Emma Brandt

TECHNOSTRESS IN A MULTIORGANIZATIONAL WORK ENVIRONMENT

UNIVERSITY OF JYVÄSKYLÄ
FACULTY OF INFORMATION TECHNOLOGY
2022

ABSTRACT

Brandt, Emma
Technostress in a multiorganizational work environment
Jyväskylä: University of Jyväskylä, 2022, 90 pp.
Information Systems, Master's Thesis
Supervisor(s): Salo, Markus; Hämäläinen, Antti

Technostress has been widely studied and with even more focus on the employee's personal life during the past decade. According to current research technostress can cause both psychological and physiological symptoms and experiences with technostress at work can easily reflect on an individual's personal life. The negative consequences of technostress can lead to lack of motivation, impaired well-being at work and in worst case scenarios even to burnout. Even though there has already been various research covering technostress and mitigating methods, that is yet to be studied is organizations that use ICT and IS systems from different organizations in their everyday work. This Master's thesis focused on studying technostress in a multiorganizational work environment in an organization that employs over a hundred employees in Finland. The employees of the case organization used two different sets of laptops provided by different companies that had to be used by the employees at all times. The goal of this research was to understand how the employees experienced that the use of two laptops at work contributed to their experience of technostress and how the employees were able to cope with the pressure of using two laptops. Teleworking and its impact on the use of two laptops was also studied in the thesis. In addition, the research focused on three different leveled roles in the case organization as previous research literature has shown that employees in higher roles experience more technostress than others. The main findings of this thesis showed that using two laptops at work had a significant impact on the creation of technostress at work and the workload and interruptions at work. The findings showed that the challenge in using two laptops caused both software related and hardware related stressors for the employees, that depending on the role experienced different types of stress symptoms and consequences. As this type of work environment had not been researched before, this thesis contributed to current research with a new type of context of studying technostress.

Keywords: technostress, eustress, distress, multiorganization, mitigation, teleworking

TIIVISTELMÄ

Brandt, Emma
Teknostressi moniorganisatorisessa työympäristössä.
Jyväskylä: Jyväskylän yliopisto, 2022, 90 s.
Tietojärjestelmätiede, pro gradu -tutkielma
Ohjaaja(t): Salo, Markus; Hämäläinen, Antti

Teknostressiä on tutkittu laajasti ja viimeisten vuosikymmenten aikana tutkimus on keskittynyt entistä enemmän työntekijän henkilökohtaiseen elämään. Tämänhetkisen tutkimuksen mukaan teknostressi voi aiheuttaa sekä psyykkisiä että fysiologisia oireita ja kokemukset teknostressistä työpaikalla voivat helposti heijastua yksilön henkilökohtaiseen elämään. Teknostressin negatiiviset seuraukset voivat johtaa motivaation puutteeseen, heikentyneeseen työhyvinvointiin ja pahimmassa tapauksessa työuupumukseen. Vaikka teknostressistä ja sen lieventämismenetelmistä on jo tehty monenlaista tutkimusta, on vielä tutkimatta, miten teknostressi ilmenee organisaatioissa, jossa työntekijät käyttävät jokapäiväisessä työssään eri organisaatioiden ICT- ja IS-järjestelmiä. Tämä tutkielma keskittyi teknostressin tutkimiseen moniorganisaatioisessa työympäristössä yli sata työntekijää työllistävässä organisaatiossa Suomessa. Tämän tutkielman tapausorganisaation työntekijät käyttivät kahta erilaista eri yritysten tarjoamaa kannettavaa tietokonetta, joita työntekijöiden oli käytettävä jatkuvasti. Tämän tutkimuksen tavoitteena oli ymmärtää, kuinka työntekijät kokivat kahden kannettavan tietokoneen käytön työssä vaikuttaneen heidän kokemaansa teknostressiin ja kuinka työntekijät selvisivät kahden kannettavan tietokoneen käytön aiheuttamasta paineesta. Tutkielmassa tutkittiin myös etätyötä ja sen vaikutuksia kahden kannettavan tietokoneen käyttöön. Lisäksi tutkimuksessa keskityttiin kolmeen eri tasoiseen rooliin tapausorganisaatiossa, sillä aikaisempi tutkimuskirjallisuus on osoittanut, että korkeammissa rooleissa olevat työntekijät kokevat enemmän teknostressiä kuin matalammassa roolissa toimivat työntekijät. Tämän tutkielman tärkeimmät havainnot osoittivat, että kahden kannettavan tietokoneen käyttö työssä vaikutti merkittävästi teknostressin syntymiseen työssä sekä työkuormitukseen ja työhäiriöihin. Tulokset osoittivat, että kahden kannettavan tietokoneen käytön haaste aiheutti työntekijöille sekä ohjelmistoihin että laitteistoihin liittyviä stressitekijöitä, jotka kokivat roolista riippuen erilaisia stressioireita ja seurauksia. Koska tämän tyyppistä työympäristöä ei ollut aiemmin tutkittu, tämä opinnäytetyö edisti nykyistä tutkimusta uudenlaisessa teknostressin tutkimuksen kontekstissa.

Avainsanat: Teknostressi, eustressi, distressi, moniorganisaatio, lieventäminen, etätyö

FIGURES

TABLES

TABLE OF CONTENTS

1 INTRODUCTION

Work environments are continuously becoming more diverse, and many organizations are struggling with the technology being used as the employees might be using several systems and, in some cases, even overlapping work systems. With the constant pressure on the employee regarding learning new systems and integrating them into their everyday work, it is becoming increasingly important for organizations to understand the consequences and impact this has on the employees. Continuous use of new technologies and several systems and devices puts strain on employees resulting in a phenomenon called technostress.

According to Tarafdar, Tu and Ragu-Nathan (2010, p.304) technostress is "stress caused by an inability to cope with the demands of organizational computer usage". Technostress can occur in several different ways and since stress can lead to severe consequences such as psychological and physiological symptoms (Palmer, Cooper & Thomas, 2003), it is necessary to understand how technostress forms and how its impact on employees can be mitigated.

During the last decade or two organizations have already started to minimize the number of systems they are working with by upgrading and replacing current systems with new, cloud-based software and platforms (Miller, 2008). These new innovations might even include more user-friendly design to ensure ease of use to all different types of employees in the organization. However, for all companies this might not be an option due to lack of knowledge or budget (Hackler& Saxton, 2007).

A reason to why organizations use several systems can be interorganizational collaboration, where competitive advantage is attempted to achieve through combining the use of systems of two different organizations (Johnston & Vitale, 1988). When two organizations are depending on each other's systems, minimizing the used systems might not be possible. Multiorganizational work environments, where two or more organizations are providing the employees with Information and Computer Technology (ICT) and how this impacts perceived technostress has not been studied in research so far.

Due to COVID-19 the challenges of telework have also contributed to employees' working conditions. According to Molino et al. (2020) telework during the pandemic can be seen in a growing experience of technostress. According to studies the correlation between remote work and added techno-overload has been shown to emerge when employees work from home. (Molino et al., 2020). Technostress in remote work can form because the employee does not feel in control of the technology environment or does not possess the necessary skills to use all of the required technology (Panisoara, Lazar, Panisoara, Chirca & Ursu, 2020).

Being capable of using technology at work can be difficult and continuously learning new ways to use the technology can cause stress for an organization's employees. According to Maier, Laumer, Wirth and Weitzel (2019) the experienced technostress is often affected by the employees' personal IT skills. Hsaio (2017) also adds that an employee's personality determines how an individual can cope with technostress. Wang, Shu and Tu (2008) explain that in environments where constant innovation is required from the employees, it might lead to internal competitiveness within the organization if the company offers rewards or prestige to employees being more successful with ICT. This requires for different employees having to keep their skills updated to maintain their capabilities to work and can cause stress to the employee if they are not performing as well as their co-workers are. (Wang et al., 2008)

Although Sellberg and Susi (2014) claim that technostress has been widely studied, most studies have been conducted in the form of questionnaires as quantitative research. Sellberg and Susi's (2014) statement shows that it is necessary to also study the phenomenon of technostress by conducting qualitative research about the subject to fully understand how employees experience stressors at work that may lead to symptoms of technostress. In Sellberg and Susi's (2008) study an organization was studied from the perspective of using both IT and paper to complete tasks, but in the case study only one organization's equipment was used by the employees included in the research. The findings were significant as the use of two different methods to complete tasks caused usability issues and a high cognitive overload for the employees as they had to be able to manage different work tools to conduct their tasks. (Sellberg & Susi, 2008) Maier et al. (2019) imply that despite the various research of technostress so far, there is still a need to explore on the forming of technostress in different organizational contexts.

Despite technostress having been a popular research field during the past decade, the field lacks research conducted in multiorganizational environments. A multiorganization includes two or more companies that work together for different purposes. Even though outsourcing and offshore outsourcing of services has been studied to some extent, they often cover outsourcing over country borders (Levina & Vaast, 2008) and lacks the studying of technostress.

Based on previous research and findings, there is a research gap in the field and this thesis provides new insight on technostress in organizations, where the outsourcing of services has been made within the same country and culture.

Therefore, this thesis supports the findings of previous research about technostress by adding a new perspective to the research. By adding the perspective of a multiorganizational work environment this research aims to deepen the knowledge on how employees experience technostress and by analyzing the results this study will be helpful for organization management, IS personnel management as well as for human resource management in the ICT field. Conducting research in a real environment is necessary to deepen the understanding how technostress is experienced in a multiorganizational work environment.

In this thesis conducted as a case study, the focus is on an organization where employees are using a double set of Information and Computer Technology (ICT). The organization in question is a multinational payment and transactional services company in Finland. The company provides customer service for an outside organization operating in the financial sector that has outsourced their customer service in payment and transactional services to the company in question. The employees of this organization are forced to work with both the employer's and the customer's ICT devices and systems. In practice this means that all the employees have two different laptops and are using them both more or less every day. The frequency of use depends on the role of the user as some employees use both laptops during all of their work time and some are using the customer's laptop only on specific occasions or when conducting certain tasks. The research questions created to help define the scope of this research are the following:

1. How using two computers affects an employee's experience of technostress?
2. Does the technostress differ depending on the employee's role on the case organization?
3. Are there differences in teleworking and working from the office?
4. What type of coping mechanisms are employees utilizing to mitigate the impact of technostress?

Many have explained that the level technostress grows as the role within the company gets more significant. In this thesis the research focuses on exploring more on this role tied subject and to see if higher level employees could also encounter less technostress than employees working on a lower tier in the company or if the results are similar to previous research. According to research from before, the stress level increases as the role or position in the organizations changes to a higher level (Tarafdar, Tu, Ragu-Nathan & Ragu-Nathan, 2007) and this study aims to bring another aspect to the previous research that a higher role might also indicate better IT skills and thus resulting in a less stressful work environment for the employee.

For this thesis, the preliminary research conducted before the empirical research is conducted as a literature review. The focus of the literature review is to understand how technostress has been studied so far, what have been the main

findings in the field during recent years and what has been found related to the employee roles and experiences of technostress so far. In addition, the literature review focused on mitigation methods that have been identified in previous research.

The academic articles are collected from respected journals and e-archives such as Aisel and Google Scholar. The publications are chosen based on their ratings in the Publication Forum. The relevance of the references to support this research is ensured by using the keywords stress, eustress, distress, technostress, telework, mitigation and coping methods. While selecting the material, emphasis is put both on the number of citations and on the year of the publication. The number of citations is considered an important part of evaluating the relevance and validity of the used references (Chen, 2017). The number of citations shows that the article or book has been commonly accepted as a reliable and valid source of information supporting further research for the matter.

Due to COVID-19 and it being a recent phenomenon, some articles with fewer citations were also accepted to this research. For these articles the research has been conducted recently so they have not yet had the opportunity to gain a large audience. By selecting research published in well-known and commonly accepted journals some articles were added to this review without a significant number of citations. The literature review also includes argumentative references that could prove the theories wrong to fulfill the critical thinking aspect. Including references both for and against the theories the analysis covers both negative and positive findings

In this research the terminology is first presented to the reader. The first two chapters consist of the terminology and research behind both stress and technostress and the chapters are written as a literature review. First the reader is presented with stress as a concept and both positive and negative stress is explained in detail. After reading this chapter the reader will have a comprehensive understanding what stress is and how stress is relevant to this study. After this, technostress and research related to the subject is presented in its own chapter. In the chapter technostress as a phenomenon will be covered in more detail as well as deepening the understanding about how technostress is formed. The chapter also includes coping methods that have been recognized to help mitigate the effects of technostress.

The empirical research part of this thesis is presented with the methodology and explaining the research method and collection of the sample group in the fourth chapter. After this the findings of the research are presented. Each role is presented in their own subchapter and lastly the differences and similarities between the roles are presented in their own chapter. After presenting the findings, the discussion chapter includes analysis of the findings reflected to previous research. Indications for future research and limitations are presented in the discussion chapter as well. Lastly, the conclusion chapter summarizes the thesis. This thesis also includes a list of references and an appendix.

2 STRESS

Stress is a natural state under which people function. The stress can be a reaction to stressors or a causal function for another feeling or reaction. According to Cooper, Dewe and O'Driscoll (2001) stress can be seen as response-based, meaning that stress is created through a stimulus which leads to the experienced stress. The other form of stress presented by Cooper et al. (2001) is stimulus-based stress. This means that stress is the cause behind the possible personal reactions that follow the state of stress. Lazarus and Folkman (1984, p. 19) in their turn define stress as a "relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being". In this chapter the stress formation and eustress and distress are explained based on previous research.

2.1 How does stress emerge at work?

In 2001 The Health and Safety executives identified seven different types of factors that can lead to stress within the employees (Palmer et al., 2003). One of these factors is the demand of the work which could include the complexity of used systems to be able to perform the work. According to Palmer et al. (2014) a Model of Work Stress was created by Palmer and Cooper in 2003 which explains the factors affecting the employee and symptoms that the employee might experience based on these factors. When experiencing symptoms of stress, the negative outcomes might be different physiological diseases for the individual. This in turn can lead to unpredictable expenses to organizations, including loss of personnel and having to train new employees. Both the individual and organizational parties experience financial loss when an employee is affected with work stress to a point where the stress is overwhelming. (Palmer et al., 2003)

In figure 1 A Model of Work Stress by Palmer (2003) it can be seen that a single employee can be targeted by different type of stress related stimuli.

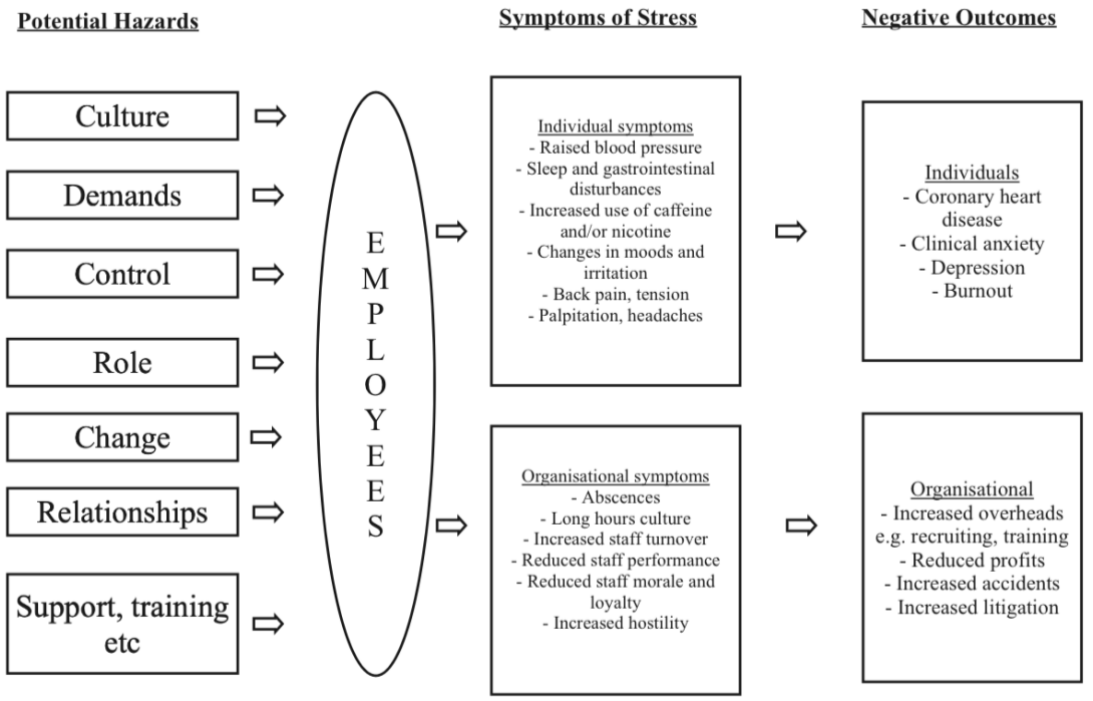

FIGURE 1 A Model of Work Stress (after Palmer, 2003 as cited in Palmer et al., 2003)

Some employees experience only one or two of these, but others experience a strain set by several potential hazards. The more the employee is burdened with stress related factors, the more likely the employee may show signs of stress related symptoms. These can eventually lead to physical diseases and organizational financial loss. (Palmer et al., 2003)

Research on stress has also faced criticism regarding the problematic definition of the term. Kemeny (2003, p.1) criticizes the use of stress in many studies as she points out that "The term stress is used in the scientific literature in a vague and in- consistent way and is rarely defined". Instead, she uses the term 'stressors' to define different conditions that affect the individual's well-being. Kemeny (2003) also explains that distress is a negatively viewed form of stress. As there can be both positive stress and negative stress, distress describes the negatively experienced form of stress. This leads us closer to understanding the different forms of stress.

What is problematic with defining stress and using stress as a term in research is the variety of types how stress is presented. Le Fevre, Matheny & Kolt (2003) present various forms of the use of stress in previous research. Some use it strictly as a state of mind where in comparison some researchers see stress as a result of certain stimuli, and some even use stress as a "blanket-term" which means that stress is used to describe a much more complex process of stimuli, experiences and consequences. (Le Fevre et al., 2003) This shows that the problem of the word is largely behind the variety of use, making it more difficult to compare previous research to each other.

2.2 Eustress and distress

Stress can be divided into two different types, *Eustress* and *Distress*. As previously mentioned, eustress is the term that describes positive stress. According to Hans Selye (Le Fevre et al., 2003), who studied stress during the 1960's and 1980's, eustress is "good stress" and was the first researcher to use this term in research. Le Fevre et al. (2003) continue to describe distress as a state of stress where the pressure on an individual exceeds the level of stress that can still be managed, and the stress turns from eustress to distress. Distress can thus be seen as "bad stress", an opposite to eustress.

As the effects of distress are far more severe than eustress, this has also led to more research around distress and its consequences. This has made the research gravitate more towards the negative stress. Fevre et al. (2003) also bring this up in their research in the start of the millennium as a problematic issue that eustress had back then been left out of the research. Due to the vast amount of research on distress, it can often be forgotten that stress is a psychological state in which people operate in. However, even if many people perform due to a natural feeling of stress, it is hard to separate when the stress becomes overpowering and starts to impact a person's capability to work.

This is also brought up in a more recent study by Bienertova-Vasku, Lenart and Scheringer (2020) and according to them, in 2020 there has been around 80 times more research including distress than eustress. Based on their view eustress and distress should not be differed from each other. They argue that "The adaptation reaction of an organism under stress is not intrinsically good or bad, and its effect on health or performance depend on a plethora of other interactions of the body with the environment as well as on the history of such interactions" (Bienertova-Vasku et al., 2020, p.1). In addition, they also criticize the vague use of the concept of stress and eustress versus distress just like Kemeny (2003) did in the early 2000s.

Another interesting aspect on eustress and distress is can the one be turned to another type of stress. Brule and Morgan (2018) introduce the idea of converting distress to eustress could be possible in some circumstances. Previously mentioned in this paper was also the negative effects of demands and according to Brule and Morgan (2018) a research group consisting of Tadić Vujčić, Oerlemans and Bakker (2017) stated that if an individual feels that they have no power over the demands put on them this affects the work environment negatively. This could mean that if employees in the case study organization in this thesis could feel a negative impact due to the organizational demand of using two different laptops for example, as it is something they do not have power over. Hakanen (2018) however explains, that if the employees feel that they have the power to impact their ways of working and taking control over their work by doing planned rearrangements or other activities that change the ways of working, this could have a positive result on the stress level of the employees. When the employees can have control over the technologies used in their work, this could result in an increase in well-being at work (Hakanen, 2018).

Looking more closely on Tadić Vujčić et al. (2017) where a group of teachers were studied, the results imply that the challenges and complexity of the work resulted in a higher motivation. This research proved that even when work is perceived challenging it does not automatically mean that the work causes negative stress. Only when experiencing situations of the hindrance demands that the employees could not influence, the experienced stress turned into distress. (Tadić Vujčić et al., 2017). The results of this research could also apply to this thesis as it could be tested in a different kind of organization where the hindering demand is put on the employee by the multiorganizational enforcement. Since the hindering demands have been proven to create distress, it is necessary to research how this impacts the psychological health of employees throughout different organizations in various fields.

Psychological distress can lead to several different symptoms for the employee. According to Drapeau, Marchand and Beaulieu-Prévost (2012) a negative mental state can cause physiological symptoms such as depression or anxiety. Understanding that the psychologically experienced stress can lead to severe psychophysical illnesses is key to understanding the employees load of work and when the workload becomes overpowering. Even though the first visible symptoms can be seen as emotional symptoms, these can easily lead to physiological symptoms that affect the employee's ability to continue working. In worst case scenarios the experience of distress can lead to long term illnesses and absences from work. If an organization has an increased number of sick leaves, it might be necessary to examine if the workload or complexity of work is too heavy on the employees. This can be due to reasons related to the work environment, difficulties with systems, lack of training or some other attribute contributing to the experienced distress. (Drapeau et al., 2012)

In addition to psychological and physiological symptoms, work stress is also related to risks in premature death (Keller et al., 2012). Large amount of continuous stress has been studied in previous research and the findings show that despite stress often being tied to mental health issues, long term effects can have a severe impact on the employee's physical health resulting in cardio-vascular diseases (Vogel, Auinger & Riedl, 2019). This is important to acknowledge as the work careers nowadays last for several decades and the experienced stress throughout an individual's career could impact the employee's well-being in the long run.

A significant issue with distress and studying stress in general is the diversity of definitions and various interpretations of the term. According to Drapeau et al. (2012) the diversity of the interpretation is one of the reasons behind the difficulty of measuring distress or stress in research. A limitation in comparing studies with each other is in fact related to the differences in the definitions and the conducted research as the definition is always impacted by the authors goal and also the environment the study is conducted in. This puts certain limitations to the literature review as it is difficult to include all different definitions of the term stress into the study. However, a similarity between the studies can be found in the results as most of the studies have found that distress

is often leading to negative outcomes within employees. Therefore, it is important to keep researching, how individuals are impacted by stress.

3 TECHNOSTRESS

The term technostress was defined in the 1980's by Craig Brod (1984) in the book "Technostress: The Human Cost of the Computer Revolution". According to Brod (1984), the user is affected by using information and communication technology (ICT) in a way that can result in psychological symptoms. Therefore, Brod stated in the 80's that technostress can be seen as a disease and can eventually affect the employees' capability to work.

3.1 Technostress in general

Technostress has been studied widely in different contexts. According to Tarafdar et al. (2007) it was shown that by using ICT at work it can lead to technostress in five different ways. These five ways included technology-imposed information and work overload, technology invading personal life and privacy, inability to deal with the complexity of technology, job security threats and fear of technology uncertainty. In the study the research focused on role stress, meaning the stress experienced based on the employee's role in the company. This research shows that the consequences of technostress extend over the boundaries of work and can affect the personal life as well. (Tarafdar et al. 2007)

Tarafdar, Cooper and Stich (2019) explain the Technostress Trifecta as a way of designing IS systems with both aspects of techno-eustress and techno-distress. Techno-eustress is defined as "good" stress with positive outcomes. Eustress implies stress that comes from excitement and thrill that helps the user stay motivated to work. Techno-distress on the other hand is "bad" stress that IS users experience and leads to seeing IS systems as a threat.

