. And also people who. At least in my entity then in Tallinn, who cannot participate in office activities. Then they have the option to sign a home office contract. So a full time remotely then.

Question: So the company is trying to go back to the office, but the process is not that fast right now.

Answer: Yes.

Question: OK, and the second part of this interview is about your personal experience about remote work. How long have you worked remotely and how often?

Answer: I think that since day one, of course the first few weeks was at the office, but since it was summer and nobody was at the office at that time, then I quickly took that tablet with me and after that now almost a year I've been sort of been uh... exercising this remote work and as of the time wise, I think it's more or less three to four times a week, especially if they're school. Then sometimes it can happen that I don't go to the office at all, but if I have school breaks or summer breaks then I tend to work in the office more. But yes, this is very often doing remotely.

Question: It's about more general question. Umm, even before pandemic, did the company have remote work options or did they get after pandemic?

Answer: I'm not entirely sure because, uh, as much as I've heard then the office sort of life was very lively and there were also always people going and coming but when taking into account that this company is very international, then they have also thought about the fact that people who are not located in Estonia, for example. Then of course they can carry out their tasks remotely, but for the people who were located in Estonia as much as I know, it was sort of a strict schedule of Monday to Friday, as according to whoever started at what time, but otherwise at the office, yes.

Question: OK, and can you describe how the remote work works? Like when you start to work, what you need to keep?

Answer: Well, for me it was, first of all I did not like. Of course the work computer was granted for me and I think and there were also possibilities to order monitors, keyboards and. Yep, I think this was around at, of course. I already had this sort of set up then, then I did not go through with it, but I know that I have the possibility and it is then associated with that or taken from my desk at the office. So for the assigned person they're assigned desk, probably then sort of carried home for them period of time working remotely.

Question: Is there like fixed time that you need to start to work, or you can choose when to work?

Answer: I have a fixed window of starting so till 7:00 AM from 7:00 AM till 9:30 AM is the window that we can all start and depending then on the starting time it will be 8 hours a day more or less.

Question: OK. It's a really general question. You can just answer whatever how, whatever you think. How do you think digitalization and remote work are related to each other?

Answer: Umm... I think that if we talk about like digitalization, then the sort of overall idea is the development of technology and also the fact that if tasks are moved online, there are no specific need for people to sit behind their desks then, uh, for the company. It's definitely useful if they have this option of remote working due to the fact that they can hire more employees who are not umm... don't have these sorts of obstacles for not participating in those daily office brutes, so to say. So I think that overall in the future if everything is and I think that I can already say from my position that everything is online, I have no good argument to why companies should not allow people to work from home.

Question: Can you tell me one pros and cons of digitalization?

Answer: Umm... Overall? or in in my sort of, uh, professional setting.

Question: I think in your profession.

Answer: OK. Umm... I think one of the pros is definitely accessibility because everything that I could possibly need is in one machine, so my laptop or my computer then and due to that, I don't sort of have these situations where I lose some important documents, or of course that can happen digitally as well, but overall I think that everything is accessible and this is like one of the biggest pros, but I think for the con it could be the lack of safety, I think. Even though I know that this is not a problem for Estonian companies, By being sort of e-country and everything is handled online and this has been sort of in practice for many, many years now, so I think that is always a very important topic to consider, but overall there is never the sort of like a safe playground for processes that require the online systems and it's as we can see in today's setting that it's quite easy to hack into everything. So I think the safety is one of them biggest concern.

Question: is there any like contract regarding like security or confidentiality?

Answer: Yes. There is. And of course, whenever the employment contract started. Then it was, uh, enclosed that depending on then the information that is in a written form confidential. Then this not this should not be enclosed in a new matter and also of course this will continue after the end of the employment contract. So yes, there's specific of course. There have been also courses and mandatory courses regarding cyber security and ethics and everything that is associated with confidentiality and sort of overall of the company and its states have that then we sort of have to know what to discuss and what to not.

Question: OK. Do you think more digitalization will be necessary for your company, or is it you think it's enough?

Answer: I don't really know because I think that everything that could be is when thinking from my professional position, then everything that could possibly be online or then digitalized is already digitalized, digitalized, and regarding the processes of different teams than, of course, those who are specifically associated with, for example, machinery and production. And, of course, this cannot be fully digitalized. But overall, I don't see a reason to

overdo it as well. If something is needed in a paper format, which is a very rare case, but this isn't a problem for anyone so.

Question: And can you tell me one pros and cons of remote work as well?

