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JOB DEMANDS AND RESOURCES OF MULTI-PROJECT WORK

Master's thesis for the degree of Master of Science in Technology submitted for inspection, Espoo, 26 September 2016.

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Abstract of master's thesis

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Abstract

Changes in work life have resulted in an increasing amount of multiple team membership in organization. Despite the increase, the effects of multiple team membership have been studied very little, since most research expects people to work only in one team simultaneously. This subject presents a clear need for more research.

In this thesis, I have chosen to study the effects of multiple team membership from the employees' point of view. Since majority of previous studies think of multiple team membership as a demand, I have focused on investigating whether it can have positive effects. I have also investigated if different work roles can change the way the effects of multiple team membership are perceived.

I used 44 interviews from two companies to gain understanding on how employees feel about multiple team membership. All interviews were recorded and transcribed for enabling qualitative analysis on the matter. I used the Job Demands-Resource model to analyse the effects of multi-project work.

My findings suggest that multiple team membership can be seen as both, demand and resource. I also found that work role can affect on whether an effect of multiple team membership is perceived as a demands or a resources. Especially the interruptions caused by multiple team membership were seen differently between different work roles. Team members involved in development work felt negatively about the interruptions, because the interruptions prevented their normal development work from continuing. On the other hand, team leaders who were responsible of communication between teams felt that multiple team membership opened new communication possibilities and kept the workday interesting. Therefore, they felt positively about the interruptions.

Keywords MTM, multiple team membership, multi-project work, Job Demands-Resource model, work role

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Tiivistelmä

Muutokset työelämässä ovat johtaneet siihen, että työpaikoilla esiintyy entistä enemmän monitiimityötä. Tästä kasvusta huolimatta, monitiimityön vaikutuksia on tutkittu hyvin vähän, sillä suuri osa tutkimuksesta olettaa ihmisten työskentelevän vain yhdessä tiimissä kerrallaan. Tämä tuo esille selvän tarpeen jatkotutkimukselle.

Tässä työssä olen tutkinut monitiimityötä työntekijän näkökulmasta. Koska aikaisempi tutkimus suurelta osin olettaa monitiimityön olevan vaatimus, päätin itse keskittyä etsimään sen mahdollisia positiivisia puolia. Tutkin myös, pystyykö työrooli vaikuttamaan siihen, miten monitiimityön vaikutukset koetaan.

Käytin työssäni 44 haastattelua kahdelta eri yritykseltä, ymmärtääkseni miten työntekijät suhtautuvat monitiimityöhön. Kaikki haastattelut nauhoitettiin ja litteroitiin, jotta aiheesta oli mahdollista tehdä laadullinen analyysi. Työn vaikutusten analysointiin käytin työn vaatimusten-voimavarojen mallia.

Työni tulokset viittaavat siihen, että monitiimityö voidaan kokea sekä vaatimuksena että resurssina. Havaitsin myös, että työrooli vaikutti siihen, koettiinko monitiimityön aiheuttama vaikutus vaatimuksena vai voimavarana. Erityisesti monitiimityön aiheuttamat keskeytykset koettiin eri tavalla eri roolien kesken. Kehitystyötä tekevien tiimin jäsenten kesken keskeytykset koettiin negatiivisina, sillä ne estivät heidän normaalia kehitystyötään etenemästä. Sen sijaan eri tiimien välisestä kommunikaatiosta vastaavat tiiminvetäjät kokivat, että monitiimityö avasi heille uusia kommunikaatiomahdollisuuksia sekä piti työpäivän mielenkiintoisena. He siis kokivat keskeytykset positiivisina.

Avainsanat monitiimityö, moniprojektityö, työn vaatimusten ja voimavarojen malli, työrooli

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Espoo, September 2016

Anne Haavisto

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1 Introduction

1.1 Background

This study has been made in collaboration with the research group "Work Psychology and Leadership" at Aalto University School of Science. The study is a part of an ongoing research program called Match Design that has been funded by Tekes. This research program studies collaborative designs for value creation beyond boundaries.