Although the research has previously focused mainly on the negative outcomes of technostress, more recent research has also shown that the affects could also be positive. According to Hakanen (2018) positive experiences at work affect the employee's personal life. Also, co-workers' emotions and feelings can

affect the employee thus indicating, that it might be possible to research how much technostress is experienced through colleagues. This could possibly lead the way to understanding why certain employees experience more technostress than others if the closest co-workers also experience the negative aspects of technostress. This snowball effect could imply that if the surrounding people react to stress in a certain way, it reflects on a larger group of people making the common understanding of technostress appear stronger in some organizations or part of an organization.

In the research by Califf, Sarker and Sarker (2020) they studied both positive and negative outcomes of technostress. According to the hypothesis before the study, the research group stated that techno-eustress would be positively related to job satisfaction and that simultaneously techno-distress would be negatively related to job satisfaction. According to the study these hypothesizes were proven correct which shows that technostress can affect job satisfaction in both a positive and negative manner. (Califf et al., 2020). However, despite the correlation between negative stress often leading to dissatisfaction at work, it can also lead to positive outcomes resulting in a higher work engagement, but this balance between positive and negative technostress is difficult to see and varies between different individuals due to differences in personalities (Maier et al. 2019; Hsaio, 2017).

Wang et al. (2008) explain that the pressure on employees to learn how to use new IT and the need for comprehensive IT skills are impacting employees in a negative way. This type of work environment where the employees are constantly facing new IT systems have been observed to experience technostress. The study by Wang et al. (2008) shows that employees of more centralized organizations seem to experience more technostress and on the contrary organizations that identify as low centralized organizations with a lower level of innovation experience less technostress. Wang et al. (2008) argue that the work environment and the organizational context is of value when studying technostress in organizations.

3.2 How technostress is formed

Technostress is often experienced in work settings where the employee is unable to handle the number of systems or the constant interruptions in work due to several systems (Tarafdar et al., 2010). Employees are forced to work with numerous systems and platforms simultaneously and this has caused technostress for many employees.

Tarafdar et al. (2007) presented that experienced technostress also increases the amount of role stress an individual can experience. As many organizations strive towards leaner and more agile ways of working, this is often achieved using new innovations and technologies. This in turn lead to added techno-overload and can lead to technostress as the employee is forced to both learn to use new system and include them in their work. (Tarafdar et al., 2007).

Tarafdar et al (2007) explain that the different forms of technostress are Techno-overload, Techno-invasion, techno-complexity, Techno-uncertainty, and Techno-insecurity (figure 2).

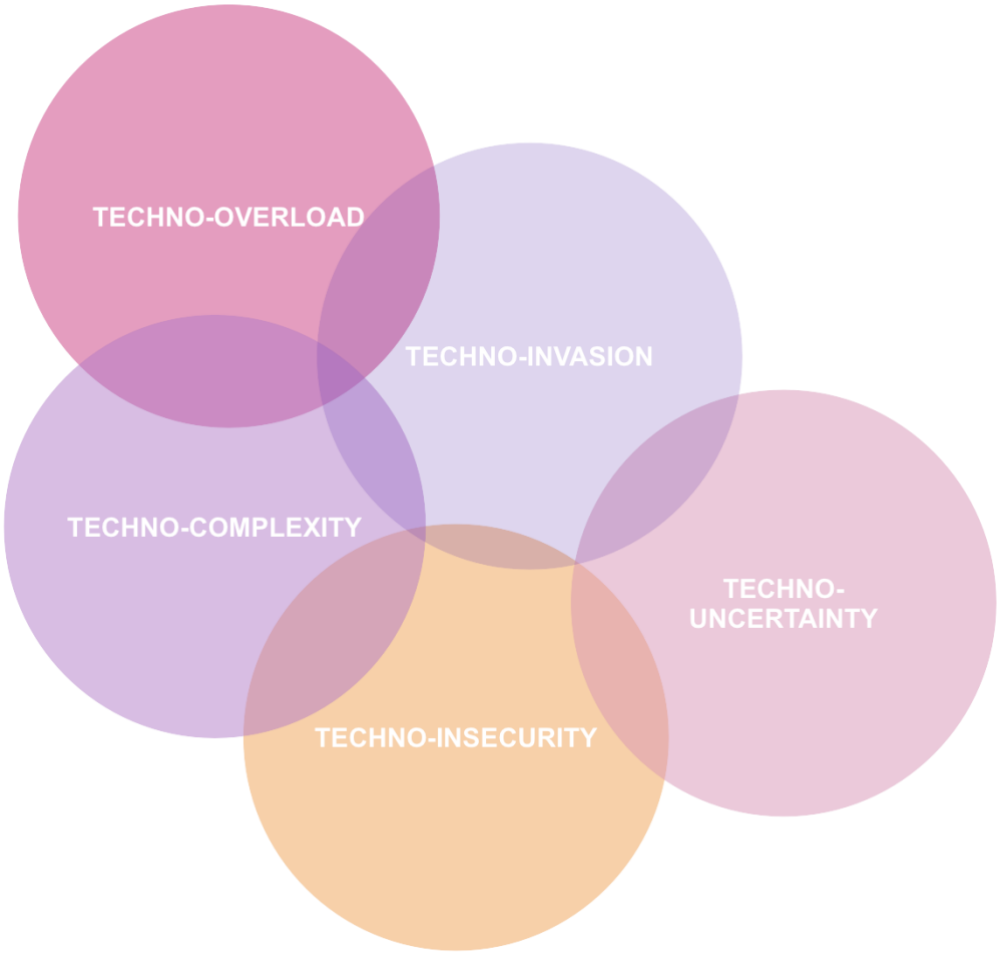

FIGURE 2 Different forms of technostress (after Tarafdar et al 2007)

The five different forms of technostress after Tarafdar et al. (2007) display a range of different target areas. Techno-insecurity describes the state where the use of complex technologies cause insecurities for the users, such as fear of losing jobs. Techno-uncertainty is related to continuous changes in the systems in use, causing for the users to be uncertain when or if the systems are changing or changed completely. Techno-overload might lead to employees having the need to work longer or faster than they are required to. Continuous reactiveness can lead to a feeling that the employees lack control of their work or that the employees have difficulties with remembering their tasks. Techno-complexity in turn means that due to the complexity of the systems in use, the users are forced to spend more time in learning and using the different systems. Lastly, techno-invasion describes the lack of boundaries between work and free-time, where the employee feels that they must be always available and must respond to different requests continuously. (Tarafdar et al., 2007)

According to Barber and Santuzzi (2015), a fast response time and quick responses to current topics is constantly required in the work environment. This may lead to an increased need for the employee to respond to messages and contacts just as quickly, creating telecommunication pressure, or telepressure for short, for the employee. Studies show that telepressure directly affects the recovery time an employee needs after a day of work. According to the research results, telepressure may even lead to a state of burnout in which the employee is no longer able to perform his or her job duties. The study also found differences in the telecommunications pressure experienced by different parties and its treatment depending on the role of the employee. (Barber & Santuzzi, 2015)

According to Çoklar and Sahin (2011) Champion stated that technostress can be divided into two different factors, environmental and social factors. The Environmental factors leading to technostress include for example inappropriate working conditions including lighting, insufficiency in equipment or other incompatibilities. Social factors can include factors such as work and role changes or anxiety over losing the job. These show that even though the concept of technostress is well-known, it can have severe consequences on employees that might be harder to spot by the employer and therefore also more difficult to tackle the issues leading to technostress as the employer could be unaware of the situation if the factors causing the possible technostress are not recognized. (Çoklar & Sahin, 2011.)

Technostress is inevitably a result that is not possible to rule out due to the nature of present work environments. Understanding the cause behind experienced technostress and by understanding what technostress can lead to is key when leading technology-based organizations.

3.2.1 Role stress

The earliest theories about Role Theories lie in Merton's Role Theory from the 1950's (as cited in Solomon, Surprenant, Czepiel & Gutman,1985) where roles refer to the position an individual has in a certain context or organization. Tied with the role the individual has are also the expected and accepted behaviors tied to the specific role (Solomon et al., 1985). Significant about the role theory is that certain behavioral features are normatively seen tied to each other and by this way people in general expect a person in a certain role to act in a certain way. Richard, Washburn and Hemphill (2019) present that the Role socialization theory is important to understand when studying individuals in different organizations as understanding the expectations and generally accepted ways of working in an organization might put a strain on the individual being researched.

The information overload every employee must face at work is becoming more and more overpowering as many work environments not only require the user to use several systems but to also be able to combine the use and understand the complexity of the systems and in addition to also contribute to the work with their input. With all of this put together it is no surprise that many employees experience technostress in different ways. Tarafdar et al. (2010) also explains the relationship between the task role and the employee role and how these are tied

with the experienced technostress. According to their model, the focus of technostress is depending on the stressors, which are Role stressors, Task stressors and Technology stressors. Together with different situational variables the strain is the result of the different factors put on the individual by the used technology. Together these create the relationship for the focus area. According to results found by the research, if technostress is experienced, this leads to dissatisfaction with the used ICT systems. This shows that even if the systems themselves are functioning and easy to use, the user experiencing technostress on a personal level could still feel negative towards the used system. This would then further indicate that the system is not always the reason behind the technostress, but it could also be the user's own inability or lack of experience to use the system that leads to experienced technostress and therefore results in a negative within the user. (Tarafdar et al., 2010)

Tarafdar et al. (2007) explain that based on their research it is necessary to do more research in the field to understand how technostress is experienced depending on the employee's role in the company. According to the study the experienced technostress may vary depending on the tasks and organizational responsibilities. By researching more into role stress, it would help the IS personnel management to find ways to reduce the amount of technostress by focusing on organizational management.

In Richards et al. (2019) research they tested their model of perceived mattering and role stress factors in how they impact job satisfaction within a group of teachers. In the study conducted they used the model described in figure 3.

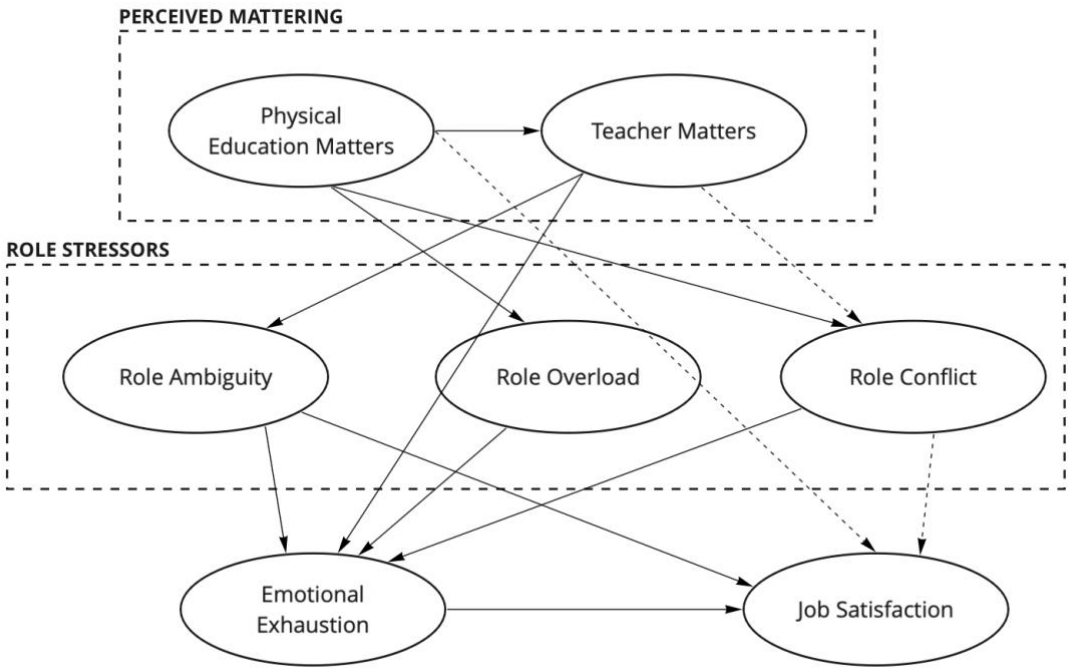

FIGURE 3 Perceived mattering, role stress, emotional exhaustion and job satisfaction model (after Richards, Washburn and Hemphill, 2019)

Based on the model in the research by Richards et al. (2019) the results were clear where the role stressors had a clear correlation with job satisfaction and emotional exhaustion which in turn also influenced mediating the feeling of job satisfaction. This shows that it is important to understand what type of strain is tied to certain type of roles within an organization. By understanding the social context for the role, the expected normative ways of reacting and working if certain situations could also have an impact on how the person in the position experiences stress and therefore also how the person experiences technostress. (Richards et al., 2019)

What is also important to note is that technostress and techno-uncertainty and the overload the use of technologies cause an employee are not always negative. Despite it often being negative, the impact the use of technologies has on an individual is tied with the employees own capabilities and personality traits. Ahmad, Amin and Ismail (2012) explain that for some employees the techno-overload or need for quick reactions and fast working it might function as a motivator to do better as it creates positive challenges for the type of employees who are able to handle the workload.

The personality traits and the person-environment approach to studying stress in different organizational context was also explained by Edwards and Cooper (2013) back in the nineties. According to Edwards and Cooper (2013) Person-Environment fit research is different than studying the Environmental supplies versus the personal motives, goals and values, the S-V fit for short and not to be confused with studying the environments demands on the person compared to their abilities and skills, the D-A fit for short. This also shows that technostress and its impact and the experiences can be studies in various ways as there can be several different premises for the conducted research. If the scope and purpose is left undefined, the results of the research can be misleading. (Edwards & Cooper, 2013)

3.2.2 Communication systems and interruptions

The use of different systems can include completing various tasks, but an employee could also use several systems for purely communicative purposes. This adds to the continuous interruptions at work and with all new communication tools that have been taken into use due to the COVID-19 pandemic, it has not made working less stressful.

Using several communication systems at work has a clear impact on job productivity due to constant interruptions (Tarafdar et al., 2007). This theory is also supported by other researchers. For example, Tams, Thatcher and Grover (2018) have studied technostress that is purely created by the interruptions at work and how this is tied to the average age of the employees in the organization. Typically, the higher the age of the employee is, the more technostress impacts the employee's ability to work (Tams et al., 2018). As organizations often employ people in different age groups, it is important to understand the impact an

individual's age has on the capability of handling constant communicative interruptions at work and how this impacts their performance.

Salo, Pirkkalainen and Koskelainen (2019) found that because of constant interruptions by communication systems, the users experienced more difficulties in concentration and an increased amount of sleep issues. This implies that technostress has an impact not only on the individual's work life but also reflects over to the personal life. The use of Social Networking Service (SNS) had increased the potential situations for the user to experience technostress (Salo etl al., 2019). As these type of communicative systems (Teams, Slack, etc.) are increasingly used in corporate environments, it could also show that the same issue can be seen at work.

As the effects of technostress do not end where work ends, there is a clear connection between a personal well-being as well as work well-being. Shu, Tu and Wang (2011) explain, that the more dependent the employee is of the technology, the more technostress is experienced between employees. Constant connectivity to work can result in technostress within employees as they are unable to disconnect after office hours if work is constantly present in their free time.

The increased use of ICT in communication has resulted in several different outcomes. According to Barley, Meyers and Grodal (2011) explain that according to prior research, the use of different communication technologies at work allow employees to extend their work outside office hours and also increases the amount of workload employees experience during work compared to the time before different communication technologies were introduced to companies. Barley et al. (2011) also imply that the use of emails and other technologies designed for communication increase the volume of work, cause interruptions, extends work hours and thus increases the experience of workload. In some interviews in the study the work overload on employees' free time was invasive and portable communication devices enabled the employee's ability to work during family vacations. What was noticeable in the research was that not only did this increase the employee's work hours, but the employee felt proud about being able to contribute to work at all hours. (Barley et al., 2011) This would imply that in some cases, depending on the employee status and the employee's own personal values, some employees might find their input to their work of high value and might even feel irreplaceable. However, this is highly influenced by the employee's own desire to control the use of communication technologies during work and outside office hours.

According to Stich, Tarafdar, Cooper and Stacey (2017) the individual's own preferences and ways of using communication applications help to delineate how much these are used, how the person handles the possible interruptions and how much the work is allowed to overflow on the person's free time. This shows again that an employee's personality and skills in using IT impacts the ways employees react to technology related stressors at work (Maier et al., 2019, Hsaio, 2017).

3.3 Mitigation and coping mechanisms

Based on previous research technostress has severe effects on the employees as this can result in sleep deprivation, stress, depression as well as gastrointestinal symptoms and headaches. Both physical and physiological symptoms can be caused by experiencing technostress and therefore it is also as equally important to understand the ways of mitigating said stress effects with different measures. Identifying the symptoms is only a part of understanding the phenomenon, knowing the mitigating ways can help minimize the effects on individuals. The more strain an employee is forced to face at work, the more likely the employee suffers from stress related symptoms that could lead to different consequences such as clinical depression (Madsen et al. 2017).

A way of presenting the forming of technostress and how mitigation of technostress follows is by studying Galluch, Grover and Thatcher's (2015) Transactional Model of Stress (Figure 4).

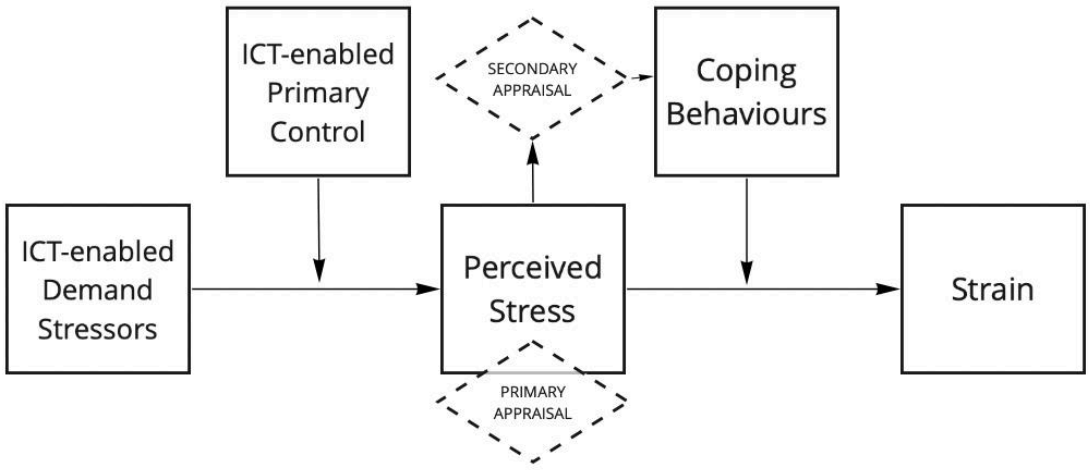

FIGURE 4 Transactional Model of Stress (after Galluch, Grover & Thatcher, 2015)

This model considers primary and secondary appraisal of the user and how the coping mechanisms fit into the figure of experienced stress. In the model the strain technostress causes are a result of ICT enabled stressors, how the user perceives the stress, how the user is coping with the perceived stress and how it eventually forms into strain. Galluch et al. (2015) explain in their model that the perceived stress is a result of the used ICT and also by the amount of control the user has of the system. The research studied both male and female employees in an organization, but according to the research the limitation of the study was the age of the sample group. When studying technostress, the average age of the sample group as well as the tech-readiness could quite possibly have a significant impact on the result as younger people often tend possess better IT skills than employees of older age. (Galluch et al., 2015)

Several different types of mitigating measures for technostress have been identified in previous research. Reducing IT -related stress can include the opportunity to be able to express the frustration with the systems with other colleagues, which shows that the company community and organizational culture is an important tool in mitigating the effects of technostress. Blaming the IT and venting about it to other co-workers online or offline has been identified as one of the main IT specific coping methods when facing issues with IT (Salo, Makkonen & Hekkala, 2020). Another way is distancing completely from the used technology when it is possible, after work for example. This could mean having other activities planned after work that are not related to any work technology or some kind of leisure activity that takes the mind of work. (Tarafdar, Salo, Pirkkalainen & Makkonen, 2020)

Venting about the impact of IT use of work has also been recognized as a good way of coping with technostress by Pirkkalainen, Salo, Tarafdar and Makkonen (2019) in their research paper "Deliberate or Instinctive? Proactive and Reactive Coping for Technostress". According to the research actively trying to look for new coping mechanisms for technostress and also using these in practice adds to the productivity at work and has a positive impact on the individuals' and the work community's well-being. The proactive coping methods have to be supported by the organization as well, so that the pressure of trying to cope with technostress does not fall on the individual alone.

What the individual can do to mitigate the results of technostress are helpful when studying individuals but it is also important for the organization to understand technostress and its impact on its employees and by this also offer ways to help cope with the effects of technostress. A way of supporting employees in this is actively supporting the employees in coping with technostress. One example of this is encouraging the employees into planning their own mitigative actions as a part of their work strategy (Pirkkalainen et al., 2019).

By including the mitigative actions for technostress in the organizations HR strategy this can have a positive impact on the company's organizational well-being and also on the individuals in their free time. By showing support to the employees it also adds to the employee engagement as they feel more valued by the company. Shu et al. (2011) explain in their research that self-efficacy plays a significant role in coping with technostress and being able to manage the computer technology at work. According to the research, higher level of self-efficacy help individuals and decrease experiences of technostress. Supporting employees in improving their self-efficacy is therefore important in order to improve the employees' capabilities in coping with technology at work.

In addition to the employee's role, the individual's personality traits can influence the experience of technostress. According to Korzynski, Rook, Treacy and De Vries (2020) technostress is experienced in various ways depending on pseudo-personalities. The research covered different personalities such as extroverts and introverts and high and low self-esteem. As a result of the research they implied that different personality traits need to be considered when trying

to find ways of mitigation and methods to help cope with technostress in different contexts.

According to Ioannou and Papazafeiropoulou (2017) coping with technostress requires IT mindfulness, which means that the employee understands how to use the given IT and finds new ways in utilizing IT systems in their everyday work. This is also related to the employee's personality and can improve the end user satisfaction and performance at work as they are more capable of handling technostress creators. (Ioannou & Papazafeiropoulou, 2017).

Salo et al. (2020) explain that helping the companies plan a strategy for IT related technostress and its mitigation within employees is including the training aspect into the planning. By ensuring that the employees are well trained the experienced technostress can be lessened in the organization. Another way is to encourage appraisal towards the employees from the management side as this has been proven to be a good tool for coping with technostress. (Salo et al., 2020). Positive attitudes towards IT and its use in work is also a contributor to mitigating the impact of technostress and enhancing the commitment to the organization, which can be supported by appraisal (Kumar, Lal, Bansal & Sharma, 2013). Uncertainty with information security and the purpose of systems can also be a reason behind an elevated experience of technostress and therefore it is important to also listen to the employees regarding their needs for additional training or support.

To summarize, mitigation of technostress is important for organizations to avoid employee exhaustion and burnout caused by technostress. Different coping mechanisms such as venting, peer support, appraisal by the employer and training the employees have been found successful in mitigating the impact of technostress. By focusing on coping methods, the employee well-being can be enhanced in the organization and employees that face technostress at work are better able to avoid the negative consequences of stress.

4 RESEARCH METHODOLOGY

In this chapter the research methodology for the empirical study is presented to the reader. Firstly, the reader is presented with the case organization in the case description chapter. After this, the reader is presented with the description of the chosen research method for this case study. The description of the data collection is explained in the following part and in the last part the analysis of the collected data is explained. After reading this chapter the reader will have a comprehensive understanding of how this case study was conducted and how the results were found.