Answer: The pros is definitely time management. Better sleep schedule and sort of the relaxed environment. Sometimes people just sort of need a day where they can work in peace without having to contact anyone like physically. So I think this is the fact that people can do their tasks very successfully. Remotely is something that shows, uh, positive side of remote work as well. But I think for the sort of con it could be the lack of motivation, especially during, for example, those vacation times, not when people are on a vacation, but summer time. Let's say that people tend to move through their country sides and try to work from there. So from a personal experience, I don't find motivation to find to work on a sunny day where I could do so much more than that. So I think that the fact that there is this option to just. I don't know to watch a movie for an hour. Even though the workday is still like continuous. Not that I've been doing it, but overall, the options and everything is there. So, I think this. There is no boundaries in some cases.

Question: OK, what would be the best form or schedule of work? And, how does the organization see the situation so? Like if you can set the form of your work or schedule, what would be the best? Like how many times you go to the office like when to start?

Answer: I actually enjoy the office culture very much, so this is just my personal preference of being able to get out of home for some days, and you know, dressed up and socialize. So, I've been thinking a lot about the fact that I'm still studying, so it's very difficult for me to carry out this routine to the office. But whenever there are breaks or when my degree ends or when I graduate then I already know that I'd very much like to. Uh, build this type of routine so personally I'm not against it, but of course if I need some days to just, for example, Fridays, I have more than happy if the company had like two or depending on the need three days a week to also work remotely. So I think it's all about the balance and people love the office environment as well, so I'm not sure that there are people who completely hate the fact that some. Maybe someday they want to, you know, or they have to go back.

Question: Yeah, makes sense. Now we're on the last topic. What do you think are the most significant barriers when you work remotely?

Answer: I think that sometimes when my partner has a day off and I have to work and there is a lack of motivation and the barrier of exactly as I mentioned before, is that whenever there is a sort of possibility to do a lot like a (more) longer break than it could turn out into. Uhm, quite bad habits in in in the future. And but as a specific like barrier, especially when I started then the accessibility to my colleagues was like in conclusion quite great. But at the same time, because the conversations were all online, then a lot of information got lost and it was difficult to reach to those important points. So, I think the communication could be quite a big barrier while working remotely.

Question: OK, and how do you secure your data confidentiality with implementation of remote work? So like when you work in your home, do you need to use specific, umm... systems to secure the data, or how does it work?

Answer: Yes, we do. uh, exactly as mentioned here, it's the VPN and encryption both depending on the systems, but these are required in any cases. There are just no possibilities there, otherwise do work.

Question: And then when you need the authorizations from the company, how does it work? Do you need help from IT department? Or is it like face-to-face granting?

Answer: Those authorizations are set to in stone from the beginning. Whenever there's the first day. So of course, in cooperation with the IT department, but overall, regarding specific processes or systems, there is always someone who is already a senior user of those, so the

communication is more or less between colleagues. And of course, there are instructions provided if necessary, so.

Question: OK, and how do you back up the data and how often do you do it?

Answer: I personally don't know about the specific process because we are not responsible of that specifically. However, there is of course the common server that we use, and we have them divided all of those processes into specific locations there. So usually, we just are already using the server, not or like personal account for example. So or disk then.

Question: So like servers or clouds automatically back up the data usually?

Answer: Yeah

Question: OK. And can you tell me which factor is interrupted the installation of financial accounting programs or individual processes?

Answer: I think that a quite common obstacle or that sort of interruption is the unstable VPN connection. But not in the sense that it is unstable as it is, you know, breached or something like that, but. Before even starting, then there has been incidents where the server was like down, meaning that we cannot even like log into anywhere because this is just provided or then this is necessary to even like log into to the computer so this has delayed the job and as I mentioned before, I also think that this interruption is also a human contact which is or more or less, the lack of human contact. Umm... because whenever I had the options to discuss some problems at the office, then I found like those solutions and so much (more) quicker and it was more efficient and effective. So, I think that these are the biggest that I have experienced so far.

Question: OK, so before wrapping up the interview, what so like in recent years, we had to work at home, hmm. I mean like lots of companies and what did you learn from that experience in terms of remote work and digitalization?

Answer: I think that the biggest lesson I learned was that if anything is possible, especially when it is a job that does not require physical presence. Being part of a customer service. Job years before and then, of course it is not possible to take the restaurant home with you and do it from there, so I guess the fact that we had the possibility to just move to our home decks and still keep up the high-quality work. Gave me a lesson of how companies actually perceive their employees. How much do they want to make it work and, how much are they willing to provide and help in order for each and every one of us to feel stable, especially in these types of situations and have a sense of security as well, so there is no like fear of losing a job because we have to work from home.

Question: So do you feel like you got more opportunities?

Answer: Definitely.

Question: OK.