As organizations develop, the amount of multiple team membership (MTM) has increased especially among knowledge workers. In Europe and the United States 65-95% of knowledge workers in several industries and occupations are simultaneously members in more than one team (O'Leary, Mortensen & Woolley, 2011). Multiple team membership is a form of work, where an organization consists of individuals who are simultaneously members of two or more teams for a given period of time.

Most studies assume that employees work for one team at a time. Therefore, MTM has been studied relatively little. MTM has been mainly seen as a demand in work life and previous studies claim that MTM causes time management problems and disturbances at work. "Our findings indicated that MTM was perceived as a job demand. Specifically, as members had to distribute their time more equally over a number of teams, they experienced their work as more demanding in terms of teamwork but not taskwork." (Pluut, Flestea, & Curşeu, 2014, p. 343).

1.2 Purpose of the study

Instead of looking at MTM as a single demand or a single resource, this study focuses on looking inside the MTM and the outcomes it causes. This study examines these matters and whether they are perceived as demands or resources.

The purpose of this study was to take a deeper look into MTM and see if there are some potential benefits to its effects. This study also explores the effects of MTM from the viewpoint of different work roles and whether multiple team membership is experienced differently between these roles. These two concepts provide the research questions for this study. Some interesting findings show that MTM cannot be interpreted as simply as previous studies imply.

This study reviews the context of MTM through the Job Demands-Resource (JD-R) model that provides us tools for examining the different work characteristics. Although the JD-R model has been used in various studies, it has not been applied in the MTM context.

1.3 The structure of the thesis

The next chapter of this thesis presents the theoretical background for the research. The two sections in theoretical background introduce the Job Demands-Resources (JD-R) model that gives us the base for evaluating job characteristics, and previous studies concerning MTM, which is the context in this study. These two subjects present the framework for this thesis. Third chapter describes the research methods and data collected in this study and the fourth chapter presents the findings. Finally, the last chapter concludes the findings with the previous studies and makes suggestions for future research.

2 Theoretical framework

This section represents the theory that this study has been based on. I will first introduce the JD-R model, which gives the basics to evaluating work. Next, I will present MTM, which is the context that I have focused on this study.

2.1 Job Demands-Resources model

The Job Demands–Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner & Schaufeli, 2001) is a job characteristics model that allows us to evaluate work. Every profession has these characteristics that have an effect on employee well-being. The main idea of the JD-R model is that the model assumes that regardless of the type of work, there are two types of these psychosocial work characteristics: job resources and job demands (Demerouti et al., 2001; Schaufeli & Bakker, 2004). Therefore, the JD-R model can be applied to multiple different professional settings regardless of the specific demands and resources involved (Hakanen & Roodt 2010; Schaufeli & Bakker, 2004).

Due to this assumption, the JD-R model has been tested in several occupational groups such as nurses (Demerouti, et al., 2001), home care professionals (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003), white-collar workers (Schaufeli & Bakker, 2004), blue-collar workers (Bakker, Demerouti, De Boer, & Schaufeli, 2003), call-center employees (Bakker, Demerouti, & Schaufeli, 2003) and teachers (Bakker, Demerouti, & Euwema, 2005; Hakanen, Bakker & Schaufeli, 2006). The JD-R model has also been tested in several different countries including Germany (Demerouti et al., 2001), the Netherlands (e.g., Bakker, Demerouti, DeBoer, &

Schaufeli, 2003; Schaufeli & Bakker, 2004), Spain (Salanova, Cifre, Grau, Llorens, & Martinez, 2005) and Finland (Hakanen, et al., 2006).

Also a simultaneous test of the JD-R model in different occupational samples from different countries has been made. Llorens, Bakker, Schaufeli and Salanova, (2006) concluded a study where they simultaneously applied the JD-R model to both different national and occupational contexts. They used two different ways to gather the data (computerized and paper and pencil), and to estimate the key variables of the model they used slightly different measures. The study showed that the basic structure of the JD–R model is maintained, even with all these differences between the participants (Llorens et al., 2006).

Based on the JD-R model, job demands include things that decrease well-being, such as workload and emotional demands. In contrast, job resources consist of things that promote well-being, such as task, autonomy and positive feedback. (Hakanen & Roodt 2010; Schaufeli & Bakker, 2004). In this study, I have used the JD-R model and both concepts: demands and resources as a basis to identifying whether employees felt negatively or positively about different topics concerning their daily work that arise from the interviews.