4.1 Case description

The case company in question is a leading technology company in the financial sector providing secure payment solutions to different customer organizations. The company is a large global company with clients in different countries around the world. The company employs over 20 000 employees worldwide and has a revenue of 3.7 billion euros. Operating in over 50 countries the specific department used for this research was the Finnish department. In the research scope the research covered a department employing around 150 employees in different roles and position in the company. The case company offers services to a customer operating in the financial sector. The case company is responsible for providing customer service to the customer company's customers and functions as a third-party operator. The case company also includes different operating departments in the Finnish department, but for this research the focus is on the customer care department and different employees in that specific department.

In the case company the employees work with two different laptops. The two different laptops are provided by the case company, which is referred as the employer company in this research, and the customer company, to whom the case company is offering their services to. This means that the employees of the case company are operating on two different devices that are from different

companies. Both laptops have their own systems and brands and they both must be in use in different frequencies depending on the employee's role and tasks. The nature of use of the two laptops varies from continuous use every day to infrequent use a couple of times a month.

The different types of roles for this research are from the customer contact center of the case company. The roles are divided into three different levels: the low level, mid-level and high-level roles. Despite the division of levels between the role, the organization's culture does not rely on a strong hierarchy or strong division between employees and their roles, but to emphasize the difference between the different roles and the significance for this research, the roles have been divided into three different levels.

The roles selected include Customer Advisors (CA), which are referred to as the low-level role in this research. The Customer Advisors are the first point of contact to the customers and are in direct contact with the end customer. The High-level role for this research consists of Team Managers (TM), who are responsible of their own teams consisting of Customer Advisors. The third role in this research is called Coaching Supervisor (CS) and the role is referred to as the mid-level role, as they are hierarchically in between the low-level role and the high-level role. The Coaching Supervisor role is responsible for supporting the Customer Advisors in their everyday tasks and supporting the Team Managers with achieving their team goals and improving the Customer advisor's performance.

The concept of a multiorganization comes from the customer relationship between the two organizations. A multiorganization is an organization that consists of two or several organizations depending on each other for services or other performance. The case company, which is the employer company, is a different organization and has its own organizational culture and work environment compared the customer organization, to whom the case company is providing their services. The customer company has therefore outsourced some of its services to a third party. Despite the outsourcing of services, the case company still uses both own systems as well as the customer's operating systems and hardware to provide the end customer with service. This results in using two different devices as both companies in the context provide the Customer Advisors with a laptop.

The case study method for this research was chosen to study more deeply on how the employees experience working with two laptops. Neale, Thapa and Boyce (2006) explain that the case study method makes it possible to focus on specific phenomenon, people, or processes in a selected environment worth researching and therefore the case study method was the most appropriate research method for this research. A few limitations to the case study method can be found as according to Neale et al. (2006) case studies can be long, it can be difficult to be thorough and careful and the results can be difficult to generalize to larger groups as the research focuses on a small, specific sample group. However, the advantages are focused on shedding light on a specific challenge and the findings can help overcome these challenges. Crowe et al. (2011, p.1)

explain that the case study method "... allows in-depth, multi-faceted explorations of complex issues in their real-life settings". To be able to present case study findings in a reliable manner it is also important to explain how the data has been collected and what type of research methodology has been used for the data collection (Benbasat, Goldstein & Mead, 1987). Therefore, in the next chapter the data collection is presented.

4.2 Data collection

For this thesis the research was conducted as qualitative research. According to Hirsjärvi and Hurme (2008) interviews can be held in groups or individually and the interview structure can be divided structured or semi-structured interviews. The method chosen for this case study was semi-structured interviews as the case study research method often focuses on a single entity with a small sample group representing a part of the target group (McIntosh & Morse, 2015) and semi-structured interviews are proved to be suitable for such research (Hirsjärvi & Hurme, 2008). For this research the scope covered only a part of the case organization and the research could not include the whole staff due to time limits. Therefore, the qualitative research method of semi-structured interviews and a case study method was chosen.

According to McIntosh and Morse (2015) semi-structured interviews (SSI) can be free formed making room for more free and open conversation between the interviewee and the interviewer as the complete interview has not been decided on before conducting the interview. By deciding specific themes before the interviews and having some support questions the interviewee keeps up the conversation with the interviewee but does not restrict the interviewee too much with pre-determined questions. Depending on how the conversation progresses, the questions and their order might also change. Hove and Anda (2005) explain the process of conducting interviews as activities shown in figure 5.

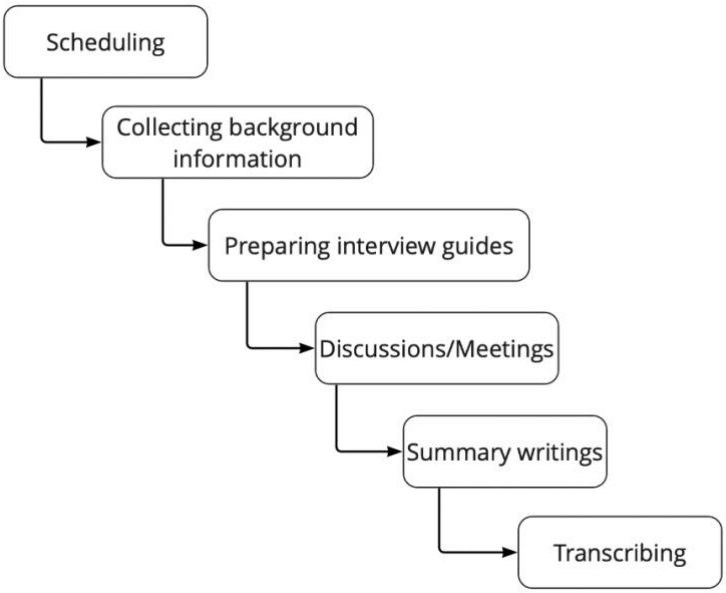

FIGURE 5 Interview activities (after Hove and Anda, 2005)

In the activities by Hove and Anda (2005) the scheduling includes contacting the sample group and agreeing on the interview place and time. Collecting background information before the interviews is necessary when choosing the right type of people to include in the research. Preparing for the interviews is important to be able to conduct the interviews in the given time frame and to make the interview professional. Discussions and meetings need to be help if the research is done by multiple researchers, however, in this case study research the research was done by one person, so the meetings were not necessary. After the interviews summarizing the interviews is an important part where the interviewer can gather thoughts and go over the interview when the conversation is still fresh in memory. Lastly, transcribing the interviews if audio recording is available helps to analyze the material in detail. (Hove & Anda, 2005). In addition to the activities, Hove and Anda (2005) continue to explain that conducting interviews successfully is highly dependent on the interviewer's skills in steering and controlling the conversation enough while not restricting the interviewee or influencing the respondents' opinions.

For the research an interview structure was created which can be found as appendix 1 in this paper. The interview structure covered three different main themes: How the two different laptops were used, how the use of two laptops felt for the interviewee and what methods the interviewee had for coping with possible stress factors created by the use of two laptops. In addition to these three main themes, the effects of teleworking were also covered in the interviews. In the interviews special attention was paid to whether the interviewee raised teleworking themselves in the conversation or if it was brought up by the interviewer. With using the pre-designed structure for each interview all of the

interviews covered the required sections for this research without making the conversation flow too restrictive (McIntosh & Morse, 2015).

After the interview structure was created, the collection of the sample group was initiated. Adams (2015) explains that when conducting research through interviews the difficult part is deciding on the size of the sample group as well as choosing the interviewees for the research. According to Adams (2015) the interviewees should be chosen by random as to the interviewees not being biased. For this research eight interviews were conducted between different roles in the organization. In total, the company employed 135 employees in the Finnish department, when the interviews were conducted. Of these, around 80 worked in the contact center, from where the interviewees were selected. Therefore, this study does not consider employees in any other contexts and their experience with the two tools.

The interviewees were chosen based on their role in the organization: Customer Advisor, Coaching Supervisor and Team Manager. The organization employs four team managers and three coaching supervisors so with these roles the interviews were held with the employees available at the time of the interviewee. Around 70 customer advisors were employed in the organization at the time of the interviews. As there were significantly more people working in this role, four interviewees were picked from this group. Myers and Newman (2007) explain that when implementing qualitative research, it is important to hear from different representatives and while balancing between giving a certain role too much emphasis, it was important for the study to include more customer advisors to the research as they represent a larger group of employees in the case organization.

The interviewees were not collected on a registration basis. This decision was made so that a representative group of interviewees had not accumulated an attitude towards the subject. If the interviewees would have been selected based on a voluntary basis, the sample group might have consisted of employees who in principle have a negative attitude towards the use of the two devices. Instead, the interviewees were chosen based on the customer advisors work schedule at random and not hand-picked from the crowd. To ensure that the selected people have a suitable background for the research (Phillips et al., 2009), an initial background screening was made of the employees as to how long they had been working in the company and how much do the employees work at the office or remotely. Attention was made on the length of their career in the organization in order to see if the responses would be different between recently onboarded employees and those who had been working in the organization for a longer period of time. The interviewees from the customer advisor role were also chosen based on are they working both remotely and at the office or full time mainly at one or the other location to see if differences between teleworkers would be found. The interviewees participated in the interviews of their own free will, and after selection, the interviewees were offered the opportunity to refuse the interview if they did not want to participate in the study or did not show interest in the topic.

As the surroundings and other external factors could impact the interviews in a negative way (Taideteollinen Korkeakoulu, n.d.), the interviews were held on premises, face-to-face in a closed room without distractions. These types of interviews are typically the most suitable research methods "used in order to find out about people's experiences in context and the meanings these hold" (Hollway & Jefferson, 2008, p. 298). The interviews were scheduled to last one hour and during this time the interviewees were presented of the scope of the study as the following excerpt from the privacy statement presented to the interviewees:

- The aim of the study is to find out how technostress is experienced by employees when they use the tools (computers) of two different organizations in their daily work. The purpose of the study is to investigate how, for example, training and experience are reflected in an employee's ability to deal with technostress and what means people in the company have to reduce the effects of technostress.

- The study also examines the differences between teleworking and teleworking in the use of the two tools and how it is reflected in the perceived technostress.

After presenting the aim of the study, the interviewees were prepped for the interview with explaining the interview method and structure. At this point the interviewees were again offered the opportunity to refuse to participate in the interviews as they also had been offered the same opportunity when the interviews were scheduled. All the interviews were recorded with the permission of the interviewees to help with the further analysis of the interviews later.

After starting the interview, the interviewees were asked to state their age, educational background, their career length including all work experience, their career length in the case company and their role in the organization. These background questions were asked in order to gain an upper-level understanding of the interviewee's status and experience in the case organization and also to help situate the researcher in the interview setting (Myers & Newman, 2007; Myers, 2019).

After asking the demographic questions presented to all in the same manner, the interviews proceeded to the different themes. Based on the interviewee's role in the company the discussion took different forms. Despite the variety in the discussions, all three themes were discussed with each interviewee. The different themes for the interviews were working with two laptops in general, how the interruptions affected the employee and what type of mitigating actions they had learned or recognized in themselves to mitigate the possible impacts caused by using two devices.

According to Potter and Hepburn (2005) using terminology with psychological or cognitive connotation can be harmful for the interview and steer the conversation automatically towards a direction unintentionally. In Potter and Hepburn's (2005) research specifically the use of the word 'stress' could be seen as harmful for the interview as the word itself already has a significant

psychological meaning for people in general. As the interviews were held, explaining the word technostress or mentioning technostress prior to the interview in larger context was avoided. This was done to avoid the interviewees familiarizing with the subject prior to the interviews and forming opinions about the subject impacting the possible responses to the interview questions. However, as the interview focused on the experiences of stress, the word stress was used in the interviews, but the tone was kept as neutral as possible to avoid emotional emphasis of the word.

The interviewees were also notified of the confidentiality of the conversation to get as candid answers as possible from the interviewees (Adams, 2015) as both the interviewer and the interviewees were employed by the same case organization but worked in different positions in the organization. To minimize the impact of the interviewer's role in the organization, the interviewee was given the opportunity to explain their experiences without the interviewee responding with own experiences, which might also impact the responses if too much self-reflection is brought in by the interviewer (Brinkmann, 2014; Malterud, 2001). Despite focusing on making the interview setting as neutral as possible, it is necessary to understand that the interviewer is always co-creating the research data with the interviewee (McGrath, Palmgren & Liljedahl, 2019) and it is a necessary note in this research as well. To avoid situations where the interviewee would get too much of a leading role in the discussion, the interviews were held focusing on listening to the interviewee as much as possible (McGrath et al., 2019) and by asking follow-up questions like "why do you feel like this?" or "how does that make you feel?".

4.3 Data analysis

The data analysis phase after the data collection is the central part of conducting research. According to numerous researchers, the analysis phase is where the findings of the data collection is studied in detail, several times. Depending on the researcher and their experience, the data analysis can differ and there are several different methods to be chosen from in order to form synthesis and summaries of the findings. (Adams, 2015; Hirsjärvi & Hurme, 2008; Hove & Anda, 2005; Malterud, 2001)

After the interviews were held, the notes were revised and cleaned up when the memory of the conversation was still fresh. This is necessary to ensure that the interviewer can understand the notes later when using them for the analysis (Adams, 2015). After all the interviews had been held, the data analysis phase continued with transcriptions of each interview. Transcribing the interviews is necessary in order to analyze the interviews thoroughly and to be able to highlight the main findings (Adams, 2015; Hove & Anda, 2005). McGrath et al. (2019) explain that verbatim transcription, which is a technique where the interview recordings are transformed into written form word by word can take up to four to eight times as long as the original recording is.

Anonymizing the data of interviews is a necessary step to be taken when transcribing and presenting findings from conducted research. Anonymizing all data is rarely possible as the interviewees can always recognize themselves from the reports and if the interviewees are aware of the other participants in the research, it might be a possibility that they recognize others from the report. (Saunders, Kitzinger & Kitzinger, 2015.) By following the McLellan-Lemal, MacQueen and Neidig's (2003) labeling instructions for interview transcriptions, the interviewee's were labeled as CA = Customer Advisor, TM = Team Manager and CS = Coaching Supervisor. The interviewes were then numbered according to a random order to anonymize the interviews even further and the citations presented in the findings chapter of this research appear in a random order, not tied to the interview order. Although the anonymization of the data was made, the data cannot be seen as completely anonymized as the researcher still had been involved in the interviews and has conducted the interviews face-to-face (Saunders et al., 2015).

Malterud (2005) suggests that inexperienced researchers should rely on already existing data analysis methods instead of simply relying on their own interpretation and free analysis of the collected data as it helps to understand how the analysis is done properly and with enough detail. Therefore, for this analysis the collected data was first transcribed. The transcription resulted in 80 pages of word-to-word transcription Any mentions of organizations and systems used in the organization were left out from the written transcription. Attention was also put on any pauses in the interviewee's talking or other inaudible wordings or emotions (e.g. laughing, nervousness, frustration) to distinguish the emotions the interviewer could hear from the recording or observed during the interviews (Halcomb & Davidson, 2006).

After the transcription was completed, the interviews were first compared based on the roles and then also cross-examined across roles in order to find differences and similarities between the interviews. The transcripts were used as a tool (McLellan-Lemal et al., 2003) to understand and analyze the conversations with the interviewees. Similar terminology and concepts brought up by the interviewees were highlighted and combined in order to find the similarities between the different roles as well as sorted into columns to help with the data analysis process. In addition, the differences were also sorted into a separate spreadsheet and columns to see, what differences were found depending on the role and if there were any similarities or differences between the three roles.

To summarize the data analysis the data analysis process for this research paper can be found in figure 6, where each step of the data analysis process has been explained in a visual format.

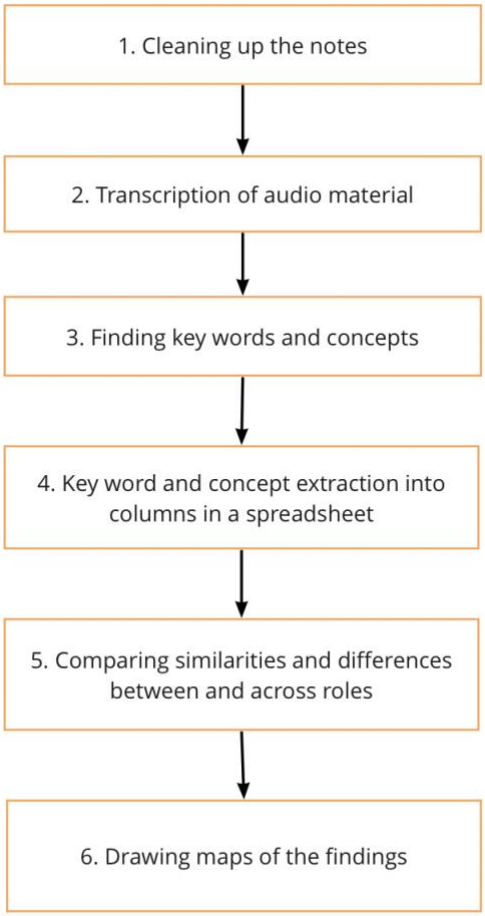

FIGURE 6 Data analysis activities

4.4 Reliability and validity

Evaluating reliability of qualitative research has been a controversial matter according to Golafshani (2003) but still it is necessary for the researcher to be able to convince the reader about the reliability and validity of the conducted research to gain the trust of the reader. Qualitative research is prone to influence of the researcher's own opinions and other circumstantial factors that are not a threat to quantitative analysis (Kaplan & Maxwell, 2005; Morse, Barrett, Mayan, Olson & Spiers, 2002). In this thesis to ensure rigor, the data collection and analysis was done based on previously well-assessed measures.

Kaplan and Maxwell (2005) explain that a reason for conducting qualitative in Information system research is the possibility to understand how the end users

consider the use of systems or devices and what the systems mean to the users. Therefore, in depth semi-structured interviews are the most suitable option for this case research. The research questions were formed to help understand how the use of two laptops was perceived by the employees having to operate with two different devices and the semi-structured interviews supported getting deep knowledge of the subject from the participants of this research.

Interviewing only four employees working in the role of customer advisors showed saturation in the responses after conducting the four interviews which indicated that interviewing more employees could have given the same findings (Morse et al., 2002). The interviews included open discussion between the interviewee and the interviewer to diminish the lack of interviewer responsiveness. This is done to minimize the gap between the interviewee and the interviewer an enhance the validity of the empirical research (Morse et al., 2002). Kaplan and Maxwell (2005) also explain that it is important for the researcher to be involved in the subject and understand the context of the research and in this thesis the researcher is familiar with the work setting of two laptops, which helps understand the reactions and responses in the interviews.

To ensure that the data collected in this research is reliable, the interviews were recorded and transcribed word-to-word and analyzed according to the process described in this chapter. By following a standard transcription process the audio data was transformed to written form to help with the analysis. This was done directly after the interviews had been held to establish a fresh recollection of each interview. After this, the findings were analyzed immediately after transcription, to

Evaluating qualitative data requires for the researcher to ask themselves questions such as why, what, and how (Kaplan & Maxwell, 2005). This was done during the data analysis as well as to understand why the employees felt like they did, what caused the feelings of stress for the employees and how were the employees responding to the discussed stressors during the interviews.

However, despite these actions, the researcher's own insight on the scope of this thesis and interest in the subject might have had an impact on the extracted data and some other researcher might have focused on other subjects from the interviews. Therefore, similar findings of another researcher in the same setting could possibly be difficult to extract from the interview data.

5 FINDINGS

In this chapter the findings of the empirical study are presented to the reader. The findings are first presented in role order from the highest role to the lowest role in the case company. In each role a map of the different stressors and the experienced consequences of said stressors are presented in their own maps, that help the reader understand how the stressors are impacting the employees in different roles in the organization and forming technostress related strain. After this, similarities and differences between the different role are presented in their own chapter.

5.1 Background information

In total eight people were interviewed for the data collection. All these eight attendants were selected from the contact center as explained in the previous chapter. Two of the interviewees were Team Managers, two were Coaching Supervisors and four Customer Advisors. Out of the interviewees four were male and the other four female. The average age of the interviewees was 29 years and the median age 26,5 years.

The interviews' total duration varied between the realized interviews. The scheduled 60 minutes with the interviewees included conversation prior to the recording as well as some discussion after the recording had ended that was left outside of the collected data to ensure that there was not a feeling of hurry during the interviews. Despite the interviews having been scheduled for 60 minutes, the interview recordings ranged between 35 to 45 minutes. On an average the interviews were 38,5 minutes long.

The interviewees were asked to evaluate freely their years in work life on an approximate scale. The answers ranged from 2 years to 30 years. The average work experience was 11 years, and the median was 8,5 years. This was asked to see how long the employees had been working in general and helped understand if the employees had experience from different types of work environments. All

the interviewees who had experience in working in similar setting (contact center or other similar work environment) said that they had not had experience of a similar need to work with two different laptops, but had learned to do so in the current organization they were employed in.

The career length in the company ranged from less than a year to four years. The average career length in the company was 2,46 years and the median 3 years. As the organization's Finnish department is relatively young and has been operating for roughly five years, the work experience in the company could not have been much higher than 5. This is to elaborate on why all of the employees' careers in the case organization was only a few years at maximum.

The interviewees were also asked to give their highest form of education to get a better view on the interviewees' educational background. The education varied between trade school graduates, bachelor's, and master's degrees.

To summarize, the collected background information of the interviewees has been combined in table 1. In the table the interviewees are presented in a random order and the interviewees are not labeled according to the numbering of this table to keep the anonymity of the respondents.

TABLE 1 Overview of interviewee background information

Interview	Age	Work experience	Career lenght in company	Highest level of education	Title	Role Level
1	35	18	0,20	Trade school	Customer advisor	Low
2	23	2	0,5	Bachelor's degree	Customer advisor	Low
3	26	7	3	Trade school	Customer advisor	Low
4	22	6	2,5	Trade school	Customer advisor	Low
5	27	11	3	Bachelor's degree	Coaching supervisor	Mid
6	29	5	3	Bachelor's degree	Coaching supervisor	Mid
7	44	30	3,5	Master's degree	Team Manager	High
8	26	10	4	Bachelor's degree	Team Manager	High
AVERAGE	**29**	**11**	**2,46**			
MEDIAN	**26,5**	**8,5**	**3,00**			

As the reader has now been presented with the overall view of the interviewees' background information, the paper continues to present findings from each role in their separate chapters. After this, the paper continues with a chapter summarizing the chapters together by comparing similarities and differences between the different roles.

5.2 High level role: Team managers

Two contact center team managers were interviewed for the research. The team managers create the high-level role for this research as they were hierarchically the highest role studied in this research. The other had worked in the company for 3,5 years and the other for 4 years. The frequency of use of both laptops was different for both respondents despite them both having the same role in the company. The other interviewee did not use both laptops on a daily basis whereas the other explained that both laptops were in use almost daily. The other found that the use of the other laptop was as rare as just a couple of times a month, while the other found that the use of both laptops was realized almost every day with some exceptions. Even though they both might have had days where the other laptop was not in use, they both acknowledged that they might have a need for the other laptop and that the need for its use might come up suddenly. One of the team managers stated that "At any time there may be a situation where you have to open the other machine and be ready in that way".

Both team managers used the employer organization's own laptop more during their time at work and the laptop provider by the customer organization was seen as a secondary laptop by the team managers. Despite the rare use of both laptops for the other team manager interviewed, the interviewee said that the other laptop had to available at any moment. This was a necessity if a sudden work task emerged and created the need to use it. An important aspect on working with the two laptops was the size of the laptops, that they were easy to carry with them and a feature pointed out by one of the team managers was that it helped differentiate between the two machines as they were not identical but had visible features how you could tell them apart.

Both team managers recognized that since their daily work did not always require the use of both laptops, they sometimes struggled with the use of the other laptop that was used less frequently. This was mainly due to the differences in operating systems, passwords, credentials and applications and software that were different from the ones that were used daily on the employer's laptop. Both interviewees pointed out that as they might not be using the customer organization's laptop as often as other employees, this caused them uncertainty when using the laptop and that remembering and recollecting the knowledge on how to use the other laptop was time consuming and stressful. The lack of a routine in the use of both laptops made it harder for both team managers to remembers all credentials and passwords for the other device and required exertion when starting to use the laptop.