Answer: I think this I as I've said to a lot of my friends that I would never want to experience like this type of physical service job anymore because now I have the possibility to evolve and have jobs inside my education. Then because everything is already digitalized in most companies that I the more or less, it's about their mentality and ethics. If they want to practice starting a type of like remote working, but the fact that the possibility is there and there is a specific time schedule and everything else. There's just so many perks that I couldn't do a list. All of those. So I think that the biggest change was the fact that I got more stability and security in inside my sort of time schedules.

Question: Schedules OK. I think we are done today. Thank you so much.

Interview: D

Date: 04/05/2022

Meeting: Written

Length of interview: N/A

Length of transcriptions: 2 pages

Question: Can you tell me your name, age, position (incl. work tasks), company name, and where does the headquarter locate?

Answer: My name is ..., 36 years old, in this time I am been little more than 1 year owner of my bookkeeping company ..., I bought it November 2020. But I am working in ... more than 8 years, I begin working here as CEO and board member. Company name is ... (You can find more from ...). We have 2 offices, in Tartu and Jõhvi. It is not easy to say, which them is "headquarter", they both have very importing role.

Question: What does the company deal with?

Answer: ... provide bookkeeping services.

Question: How big is the company? Can you tell me the approximate employee numbers?

Answer: We have 8 employees.

Question: How long have you worked in the company, and do you have any experience of working remotely?

Answer: I am worked in ... 8 years. I am working remotely when I was home with my babies, it was September 2015 – august 2019, and in Corona time. I prefer working in the office, it is more comfortable to me, but we use remotely working too.

Question: What kind of program do you primarily use for accounting work? E.g., Oracle, internal system.

Answer: We use Merit, Directo, Books, Eeva, Navi

Question: How do you think the accounting tasks are managed online? Can you indicate its share in percentage?

Answer: Almost all tasks are managed online, 99 %.

Question: Can you tell me any digitalized processes or tasks?

Answer: We try digitalize almost all, so much as possible. Invoices are digitalize by Costpocket app or are e-invoes, we use bank Gateways.

Question: How many documents are written and transferred electronically?

Answer: Most our documents are electronically, ca 90 %

Question: How does the company budget for digitalization, and what's the future direction?

Answer: Digitalizing in accounting office don't need a big money, I think that we can save money and time when we use digitalizing.

Question: How often do you work remotely? Can you express its share in percentage?

Answer: I work remotely 3-4 times a month. 7%

Question: How do you communicate with other colleagues?

Answer: I meet with them, we call, write e-mails, messenger, and sometimes have web-meeting. I prefer meeting and calling.

Question: Can you tell me the main channels that you use for the communication?

Answer: Phone calls and meeting.

Question: How do you access the financial and accounting programs while working remotely?

Answer: They all is useful by web

Question: How would you predict that remote work will be applied to the company with digitalization process?

Answer: They support each other, but they are different themes.

Question: How long have you worked remotely, and how often?

Answer: September 2015 – August 2019, and in Corona time March 2020 – May 2020, and November 2020 – May 2021

Question: Can you describe how it works? E.g., where to get the equipment, operating schedule, working system

Answer: It works normally, we have all opportunities to do work at home. At first corona time, we have lot of works with clients employees, we helped very much and we have good relationships with our clients. The second Corona time seems little hard, we miss meeting people, it was hard to hold team-feeling.

Question: How do you think digitalization and remote work are related to each other?

Answer: About in bookkeeping services it very related.

Question: What are the pros and cons of digitalization? E.g., the quality of financial report, data analysis, better decisions.

Answer: Pros – less easy and cheap work, faster workflow, greater efficiency,
Cons – less communication,

Question: Do you think more digitalization will be necessary for your company?

Answer: I think we are very good digitalization, but if there are more opportunities, we use them certainly.

Question: What are the pros and cons of remote work?

Answer: Pros: flexible, better feeling about work and family time,
Cons – few times with colleges, few communication

Question: What would be the best form or schedule of work and how does the organization see the situation?

Answer: I prefer working in office, but if I have to be home, its good if I have possibilities to do work at home.

Question: What do you think are the most significant barriers that you felt while working remotely?

Answer: Bad communication. It was harder to communicate with clients and colleagues.
Teamwork and team support.

Question: How do you secure data confidentiality with the implementation of remote work? E.g., VPN protection, encryption, both.

Answer: I don't know

Question: When granting authorizations to financial and accounting systems, how does the company verify the methods of doing so?

Answer: I don't know

Question: How do you back up the data, and how often do you do it?

Answer: I don't know

Question: Can you tell me which factors interrupt the digitalization of individual processes and accounting programs?

Answer: I think the main factor is human. They don't (can't) use digitalizing.

Question: Before wrapping up the interview, what did you learn the most while remote work was regulated in the past years? And what can we learn from this unprecedented situation?