The JD-R model consists of two processes. If an employee has a job with high job demands, it consumes his or her physical and mental resources and can lead to health problems. This is called the health impairment process, which can drain energy and is mediated by burnout (Schaufeli & Bakker, 2004). On the other hand, if an employee has a job with good job resources, it promotes his or her engagement and performance at work. Engagement is also associated with other positive outcomes

like organizational commitment (Schaufeli & Bakker, 2004). This process is called the motivational process (Hakanen & Roodt 2010; Schaufeli & Bakker, 2004). These two processes are shown in Figure 1 below.

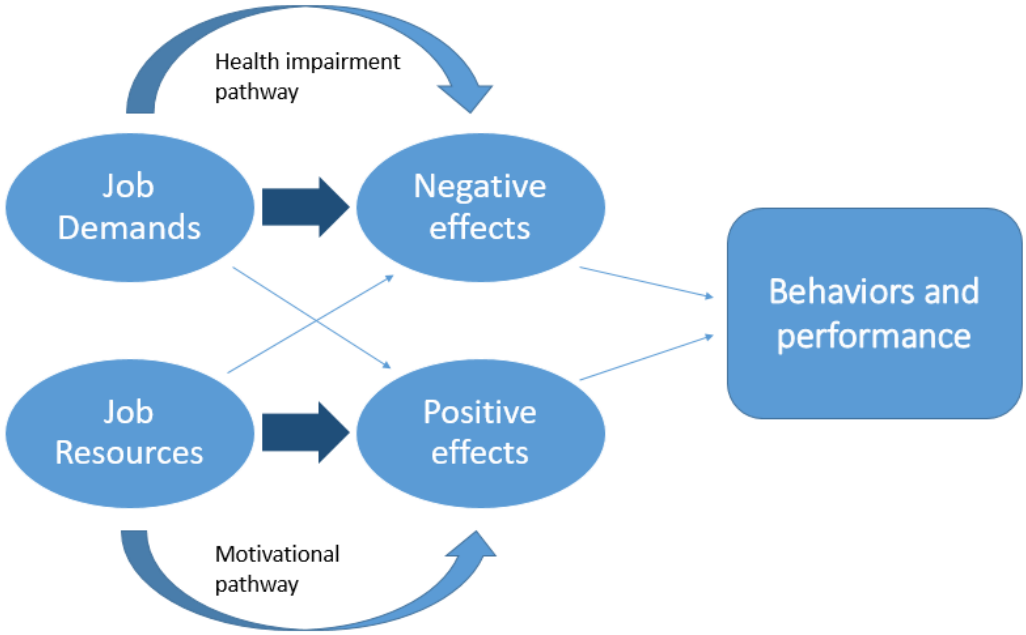

Figure 1 JD-R model (based on Demerouti, et al., 2001; Schaufeli & Bakker, 2004)

Empirical support has been found for both the motivational and the health impairment process. There is evidence that the level of work engagement is related to the amount of job resources (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Hakanen, Bakker, & Demerouti, 2005; Mauno, Kinnunen, & Ruokolainen, 2007). In addition, it has been found that work engagement has a mediating role between job resources and positive motivational outcomes. This has been shown in different studies by several different positive motivational outcomes including organizational commitment (Hakanen, et al., 2006; Llorens, et al., 2006), low turnover intention

(Schaufeli & Bakker, 2004) and personal initiative and work-unit innovativeness (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008). However, there is a limited amount of longitudinal support for the motivational process. Furthermore, there could be an indirect role for job demands in the motivational process, since burnout is also negatively related to organizational commitment (Hakanen et al., 2006; Schaufeli & Bakker, 2004).

Results from a multi-sample study made among employees from an insurance company and employees of occupational health and safety services by Schaufeli and Bakker (2004) indicate that burnout and engagement are negatively related. Therefore, people who feel engaged at work are not likely to suffer burnout. The study also suggests that burnout can be predicted mainly by job demands but also by the lack of job resources, while engagement can be predicted solely by available job resources. Health problems as well as to turnover intention are both related to burnout, whereas only the latter is related to engagement. burnout mediates the relationship between job demands and health problems, whereas engagement mediates the relationship between job resources and turnover intention.