Another important issue that was raised by the team managers (high level role) was operating during incidents. Due to the infrequent use of the customer organization's laptop, working during incidents required more effort from the employees. As incident management often requires quick actions, these were also pointed out as particularly stressful situations.

According to the team managers, the infrequent use of the customer organization's laptop made using the other laptop time consuming. Even when

not being in a hurry, getting started with the other laptop took extra time and effort. However, the responses differed from each other as the interviewees had different backgrounds in the organization. The other found that using both laptops was fairly easy whereas the other found that there were situations where they had to ask for help from another colleague. One of the interviewees stated the following when asked what type of feelings opening the less used laptop caused them:

> TM2: "I get frustrated. Just the fact that it takes time, it may not fit the current work ergonomics that you have to reach for another machine and make room for it and possibly change the charger from one machine to another if it has run out of battery because you don't pay as much attention to it. Sometimes there may be a moment with some passwords "like what is this again?" because you use the other laptop so much less."

The same issue was pointed out by both team manager so they both recognized the need for time and effort when using the other laptop. One of the interviewees pointed out that as there is no routine in using the laptop less used, they must take time to remember how to use the other laptop. When discussing the topic this clearly raised the concern of the interviewees and they felt that this impacted them in a stressful way.

When it came to working remotely both team managers pointed out that the working conditions were better at the office for the two-laptop setup. At the office the use of additional screens, keyboards and other accessories was considered noticeably easier, which also made the use of two laptops more fluent. Neither of the interviewees had additional screens at home, which made the view of looking at all the different systems at the same time impossible when working from home. They both also pointed out the need for more physical space when using two laptops at the same time and a larger working desk when working from home.

Carrying both laptops from home to work and then back home again was also seen as a challenge in alternating between remote work and on-site work with two laptops. Depending on the way of transportation between the office and the home, this was seen as a bigger burden for the one using public transportation than for the one using a private vehicle. The respondent using public transportation stated that they had started to wonder if carrying both laptops with them to work every time was necessary as most of the work was done on the employer organization's laptop. Still, despite questioning the need they also stated, that as the sudden need for the other laptop might occur without a warning, both laptops had to be always carried with them.

The main reason for the team managers for using two laptops was to get data from the other laptop to the other one. As there is currently no link between the two different organization's data management, necessary data for team management and other operational measures had to be retrieved and transferred from the customer organization's systems to the team managers mainly used laptop provided by the employer organization. The team managers also said that

sometimes the data needed from the customer organization's systems was not available or incorrect, which led to delays in getting the data extracted and therefore also reporting issues within the case organization itself.

Another reason for the use of the other laptop was during incidents in customer services or difficulties in reaching team members through the employer organization's own communication channels. If the guest profile for the customer organization's teams channels was not functioning properly, this required for the team manager to start using both laptops at the same time.

5.2.1 Challenges and interruptions at work

For the high-level roles, the interruptions were not as frequent as the use of two laptops did not always happen every day. Even if the laptops were almost always available, both team managers admitted that there were days that the customer organization's laptop was not in use at all. Due to the infrequent use the secondary laptop was seen more as a burden than an asset by the team managers. The main reason the high-level employees used the customer organization's laptop was to collect data to execute tasks on the employer organization's laptop. The other reason was for disruptions in services and incident management, where the secondary device was needed for certain tasks performed by the managers related to incident management. Both team managers also recognized the space related issue, where you always need to have more space when working remotely if they had to use both laptops.

Interruptions in working were caused for the team managers when they had to collect data from the other laptop. This itself was seen as a necessary evil as both interviewees understood the reason for operating like this but nevertheless caused frustration as it was always seen as a time-consuming task to open the other laptop. Sometimes the team managers did not have enough time to prepare for discussions with their team members as they did not have time to collect and transfer the data from the other laptop to their own. This made them feel unprepared for discussions with their team members. During the interview when asked how the interviewee felt in such situations the following was said:

> TM1: "Well, it doesn't feel good. In those situations when you already sacrifice a lot of time that should be spent on something else, then it accumulates stress if you didn't get to do the things you needed during the day and so on. Somehow it feels that you have not done your job well enough."

At some times the challenges in retrieving data from the customer systems was challenging due to reporting issues or faults in the customer's systems. This resulted in the inability to finish tasks or delays in performance as the team managers could not solve the issue themselves but were instead forced to wait for the solution from the customer.

The team managers also possessed different type of skills regarding the usage of two different laptops. For the other team manager, the use was more

familiar as they had been working more with both organizations' laptops in their previous roles in the company whereas the other was not as familiar with the customer organization's laptop. This was brought up by both team managers where the other pointed out that they needed more help and the other said that they often had to offer support to other colleagues to help them finish their tasks. This showed an uneven distribution of the workload shared by the team managers. An example of the team managers' different statements can be seen in the two excerpts below:

> TM1: "Strong internal prioritization is a necessity. Few things are such that they are acute specifically that day, and I know that I also have strong support in the background who I can ask for help and even people who can do something for me if I can't, which is a big strength."

> TM2: "It causes me more workload in that sense that if I'm the only one who can use a program or system, that it takes time, if information is needed from me or my colleagues, if I'm the only one who can extract that information from the system because of my skills, but on the other hand, it also takes time if I train them to use it and find that knowledge for themselves"

These differences showed that even if both team managers had the opportunity to use both laptops, sometimes the lack of use could be due to lack of skills or knowledge and even though the other offered to help and the other saw it as an asset, the one asked for help experienced more workload.

Both team managers also recognized that as the process of using both laptops was more time consuming this sometimes resulted in working overtime if the time consumed on the other laptop took longer than expected and other tasks were delayed. The following statement was made by one of the team managers when asked about how the use of two laptops impacted their experience of workload after office hours:

> TM2: "So maybe it's [work time] stretching, the only way it might show is that it's [work time] stretching. It might show in my spare time that someone asks me for help when I'm no longer at work, but otherwise it doesn't show much. [pause] You may sometimes think that if you are not at work yourself, when you know the fact that in the event of a breakdown or in some situations it requires the use of two machines, that if you are not at work yourself it might trigger thoughts about how will this situation be handled, if you are not at work when you have the skills for those two machines. "

5.2.2 Overlapping communication systems

Interruptions and frustration at work was related to overlapping communication channels and systems as the team members and other roles all had a different way of using the systems. Due to the use of two different organizations' laptops and the lack of commonly agreed ways of working with these, it caused the team managers stress for always having to pay extra attention to what channel they are using for communication. Both team managers explained that they often had

to communicate the same message twice through two different channels, both the employer organization's own email and then through the customer organization's teams, as they had to be sure that their team members were aware of the messages sent to them. This was as well seen as time consuming and frustrating as the same message had to be delivered twice. When asked about what type of feelings were evoked in the interviewee if they heard that a team member had not read an important message sent to the, the team manager responded with:

> TM1: "Well, it's frustrating for me, because I personally feel that with such a strong employer identity I do this that how could it be that one day I wouldn't read mails? In a way, maybe it's a little bit of an attitude from my side because my team works strongly the other way around, compared to me [with the two laptops]. After all, we have had quite massive challenges with some people in this dual task that some just cannot outline what is done on the employer's profile and what on the customer's"

Due to the possibility of using two different communication channels with two laptops the team managers also recognized that sometimes they might miss messages or interrupt other tasks due to messages received on the other laptop. Through this, one of the team managers said that they often found themselves starting to use the other laptop in the middle of a task if they received a message on the other one. As they read the message, they felt obligated to see if they had missed something else on the other laptop and they could forget about what they were originally working on. At some times this even resulted in forgetting to complete sentences on the other laptop if the work was interrupted by a sudden message on the other one. Overlapping communication systems on two devices result in a disability to focus on one task if there are continuous interruptions from the other device.

In addition to difficulties with communication with team members, communication with other roles was also seen as a challenge depending on the role. Both team managers explained that they knew through which channel most of the colleagues could be reached but the lack of commonly agreed communication channels created challenges for reaching specific colleagues from time to time. This caused both team managers additional work and both stated that they would be more satisfied with working with just one organization's communication channels rather than two. Another aspect they pointed out was that they felt that their own team members and colleagues did not always know how to reach them due to the lack of clear communication rules for different departments and roles.

When asked about ways that the communication could be improved, both team managers explained that it would be easier with agreeing on using just the employer organization's communication channels. However, they found that as long as team members and other employees are using the customer organization's device significantly more in their everyday work, this could be a challenge that they do not currently have a solution for. To some extent the interviewees were also reluctant to change the current ways of working as it

would require clear communication structures and guidelines that were not currently agreed upon. When a team manager was asked if agreeing on certain channels for communication in the whole organization would make the communication easier and the need for double communication redundant, the interviewee responded that "Maybe in part yes. I'm a little pessimistic that I don't really know how well we could embrace it until we've just moved to work on one machine".

What also was significant for the team manager, high level, role was that they were also approached by team members with device issues and malfunctions in both software and hardware of both organizations. Due to using two laptops many employees contact the team managers when they have issues with their devices or systems. As the team managers are more familiar with the employer's device, the team manager who pointed out they were less skilled in using the customer organization's systems found that they always had an answer to where the employee could seek help. The importance of support channels was brought up by the team managers so that they could keep their team members content even when the work systems or hardware was not working properly. What was also brought up was the difficulties in returning to the office as the workstations have screens and docks for both laptops, many team members point out the difficulties in starting their work and finding a workstation that works properly. When the interviewee was asked how they felt if their team members had difficulties in setting up their workstation at the office, they responded with:

> TM1: "That the persons would know how put the workstations properly is stressing me. I do not really know the right kind of advice. It triggers a lot of complaints because it is felt that the management of tools is in some ways related to the supervisor-subordinate relationship...The fact that you don't have your own place or stationary devices is difficult, an own place would already be enough to eliminate the problems… There is often messages that "it took me fifteen minutes to get my machines to work" or that they did not even try to install the screens because it would have been too complicated."

As the managers work closely with their team members and are aware of the team members issues related to the used devices and systems it is clear that the team managers are also affected by the team member's ability to work with the two different devices. Another aspect brought up by one of the interviewed team managers was that they had to consider working with two devices already in the recruitment of new employees as they had to be sure that the new employee could manage learning not only one but the use of two different devices right from the start.

5.2.3 Incident management and two laptops

For incident management both team managers recognized the complexity of the processes. Due to the nature of the multiorganizational work environment, incident management required deep knowledge of both laptops as well as the systems used on the devices. Inexperience and infrequent use of two laptops

caused stress for on team manager as their background in working with both organization's laptops was not as long. The team manager who found themself less skilled in operating with the customer organization's laptop found it personally more challenging to work fast during incidents as the systems require different credentials and might have had updates that have changed the appearance of the systems used for incident management. Also operating with two different organizations made communicating during incidents difficult as the communication flow needs to be to several different directions: the team members, the customer organization, colleagues, and employer company's higher management levels above team managers.

Even though the incident management and communication during incidents were found challenging by both team managers, the other brought up the positive side of working with two laptops. When working at the office, the additional screens provided more room for visibility and operating with the two laptops enabled the opportunity to write messages almost simultaneously with both devices to different chat discussions with team members, colleagues, or the customer organization. Even though using one laptop and more screens would make the workload easier, one of the team managers pointed out that managing different chats to different stakeholders was in some ways easier during incident management due to having two different laptops and them making a clear separation between the two organizations.

5.2.4 Team manager mitigation

Due to the high-level role in the organization the team managers found that the ability to prioritize work tasks they were able to mitigate the stress that using the two laptops caused them. As they did not have the need to use both devices on a daily basis, it also helped them lessen the interruptions the usage of both laptops could potentially cause them. The interruptions were not as prominent for this role as they were not using the laptops every day, but as the other laptop had to be always accessible and the skills to use the customer's laptop were necessary to upkeep. The reactions were more bound to the single time use of the other device rather than interruptions while performing other tasks. One team manager added that in addition to the two laptops they also worked with their phone with systems provided by the employer organization, so they had distributed the work on three devices which they found helped with time management and helped with not forgetting to answer messages they received during the office hours that they had not had time to answer.

One way of mitigating the stress communication channels caused the team managers was to provide time for team members to use for reading through emails and messages during office hours. As both team managers found it frustrating and time consuming to follow up if all their sent messages had reached their team members, this would facilitate communication significantly. Important ways of mitigation were listed as the following by the team managers: having enough support from other close colleagues and team members, having

time to spend on using the other laptop, balancing out work on a broader time span, having excellent time management skills and prioritization skills.

5.2.5 Stressors and consequences for Team Mangers

The challenges were categorized in two different categories: software related challenges and hardware related challenges in using two different laptops. The challenges were the stressors creating the strain for the team managers that led to the negative consequences that symbolize the different forms of stress experienced in the role. The software related stressors and challenges were related to the use of different software. The Hardware related challenges covered the physical use of two different laptops and how that impacted the Team Managers and led to different stress related feelings. The main software related challenges were challenges with the multiple, overlapping communication systems, the number of credentials that had to be used with both laptops, the inconsistency of use with the other laptop provided by the customer organization, incident management and data transferring and handling data from one operation system to another. Visible from the figure 7 you can see the construction of challenges for managers.

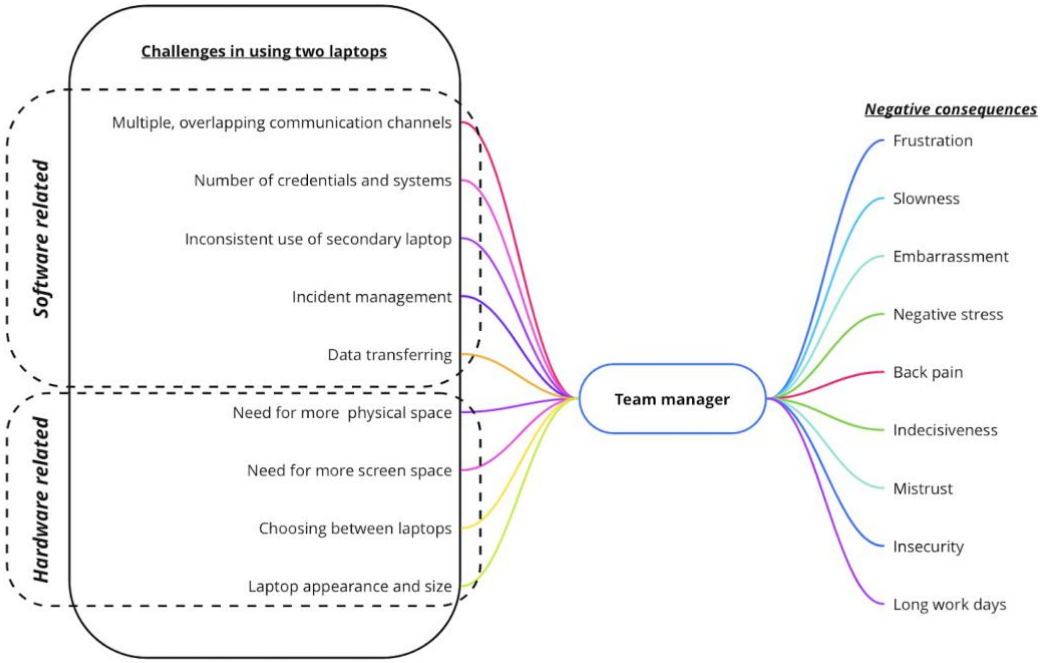

FIGURE 7 Team Managers: Stressors and consequences

Due to the challenges, the negative consequences were identified. The negative consequences included the feelings of frustration when team members had not followed up on critical communication or when struggling with all the different passwords. The feeling of frustration was also brought up in the context of

having to use the other, less used device after a long break or if completing a specific task required data transferring from the other device. Embarrassment when the team manager had not been able to prepare as well for their discussions with team members which ultimately led to feelings of negatively experienced stress. Indecisiveness, and mistrust in other colleagues and in the system were also brought up as well as insecurities when being unable to use both laptops. The challenges in using two laptops sometimes prolonged the team managers workdays and even resulted in physical back pain if working at a poor workstation from home and having to switch between devices.

In conclusion the team managers did not need to use both organizations' laptops daily and the interruptions in switching between the two were mostly related to data collections and transfer to their mainly used device when completing another task. The interruptions were not significant for the most part, but the team managers faced challenges in using two laptops due to the infrequency of use and the necessary speed in working during incident management. The main challenge from the manager perspective was the number of communication channels, as the team members used mainly the customer organization's device and systems such as outlook and teams rather than the employers' own similar systems. This resulted in double work and additional stress as they could never be certain that a message had reached their team members or not. As the team manager i.e., high-level role has been covered in this part, the following chapter covers the findings of the mid-level role.

5.3 Mid level role: Coaching supervisors

Two coaching supervisors were interviewed for this research. The role sets the base for the mid-level role in the organization as they are functioning between the low- and high-level roles. Both interviewees had worked in the company for 3 years and had started working in the role of the customer advisor before transitioning into the higher level. Both coaching supervisors stated that they always used both laptops every day for their work. This was significantly different compared to the team managers (high-level) as they explained that they only needed the laptop to perform certain tasks and not daily. The coaches both recognized that they had to always use both laptops at work while performing different tasks but also to remain available on both devices.

For this specific role the use of two laptops was very frequent, almost every hour both laptops were in active use. One interviewee pointed out that of the work situation was more stable, there could be times where the focus of work was on the employer's device, but on most days the active use of both laptops was necessary to complete all tasks and ad hoc work. Due to the frequent use of both laptops regularly, the coaches did not struggle as much with passwords and credentials and knowing how to operate on the customer's device as they were familiar with them both and could keep up with software changes and updates. The frequent use of both laptops also showed in the interviewees confidence in

using two laptops and both interviewees explained that they saw this because of their experience both in the company and in the current role they were in. Despite them both being used to working with two different laptops it did not mean, that they used them with ease. There were several challenges caused by simultaneous use of two laptops for the coaches, which will be covered in this chapter.

5.3.1 Interruptions at work

When discussing about interruptions during the day caused by using two laptops both interviewees said that their work was constantly interrupted by either having to perform a task where both laptops were needed or then interruptions while performing a task due to a sudden request through communication channels such as teams or email.

Both interviewees found that when they experienced so many interruptions during their workday, it made completing simple and easy tasks more time consuming and it took more effort to get their focus back to the task they were performing if they were interrupted by something else. As doing simple tasks without interruptions would be the ideal situation for both interviewees, simultaneously they also identified the need for strong prioritization skills to manage the constant interruptions and how urgent they were compared to the task they were performing. When asked about the interruptions and how the interruptions made them feel, the interviewees responded with the following answers:

> CS2: (when asked how it feels that the work gets interrupted) "Disturbing. Or it creates a challenge for concentration and, in the long run, prolongs the execution of one simple thing from beginning to end. But with the interruptions this job also requires hard prioritization of tasks, because sometimes the task that interrupts what you do may fall lower in that order when you send to take care of the interruption, so after all even if it is disturbing it's also a big part of the work [what I do]"

> CS1: "Well yeah it's a burden, it might be because of my own job when I may have a lot of requests during the day or requests for help during the day that require a quick response at least as far as if you don't know to whom it can be delegated or then you have to think does it really need taking actions now if you are currently doing something else. It burdens you that your work is interrupted and you have to gather thoughts again and then my character easily drifts into a reactive way of working when feeling stressful or in a stressed state, then I have to see what else is there on that computer other that this message that I received and I started to take care of them and then forget the original task what I was really doing."

Both pointed out that due to the nature of the business they are working in, it is necessary to stay alert and available as there might be tasks that show up on short notice that require quick actions and are more important to handle than the task they are currently working on. Due to the hectic nature of their work, both interviewees explained that they had gotten used to the interruptions in their work, but it still generated negative and stressful feelings for them.

Due to the interruptions, conducting simple tasks took more time and the interruptions could quickly change the way they were working as the prioritization of tasks could change rapidly. Some of these situations were prioritized by supervisors but at times it was up to the coach to decide whether the interrupting task was more important than the task they were currently working on. This put a lot of pressure on the role and one of the interviewees pointed out that a big part of successful prioritization comes from open discussions with their supervisors. The dialogue between the mid and high-level roles was seen as a very important part of handling the workload in the current situation, where two laptops are in use for everyday tasks.

As both laptops were always in use, this also resulted in having notes and conversations open simultaneously on both devices. This led to forgetfulness and difficulties in finishing simple tasks. This also put a significant amount of stress on the coaches as they always had to remember what device was last used to record tasks that had to be taken care of. One of the respondents said the following when asked about how using two different laptops affected their performance at work:

> CS1: "When things are interrupted, it strains your working memory quite a lot when you have to remember a lot of things in your own head you have to take care of next up and recall those things again and it is because of these two machines that it increases the workload and affects coping at work."

When interviewing the coaching supervisors and asking them if they had notes on both laptops, they both initially responded that they did not, but after a couple of minutes as they started to think about their ways of working more deeply, they both realized that they do use both of the laptops. This shows that the use of the two different organizations' devices can feel natural and unnoticeable to the user while working, but when stopping to think about it they realize what type of challenges working with two devices puts them through. Even though they were both used to the two devices, they also pointed out that the transition from the customer advisor role to the coaching supervisor role shifted the balance of working more on the customer organization's device and as their role changed, they started to work increasingly with the employer's device. When discussing the differences between working in different roles one of the interviewees found working with two laptops positive in their previous role as it made differentiating between systems easier when talking with clients.

Even though working with two laptops was positive when working as a customer advisor, the coaches brought up how difficult their task sometimes were to execute as not all instructions and guides could be shared on the customer organization's device due to corporate policies. When asked about challenges in their everyday work with two devices, one interviewee responded:

> CS1: "On the other hand, working two different devices with different tools, I started to think that with my current job, it would be easier for them to be on the same machine, for example from one of the machines you are not allowed to share screenshots to the other machine (inter-organizational restrictions / confidentiality).

> You cannot speak very openly so instructing something and implementing new instructions or telling things as comprehensively as possible to these people who need to be guided is so much more challenging because of not being able to communicate with the customer's machine about the employer's machine systems. That's why the instructions are in two different places"

Due to the restrictions put by working with two different organizations, it makes sharing information harder as you might not be able to share everything with just one device. This is similar to the strain of having to use two communication systems as some information simply cannot be shared on the other side. Working in a multiorganizational work environment challenges the coaches when deciding where to share and what you are even able to share on which device.

5.3.2 Teleworking with two laptops

Experiences of stress seemed to be very different for the two interviewees as the other was working from the office and the other switched between teleworking and working at the office. When asked about how the constant interruptions at work affected the interviewees in their spare time after office hours, the responses were very different. As the other worked from the office and the other was working from home most of the time, the ability to switch from work to free time was different for both interviewees. In this case, another factor that could have affected the differences in their responses was also their experience in the current role as well as their personalities.

> CS1: "Yeah! Especially when you have been working remotely, you notice that after the end of busy workdays it takes some time to let go. It's more like that during days if you've been really reactive and have gone from one thing to another, then ending working day is thinking 'okay what I did today and what I have to do tomorrow', I have already been at work for a full day and would still need to wrap up the day and would like to stop, the brain is no longer working. This results in wondering in your free time, you have to think about what you didn't do and what you have to do tomorrow, and I forgot to answer this today, etc. so it burdens your free time in ways."

In comparison, the other interviewee had been working mainly from the office even during the pandemic, so the response was significantly different, but still they recognized that had they been working from home, the situation might be different.

> CS2: (when asked about whether work interferes with their free time) "That is a really good question, no! That's why I work at the office…the machines stay in the office and there is no such situation [that would burden them in the free time] because free time and work time is so concretely divided because of working from the office. BUT for example when working remotely, you rarely had the energy to hide those machines somewhere far away, because they have to be put out again the next day and it has a psychological effect when you know that you have a horrible contraption of chords gathering dust somewhere in the corner of your room, but you never pack them away

> because you need them every day. When you work at the office you don't have this issue"

When asked about if the interviewee would be more likely to set them aside after working at home if the employee had only one laptop, the answer was no. So even if the stress was acknowledged, the employee was not willing to put effort into setting the laptop aside after the workday. This indicated that the employee would not handle the situation differently with just one device, so the concept of two laptops was not as much an issue as just the task of putting a device away and putting it back to place to continue working. When discussing the remote work conditions, both coaches felt that they had either a completely similar set up at home or at least a good desk, additional screens, keyboard, and mice. This played a big part for them both for being able to work from home as they both felt that the additional screen was a necessity for working. Due to both having good working conditions at home, they did not really see a difference in physically using two devices at home or at the office.