Answer: It is very important to have good relationships, team support. You have to take time for communications.

Interview: E

Date: 05/05/2022

Meeting: Virtual

Length of interview: 27 minutes

Length of transcriptions: 5 pages

Question: Can you introduce yourself and your company position, etcetera?

Answer: It's one that's what I want to ask for you, how we will be better to do and my name is ... and how I tell you I am sitting in different stools and I'm connected with the different companies. Everyone are somehow related to accounting and bookkeeping my main job is to lead the company named ..., I am CEO here and where is offering the cloud-based budgeting solutions. My another job is doing also from where I am advising local governments how they can do better the accounting process, how they can digitalization the like, your main task and another my...our family company is small one, but I am an main accountant there, and do some activities for accounting and auditors also. And then. In which prospect we will do this. We all. We can speak generally?

Question: I think the important thing is you're working in accounting field, but like specific positions are like companies are not that important. So I think general answers would be nice. And how long have you worked in accounting fields?

Answer: About the 2000s. Beginnings of 22 years already.

Question: OK and have you, do you have any experience of working remote?

Answer: Yes, yes, yes. I think I have these 10 years to experience to work with remote since 2012.

Question: So our interview is consisting of three parts, so the first part is about digital accounting and remote work, and the second part is more about your experience and the last part is more about barriers or difficulties. And then I'll start with the first part. What kind of program do you primarily use for the accounting work? So for example, there's like Oracle or internal systems.

Answer: And Estonian programs like Noom and Directo.

Question: I think a lot of people use that one, the second one...

Answer: It's very popular in Estonia.

Question: And how do you think the accounting tasks are managed online? So how many? Do you know approximate percentage of online work?

Answer: I think in Estonia today is more, of course, about the COVID issue also, but remote work is quite normality to work not in the office, but also in the in the different housework, because umm...it's also very popular to they don't have anymore. There are accountants in house they are offering this another company was offering accounting services exactly. In house, it's also this process might be in remote.

Question: Mm-hmm, so do you use any like do you think? Umm...people working in accounting they don't need to go to the office because everything's online?

Answer: So, so I think some of it. They have a, they are in office, some of them and they have possibility to work in home office as well.

Question: Can you umm... percentile, how many percentages of work is done by online, like 60 percent, 70 percent.

Answer: I think it's 60% or something or it's growing also.

Answer: And can you tell me any digitalized processes or tasks for example? You're doing issuing invoices online or signing transfers online.

Answer: Everything in on.

Question: Everything, OK.

Answer: This not anymore. Any paper we don't need anymore.

Question: And Uhm, do you know something about budgeting in your company?

Answer: Yes.

Question: Do you plan to put more money on digitalization? For example, buying electronic devices or buying more programs? Or do you think it's just enough to spend as you spend right now?

Answer: It's a...please...this question again repeats this is it. I haven't...about budgeting.

Question: Yes, do you plan to invest more money into digitalization?

Answer: Oh OK, yes, I know I got you. The digitalization today is like one normality. We don't have not need to do extra actions or another digitalization approaches. I think in our company.

Question: OK, so you think right now is already enough.

Answer: Yes, yes.

Question: OK, and how often do you work remotely right now?

Answer: Ah, with the accounting or every day, every day. I'm remotely, somehow.

Question: OK. And how do you communicate with other colleagues when you're outside of the office?

Answer: Nobody, it's because I am sitting different stool. But if I need to do it accounting issues, then we using email then we using also phone then we're using Team and Teams.

Question: OK. And so the next question is about the main channels for the communication you think you use the Teams most.

Answer: Yeah, Teams and Google, Google Meet as well.

Question: OK. And how do you access the financial and accounting programs while working remotely? So do you use any sort of verifications systems?

Answer: yes, you want to there like Cloud-base, I think they are Cloud-base solutions, and they need to have a log in with the mobile ID or ID card and the verification. I think they are quite strong.

Question: OK. And how would you predict that remote work will be applied to your company? You think they're going to increase the amount of remote work? Or people are going to come back to the office?

Answer: I think it might be. They might be optional. How like to everyone to work some days in office or some days remotely like, how I tell you, it's not necessary anymore to be in office in. Of course, if you have some meetings, then we might be in office, or we have some, not exact meetings, we with clients or something, we must be the best connection. It's very good to do with the side by side. But if we have a just everyday job, I think it's not the anymore important where you are doing this in home remotely or in office.

Question: OK. The next question is about your experience, so I think I already asked you how long you have worked remotely is approximately 10 years.

Answer: The 22 year 22 years.

Question: Like remote work is also?

Answer: A remote work yeah yeah yes yeah yeah

Question: 10 years, OK? And can you describe how it works, for example? In your company, set the time so you need to be on the desk around the time or is it your just. Your own choice. You can decide when to work. How does it work? If you decide to work.