Additionally, the other coach working more remotely expressed that while working at the office, on top of already having two devices there were interactions and interruptions face to face. These interactions also required concentration when returning to the workstation when moving around or centering your thoughts back to the task on the two different laptops. During these interruptions the interviewee felt that the loss of focus often led to forgetfulness and prolonged the time of finishing a task. This additional aspect is worth paying attention to as many employees are now returning to work on premises after two years of working almost entirely from home. The interviewee explained that when at home, every interaction you have is on screen and more or less recorded in different chats, so even if you have the chats on two different devices, you still have them in writing and do not have to remember everything in your head. Comparably at the office, some interactions that happen face to face might be forgotten easily as you do not type them down immediately. When returning to the workstation, some of the face-to-face interactions might have already been forgotten and some the interviewee felt that had to be rapidly written down on either one of the devices, leading to notes and task lists on both laptops.

Another difference between working remotely and working at the office was that while at home, you never really see what the other person is doing or how the other person operates with both laptops. It is especially challenging when trying to reach out to colleagues and not knowing on what profile they are available at the moment. At the office the interviewee said that they were able to see better what the other colleague was doing, therefore helping them figure out what they were doing and how to reach them either face to face or on which device.

5.3.3 Issues in communication

In this specific role, the interviewees used three different Microsoft Teams profiles: one for the employer's profile, one for the customer's and then the third one as a guest profile through which the customer's teams was accessible through the employer organization's laptop. One of the interviewees explained that they used all three of them whereas the other said that they had made a strict policy to only use the customer's own profile and the employer's profile and did not use the guest profile at all. The communication challenges were clearly pointed out by both interviewees, but as they had their own ways of using the different profiles, this also showed differences in how the interviewees were able to handle the incoming communication. One of the coaches responded as following, when asked how they felt about using two laptops and how it feels when the work gets interrupted:

> CS1: "Well [pause] it is quite stressful at times, and what is the most challenging and also the most stressful is how to communicate with colleagues in general within the organization when there are so many communication channels and opportunities. You have two different emails, three different Teams users and they are used to communicate quite differently and there is no established way with any of the organization's internal stakeholders to communicate, so they [messages] can come from wherever. And actually, to rephrase, three emails, because we still have the shared team email to follow."

Along with the challenges mentioned thus far, the coaches also brought up the same issue as the team managers, that due to their work they sometimes must move around the office, they also had to choose which laptop they carried around or which laptop might be needed for the task. One of the interviewees also pointed out that it requires a great amount of self-control and drawing the line when you are available for contact and when you are unavailable. Depending on the task, the interviewee felt that they had to shut down other communication channels to be able to focus on a certain task. The interviewee called it "willful ignorance" to explain how they managed to shut down the other channels of communication and to be able to finish the task they had to prioritize at certain times. The interviewee also explained that they did not feel as organized as their colleagues which they noticed easily led to them not being stressed but seeing stress in others in the same situation. The interviewee said:

> CS2: "I don't know if it contributes, I'm not a very organized person by nature, but I have co-workers who are well-organized and probably like that, you could imagine, that it has a negative impact at because you might not be able to everything is stored in one place but you need the two different machines."

Incident management and communication between different stakeholders during incidents was also discussed with the coaches. Both said that the number of different communication channels on different devices made it difficult to keep up with the incident status and understanding where their help was needed.

During incidents communication with the employer organization happens in their own teams and via emails. Communicating with the customer organization might happen via email or the customer organization's teams and then in addition they must communicate with the customer advisors via teams. One of the interviewees became aware of the complexity during the interview and suddenly stated: "When you say it out loud, it doesn't make any sense, does it?" and that communication professionals would probably be terrified if they saw how communication was handled in the employer organization.

When asked how the interviewees would like to change the situation both hoped for clear guidelines and rules for everyone to operate with. However, even though they both found the overlapping communication channels stressful, when the other interviewee was asked how they would like to solve the issue, they said that they would rather just be given new instructions on how to use the communication channels rather than participating in the development and planning of new instructions. The interviewee felt that others in the organization were far more skilled to work on the task and found that themself had little or close to no input to the matter, even if the communication channels were overlapping each other.

5.3.4 Coaching Supervisor mitigation

As for mitigation mechanisms, both coaches brought up the emphasis on prioritization of the most urgent and important tasks and how this is something that must be discussed actively with other stakeholders and supervisors. Also, strong self-discipline in where to draw the line for the interruptions was an important part of the mitigation strategy for both interviewees. When asked about how they felt about their workload and ability to cope with their work due to interruptions and how that affects their stress levels, one of the interviewees stated:

> CS2: "When the management of the work is not so smooth, that's when you usually start to experience stress. It is basically like this seesaw where on the other side you have the feeling that the situation is not at all in control and things are stressful and then on the other side it's where you are in control and things are fine… If you experience a sense of control, it increases your work motivation and coping at work, and you very unlikely experience stress"

So as long as the prioritization of tasks was clearly discussed with the supervisors and the ability to focus on one task at a time, the coaches felt more in control of their work. The ability to control their own workload and how the work was handled made the coaches feel like they were more satisfied with their work.

The coaches also pointed out that due to the requirement of being able to handle many tasks simultaneously on two different devices they felt that they had the capability to manage the work better compared to people working with only one device. The other interviewee explained that he saw that in comparison to his friends of same age he would probably be more skilled in handling the

workload than some of his friends working in similar conditions but with only one device.

Another difference in the coaches' ways of working showed that while the other had been able to draw a line where they did not react to every interruption, the other felt that they had to react to the interruptions. When asked how they felt about the interruptions and how they handled the situations, two very different responses were given:

> CS1: "Well, [pause, nervous laugh] I get stressed. In those situations, you feel like you're at times a little unarmed you don't know what to do. It's challenging for me personally to say you have too much on your plate, that now I can't take more tasks, you can't tell them to ask someone else when I may not always know who else to ask something about. It is challenging to put those boundaries around yourself so that it doesn't become too much now and say stop those requests, which come flooding".

> CS2: "From experience you will understand that you do not need to be involved in all things, if someone asks you something and they do not get an answer from you then that person will not be left alone with that problem as they will ask the next person. Maybe it is also if you are always too accessible then it makes you sabotage yourself and "dig your own grave", because it's more likely that people tend to ask for help from where it's best given and if you're always available, always ready to help, then those people will probably turn to you more often and you are the first name that comes to their mind to ask. Therefore it is almost necessary to shut down all channels and being out of reach."

This could mean that the personality helped them with either being able to handle the interruptions in a better manner or then getting too stressed to sometimes impact their ability to work. When asked if this is self-initiated, the interviewee responded that the desire to do so was self-sustaining. They explained that the will is initiated by themselves, because there are a certain number of tasks to do. At that point it if they were conducting a medium priority task and the work was interrupted by a high priority task, the current task became a low priority task. Prioritizing and also knowing what to prioritize was something that both of the interviewees said that was one of the most important parts of mitigating the stress from their work.

5.3.5 Stressors and consequences for Coaching Supervisors

In figure 8 you can see that the challenges in using the two laptops can be categorized similarly for the coaching supervisors as for the team managers in software related and hardware related challenges. The challenges in using two laptops were the stressors creating the strain for the coaching supervisors. These in turn led to negative consequences that symbolize the different forms of stress experienced in this specific role.

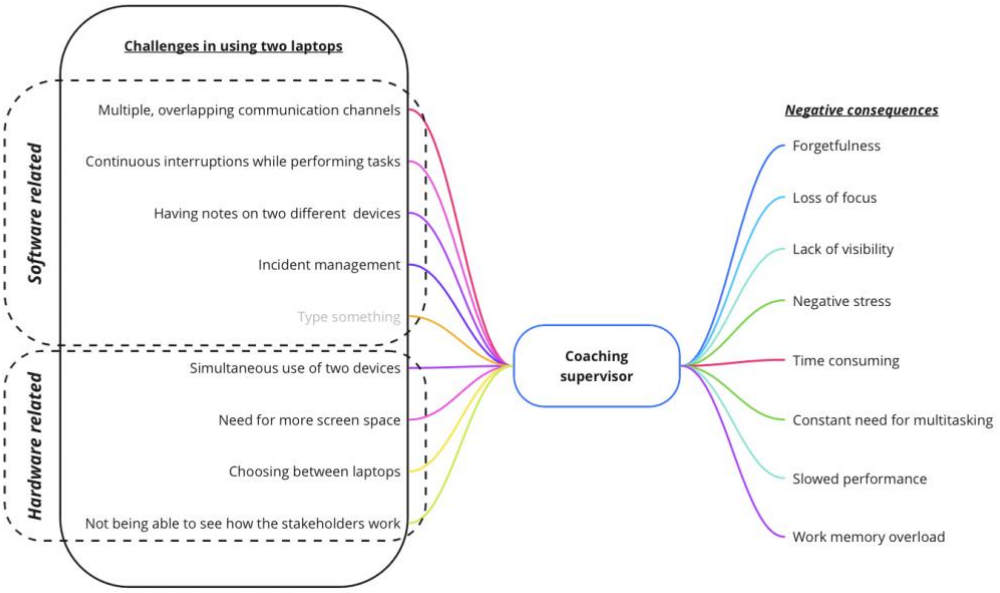

FIGURE 8 Coaching Supervisors. Stressors and consequences

In the software related challenges, the coaches found having multiple overlapping communication systems a challenge in their everyday work. Other challenges related to software use were interruptions while performing a task, having notes on different devices and incident management when working with the two different laptops. Hardware related challenges were caused by the continuous simultaneous use of two devices, needing more screen space for all the systems being used at work, choosing between which laptop to carry around at the office and not being able to see what other colleagues were doing or how they were working. These challenges led to multiple negative consequences for the coaches. The consequences consisted of forgetfulness when having too much on their plate, loosing focus on other tasks due to the continuous interruptions, lack of visibility of how others were working, negative feelings of stress, time consuming activities and therefore also slowed performance when completing tasks, a constant need for multitasking which evidently also was experienced as an overload of the work memory.

To summarize the impact of having to work with two different work devices from two different organizations on the coaches, the interruptions happened mainly in the middle of other tasks and the interruptions were negative in nature. The coaches work required more dynamic and reactive ways of working which easily led to an overload of work or tasks, which then could lead to forgetfulness and the feeling of losing control over work. While losing control over work and feeling unarmed in the situation caused both interviewees the feeling of not being able to perform their task, they both also identified that a big part of this required a bigger effort from themselves rather than losing the other device at work.

5.4 Low level role: Customer advisors

For this research four Customer Advisors (CA) were interviewed from the employer organization's customer service representatives. In total, at the time of the empirical research, the organization employed around 80 customer advisors. Customer advisors represent the low-level role in this particular research. The customer advisor's average career length in the organization was 1,6 years. The average age of the customer advisors was 26,5 years and three had finished trade school and one had a bachelor's degree as their highest form of education.

All the interviewees from this group worked daily with both organizations' laptops to be able to conduct their tasks. When asked about how often the interviewees used two laptops the answer from all four was unanimous: "Five days a week, every hour of the day". The use was very frequent as both laptops had to be used while answering customer requests in the contact center environment. Due to the frequent use of both laptops, most of the respondents' first reaction to asking if they noticed any difference in using two laptops compared to imaginatively only using one laptop, they all responded with that it actually made the work easier as it helped them all differentiate between the two different organizations. The way they all used the two laptops at all times at work made the change between the two laptops intuitive and simple, which was an interesting discovery during the interviews. In comparison to the two previously interviewed roles, the customer advisors mainly used the customer organization's laptop in their everyday work. One of the interviews even started off with the interviewee stating right at the start that they had never even considered working with two devices stressful or difficult. When asked if working with just one laptop would make working easier during early stages of the interview, they all responded with that it did not really make a difference. Only when getting deeper into the subject the interviewees started to find the challenges in using two laptops.

5.4.1 Career length and managing two laptops

The interviewees all had different backgrounds and career lengths in the company. Two of the interviewees had worked in the organization for around 3 years and two less than a year. This created differences in some of the responses while discussing the different themes during the interviews.

Even if the use of systems on two different laptops was considered easy at work, one of the interviewees with the least experience in the company explained that in the beginning it was harder to differentiate between the two laptops. In the beginning during the training period, being handed two laptops instead of just one caused stressed for one of the interviewees as they said that they were nervous if they would be able to learn to use both laptops as well as their co-workers.

Despite being insecure about using two laptops in the beginning, after working frequently with them both for a couple of months, they hardly ever

noticed it as the workflow grew stronger. When asked how long the interviewee felt that it took to get used to using two laptops, the answer was that they did not really remember, but estimated that it took roughly 1,5 - 2 months and explained that they got used to it with just working with the two laptops constantly. Another one of the interviewees also pointed out that it was better to learn to use both laptops directly from the beginning of the career as had the other laptop been brought up later after already gotten used to working with just one laptop, that could have been harder to learn.

Getting used to using two different laptops was a mutual response from all of the interviewees, every respondent felt that the ease of use of two laptops came from the frequent use of both laptops and getting used to having two laptops, which did not take particularly long for any of the respondents.

As some of the interviewees had been working in the company for a longer period of time, one of them had experienced a time in the organization where they had not had the two laptops to work with straight from the beginning. They had started their career in the organization while only using the customer organization's laptop. As a result, not all tasks could be performed, and some had to be delegated to more competent colleagues who had the necessary systems in place on both the customer's and the employer's devices. In this situation, when the interviewee themself finally got the necessary training and the other laptop to work with, the meaningfulness at work and comfort of working increased considerably, according to the interviewee, as they no longer had to blindly move their own tasks forward and they were finally able to do the necessary task by themselves.

This was also brought up in conversations with the employees regarding specific services that were offered to the customer organization's customers. They explained that they were forced to answer certain types of calls that required additional training and a system that they did not have the skills or access to use. One of the interviewees explained it as following:

> CA3: "We have a certain line that we need to respond to but we don't have the training or visibility to the system that needs to be used with these customers. Then you have to ask for help in Teams and there are not always people available who could help. It's easy to get frustrated if someone doesn't respond quickly, especially if the customer is still on the line waiting."

This made the interviewees feel frustrated and they felt that answering these calls was time consuming and difficult as they had to get the necessary information from a co-worker that had the access to the system they needed to help the customer. This was brought up by three of the four interviewees.

5.4.2 Stressful situations for customer advisors

A stress factor brought up by the respondents was the number of credentials that had to be remembered and also changed at a relatively short time span. This made the respondents feel like they had to constantly keep changing passwords

and coming up with new acceptable ones that had not already been used. One explained that they had to keep all the passwords accessible in written form and felt that it was a compliance risk, which they stressed about. This made the handling of different credentials stressful and interfered with the customer service situation if they did not remember the credentials. This scenario caused a stressful situation where multitasking was important when trying to keep the customer on the line while simultaneously trying to get the applications or systems to work. One respondent explained it like this:

> CA1: "Sometimes there are situations where you have to serve customers but do not remember the passwords of all the systems and you have to ask your friends for help. Then the day is ruined when you don't have the other system or you have to ask for help with it."

Another example of situations that created stress was the times where the other laptop did not work. One of the interviewees pointed out that they had had many issues with the employer organization's laptop during their time in the company. The interviewee explained that while the remote work first started back in 2020 they spent most of their time working from home using only the customer organization's laptop. This resulted in challenges in performance as they always had to rely on co-workers to get necessary information from the other laptop without being able to access the systems themselves. They explained that due to this situation form the past it still made them feel stressed at work while always having to wonder if the other laptop would be working or not. They explained that that the stress was mostly related to the reaction of their supervisor or the customer if they were unable to perform fast. Due to this they felt stressful also when arriving to work having to start two laptops in time for their shift and making sure that everything was working. Sometimes they admitted that they did not have enough time to start both laptops before the start of their shift which resulted in serving the first customer possibly without all systems ready at use, which made them feel nervous. One of the interviewees explained the feeling as following:

> CA4: (when asked how they reacted if the other laptop stopped working in the middle of the day) "A similar feeling that do I need it right now and when I know that it can happen, it makes me feel that even if it doesn't stop working, I still think about it "but what if", kind of anticipating it? … What makes me feel tense is that what if the customer gets mad at me, if I suddenly have to make them wait because my system doesn't work, that is really what I'm afraid of, the customer's reaction."

The same respondent also said that it would be nice to start just one machine at the start of their shift and that it was a big stress factor how long it takes to start the day with getting two different devices to operate with. Later as the conversation went on, they also explained that the pressure was built when thinking about how the supervisor would react if they had troubles with the other laptop.

Another one of the interviewees also identified that the fear of failing at work if they were unable to operate on both laptops as smooth and quickly as possible, it made them stressed over how their supervisor would react to the slowness in performance. Even though this was more or less recognized by all of the interviewees, the one most experienced in the company felt that they had learnt to manage the stress caused by a not working system or device. They explained that they had learnt that as it was not something that they could predict or fix right away, it was better to stay calm and not stress about something that was out of their control.

What all interviewees felt was the most stressful situation to work with two laptops was just like the previous roles had explained, incidents. During incidents they explained that they had to keep up with the information updated coming from different stakeholder through different communication channels and at the same time they had to be able to serve the customers as fast as possible. One of the interviewees said that the days they felt particularly drained out of all energy were days of incidents and another pointed out that handling phone calls with all systems on just one laptop during incidents would be a lot faster as you would not have to switch laptops while conducting tasks required by the customer.

All of the interviewees felt that it would be easier if their organization would have just one Teams and one email in use instead of the overlapping systems with the customer organization. Despite them preferring just one set of communication channels, they felt that following the different channels was not as burdening as for the other two roles in the research. They all explained that they tried to read through their own email once a day and keeping up with the communication in the customer organization's teams. One said that somedays they felt stressed if they had not noticed a message or a change in instructions due to other work, but otherwise the customer advisors did not experience as much interruptions in their work due to the overlapping communication systems as the coaching supervisors and team managers.

As explained earlier, the interviewees pointed out that having to respond to customers without having access to all necessary systems was frustrating, time consuming and stressful. As the employees all had two laptops to work with, they were able to continue their work if only one of their laptops stopped working, if it was not stopping them from receiving calls. Due to this the expected way of working from the employer's point of view was to keep answering calls as well as the interviewees could while operating with only half of the needed systems. For these type of situations the interviewees explained that they were able to get help from other co-workers, but that it took time and made them feel like they were incapable of answering the customer's questions at a reasonable time. One of the interviewees said: "If there is a rush on the lines and you know that the other laptop is not working, then you do not feel that you can try to figure out what is wrong with the other laptop in a hurry and it takes time and stresses you out. If you are in a hurry, you will not be able to figure out the problems that limit your work". The same interviewee continued to explain that they felt

contradictory when knowing that their employee should provide them with functioning devices, but still they felt guilty if they were unable to do their job as intended if one of the laptops did not work.

The switch between the two different laptops during work was not seen as interruptive by any of the respondents explaining, that the use of laptops in the Customer Advisor role did not cause stress due to interruptions. The experienced stress in the customer advisor role was rather linked to situational factors such as situation where the other device was not working or if there were peaks in rush hours where they felt they had to work fast or they had to remember what credentials to use. One important factor they all also brought up was the difficulty in sometimes keeping up with the different communication channels between the organizations.

5.4.3 Physical differences in using two laptops at work

Working with two different laptops caused physical differences at work comparing to a similar situation where only one laptop would be used. In this case organization the customer advisors identified several factors that impacted their work when using two laptops.

A positive aspect brought up by the interviewees was the possibility of having more screen space for all systems in order to be able to view all the different systems in use at the same time. Having two laptops enabled for the interviewees to view up to five different screens when working at the office. Two of the interviewees used additional screens both at home and at the office while the two other did not have screens at home and had to use only the laptops' screen space when teleworking.

Interestingly, one of the interviewees said that as they worked irregularly from the office and did not have extra screens at home, they did not want to use the additional screens at the office either. They explained that they did not want the work view to change while working at the office or working from home in order to keep the work as similar as possible despite the location. In addition, they felt that using extra screens felt like yet another set of work devices to operate with. They felt that working with two laptops was challenging enough.

The three other interviewees clearly stated that the most important part of having two laptops and extra screens to both laptops was necessary to use all of the different systems as smoothly as possible, which made the fourth interviewees statement about not using the screens at all contradict with the other responses. Another one of the interviewees said when asked what the benefit with extra screens was, the response was that it was easier when you can see everything at the same time, which might have been a factor that the one reluctant to use extra screens had not thought about.

When asked if the work would feel easier if all systems were used on only one laptop all answered that if they just had access to the laptop it would make their work more difficult, but if they could have as many extra screens with just one laptop as they now had with two, one explained that it would make work somewhat easier when not having to transfer data from one laptop to another.

The one interviewee who had had the most technical difficulties with their laptops also said that it would reduce the amount of stress experienced when starting the workday when having to only start one laptop instead of two.

One of the interviewees brought up the difference between working at home or at the office simply by the lack of proper workspace at home. They explained that while working from home, they had to use two different desks to be able to use both laptops side by side. The direction and position of the machines had varied at home, depending on how the interviewee had been able to make the workstation work. The interviewee also raised the challenge of how to get both machines to a place where there were enough sockets and how the machines can be used for charging. They also said that sometimes they had been forced to keep the laptops behind each other, switching their position every time they had to use the other. This led to loss of productivity and efficiency, and they said that after they came back to work from the office full time, it affected their productivity, and it was visible from statistics how the customer advisor's efficiency is measured in the organization. Additionally, the interviewee pointed out that they had experienced back pains due to the unergonomic working positions with the two laptops. When asked specifically does the interviewee feel that the working conditions at home affected their productivity the answer was the following:

> CA4: "For sure. 100% yes. Here in the office when you always have that machine on a certain side, so you naturally have it there when you need to use it. You already know where you're reaching, what you're pressing, what you're doing, it's always there in the same spot so using it is faster, which is reflected in my statistics. Clearly, the statistics have improved while being at the office."

One of the interviewees also said that they worked with two different sized laptops. Interestingly the one they used the majority of their office hours was the smaller laptop and the one used less was the larger one. When not having access to extra screens this also showed that even if the interviewee did not at first see it as an issue, they later stated that if the situation was the other way around it would probably make their work easier. This could mean that even if the employees do not knowingly pay attention to the size of the laptops, it could have some impact on their productivity if the laptops are not the same size or at least that the mainly used laptop would be the one with a larger screen.

Some of the interviewees also pointed out that they had experienced physical symptoms of the use of two laptops. One interviewee said that if they did not have access to their glasses and they notices that they had a headache at the end of the day. The interviewee was uncertain if it was just from their poor eyesight or if it had something to do with staring at the small screen without proper glasses. Another one of the interviewees also pondered if they had experienced headaches due to stress as they were not certain if it was due to work related stress or something else. As they thought about their past they realized that before their studies and working at the company they had not experienced such headaches, which led them to believe that it could be a symptom of stress.

5.4.4 Customer Advisor mitigation

For mitigation of the stress caused by two devices there were fairly similar responses as for the other two roles in this study. What combined the interviewees was the will to stop thinking about work after office hours and doing physical activities in their spare time to balance the workload. For all the respondents the most important mitigation method for situations where the malfunction of the laptops was causing them stress was the support offered by co-workers, the coaches, technical support and other critical stakeholders. As they all explained that they had more or less gotten used to the issues with the laptops, it had become easier with time to adjust to the situations compared to their reactions at the start of their career.