Answer: Umm...Sorry I haven't got you.

Question: Yeah, is there any specific system that you need to follow for the remote work? Or is it just your choice how to?

Answer: Why are we working is the question remotely or?

Question: How?

Answer: Yeah, OK. Mainly we are using this program. One company is using 'Directo' is the cloud-based solution. Another company is using 'Noom'. This is a server-based solution,

and I am in this server VPN access to this server and there are different folders. When we put the documents when we need out of this outside of this program and we are sharing this server.

Question: Is there any specific time that you need to work, for example starting at 9 or something?

Answer: No no.

Question: OK.

Answer: It's very good to we know our date, but we in which time we need to do some activities like for taxes, taxes, reports or reports or governments and we have specific dates for our process but um...we don't. It's very good saying in Estonia we don't pay... we don't buy any more time for employees, but we are buying a responsibility. It's not important when are they doing this. I believe this, but they must do they will more response these activities, but they are doing when they are doing it's not important anymore. Of course, if it needs to be for clients, if they do not need to call you, you must answer this, but it's not where do you answer? It's something anymore, so not so important.

Question: OK. And I know it's a really general question, but you can just answer how you think and how do you think about the relationship between digitalization and remote work.

Answer: I think it's another can't be without another remote work, it's. One condition to work remotely. OK. If it's supposed to get the answers.

Question: Yeah, I got it and can you tell me one pros and cons of digitalization?

Answer: Pros I have a lot of pros because we don't need that. It's a very environmental because we don't need the paper anymore. We don't have any printers also in our... And it's very quick very transparent we can understand the process documents. Nothing is our hided, but. And for me, it's accounting is the support service for every companies. It's not the main business. Of course, for some if they are serving the different accounting clients, there are main business for companies whose are retail companies. They're not the main business, they are mostly the accounting is support service and it's not, be that's it is important, not so important. It might be work very smoothly. And the pros. I think it's mostly I told you, but of course if I can tell you it's I think people are more happy because they are literally time better. But they are doing when they are doing, and they are more effective. But cons, of course, uh, some pros. There might be some cons. And one of them, I think, uh...to understand better processes. It's better to be inside this business and you get more information, not some information you need also not accounting immediately, they invoice or so. But you need to more information about the process in on other processing companies and you don't get it if you are remotely. Maybe it's not so good, and another of course, do people better connection with colleagues. Also, that's it might be the face-to-face connection also sometimes.

Question: I think those are really good points and the next question is how do you think? Do you think more digitalization process will be necessary for your company? Or do you think it's already digitalized enough. What they think?

Answer: Always can be better. Always can get better always. You don't need the more different processes can be to, not so many controls, so I think they are start example like payroll systems. If they have some...schedule difference and that they it's. It can be better with automatization, can be better than the automatization in this field like.

Question: And what are the pros and cons of remote work?

Answer: I answered already this question or.

Question: Before it was about digitalization, and right now is more about working remote work.

Answer: It's almost same like digitalization. You don't have the constant pro,

For me it's the same thing. Digitalization can't be without the remote work can't be without the digitalization.

Question: OK.

Answer: And of course, you can take the papers in your home office and but it's not. You might be, do digitalization in remote work, it can create another, but they said the same way they same answers cons and pros.

Question: And what would be the best form of your work if you can choose, for example, you can set your working system. What would be the best form? The remote or office working? What do you prefer?

Answer: I prefer that I can choose to be in office when I need and when I want and be in home office, remote office and when I need, and when I work because I have been out also and I have with my computer and I can do remotely my job, but it's not necessary anymore. If I need a different activity with my personal life. It's very important that we can conclude. Our personal life with the work life, of course. It's very hard to find the balance not so and so, but. If you find the balance, it's but I prefer that I can choose what in this moment or better to do it remotely or in office.

Question: So, flexibility is more important for you.

Answer: Absolutely

Question: OK, and now we are on the third part. What do you think are the most significant barriers when you work remote? Do you feel any difficulties or barriers?

Answer: What I see in remote work some difficult... yes?

Question: Yeah.

Answer: What accounting remote work I can see everyday work. I can't see any difficulties so every everything our digitalization... are...I think digitalized, then it's not the problem to. And not very cons, I think so. If you are thinking true, but you must do, what kind of system do you have I can't see any problem.

Question: And how do you usually secure the data confidentiality? While you work outside of the office, for example VPN protection, encryptions, how do you secure?

Answer: How we secure, it starts for us it's very big issue. Of course, example where because we are offering goals of cloud-based solution for budgeting we start to do with the contracts with our clients and they are also the point. But this is what kind of secure might be do and another. And another, our company made they are, also then I saw...certificate in 2020. Even something for this field and. What special activities, of course all channels might be very secure. Controlling what we are doing, what our how comes over us. How the information also. And training for our employees also is very important.

Question: And when you granting authorization to financial and accounting systems, how does the company verify the methods? So, for example, when the company gives the access to specific things, how do they offer the authorizations. Does IT department?

Answer: Yeah, IT departments. Yeah, they're making up for us the VPN, access and...

Question: OK. And the next question is, how do you back up the data and how often do you do it?

Answer: How we're doing our solutions that we are using there making the backups.

Question: So it's basically similar to cloud system.

Answer: Yeah, cloud system, but if you have one server there are also making automatic.

Question: OK, and can you tell me which factors interrupt the digitalization of individual processes and financial accounting programs? So there are examples like lack of Internet access, lack of corporate equipment, unstable VPN connections.

Answer: Both of them Internet connections and VPN. We need the more remote work we need. The definitely very good Internet. Otherwise, it's not.

Question: So it's more mostly technical issues?

Answer: Yeah.

Question: OK, and the last question is, umm... did you work during pandemic, no did you work remotely during pandemic?

Answer: Yep.

Question: What did you learn the most from that experience?

Answer: That we need to see face to face with other colleges as well because it seems like we haven't the flexibility to choose to be in office or not. We were remotely and if you don't have the tools then you need to have some contact and it was almost two years and after that if you have possibility. Of course, you know what when we will meet each other but. It was what we need to understand. We need another people to see some time today.

Question: And that's really good point, because like all my other friends are also like. I mean, like we're not working. We are studying, but still not seeing each other for that long time. It was really hard.

Answer: Yeah, last year I studied in Estonian EBS it was almost a half year when we studied remotely and I realized that for studying I need to be in the classroom was ... Every day works, it's not so necessary, but studying it's yeah. Being discussed in the same discussion room, not internet. It's possible, possible, but it's not the Same, right?

Question: OK, I think that's it for us today and thank you so much.

Answer: You're welcome if you need some question another when we can discuss and if you can if I can help you of course let me know.

Interview: F

Date: 05/05/2022

Meeting: Written

Length of interview: N/A

Length of transcriptions: 3 pages

Question: Can you tell me your name, age, position (incl. work tasks), company name, and where does the headquarter locate?

Answer: ..., Accounting Team Lead

Question: What does the company deal with? delivers accounting, tax, audit, business, and advisory services

Question: How big is the company? Can you tell me the approximate employee numbers?

Answer: Prox 40 in estonia

Question: How long have you worked in the company, and do you have any experience of working remotely?

Answer: 6 years and since 2020 autumn we are working remotely

Question: What kind of program do you primarily use for accounting work?

Answer: P2P, NAV, BC

Question: How do you think the accounting tasks are managed online? Can you indicate its share in percentage?

Answer: 100%

Question: Can you tell me any digitalized processes or tasks?

Answer: 100% digital invoicing process

Question: How many documents are written and transferred electronically?

Answer: 100 %

Question: How does the company budget for digitalization, and what's the future direction?

Answer: No comment.

Question: How often do you work remotely? Can you express its share in percentage?

Answer: 99 %,

Question: How do you communicate with other colleagues?

Answer: Via chat, web meeting

Question: Can you tell me the main channels that you use for the communication?

Answer: Google chat

Question: How do you access the financial and accounting programs while working remotely?

Answer: Via net, all programs are online, and we are using VPN for secure

Question: How would you predict that remote work will be applied to the company with digitalization process?

Answer: Then higher the level of digitalization, the easier it was/is to switch to remote work

Question: How long have you worked remotely, and how often?

Answer: Since 2020 autumn and 99%

Question: Can you describe how it works?

Answer: Work equipment such as computer, additional screens etc. are provided by the employer. At the beginning the situation was new for everyone but by the end of the first week it was running smoothly. we have daily meetings with our team and based on each client we have opened a chat conversation forum, if needed we will have a meeting and share the screen. There is more indirect communication but on the other hand people appreciate being able to work from home.

Question: How do you think digitalization and remote work are related to each other?

Answer: I don't see connection as digitalization and remote work, purpose of digitalization is to reduce paper documents and is the first step for automatization – example purchase invoices. But the reason is – digitalization-why the reason why accounting people can work remotely.

Question: What are the pros and cons of digitalization

Answer: I have only pros, digitalization reduces company costs and reduce accounting people manual work, they can use that time for more complicate tasks.

Question: Do you think more digitalization will be necessary for your company?

Answer: All time there is /are tasks to do.

Question: What are the pros and cons of remote work?