Dividing the four interviewees group in half, two of the respondents had chosen to work at the office at all times while the other two worked partly from the office and partially from their homes. For the two interviewees who were working at the office they both found that it was a way of mitigating the negative effects work had on them. For the other one it was not so much tied to the two laptops as their working environment at home was satisfactory because they had separate screens and a good desk at home, but for the other one working at the office had made a clear difference in their work as they had a proper workstation and enough screen space to work efficiently.

The fact that either one of the laptops could stop working during the day was both a stressful situation as well as a positive experience. Due to having two laptops it was possible to continue working to some extent with just one laptop. The interviewees said that at least with two laptops if the other stopped working, you still had the other one to stay in touch with your colleagues and they felt that help was always available when needed. This played a big role in mitigation as the interviewees all pointed out that getting assistance and support with technical issues with both laptops was easy and they were all able to rely on co-workers to help if help was needed.

As for the overlapping communication channels and the difficulties in keeping up with news, one of the interviewees working from the office stated that they hoped the gradual return to the office would help with the communication issues. They said that they had never before COVID-19 and remote work experienced that it was hard to keep up with new instructions and changes in the work as it was during remote work. They had also noticed that their co-workers had experienced the same type of issues. The situation was best described by the interviewee in the following extract of the interview:

> CA4 “there's a lot of changes going on here, and it's just that when you have so many employees here and I understand that it's difficult to communicate in such a big organization, that you have to get the messages to many people and when it happens electronically through a Teams post you easily kind of fall behind, even though your co-workers guide each other a bit…in that sense when there are changes it would be nice to go through these more. When many are working remotely most of the time so of course I understand the current system because you can't really do it in any other way, but it would be nice to somehow get more training…But maybe now if we start

> coming back to the office, hopefully at least it will help with these things, we will be able to communicate and we will HEAR what a colleague is talking about during calls, we are able to question these things and ask questions. Being present at the office is in itself such a big part of that communication so I believe and hope it helps with most of these things, because I didn't experience these things when I started here and we were always at the office. Back then I didn't feel like there were so many of these communication problems between these things because they didn't happen remotely, everything happened in the office."

So even if the communication issues are acknowledged and the employees understand why the communication happens the way it does, the interviewee still hoped that live interactions with co-workers and other employees would help with the current issues in communication.

5.4.5 Stressors and consequences for Customer Advisors

As for the Customer Advisors, the use of two different devices appeared different during work than for the two other roles interviewed. For the most part the customer advisors were mainly using the customer organization's laptop and having less use for the employer organizations' laptop. Nevertheless, they did operate with both devices daily every hour in order to complete their tasks, but they did not experience a sense of interruptions of the use as they operated on both in a manner that felt natural and easy. They had all gotten used to using both devices due to the frequent use of both laptops and the nature of their work made it easier to see both devices more like a single device as they had to use both for many of the tasks they were completing during the day.

The challenges of using two laptops were focused on the overlapping communication channels, managing the amount of credentials on both devices and keeping them up to date, efficient working with two devices at all times at the same time during their workday. Other difficult software related challenges were days where there were incidents and not having access to all necessary systems to serve the customers. Hardware related challenges included the simultaneous use of two devices, the need for additional screen space and physical workspace and having to start two laptops. These are visible in figure 9.

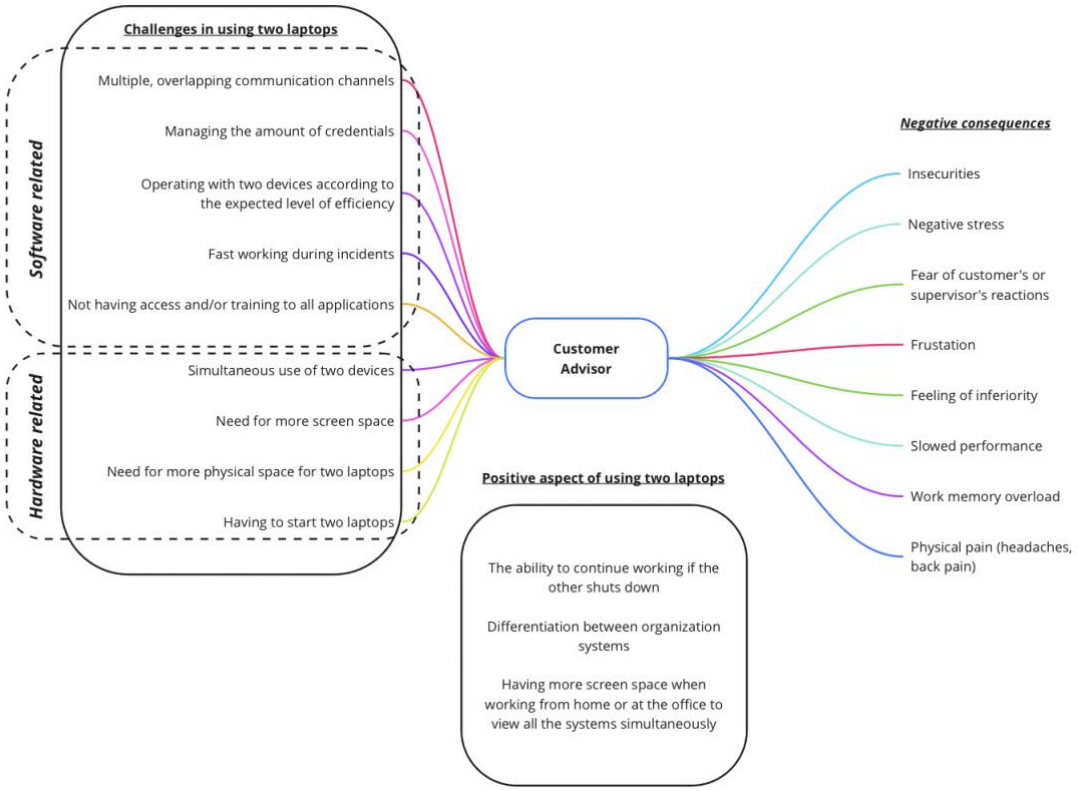

FIGURE 9 Customer Advisors: Stressors and consequences

Even though the interviewees had all gotten used to having two laptops, many of them identified challenges in the simultaneous use of both devices in more challenging situations or if one of the two laptops did not work. They also acknowledged that two devices provided them more screen space but also that additional screens were necessary to being able to work fast. Having to start two different laptops at the same when beginning their shift was also seen as a challenge.

The negative consequences of the challenges were insecurities in the use of two laptops. The interviewees explained that they felt stressed in cases where the other laptop did not work or if they were unable to answer questions if they did not have access to the required systems. This also led to fear of the customer's reaction or in some cases the fear of how their managers would react of they were unable to work. Frustration was also found amongst the interviewees in situations where they were unable to access a necessary system or if they had technical issues with their devices. When not being able to fix their technical issues due to other restrains the interviewees felt inferior and that their work speed was slowed down, which then again led to slowed performance. Some interviewees considered that using two laptops could have resulted in physical symptoms such as headaches and back pain.

In comparison to the other two roles thus far, the customer advisors also found positive aspects related to the work with two different laptops. They felt that they could continue working even if the other device was not working

properly or at least they had a device to contact support if the other one was not working. The interviewees also said that working with two different devices helped the differentiate between the two different organization's systems and that the two laptops enabled them with more screen space when working from home and had the situation been opposite that all of the current systems in use had to be used on just one laptop, it would make working difficult as every system had to be behind each other on a smaller screen.

In conclusion all of the interviewees also pointed out that had they not been somewhat skilled with operating with IT systems and devices, some of them being more interested in IT and ICT in their spare time, they might not be as successful at their job as they felt they were. One of the interviewees said that they were not as interested in IT in their spare time as their other co-workers might be, they still recognized that they had the required skills to operate with two different.

5.5 Similarities and differences between roles

In the previous parts of this chapter the findings according to each role were presented. Between the different roles there were some significant differences that could be seen. The division between the frequency of use of both laptops was one where the differences could be seen between the low- and mid-level roles compared to the high-level role. As the high-level role did not require constant use of the two laptops, the Team Managers did not feel that it caused the interruptions as much during the day compared to their mid- and low-level. The low-level and mid-level roles were found to use the two laptops at all times during work whereas in the high-level role the other device was estimated to be in use only around 10 percent of the work time. This created a gap between the three different roles where the low- and mid-level roles were using the laptops in a similar frequency compared to the significant difference to the team manager working in the high-level role.

Another difference in the use of the two different laptops could be found in the emphasis of use of the two laptops. For the low level role the customer advisors identified that they used mainly the customer organization's laptop to conduct their everyday work. In comparison, for the mid-level role the equal use of both laptops was necessary to complete their tasks. For the high level role the customer organization's laptop was used infrequently to as a result of which the employer's computer was used for most of the time. The differences in the emphasis of use was also one of the reasons why the interruptions at work felt very different for the different interviewees in the different roles. Showing why the high level roles felt more inadequate in using the customer organization's laptop is the infrequent use of the device where as the mid- and low-level roles were confident in using the both as they had more experience after using the laptops every day. While the low-level role emphasis of use was on the customer

organization's laptop, the employer organization's laptop was still used every day.

As for the interruptions arising during work, the low-level role findings showed that the continuous use of both laptops did not necessarily cause the customer advisors interruptions that made them lose focus but rather a sign of having to use the both laptops in order to complete a task created the situation where mid-task the device had to be switched. For the mid-level role the interruptions happened in the middle of conducting other tasks so the interruptions affected the efficiency and focus of the coaching supervisors more than in the other two roles. This shows that depending on the complexity and level of tasks for each role, the impact of using two different laptops is different. For the high-level roles the occurrences of the interruptions could be of both types. All these findings have been combined in table 2 to help see the similarities and differences in the use of two laptops for the different roles.

TABLE 2 The nature of use of two laptops

	Low - level	**Mid-level**	**High-level**
Title	**Customer advisor**	**Coaching Supervisor**	**Team manager**
Frequency of use (Both laptops)	At all times	At all times	~10% of work time
Laptop mainly in use	Customer organization's laptop	Both equally	Employer organization's laptop
Interruptions per day	Continuous	Continuous	Max. 2-5 times a day
Occurance of interrupiton	Interruptions occur while executing a task	In the middle of other tasks	While executing a single task / In the middle of tasks

What was a significant finding between the different roles was the gap between the low-level role compared to the mid- and high-level roles. As the complexity of the tasks increased as the level of the role got higher, this resulted in different types of challenges for the mid- and high-level roles that the low-level roles did not identify. The employees working in the mid- and high-level roles were forced to move around at the office while the low-level role had a stationary position when working at the office. This resulted in the difficulties in choosing which device to carry with while moving around at the office. This was not brought up by a single customer advisor in the interviews showing, that they did not have the need to move around but instead could focus on working from the same workstation for the day.

The other part enforcing the gap between the two higher level roles and the low-level role was the nature of the interruptions. As the employees working in the low-level role were not expected to react quickly to unpredictable work tasks, they did not experience that their work was interrupted by the use of two laptops in the same manner as for the mid- and high-level roles. For the low-level role the interruptions happened while performing a single task such as helping a customer, the interruptions was caused when having to use a system on the other device. As for the employees working with more supportive tasks in the higher levels of the organization, the interruptions happened while conducting a single task by another emerging task or request.

Due to the nature of the interruptions and how they occurred, the feelings caused by the interruptions were also different. For the high- and mid-level roles the interruptions had a clear negative impact on the employees whereas for the low-level role the interruptions did not cause as many negative feelings. On the contrary, the low-level employees felt that the use of two different devices was helpful when differentiating between the different systems used for conducting different requests from the customers. All of the differences highlighting the gap between the higher and lower-level roles have been collected together in table 3.

TABLE 3 The gap between mid-/high- and low-level roles

	Mid / High level	**Low level**
Moving around in the office	**Mid-level** and **high-level** employees experienced difficulties at the office when choosing which laptop to carry around the office	**Low level** employees work stationary and are not required to move around with laptops during the day
Interruptions	Other work was interrupted more due to the usage of two laptops as using both laptops while performing a task allowed other interruptions.	The interruptions happened while performing a certain task, not significant when trying to finish the task as changing laptops was a part of the task.
The feeling of interruptions	The interruptions mostly had a negative impact on the employees on high or mid-level as the interruptions caused forgetfulness and moving from performing one task to another	The interruptions were not found harmful as the switch of laptops was made during each task which helped the employees form a routine in using both laptops with ease.
Positive or negative feelings about using two laptops	Mainly negative as the tasks required more effort and s elf-control to not be interrupted by the switching between laptops	Mainly positive, as working with two laptops made it easier to handle the different systems in use

As for the mitigation methods, all of the three roles explained that the most important mean of mitigation was the support available for technical issues at all times. Whether it was a technical support or venting to a same-level or different

leveled colleague, the peer support was seen as an important actor in the mitigation of stress caused by the use of two laptops. In addition to this, many interviewees despite the role felt that curricular activities such as hobbies and spending time with their families played a big part in their mitigation processes after office hours. The three interviewees who worked mainly from the office if not forced to telework, had clearly made working from the office a type of mitigation for themselves as they stated that remote work caused them more stress and made them feel less content with their work. By leaving the work at the office they were able to let go of work and leave the used devices to the office and continue their free time without having to stress about work. In comparison to the employees combining teleworking and working on premises, this group of interviewees clearly felt that the use of the technologies and the challenges in using two laptops (e.g. interruptions and difficultes in use) made the workload more prominent and caused extensions of working hours.

To summarize this chapter, all of the three leveled roles experienced some stressors that caused negative feelings or consequences that can be seen as forms of technostress. Depending on the role, the experiences were somewhat different, and all of the three different roles had to deal with different types of strains related to the use of two laptops in their everyday work. To understand how the impact of using two different laptops impacts the creation of technostress in a multiorganizational work environment, figure 10 displays the process.

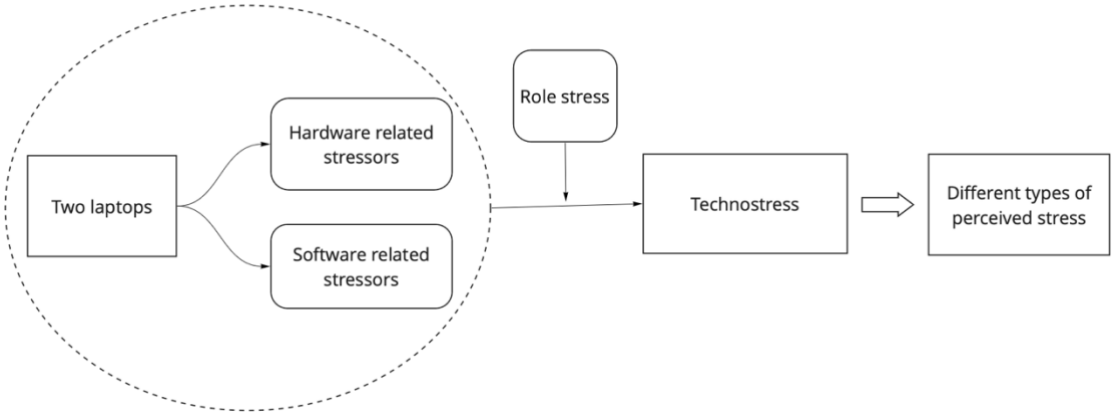

FIGURE 10 Technostress from using two laptops

In the figure the process shows that using two laptops creates both hardware (lack of space, need for additional screens, etc.) and software related (overlapping systems, lack of training to use all systems, etc.) stressors that are connected to the creation of technostress in a multiorganizational work environment. Depending on the employee's role, technostress results in different types of perceived stress.

6 DISCUSSION

The use of technologies at work is inevitable in almost all companies in the modern world. In many organizations it is common to use many different systems to handle different tasks. In this thesis the research involved a case organization, where the ICT complexity was increased by the use of two different organizations' laptops. This created the possibility to study how multi-organizational work environments impact the employees, which has not been done before.

As technostress is inevitable in many work environments, this research focused on how the use of two different laptops impacted the employees of the case company in different roles. As this had not been researched before, this thesis contributes to current research by adding the viewpoint of a multiorganizational work environment, using two different laptops and how that impacts the employees' experiences of technostress.

This research focused on finding answers to four different research questions, which will be discussed in this chapter. This research focused on the following research questions:

1. How using two computers affects an employee's experience of technostress?
2. Does the technostress appear differently between different roles?
3. Are there any differences between teleworking and working from the office?
4. What type of coping mechanisms the employees were using to mitigate the impact of technostress at work?

In this discussion chapter the findings from the research are analyzed and reflected on previous studies in the field. The chapter consists of presenting the different forms of technostress in the different roles, the challenges in overlapping communications systems, teleworking with two laptops and mitigation and coping methods of the case company employees. After this the

future research and implications for practice are covered and lastly the limitations for this research is presented.

6.1 Different forms of technostress in different roles

Technostress is emerging in different forms in different contexts (Tarafdar et al., 2007; Wang et al., 2008) impacting the employee well-being and job satisfaction (Califf et al., 2020). According to previous research constant interruptions at work (Tams et al., 2018) and the need to respond to different requests as fast as possible (Barber & Santuzzi, 2015) puts the employee under strain that often results in negative stress (Tarafdar et al., 2019). According to Crawford, LePine and Rich (2010) work that puts too high demands on the employee can result in employee burnout and prolonged sick leaves. Depending on the employee's role and the role complexity (Tarafdar et al., 2007; Richards et al., 2019) technostress has different types of consequences for the employee. As burnout is one of the typical consequences of technostress (Bakker & Demerouti, 2017) it is necessary for organizations to understand how technostress emerges and what the employees are doing to cope with the stressors to support the mitigation and help diminish the impact of technostress. This must be done so that proper measures can be taken to mitigate the impact of technostress and to help employees cope with the stressors (Atansasoff & Venable, 2017).

In this chapter the aim is to discuss the two first research questions: How using two computers is affecting the employee's experience of technostress and does technostress appear differently between the different roles in the case organization. According to the findings of the interviews it was clear that all of the roles' experiences stressors that caused them negative feelings or experiences at work. Due to the use of two different laptops from two different organizations, depending on the role the consequences were different. Reflecting on the Tarafdar et al. (2007) explanation of the five different forms of technostress, all five could be found amongst the different roles.

Employees in the high-level role and mid-level role admitted to sometimes having to work overtime due to the use of two laptops. This supports previous findings of technostress as techno-overload often results in having to work overtime (Tarafdar et al., 2007). For the high-level roles such situations could be when the other laptop was not working or if they did not remember how to use the laptop, also issues with the customer organization's data managements caused delays in the task performance and could extend the working hours of the employees. For the mid-level role, the techno-overload could be seen in the situations where the coaching supervisors explained that their role required fast responses to suddenly emerging tasks, and they admitted that working in this manner caused a significant number of retraining interruptions that had begun to impact the amount of stress they experienced at work.

The continuous interruptions due to the use of the different communication systems and the mid-level role tasks forced the coaches to interrupt their work,

which then again meant that completing simple and otherwise fast tasks took significantly longer. Tarafdar et al. (2015) also explain that technostress has a negative impact in performance, which the findings of this thesis also support as the findings showed that the constant interruptions had an impact on the employee performance. Continuous interruptions have also shown that employees feel more exhausted from work and it impacts their work memory (Tarafdar, Tu, Ragu-Nathan & ragu-Nathan, 2011; Tams et al., 2018; Sellberg & Susi, 2014) which was also discussed with the interviewees while conducting this research.

The findings also showed that the employees working in the mid-level role felt they lacked control of their work due to the constant interruptions. The findings also showed the interruptions leading to situations where the employees felt they did no longer know how to cope with the amount of work requests they received. The fragmentation of work can be seen as a stressor for the mid level role, which in time could lead to an increased distress level for the employees (Mark, Gonzales & Harris, 2005). This in turn may lead to decreases in job satisfaction and increase the role stress in the psychological strain and behaviorally it can also decrease the productivity of the employee (Tarafdar et al., 2010).

In comparison, the low-level role did not show as many signs of techno-overload as their tasks were not affected by the use of two different laptops as much as for the two other roles. In the low-level role the use of two laptops did not show the need to work as fast as possible or to respond to different requests as fast as for the other levels. This implies that as the role complexity grows with the level of the role, the impact and significance of technostress increases (Tarafdar et al., 2007; Marchiori, Mainardes & Rodrigues, 2019).

For the low-level role employees, the techno-insecurity was more visible in the results due to their experiences of technical difficulties and the fear of seeming uncapable of doing their work in the eyes of their managers. This feeling reflected in signs of stress and uncertainty and even in feelings of losing their jobs if they were not able to use the two devices as well as their co-workers. These types of feelings caused by technostress can typically lead to inefficacy, anxiety, or fatigue (Salanova, Llorens & Cifre, 2013). According to previous research, similar findings have been made when studying technostress and employees with different experience (Marchiori et al., 2019) which indicates that even in a multiorganizational work environment, the less experienced employees are prone to techno-insecurity more than the more experienced employees, despite the frequency of use of two laptops being higher for the low-level role.

The managers infrequent use of the customer organization's laptops could be connected with the techno-uncertainty (Tarafdar et al., 2007). From the managerial point of view the uncertainty was also connected with the changes in the customer organization's operating systems and continuously having to learn new ways of using these systems or being prepared to changes in the systems when using the other laptop so infrequently. Changes in technologies in use can

lead to employee uncertainty in questioning their own skills and fearing of getting replaced by more skilled employees (Ayyagari, Grover & Purvis, 2011).

Password management was seen as difficult both for the high level and low-level roles, which was not as visible in the findings amongst the mid-level roles. Password management could be linked to techno-uncertainty and techno-complexity (Tarafdar et al., 2007). As both the low- and high-level roles explained that they found it difficult to keep all the different passwords in mind and also updating them on a frequent basis, this shows that the more systems the employees have to operate, the more complex and difficult it becomes to come up with secure password combinations to all different systems in use. This could result in reusing similar types of passwords which can be seen as a security risk (Grawemeyer & Johnson, 2011) for the case company. Uncertainty in password management or other information security measures are prone to lead to unsecure coping methods. As the findings also showed keeping passwords on paper, this could also risk the security of systems if someone would get a hold of the passwords. In 2021 data breach costs averaged around 4.24 million USD where the most breaches were caused by compromised credentials (IBM, 2021). Therefore, data breaches can be costly for companies and should be considered when guiding and instructing employees.

According to previous research techno-uncertainty is related to an employee's age and work experience (La Torre, De Leonardis & Chiappetta, 2020; Marchiori et al., 2019) and similar findings were made in this research. Based on the respondents age and work experience in general, the low-level role employees felt more uncertainty in the use of two laptops than the employees with more experience. Also, the role perspective showed such indicators as employees who have worked in the same role for a longer period seemed to experience less stress of the use of two laptops than employees who had been working a shorter time. This findings was contradictory to the previous research by Marchiori et al. (2019) as in their research the results showed that the more experienced the user is, the more stress is infused. In this thesis however the findings showed that due to the higher role of the employee, the high-level roles managed technostress in a better manner than the employees in the low-level roles.

The infrequent use of the two different laptops showed that the high-level role was more prone to experiencing techno-complexity. As the infrequent use of the customer organization's laptop led to situations where the team managers did not have time to retrieve data from the other laptop due to time limitations to prepare for discussions with their subordinates, this caused the managers feelings of inadequateness and being unprepared for discussions with their team members. Studies have shown that the Crossover effect of managerial well-being to their team members can result in a diminished well-being in the subordinates as well (Nielsen & Taris, 2019). This important to keep in mind in the case company as the high-revel role stress might slowly through time start to impact the well-being of the whole organization and the organizational commitment (Ragu-Nathan et al., 2008).

Techno-complexity was also a result of new employees onboarding in the case company as they had to embrace two new laptops and learn how to use all the different systems. According to Becker and Huselid (1998) focusing on careful hiring of new employees is necessary to reach an organization's operational goals, which shows that it is a necessity to consider in the hiring process which applicants are chosen. This puts emphasis specifically on the IT skills as the results of this thesis shows that working in the multiorganizational work environment with two different laptops requires excellent IT management skills. This was identified by the employees in all levels, as they explained that they felt they were able to use the two laptops due to their skills in handling IT systems and devices.