Answer: I, as leader prefer at least one week per month all team come together into office. people are social “creatures”, and team “sole” requires being “nose to nose” from time to time, and recent studies have shown that reote work has contributed to people feeling stressed and disconnected from society, and getting into a comfort zone - where they don't bother to comb their heads, wash themselves, etc.

Question: What would be the best form or schedule of work and how does the organization see the situation?

Answer: As I wrote on 2.6- 1 week per month is minimum. Organization sees mostly remotely, but we will discuss more about this topic end of August.

Question: What do you think are the most significant barriers that you felt while working remotely?

Answer: In the office you as leader are always next but when everybody is his/hers own place, not knowing how to do anything at first, the hardest thing is to get people to communicate and inform when they are away from the computer screen.

Question: How do you secure data confidentiality with the implementation of remote work?

Answer: VPN should be the first login step before open any other system

Question: When granting authorizations to financial and accounting systems, how does the company verify the methods of doing so?

Answer: each person have they own password, and each person is allocated a computer with a unique code

Question: How do you back up the data, and how often do you do it?

Answer: As we are using cloud-based systems, then all data are in server.

Question: Can you tell me which factors interrupt the digitalization of individual processes and accounting programs

Answer: Nothing prevents digitalization

Question: Before wrapping up the interview, what did you learn the most while remote work was regulated in the past years? And what can we learn from this unprecedented situation?

Answer: It's all stuck in the old habit of why people didn't agree to telecommuting before, usually it's senior managers who are behind it, because they don't have a lot of direct reports, so for some reason it's thought that if everyone's in the same office the work gets done but if they're at home it doesn't. I can't explain why this is the case. If you look at what google did, have learned nothing.

Interview: G

Date: 09/05/2022

Meeting: Written

Length of interview: N/A

Length of transcriptions: 2 pages

Question: Can you tell me your name, age, position (incl. work tasks), company name, and where does the headquarter locate?

Answer: My name is ..., I'm 33 years old. I'm a accountant in headquarter is in Tartu,

Question: What does the company deal with?

Answer: ... is an international enterprise offering accounting services and consultation on business and taxation. ... helps enterprises enter Estonian and Finnish markets. The company's strength is the expert knowledge of the taxation systems of these countries, requirements of accounting, state regulations and work and business laws.

Question: How big is the company? Can you tell me the approximate employee numbers?

Answer: There are approximately 50 people working in

Question: How long have you worked in the company, and do you have any experience of working remotely?

Answer: I have been working in ... almost a year and work remotely one or two times a week.

Question: What kind of program do you primarily use for accounting work?

Answer: I mainly work with Trigon, Standard Books, Procountor and Merit Palk

Question: How do you think the accounting tasks are managed online? Can you indicate its share in percentage?

Answer: My client is paper free so 100% is managed online.

Question: Can you tell me any digitalized processes or tasks

Answer: Almost everything is digitalized.

Question: How many documents are written and transferred electronically?

Answer: Clients send their documents by email, but we insert them into our programs.

Question: How does the company budget for digitalization, and what's the future direction?

Answer: In the second part of the year Trigon is planning cooperation with Costpocket to digitalize receipts, purchase, and sales invoices.

Question: How often do you work remotely? Can you express its share in percentage?

Answer: One or two times a week. 20-25%.

Question: How do you communicate with other colleagues?

Answer: We use online services or phones.

Question: Can you tell me the main channels that you use for the communication?

Answer: We use Teams.

Question: How do you access the financial and accounting programs while working remotely?

Answer: We use our work computers(laptops). Every access is there if needed.

Question: How would you predict that remote work will be applied to the company with digitalization process?

Answer: I can work 100% from home already now. My clients are paper free.

Question: How long have you worked remotely, and how often?

Answer: One or two times a week.

Question: Can you describe how it works? E.g., where to get the equipment, operating schedule, working system

Answer: I take my work laptop home and do everything I am supposed to.

Question: How do you think digitalization and remote work are related to each other?

Answer: My clients being 100% paper free means I can work remotely all the time. These are different. Paper free means I can work from home; digitalization means we have less data to insert ourselves.

Question: What are the pros and cons of digitalization?

Answer: All data from clients is delivered daily.

Question: Do you think more digitalization will be necessary for your company?

Answer: It is necessary. The more digitalized the company is, the more clients can one accountant have.

Question: What are the pros and cons of remote work?

Answer: You can do house chores with work – it takes time from work. Kids interrupt work. You are the boss of your time, and you save time from commuting.

Question: What would be the best form or schedule of work and how does the organization see the situation?

Answer: You should at least visit the office one or two times a week minimum. You should be in tune with what is happening in the office.

Question: What do you think are the most significant barriers that you felt while working remotely?