Despite the complex onboarding process, one of the positive findings were that the low-level employees felt that they got used to using two laptops quickly after the beginning and after an estimated time of two months, the users who used both laptops frequently did not notice specific difficulties with using two laptops compared to imaginatively having only one laptop in use. This is supported by previous research as an individual's own technical skills improve with using the technology and makes it easier to cope with the used technology (Tarafdar, Pullins & Ragu-Nathan, 2015). Regular use of two machines plays a significant role in the smooth operation of both laptops therefore contributing to previous research about the matter.

The unawareness of used systems and the purpose of the two devices was also a sign of the techno-complexity in the use of two devices. When asked whether employees in the mid-level role use both machines to take notes, the two first responded no. When discussing further on the matter, both interviewees in the role realized they used both devices for notetaking. This led to having numerous tasks on two devices, which then again could lead to forgetting tasks and finding them later. This could be explained as techno-complexity as the complexity of the used devices is not fully comprehensible without further analysis of the users themselves. Techno-complexity and the unawareness of this in turn can lead to counter-productivity and loss of self-efficacy (Kim & Lee, 2021), as the employee is unable to connect performance challenges to the complexity of the used devices or systems.

Techno-invasion was also visible from the findings. Especially for the high- and mid-level roles the techno-invasion was more visible as the roles were conducting tasks that required for them to work reactively and responding quickly to different requests. Due to the use of the overlapping communication systems, the constant interruptions and requests caused stress for the mid-level employees as they felt they had to be available at all times. For the high-level roles this appeared more in the work continuing after office hours. As the role required for the team managers to also respond to requests in their free time, this showed that the complexity of using two different devices for their work sometimes hindered the employees from being able to relax in their free time due to being concerned about how other co-workers manage situations where the skills might not be as good. Also, working overtime can lead to fatigue, burnout,

physical symptoms and several other severe consequences that can impact the employee's ability to work (Beckers et al., 2004). In the long run it might even result in diminished job satisfaction and in difficulties in balancing between work-life and free time (Hsu et al., 2019). Another consequence of continuous and compulsive technology use in work and work spilling over to the individual's free time is techno-addiction, which in turn can also lead to fatigue and in a diminished job satisfaction (Salanova et al., 2013). Job satisfaction is directly related to performance as performance issues can be improved if the job satisfaction increases (Böckerman & Ilmakunnas, 2010).

Although the findings showed that after getting used to working with two laptops, the employees did not identify problems with the use of two machines, but nevertheless they were aware that it could be challenging for a different person. These signs contribute to the eustress part where not all stress is negative and as the laptop brought more workspace for employees to use for their tasks, it can also be seen as a positive consequence. The theory of technostress contributing to innovativeness and eustress is also supported in more recent research from Tarafdar et al. (2019), where they explain that techno-eustress can be experienced as positively challenging or exciting, resulting in a positive feeling amongst employees. For example the challenges in using two different laptops and overcoming these challenges could be seen a signs of positive strains of working with two laptops as it makes employees feel like they have autonomy over their work (ter Hoeven and van Zoonen 2015, as cited in Tarafdar et al., 2019). Challenges in work might also result in a higher work engagement when overcoming challenges (Bakker, Hakanen, Demerouti & Xanthopoulou, 2007).

Despite the main findings of this research were found to be negative, a positive outcome of the research was that the employees had gotten used to working with two laptops so that they did not explicitly find the need to switch to working with only one laptop. The findings showed that the interviewees also took pride in their skills of being able to manage both laptops simultaneously and even if it caused them stressful feelings and situations from time to time, they felt as if they were more skilled to use IT than other's working in similar settings with only one laptop. The findings also showed signs that the employees realized their value when they had enough skills to operate on two different laptops.

6.2 Communication challenges and technostress

Based on previous research the use of communication technology and the complexity of these contribute to the experienced technostress (Tarafdar et al., 2007; Tams et al., 2018; Salo et al., 2019; Shu et al., 2011). Excessive use of communication systems has shown signs of addiction (Tarafdar, Maier, Laumer & Weitzel, 2020) and extending the work outside office hours (Barley et al., 2011).

Previous research shows that the use of communication technology has a negative impact on employee stress (Lee, Lee & Suh, 2016) which in this thesis was even more complex as the communication happened with two different

devices. One of the main challenges for this case company was the overlapping communication systems of two different organization and how they were used by the employees in different roles. The findings showed that the employees had difficulties in keeping the information in certain channels and for some roles the overlapping communication systems led to interruptions coming from different devices unexpectedly. Also, the differences in emphasis of use of the different devices caused challenges for the employees regarding where important information should be shared.

Using the communication technologies in a right manner is necessary in incident management or other challenges where communication is necessary (Adu-Oppong & Agyin-Birikorang, 2014). Each employee of the case company had defined their own ways of using communication tools instead of agreeing on a common way of using the channels. This reflected in different employees experiencing the challenges differently and while one had the peace to work, the other experienced stress when they did not know which channels to use to get in touch with the co-worker.

The difference between the high-/mid-level users and low-level users on how they used the communication channels led to overlapping communication of the same matter through different channels in order to ensure that the message would be received. The importance of communication in organizations can be seen in increases in job satisfaction, reducing conflicts and helping form relationships between communities (Men, 2014). Challenges for successful communication can be found in both the sender and the receiver of the message, but also a lack of right channels and agreed customs make it more difficult to communicate effectively (Lunenburg, 2010). Overcoming communication challenges in organizations together has been proven to enhance effectiveness in teams (Adu-Oppong & Agyin-Birikorang, 2014) as well as strengthening the organizational culture (Keyton, 2017). The findings in this thesis showed that the previous research about challenges in communication channels are present in the multiorganizational work environment and requires even more focus on agreeing on common ways in using the systems.

Employees interviewed for this research were aware that the number of communication channels was illogical, but they also had no means or willingness to unify the operating models with co-workers or within the organization. This showed signs of habits and difficulties in developing new rules for the communication channels. Innovation resistance has been found as a consequence of technostress in previous research (Kim & Lee, 2021). This could be interpretated as a consequence of technostress in the case company, as technostress has been found to hinder innovation (Chandra, Shirish & Srivastava, 2019). Lack of innovation can impact the job satisfaction and work engagement (Bakker et al, 2007) and decrease productivity (Pirkkalainen et al., 2019). How the two different laptops were used for communication purposes had continued for such a long time, it seemed as if the employees were reluctant to change the way they were working. This which could be a result of technostress within the employees.

Unwillingness to share information may occur when employees feel too busy. Due to other more important tasks generating communication rules might appear as an inferior task to complete as some felt that they had better things to do than focus on communication guidelines or teaching other's ways on how to use the communication devices or the systems in the two different laptops. Previous research shows that being busy and competitiveness contribute to the unwillingness of knowledge sharing (Connelly, Ford, Turel, Gallupe & Zweig, 2014). If the situation would to get worse or the employees start to experience too much stress due to the use of overlapping communication systems, it might lead to counterproductive behavior amongst the employees. This could in turn result in a negative impact for the whole organization (Weatherbee, 2010).

Another sign of unwillingness to share information unrelated to communication devices but rather to other systems in use was the unwillingness to share knowledge and instructions to using systems so that everyone in the organization would know how to use the systems. This was also an important finding as the use of two devices could impact the work environment negatively as completing tasks takes time and thus employees felt that doing the tasks themselves took less time rather than teaching others how to do it themselves. It is important to acknowledge that an organization is only as strong as its IT capabilities are, if the work revolves strongly around the use of Information and Communication Technologies (Bharadwaj, 2000).

The unwillingness to share information can be a result of distrust in co-workers (Connelly, Zweig, Webster & Trougakos, 2012) when evaluating is teaching new ways of working worth the effort and if the employee trusts the other to learn new ways of working. Shared knowledge of the use of IT enhances the capabilities of the employees and results in enhanced performance and productivity as well so therefore it is necessary to train employees equally in comparison to keeping information simply tied to one individual.

Despite the fact that the average age of the interviewees was 29 years, it did not automatically mean that the employees were native in the use of communication technologies and according to previous research individuals' capabilities in the use of digital technologies in their free time does not necessarily mean that the employees enjoy the use or are confident in the use of technologies at work (Friedl & Verčič, 2011).

Previous research shows that the assimilation gap grows when the organization's strategy does not include deployment and improvement of used systems (Fichmann & Kemerer, 1999). In order for this case company to successfully diminish the impact the use of overlapping communication systems has on its employees, the organization would need to invest in trainings or in creating new guidelines for the use of communication systems to mitigate some of the technostress the employees are now forced to face.

These findings showed that reducing physical equipment would not reduce work-related stress significantly from the user perspective, but rather clarifying the communication channels between devices used by different organizations would bring benefit to all employees regarding information overflow and

communication problems. As technostress is visible in the case organization, it could have an impact on the whole organization's behavior patterns (Ragu-Nathan, Tarafdar, Ragu-Nathan & Tu, 2008).

6.3 Teleworking with two laptops

Research shows that teleworking is prone to triggering technostress in the form of work-family conflicts and in inducing behavioral stress (Molino et al 2020; Panisoara et al., 2020). As also found in this research, some of the interviewees had decided to return to the office work despite of COVID-19 -restrictions as they felt that they felt less stressed when working from the office and had the possibility to leave the work at the office.

The third research question was if teleworking somehow impacted the technostress regarding the use of two laptops at work. The main findings regarding teleworking and combining teleworking with working on premises were significant for this research. Only one of the interviewees brought up the subject themselves, so it might be, that not all employees consider a difference in working at the office or working from home. However, the differences in the working conditions with two laptops from home were different for roughly half of the interviewees. Only half of the interviewed employees had as many monitors, keyboards, and mice accessible at home as in the office Only one of the interviewees had as much peripheral equipment at home as they had at the office. So even if only one of the interviewees brought up the challenges themselves, each employee in this case research had opinions regarding working from home.

As some of the interviewees also pointed out the physical working conditions for working with two laptops were significantly better at the office, this could mean that when working with two laptops it is important to at least have appropriate equipment to use for the work also at home. Providing every employee with proper work equipment both at home and at the office is a costly investment for companies (Buomprisco, Ricci, Perri & De Sio, 2021), but might still be worth exploring as it often impacts the employee performance if the employee does not have access to necessary equipment to complete their tasks (Greer & Payne, 2014).

As this research showed, that for this case organization it was not given that all employees had proper workstations at home despite the interviewees stating that the difficulties in using two laptops at home caused significant issues for them such as performance issues, lack of space and even back pain when having to work from creative positions or places at home so that the use of both laptops would still be possible. It has been implied in recent research that teleworking during the COVID-19 pandemic has increased the importance of work ergonomics at home to avoid health risks for the employees (Buomprisco et al., 2021).

Working overtime due to the strain of two devices was also visible in the two higher level roles as to where the possibility of work continuing after office

hours was more probable than for the low-level employees. As the employees were working from homes, some with family at home admitted that working overtime sometimes conflicted with the family life at home as other distractions occurred while working from home. As one interviewee admitted having more workspace in the living room for working with two laptops, this sometimes interfered with the personal life at home, if they were forced to work overtime. Due to the pandemic, the crossover of work- and family time could have an impact on employee wellbeing in the long run (Carnevale & Hatak, 2020; Andrade & Lousã, 2021).

What also contributed to the main findings of the research was that employees recognized the lack of face-to-face communication due to teleworking. This led to employees being unaware of new instructions and changes in methods as the information was no longer shared on site but rather in the different communication channels on the two laptops. These types of issues have been explained in previous research (Workman, 2005) and as the work becomes more complex with the use of two laptops, keeping up with the information flow on both organization's communication channels had become more challenging due to teleworking (Taskin & Bridoux, 2010).

6.4 Mitigation and coping

Mitigation and coping mechanisms for technostress are important for lessening the impact technostress has on employees of different organizations (Galluch et al. 2015; Kumar et al., 2013; Salo et al., 2020; Korzynski et al., 2020; Tarafdar et al., 2020). Different types of mitigation are appraisal of employees (Galluch et al. 2015; Kumar et al., 2013; Salo et al., 2020), venting or being able to complain about the IT (Salo et al. 2020; Pirkkalainen et al., 2019), curricular activities (Tarafdar et al. 2020) and IT mindfulness (Ioannou & Papazafeiropoulou, 2017). In addition to the known coping methods, the mitigation is also dependant on the employee's personalty traits (Korzynski et al., 2020) and ability to handle IT (Maier et al., 2019). In this research, the findings showed that the employees of the case company were aware of their coping methods for experiences of stress caused by the use of the two different laptops.

According to the findings of this research, the employees felt a strong team spirit regarding technical difficulties when using two laptops. For all it was a significant method for mitigating the impact of malfunctions or issues related to the use of two laptops. The employees explained that they were always able to get help if they had technical difficulties and this played a big role in the mitigation for all employees despite their roles. The importance of giving technical support has been acknowledged by previous research as well (Ahmad, Amin & Ismail, 2014).

Also venting to other co-workers about the issues they experienced was seen as important to the employees in this case research and this has also been found as a coping mechanism towards technostress (Pirkkalainen et al. 2019;

Pirkkalainen, Salo, Makkonen & Tarafdar, 2017). With the use of two laptops the support was easier to get hold of when teleworking as in situations where the other laptop stopped functioning, the employee could get in touch with supervisors or other colleagues with the other laptop. The use of two laptops, even if it caused the users stress, also helped when they experienced issues with the other device. Previous research show that the importance of social support during computer freezes plays a big role in avoiding techo-exhaustion and performance issues (Weinert, Maier, Laumer and Weitzel, 2021).

Previous research by Pirkkalainen et al. (2019) show that by combining both reactive and proactive coping behavior helps mitigate the impact of technostress. In this case research the employees showed signs of proactive coping by getting to work early enough in order to ensure that their two laptops were ready to use when the shift started. If the employees experienced issues with the laptops, they knew which way to turn for help and worked actively to solve the issues in order to get both laptops to function properly. Despite sometimes running into time constrains when trying to use the two laptops, the employees still felt they were responsible of finding ways to work with the two laptops helping them engage with their work. Self-efficacy has been shown to enhance work engagement in previous research as well (Caesens & Stinglhamber, 2014). The feeling of control of the employee's work in the findings confirmed previous statements in research corrct, that enhanced control of work helps mitigate technostress (Tadić Vujčić et al., 2017).

The findings also show that distancing from technology was seen as a helpful coping mechanism from the use of two laptops, which has been found in previous research as well (Pirkkalainen et al., 2019). For roughly half of the interviewees this meant leaving the laptops to the office and being able to get distance to the work environment. This was significantly different to the employees who varied between teleworking and working from the office. Despite distancing being an effective coping method for some employees, it was not seen as a necessity by all employees interviewed for this case research, which would imply that a personal interpretation and attitude towards IT and ICT is present in the multiorganizational work environment.

For the employee working more from home it was also showed in this research that the ability to cope with IT and ICT in the employee's free time meant that their responses were less negative when discussing how working from home with two devices impacted them personally. Employees who distinguish technology as a part of their everyday life seem to experience less stress by the use of different devices (Stich et al., 2017). Others have also explained that personality traits such as openness and conscientiousness contribute to how technostress impacts an individual's experiences either negatively or positively (Srivastava, Chandra & Shirish, 2015). Where the others felt more impacted by having the two laptops present at home experienced more stress, the others did not mind this as much and continued to combine teleworking with working at the office. Some felt that they recognized that the workload spilled over their free

time more frequently when working from home but still did not return fully to the office after the COVID-19 pandemic as some of the other employees had.

Having the devices close by in the free time also showed in the discussion that for some this meant that they were able to handle requests quickly and without having to stress about the request until the next morning. These types of manners have also been studied before as some employees feel that responding to requests in their free time helps with the mitigation of stress (Stana & Nicolajsen, 2021). Despite this meaning that the employees of the case organization had to carry both laptops with them, they felt that it brought them a sense of peace when both laptops were accessible at any time.

As the employees of the case organization had all gotten used to working with two laptops, the employees had difficulties in even imagining working with only one laptop and in a setting where only the employer organization's systems would be in use. Typically for outsourced services, the third party operates in their own systems to provide IT portfolio management to the customer (Lacity, Khan & Willcocks, 2009), but in this case company the case company employees were forced to use devices and systems provided by both the employee and customer organization resulting in the use of two different laptops.

As one form of mitigation is using the technologies actively and frequently, the frequent use of both laptops proved to be one of the factors contributing to successful use of two different laptops (Tarafdar, Pullins & Ragu-Nathan, 2015). Also, the experience of working in the company with two laptops for a longer period contributed to the mitigation looking at the positive aspects and learning new skills due to use of IT. This can also be seen as proactive coping as the gained experience helps with the management of IT (Pirkkalainen et al., 2019). Not only is the employee's personality, ability to cope with IT and support important coping methods for mitigation (Maier et al., 2019), but also the gained experience in using the two laptops frequently enough to help learn the patterns on how to operate on both laptops smoothly is important to the mitigation. If the two different laptops were used infrequently, this led to software updates making the used systems new each time they had to be used and getting unfamiliar with the other organization's laptop. This in turn caused frustration if the use of the other laptop took more time or the user needed support from others to use the other laptop.

As the employees also discusses about their lack of systems to use to handle all of the incoming customer calls, it can be implied that additional training is necessary. By improving the trainings and focusing on offering needed training to the employees it could contribute to the mitigation of technostress. As the discussions showed that the employees were forced to help customers without access to all systems needed for the task, this created additional stress to the employees as it had an impact on their performance as they felt that they could not impact the speed of another employee's work. Training has been proved to be a helpful mitigation tool for coping with technostress (Shadbad & Biros, 2021). Previous research shows that training also correlates positively with employee commitment to organizations (Ahmad, Amin & Ismail, 2014), which could

indicate in a smaller turnover of employees if they experienced that their capabilities were enhanced by training. When the employee's skills are improved by training, it also helps enhance performance and helps with technology self-efficacy and confidence in use (Tarafdar, Pullins & Ragu-Nathan, 2015).

6.5 Managerial implications and future research

Previous research has shown that minimizing email traffic towards employees has had a positive effect on employee well-being and mitigated the impact of technostress (Valta, Pflügner & Maier, 2021), it would be necessary for the case organization to implement guidelines on how to use the different communication channels as this could result in a calmer work environment for the employees working in high- or mid-level roles. Based on the findings of this research it has been shown that the employees are in the need of guidelines on how to use the communication systems in a better way.

What the case company could also consider is investing in proper equipment for employees at home or supporting the employees financially to buy necessary equipment for homes in order to enhance the performance of teleworkers, who do not have proper equipment at home but still want the opportunity to telework. Also developing system integrations to the customer organization's laptop or vice versa could help with performance issues, if all systems could be used on one laptop. If doing so, the employees would still need access to use as many additional screens as now, so investments in necessary equipment to connect one laptop to at least three screens would be in place.

For future research this case company could continue with deepening research based on the findings of this case study. To get a more cohesive result of research in the case company, the findings and analysis of this research could be used to create a questionnaire in order to conduct quantitative research from all of the employees to see how well the case study results represent the company or how the employees outside of this research respond to indications of technostress related to the use of two different laptops. This could help the organization to understand what type Of impact the two laptops has on their employees and with the help of these findings it could be possible to find ways to mitigate the effects of technostress in this case company.

In addition to only continuing the research among employees working in the contact center, future research could also study the differences across departments in the case company both in Finland an in other countries. By comparing the responses from different departments the case company could improve the working conditions with two laptops in different department and help improve the performance in different departments. Also notably this could be a way of identifying cultural differences if the research would to be expanded to other countries as well to see how well other employees with different cultural backgrounds find the use of two different laptops in their everyday work and

how it contributes to the general experience of technostress globally in the case organization.

The case organization could also benefit from continuing to research how teleworking impacts the efficiency of the employees and their performance. As this research showed that some had proper equipment to work with two laptops from home and others did not, this could be something worth exploring as it might have an impact on the overall performance of the employees. Combined with this the performance could also be measured by comparing the laptop sizes the employees are using and how the laptops differ from each other and how his impacts the employee's ability to conduct their tasks.

As this interview was only conducted by a single round of interviews, it could be of interest to conduct similar interviews after 5-10 years if the same employees were to still be employed in the organization. Would the working conditions and tasks still remain the same after 5 years it would be interesting to see if the responses would be different from the same employees. In addition to interviewing the same employees it could bring up interesting new findings if the same research were to be conducted by including new interviewees to see if time and operating with two laptops would have changed in the future or if any differences in responses could be found.

Another important and what could be considered a new viewpoint for the research is comparing the findings of the interviews conducted during the empirical study with the efficiency of each interviewee. This could prove that depending on the employee's personal technostress level how much does it affect the efficiency at work. Also, a notable aspect would be either the lack of proper training and support or the employee's personal qualifications for the job. This could however result in a lack of responses as the questionnaire could not be conducted anonymously. But by conducting the research un-anonymously it would be of more value to the managers and other supporting roles in the company. These are all mainly possible research questions and types for the future.

6.6 Limitations

Based on the findings in previous research, technostress and its appearance in different context has already been studied widely. The added complexity of the empirical study in this thesis is created by the environment where two different IT devices are used every day, and this created an interesting environment for conducting the research. Limitations for this research are caused by the nature of the organization and the case study form of execution.

The research results cannot be generalized to the entire staff of the organization as the sample group represents only a small fraction of the whole organization. Also, the voice of the interviewees does not cover the whole Finish department as the representative group consisted of such a small representation of the department. In addition, the research results cannot be generalized to

people outside of this case organization without further research, as case study methods are only applicable directly to the research environment (Malterud, 2001).

This research covered only employees in a Finnish department of an international organization, so further research across countries and cultures would be necessary in order to see if the findings could be generalized to other countries as well. Krishan (2017) explains that technostress is influential of personality and cultural differences, so interviewing only a focus group of eight people from one culture does not give a comprehensive picture of the whole case organization across country borders.

Another limitation to the research is the researcher's relation to the interviewees. As the interviewees were familiar with the interviewer from before, this could have impacted the responses negatively even though openness was encouraged. Despite addressing the confidentiality of the interviews and encouraging free discussion, it is important to note that this might have caused some limitations to the research as the interviewer was familiar with the interviewees and the differences in the role positions might have impacted the candor of the interviewees. Also the researchers own personal view and interest on technostress could have impacted the results and might have resulted in different analysis of the findings compared to if someone else would have conducted this research. (Smithson, 2000). The findings of this research are thus only applicable to this specific thesis.

7 CONCLUSION

The aim of this thesis was to study closely on how working with two different laptops impacts the experiences of technostress within employees in a multi-organizational work environment. The goal was to understand how employees felt using two different laptops in their everyday work contributed to their experiences of technostress. The thesis consisted of a literature review and empirical research.

This thesis contributed to the current research by including the aspect of not just operating with different systems but with physically two different laptops from two different organizations. A similar type of multiorganizational work environment has not been included in technostress research to this day so therefore this research provided new valuable insight about technostress in a new research context.

The findings of the empirical research showed that employees forced to work with two different laptops at work experienced several different stressors such as interruptions, overlapping communication systems, difficulties in incident management and lack of workspace. The use of two different laptops created interruptions for the employees both mid-task and while conducting the task having to switch between two laptops. The findings also showed that the working conditions when teleworking had an impact on the employee well-being and performance if the employee did not have proper work equipment available at home to operate with two different laptops. Mitigation and coping methods for the employees of the case organization were similar to coping methods recognized in previous research of the subject.

Previous research explained in the literature review of this thesis showed that research has so far focused on individuals as well as bigger organizations and they have recognized that technostress is not a form of stress that will disappear in the future, but its incidence is more likely grow continuously. In previous research it has been found that role stress is impacted and increased by technostress and that the higher the role is within the company, the higher is the level of experienced technostress. To help mitigate the effects of technostress for example venting has been found as a good solution as well as the organizational

support on the individuals work on creating an own strategy to cope with the effects of technostress.

The findings in this thesis showed that the employees face different types of stressors contributing to the experienced technostress and that the complexity of the employee's role also adds to the ways the employee experiences stress caused by the used technology in a multiorganizational work environment. The employees working in the higher-level roles had more experience in handling stressful situations, which showed that experience gained in the roles helped with the mitigation of technostress. This showed that even though previous research has identified that as the role complexity increases so does the level of technostress, in this research the skills in handling technostress related stressors are better as the role level increases. This information could be of value when continuing research about technostress and role related stress.

Both hardware and software related stressors contributed to the buildup of technostress amongst the employees interviewed for this thesis. Consistency, frequent use and training play a significant role in mitigating the effect of technostress when using two laptops. However, the research also showed that the use of two devices provided more screen space to employees when teleworking if they did not have access to extra screens at home. In addition to this, using two laptops helped the low-level role employees differentiate between the two different organizations more clearly in comparison to having to use every system on just one device. Understandably working with two different laptops cause the employees more interruptions and require IT skills to handle both laptops, but despite the many negative findings in this research it is also noteworthy that using two laptops had some positive consequences for the employees.

The findings of this thesis confirmed the findings of previous studies as the employees of the case organization showed symptoms of technostress and also identified measures that helped them cope with the strain of having to use two laptops. In addition, the findings of this thesis showed signs that the higher leveled roles were able to cope with technostress differently than employees in lower roles giving new insight on the roles stress research so far.

The findings of this research are not directly applicable to other contexts than this thesis, but the limitations such as the size of the sample group and the qualitative research method used for this thesis provide new research opportunities in comparing the findings of this thesis to similar work environments or even environments, where only one laptop is used. Continuing the research in the same case company would also mean that new mitigation and coping methods could be identified between the different departments making it possible for the organization to enhance the well-being of their employees.

In conclusion technostress is largely covered in publications and research and has been identified as a form of stress from the turn of the millennium. Even though the subject is popular and there is already plenty of research, all research so far has identified the possibilities this subject offers for conducting further research. Due to the versatile nature of stress and technostress and its ties to the

surroundings and roles, it is possible to still find new areas of research to support the current findings and expand the current views on the subject.

REFERENCES

Adams, W. C. (2015). Conducting semi-structured interviews. *Handbook of practical program evaluation*, *4*, 492-505.

Adu-Oppong, A. A., & Agyin-Birikorang, E. (2014). Communication in the workplace: Guidelines for improving effectiveness. *Global journal of commerce & management perspective*, *3*(5), 208-213.

Ahmad, U. N. U., Amin, S. M., & Ismail, W. K. W. (2012). The relationship between technostress creators and organisational commitment among academic librarians. *Procedia-Social and Behavioral Sciences*, *40*, 182-186.

Andrade, C., & Petiz Lousã, E. (2021). Telework and Work–Family Conflict during COVID-19 Lockdown in Portugal: The Influence of Job-Related Factors. *Administrative Sciences*, *11*(3), 103.

Atanasoff, L., & Venable, M. A. (2017). Technostress: Implications for adults in the workforce. *The career development quarterly*, *65*(4), 326-338.

Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological Antecedents and Implications. *MIS Quarterly*, *35*(4), 831–858.

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: taking stock and looking forward. *Journal of occupational health psychology*, *22*(3), 273.

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of educational psychology*, *99*(2), 274.

Barber, L. K., and Santuzzi, A. M. (2015). Please respond ASAP: Workplace telepressure and employee recovery. *Journal of Occupational Health Psychology*, 20(2), 172–189.

Barley, S. R., Meyerson, D. E., & Grodal, S. (2011). E-mail as a source and symbol of stress. *Organization Science*, *22*(4), 887-906.

Becker, B. E., Huselid, M. A. (1998). High performance work systems and firm performance: A synthesis of research and managerial implications. *Research in personnel and human resource management*, *16*, 53-101

Beckers, D. G., van der Linden, D., Smulders, P. G., Kompier, M. A., van Veldhoven, M. J., & van Yperen, N. W. (2004). Working overtime hours: relations with fatigue, work motivation, and the quality of work. *Journal of Occupational and Environmental Medicine*, 1282-1289.

Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The case research strategy in studies of information systems. *MIS quarterly*, 369-386.

Bharadwaj, A. S. (2000). A resource-based perspective on information technology capability and firm performance: an empirical investigation. *MIS quarterly*, 169-196.

Bienertova-Vasku, J., Lenart, P., & Scheringer, M. (2020). Eustress and distress: neither good nor bad, but rather the same?. *Bioessays*, *42*(7), 1900238.

Brinkmann, S. (2014). Unstructured and semi-structured interviewing. *The Oxford handbook of qualitative research*, 277-299.

Brod, C. (1984) *Technostress: The Human Cost of the Computer Revolution.* Reading, Mass: Addison Weslety, 1984.

Brulé, G., & Morgan, R. (2018). Working with stress: Can we turn distress into eustress. *Journal of Neuropsychology & Stress Management*, *3*, 1-3.

Buomprisco, G., Ricci, S., Perri, R., & De Sio, S. (2021). Health and telework: new challenges after COVID-19 pandemic. *European Journal of Environment and Public Health*, *5*(2), em0073.

Böckerman, P., & Ilmakunnas, P. (2012). The job satisfaction-productivity nexus: A study using matched survey and register data. *Ilr Review*, *65*(2), 244-262.

Caesens, G., & Stinglhamber, F. (2014). The relationship between perceived organizational support and work engagement: The role of self-efficacy and its outcomes. *European Review of Applied Psychology*, *64*(5), 259-267.

Califf, C. B., Sarker, S., & Sarker, S. (2020). The Bright and Dark Sides of Technostress: A Mixed-Methods Study Involving Healthcare IT. *MIS Quarterly* (MISQ).

Carnevale, J. B., & Hatak, I. (2020). Employee adjustment and well-being in the era of COVID-19: Implications for human resource management. *Journal of Business Research*, *116*, 183-187.

Chandra, S., Shirish, A., & Srivastava, S. C. (2019). Does technostress inhibit employee innovation? Examining the linear and curvilinear influence of technostress creators. *Communications of the Association for Information Systems*, *44*(1), 19.

Chen, C. (2017). Science Mapping: A Systematic Review of the Literature. *Journal of Data and Information Science Vol*, *2*(2).

Çoklar, A. N., & Sahin, Y. L. (2011). Technostress levels of social network users based on ICTs in Turkey. *European Journal of Social Sciences*, *23*(2), 171-182.

Connelly, C. E., Ford, D. P., Turel, O., Gallupe, B., & Zweig, D. (2014). 'I'm busy (and competitive)!'Antecedents of knowledge sharing under pressure. *Knowledge Management Research & Practice*, *12*(1), 74-85.

Connelly, C. E., Zweig, D., Webster, J., & Trougakos, J. P. (2012). Knowledge hiding in organizations. *Journal of organizational behavior*, *33*(1), 64-88.

Cooper, C. L., Cooper, C. P., Dewe, P. J., Dewe, P. J., O'Driscoll, M. P., & O'Driscoll, M. P. (2001). *Organizational stress: A review and critique of theory, research, and applications*. Sage publications, Inc.

Crawford, E. R., LePine, J. A., and Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology*, 95(5), 834–848.

Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC medical research methodology*, *11*(1), 1-9.

Drapeau, A., Marchand, A., & Beaulieu-Prévost, D. (2012). Epidemiology of psychological distress. *Mental illnesses-understanding, prediction and control*, *69*(2), 105-106.

Edwards, J. R., & Cooper, C. L. (2013). The person-environment fit approach to stress: Recurring problems and some suggested solutions. *From Stress to Wellbeing Volume 1* (pp. 91-108). Palgrave Macmillan, London.

Fichman, R. G., & Kemerer, C. F. (1999). The illusory diffusion of innovation: An examination of assimilation gaps. *Information systems research,* 10(3), 255-275.

Friedl, J., & Verčič, A. T. (2011). Media preferences of digital natives' internal communication: A pilot study. *Public Relations Review*, *37*(1), 84-86.

Galluch, P. S., Grover, V., & Thatcher, J. B. (2015). Interrupting the workplace: Examining stressors in an information technology context. *Journal of the Association for Information Systems*, *16*(1), 2.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, *8*(4), 597-607.

Grawemeyer, B., & Johnson, H. (2011). Using and managing multiple passwords: A week to a view. *Interacting with computers*, *23*(3), 256-267.

Greer, T. W., & Payne, S. C. (2014). Overcoming telework challenges: Outcomes of successful telework strategies. *The Psychologist-Manager Journal*, *17*(2), 87.

Hackler, D., & Saxton, G. D. (2007). The strategic use of information technology by nonprofit organizations: Increasing capacity and untapped potential. *Public administration review*, *67*(3), 474-487.

Hakanen, J. (2018). *Työn imu*, Tampere: Työterveyslaitos.

Halcomb, E. J., & Davidson, P. M. (2006). Is verbatim transcription of interview data always necessary? *Applied nursing research*, *19*(1), 38-42.

Hirsjärvi, S., & Hurme, H. (2008). *Tutkimushaastattelu: teemahaastattelun teoria ja käytäntö.* Helsinki: Gaudeamus

Hollway, W., & Jefferson, T. (2008). The free association narrative interview method. In Given, L. (ed.) *The SAGE Encyclopedia of Qualitative Research Methods*, pp. 296–315, California: Sage

Hove, S. E., & Anda, B. (2005). Experiences from conducting semi-structured interviews in empirical software engineering research. In *11th IEEE International Software Metrics Symposium (METRICS'05)*, 10-23.

Hsiao, K. L. (2017). Compulsive mobile application usage and technostress: the role of personality traits. *Online Information Review*.

Hsu, Y. Y., Bai, C. H., Yang, C. M., Huang, Y. C., Lin, T. T., & Lin, C. H. (2019). Long hours' effects on work-life balance and satisfaction. *BioMed research international*, *2019*.

IBM. (2021). How much would a data breach cost your business? Retrieved from https://www.ibm.com/security/data-breach May 18th, 2022

Ioannou, A. and Papazafeiropoulou, A. (2017). Using IT Mindfulness to Mitigate the Negative Consequences of Technostress. *AMCIS.*

Johnston, H. R., & Vitale, M. R. (1988). Creating competitive advantage with interorganizational information systems. *MIS quarterly*, 153-165.

Kaplan, B., & Maxwell, J. A. (2005). Qualitative research methods for evaluating computer information systems. In *Evaluating the organizational impact of healthcare information systems* (pp. 30-55). Springer, New York, NY.

Keller, A., Litzelman, K., Wisk, L. E., Maddox, T., Cheng, E. R., Creswell, P. D. and Witt, W. P. (2012). Does the perception that stress affects health matter? *The association with health and mortality. Health Psychology,* 31(5), 677.

Kemeny, M. E. (2003). The psychobiology of stress. *Current directions in psychological science*, *12*(4), 124-129.

Keyton, J. (2017). Communication in organizations. Annual Review of Organizational Psychology and Organizational Behavior, 4, 501-526.

Kim, D. G., & Lee, C. W. (2021). Exploring the roles of self-efficacy and technical support in the relationship between techno-stress and counter-productivity. *Sustainability*, *13*(8), 4349.

Korzynski, P., Rook, C., Treacy, E. F., & de Vries, M. K. (2020). The impact of self-esteem, conscientiousness and pseudo-personality on technostress. *Internet Research*.

Krishnan, S. (2017). Personality and espoused cultural differences in technostress creators. *Computers in Human Behavior*, *66*, 154-167.

Kumar, R., Lal, R., Bansal, Y., & Sharma, S. K. (2013). Technostress in relation to job satisfaction and organisational commitment among IT professionals. *International Journal of Scientific and Research Publications*, *3*(12), 1-3.

Lacity, M. C., Khan, S. A., & Willcocks, L. P. (2009). A review of the IT outsourcing literature: Insights for practice. *The journal of strategic information systems*, *18*(3), 130-146.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.

La Torre, G., De Leonardis, V., & Chiappetta, M. (2020). Technostress: how does it affect the productivity and life of an individual? Results of an observational study. *Public Health*, *189*, 60-65.

Lee, S. B., Lee, S. C., & Suh, Y. H. (2016). Technostress from mobile communication and its impact on quality of life and productivity. *Total Quality Management & Business Excellence*, *27*(7-8), 775-790.

Le Fevre, M., Matheny, J., & Kolt, G. S. (2003). Eustress, distress, and interpretation in occupational stress. *Journal of managerial psychology*.

Levina, N., & Vaast, E. (2008). Innovating or doing as told? Status differences and overlapping boundaries in offshore collaboration. *MIS quarterly*, 307-332.

Lunenburg, F. C. (2010). Communication: The process, barriers, and improving effectiveness. *Schooling*, *1*(1), 1-10.

Madsen, I. E., Nyberg, S. T., Hanson, L. M., Ferrie, J. E., Ahola, K., Alfredsson, L., ... & IPD-Work Consortium. (2017). Job strain as a risk factor for clinical depression: systematic review and meta-analysis with additional individual participant data. *Psychological medicine*, *47*(8), 1342-1356.

Maier, C., Laumer, S., Wirth, J. & Weitzel, T. (2019) Technostress and the hierarchical levels of personality: a two-wave study with multiple data samples, European Journal of Information Systems, 28:5, 496-522

Malterud, K. (2001). Qualitative research: standards, challenges, and guidelines. *The lancet*, *358*(9280), 483-488.

Marchiori, D. M., Mainardes, E. W., & Rodrigues, R. G. (2019). Do individual characteristics influence the types of technostress reported by workers?. *International Journal of Human–Computer Interaction*, *35*(3), 218-230.

Mark, G., Gonzalez, V. M., & Harris, J. (2005). No task left behind? Examining the nature of fragmented work. In *Proceedings of the SIGCHI conference on Human factors in computing systems*, 321-330

McGrath, C., Palmgren, P. J., & Liljedahl, M. (2019). Twelve tips for conducting qualitative research interviews. *Medical teacher*, *41*(9), 1002-1006.

McIntosh, M. J., & Morse, J. M. (2015). Situating and constructing diversity in semi-structured interviews. *Global qualitative nursing research*, *2*, 2333393615597674.

McLellan, E., MacQueen, K. M., & Neidig, J. L. (2003). Beyond the qualitative interview: Data preparation and transcription. *Field methods*, *15*(1), 63-84.

Men, L. R. (2014). Strategic internal communication: Transformational leadership, communication channels, and employee satisfaction. *Management communication quarterly*, *28*(2), 264-284.

Miller, M. (2008). Cloud computing: Web-based applications that change the way you work and collaborate online. Que publishing.

Molino, M., Ingusci, E., Signore, F., Manuti, A., Giancaspro, M.L., Russo, V., Zito, M. and Cortese, C.G. (2020). Wellbeing costs of technology use during Covid-19 remote working: An investigation using the Italian translation of the technostress creators scale. *Sustainability*, *12*(15), 5911.

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International journal of qualitative methods*, *1*(2), 13-22.

Myers, M. D. (2019). *Qualitative research in business and management*. California: Sage.

Myers, M. D., & Newman, M. (2007). The qualitative interview in IS research: Examining the craft. *Information and organization*, *17*(1), 2-26.

Neale, P., Thapa, S., & Boyce, C. (2006). *Preparing a case study: A guide for designing and conducting a case study for evaluation input*. Watertown: Pathfinder international.

Nielsen, K., & Taris, T. W. (2019). Leading well: Challenges to researching leadership in occupational health psychology–and some ways forward. *Work & Stress*, *33*(2), 107-118.

Palmer, S., Cooper, C., & Thomas, K. (2003). Revised model of organisational stress for use within stress prevention/management and wellbeing programmes—Brief update. *International Journal of Health Promotion and Education*, *41*(2), 57-58.

Panisoara, I. O., Lazar, I., Panisoara, G., Chirca, R., & Ursu, A. S. (2020). Motivation and continuance intention towards online instruction among teachers during the COVID-19 pandemic: The mediating effect of burnout and technostress. *International Journal of Environmental Research and Public Health*, *17*(21), 8002.

Phillips, S. J., Dudík, M., Elith, J., Graham, C. H., Lehmann, A., Leathwick, J., & Ferrier, S. (2009). Sample selection bias and presence-only distribution models: implications for background and pseudo-absence data. *Ecological applications*, *19*(1), 181-197.

Pirkkalainen, H., Salo, M., Makkonen, M. and Tarafdar, M. (2017). Coping with Technostress: When Emotional Responses Fail. In *ICIS 2017: Proceedings the 38th International Conference on Information Systems*.

Pirkkalainen, H., Salo, M., Tarafdar, M., & Makkonen, M. (2019). Deliberate or instinctive? Proactive and reactive coping for technostress. *Journal of Management Information Systems*, *36*(4), 1179-1212.

Potter, J., & Hepburn, A. (2005). Qualitative interviews in psychology: Problems and possibilities. *Qualitative research in Psychology*, *2*(4), 281-307.

Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual

development and empirical validation. *Information systems research*, *19*(4), 417-433.

R Richards, K. A., Washburn, N. S., & Hemphill, M. A. (2019). Exploring the influence of perceived mattering, role stress, and emotional exhaustion on physical education teacher/coach job satisfaction. *European Physical Education Review*, *25*(2), 389-408.

Salanova, M., Llorens, S., & Cifre, E. (2013). The dark side of technologies: Technostress among users of information and communication technologies. *International journal of psychology*, *48*(3), 422-436.

Salo, M., Makkonen, M., & Hekkala, R. (2020). The interplay of IT users' coping strategies: Uncovering momentary emotional load, routes, and sequences. *MIS Quarterly*, *44*(3).

Salo, M., Pirkkalainen, H., & Koskelainen, T. (2019). Technostress and social networking services: Explaining users' concentration, sleep, identity, and social relation problems. *Information Systems Journal*, *29*(2), 408-435.

Saunders, B., Kitzinger, J., & Kitzinger, C. (2015). Anonymising interview data: Challenges and compromise in practice. *Qualitative Research*, *15*(5), 616-632.

Sellberg, C., & Susi, T. (2014). Technostress in the office: a distributed cognition perspective on human–technology interaction. *Cognition, Technology & Work*, *16*(2), 187-201.

Shadbad, F. N., & Biros, D. (2021). Does Technostress Trigger Insider Threat? A Conceptual Model and Mitigation Solutions. *Information Technology in Organisations and Societies: Multidisciplinary Perspectives from AI to Technostress*.

Shu, Q., Tu, Q., & Wang, K. (2011). The impact of computer self-efficacy and technology dependence on computer-related technostress: A social cognitive theory perspective. *International Journal of Human-Computer Interaction*, *27*(10), 923-939.

Smithson, J. (2000). Using and analysing focus groups: limitations and possibilities. *International journal of social research methodology*, *3*(2), 103-119.

Solomon, M. R., Surprenant, C., Czepiel, J. A., & Gutman, E. G. (1985). A role theory perspective on dyadic interactions: the service encounter. *Journal of marketing*, *49*(1), 99-111.

Srivastava, S. C., Chandra, S., & Shirish, A. (2015). Technostress creators and job outcomes: theorising the moderating influence of personality traits. *Information Systems Journal*, *25*(4), 355-401.

Stana, R., & Nicolajsen, H. W. (2021, January). A Cautionary Tale: How Co-Constructed Work Obligations Lead to ICT-Related Technostress. In *Proceedings of the 54th Hawaii International Conference on System Sciences* (p. 6631).

Stich, J. F., Tarafdar, M., Cooper, C. L., & Stacey, P. (2017). Workplace stress from actual and desired computer-mediated communication use: a multi-method study. *New Technology, Work and Employment*, *32*(1), 84-100.

Tadić Vujčić, M., Oerlemans, W. G., & Bakker, A. B. (2017). How challenging was your work today? The role of autonomous work motivation. *European Journal of Work and Organizational Psychology*, *26*(1), 81-93.

Taideteollinen Korkeakoulu, Virtuaaliyliopisto: Tuotetiede - Kyselevät tutkimustavat (n. d.) Retrieved May 8, 2022, from http://www2.uiah.fi/virtu/materiaalit/tuotetiede/html_files/1364_empiir.html#teemahaas

Tams, S., Thatcher, J. B., & Grover, V. (2018). Concentration, competence, confidence, and capture: An experimental study of age, interruption-based technostress, and task performance. *Journal of the Association for Information Systems*, *19*(9), 2.

Tarafdar, M., Cooper, C. L., & Stich, J. F. (2019). The technostress trifecta-techno eustress, techno distress and design: Theoretical directions and an agenda for research. *Information Systems Journal*, *29*(1), 6-42.

Tarafdar, M., Maier, C., Laumer, S., & Weitzel, T. (2020). Explaining the link between technostress and technology addiction for social networking sites: A study of distraction as a coping behavior. *Information Systems Journal*, *30*(1), 96-124.

Tarafdar, M., Pirkkalainen, H., Salo, M., & Makkonen, M. (2020). Taking on the "Dark Side"––Coping With Technostress. *IT Professional*, *22*(6), 82-89.

Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. S. (2015). Technostress: negative effect on performance and possible mitigations. *Information Systems Journal*, *25*(2), 103-132.

Tarafdar, M., Tu, Q., & Ragu-Nathan, T. S. (2010). Impact of technostress on end-user satisfaction and performance. *Journal of management information systems*, *27*(3), 303-334.

Tarafdar, M., Tu, Q., Ragu-Nathan, T. S., & Ragu-Nathan, B. S. (2011). Crossing to the dark side: examining creators, outcomes, and inhibitors of technostress. *Communications of the ACM*, *54*(9), 113-120.

Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of management information systems*, *24*(1), 301-328.

Taskin, L., & Bridoux, F. (2010). Telework: a challenge to knowledge transfer in organizations. *The International Journal of Human Resource Management*, *21*(13), 2503-2520.

Valta, M., Pflügner, K., & Maier, C. (2021, January). Guiding companies to reduce technostress: A mixed-methods study deriving practice-oriented

recommendations. In *Proceedings of the 54th Hawaii International Conference on System Sciences* (p. 6275).

Vogel, J., Auinger, A., & Riedl, R. (2019). Cardiovascular, neurophysiological, and biochemical stress indicators: a short review for information systems researchers. *Information systems and neuroscience*, 259-273.

Wang, K., Shu, Q., & Tu, Q. (2008). Technostress under different organizational environments: An empirical investigation. *Computers in human behavior*, *24*(6), 3002-3013.

Weatherbee, T. G. (2010). Counterproductive use of technology at work: Information & communications technologies and cyberdeviancy. *Human Resource Management Review*, *20*(1), 35-44.

Weinert, C., Maier, C., Laumer, S., & Weitzel, T. (2020). Technostress mitigation: an experimental study of social support during a computer freeze. *Journal of Business Economics*, *90*(8), 1199-1249.

Workman, M. (2005). Virtual team culture and the amplification of team boundary permeability on performance. *Human Resource Development Quarterly*, *16*(4), 435-458.

APPENDIX 1 INTERVIEW STRUCTURE

Background information:
Age
Overall work experience in years
Work experience in years in the case company
Highest form of education
Job title

Semi structured interview
Themes: Using two laptops, The workload of two laptops and remote work and Mitigation

THEME 1 - Using two laptops
How often during work do you use you laptops?
How often do you experience interruptions during your work day because you have to switch between two devices?
How do the interruptions impact your work?
Do you experience the interruptions as overloading or disturbing?

THEME 2 - The workload of two laptops and remote work
Do you feel that the number of devices to work with impact the feeling of workload?
Do you feel that working remotely with two devices is more difficult?
Do you see differences in working with two devices when working remotely or at the office? (Can the interviewee tell about the differences by themselves or do they initiate the conversation)
Do you feel that working with two laptops affects your coping with work? In what ways?
Do you notice that the effects of using two devices are reflected in your freetime?
Would working with only one device mitigate the strain of work?

THEME 3 - Mitigation:
What type of days cause more stress or strain and how do you cope with these days?
What measure do you use to mitigate the possible strain caused by working with two laptops?
What do you do in your spare time to mitigate work stress?

Depending on the role and the interviewees answers the questions might differ.