Answer: Knowledge since I am a beginner accountant.

Question: How do you secure data confidentiality with the implementation of remote work?

Answer: We use VPN and encryption.

Question: When granting authorizations to financial and accounting systems, how does the company verify the methods of doing so?

Answer: Since Estonia is a leading IT country, Company owners grant access to important data remotely and digitally to accountants. Internal access is granted by IT department.

Question: How do you back up the data, and how often do you do it?

Answer: Automatically.

Question: Can you tell me which factors interrupt the digitalization of individual processes and accounting programs?

Answer: Used programs do not communicate to each other. That complicates the process.

Question: Before wrapping up the interview, what did you learn the most while remote work was regulated in the past years? And what can we learn from this unprecedented situation?

Answer: I learned that I have really good self discipline. You can be as efficient worker from home as in the office

Interview: H

Date: 09/05/2022

Meeting: Written

Length of interview: N/A

Length of transcriptions: 2 pages

Question: Can you tell me your name, age, position (incl. work tasks), company name, and where does the headquarter locate?

Answer: ... 25, accountant, ... Tallinn, Estonia

Question: What does the company deal with?

Answer: Accounting services

Question: How big is the company? Can you tell me the approximate employee numbers?

Answer: Small business (less than 50 employees)

Question: How long have you worked in the company, and do you have any experience of working remotely?

Answer: I've been working here for 7 months. I have remote work experience from current job and previous job.

Question: What kind of program do you primarily use for accounting work?

Answer: We mainly use our own software (Trigon), also Standardbooks and Directo.

Question: How do you think the accounting tasks are managed online? Can you indicate its share in percentage?

Answer: I think almost all accounting tasks are done online.

Question: Can you tell me any digitalized processes or tasks?

Answer: All clients send me the invoices via email, payment orders are done electronically, signing contracts is mostly done online. Also, all files are backed up online.

Question: How many documents are written and transferred electronically?

Answer: Almost all documents (at least my clients).

Question: How does the company budget for digitalization, and what's the future direction?

Answer: We are very pro-digitalization and are trying to make our program more automatic.

Question: How often do you work remotely? Can you express its share in percentage?

Answer: Currently one day per week, sometimes more often.

Question: How do you communicate with other colleagues?

Answer: Phone calls, emails, Teams chat

Question: Can you tell me the main channels that you use for the communication?

Answer: None.

Question: How do you access the financial and accounting programs while working remotely?

Answer: Everything is online.

Question: How would you predict that remote work will be applied to the company with digitalization process?

Answer: Remote work is here to stay and will be more popular in the future.

Question: How long have you worked remotely, and how often?

Answer: Currently one day per week, sometimes more often if necessary.

Question: Can you describe how it works?

Answer: Main equipment (laptop, phone) is from my employer. I have a private study book at home. Working schedule is the same as at the office. Systems are the same as at office.

Question: How do you think digitalization and remote work are related to each other?

Answer: Digitalization makes remote work more accessible and easier.

Question: What are the pros and cons of digitalization?

Answer: I think there are only pros – quality is higher (less errors than with manual work), data analysis is more complex and up to date, it is easier and faster to make decisions that before.

Question: Do you think more digitalization will be necessary for your company?

Answer: I think we are doing quite well in that area.

Question: What are the pros and cons of remote work?

Answer: Pros are flexibility, less time on commute, more freedom to plan my day.

Cons – connecting with coworkers can be difficult, working alone is less fun than at the office, hard to stop working

Question: What would be the best form or schedule of work and how does the organization see the situation?

Answer: I personally think 3-4 days at the office and 1-2 days at home is the perfect balance.

Organization is more flexible and isn't against working from home for the most time.

Question: What do you think are the most significant barriers that you felt while working remotely?

Answer: Being up to date with the office news and changes was a bit complicated, I felt more alone and on my own, had hard time to stop working.

Question: How do you secure data confidentiality with the implementation of remote work?

Answer: VPN

Question: When granting authorizations to financial and accounting systems, how does the company verify the methods of doing so?

Answer: Remotely by the IT

Question: How do you back up the data, and how often do you do it?

Answer: IT does that

Question: Can you tell me which factors interrupt the digitalization of individual processes and accounting programs?

Answer: Remote communication can be difficult, also programs should be more developed by now

Question: Before wrapping up the interview, what did you learn the most while remote work was regulated in the past years? And what can we learn from this unprecedented situation?

Answer: It is important to keep in touch with coworkers, it can be quite easy to lose touch and the connection with them. Also plan out the working day and keep strict schedule.

Resümee

RAAMATUPIDAMISE DIGITEERIMISE MÕJU KAUGTÖÖLE

Hyeonji Yoon

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