The JD-R model has been further developed to match results from different studies. In the current version of the model, job demands have been divided into two types of demands; job hindrances and job challenges (Figure 2). Job hindrances are demands that may prevent individuals from achieving goals, personal growth or learning and therefore they still have negative impacts on well-being. The difference compared to the previous model is that not all demands have this negative impact. Job challenges are demands that can promote growth, mastery and future gains, therefore job

challenges can actually promote well-being and add job satisfaction together with correct job resources. (Crawford, LePine & Rich, 2010; Van den Broeck, De Cuyper, De Witte & Vansteenkiste, 2010.)

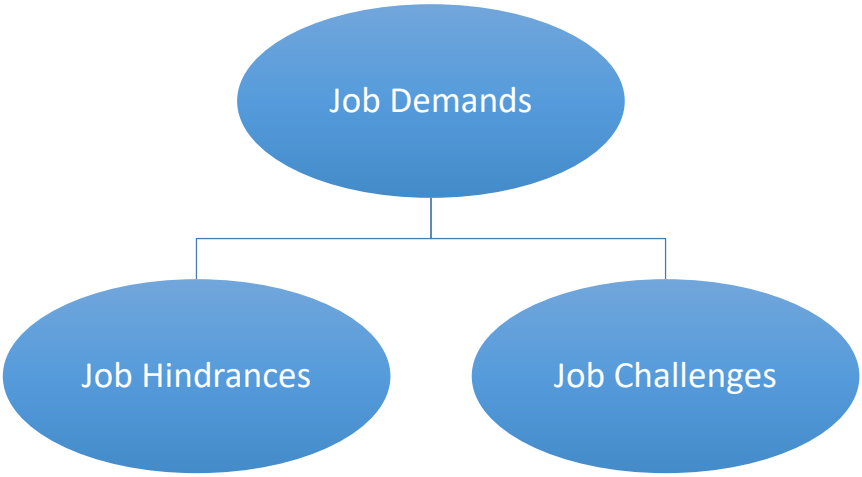

Figure 2 Job Demands divided into two categories (based on Crawford et al., 2010; Van den Broeck et al., 2010)

Challenges are mostly seen as stressful demands that can potentially promote mastery, personal growth, or future gains. Some examples of demands that are seen as challenges are a high workload, time pressure, and high levels of job responsibility. These demands are often perceived as opportunities to learn and achieve competences that tend to be rewarded. On the other hand, hindrances are usually seen as stressful demands that could potentially thwart personal growth, learning, and goal attainment. Role conflict, role ambiguity, organizational politics and red tape are examples of these demands that are seen as hindrances. These demands are often experienced as constraints, barriers, or roadblocks that unnecessarily hinder employees' progress toward goal attainment and rewards that come from being an effective performer. There is also a negative association between

engagement and these demands that employees tend to appraise as hindrances. Whereas, there is a positive association between engagement and the demands that employees tend to appraise as challenges. (Crawford et al., 2010.)

"Specifically, the present findings suggest that job hindrances need to be reduced, whereas job challenges must not necessarily be decreased, as they play, together with job resources, a key role in the enhancement of employees' vigour." (Van den Broeck et al., 2010, p. 22).

The JD-R theory also divides the job resources into three categories; social resources, organizational resources and individual resources (Figure 3). Social resources mean the social support received from managers and colleagues. Organizational resources consist of the organizational culture and the values and politics in the company. Individual resources come from individual's personality, competences and coping strategies. In addition to the good effects of these resources, the lack of correct resources can also lead to employee dissatisfaction. (Van den Broeck et al, 2010.)

Figure 3 Job Resources divided into three categories (based on Van den Broeck et al., 2010)

Evidence show that job resources can buffer the negative effects caused by job demands. Job resources such as social support from colleagues, autonomy, performance feedback and a high-quality relationship with the supervisor can have a buffering effect on the impact of overload on exhaustion. (Bakker et al. 2005.)

As said, the JD-R theory is closely related to employee engagement. Meaning that with good job resources and manageable job demands it is possible to make employees more engaged. Making investment in employee well-being also increases productivity, since employees who feel motivated are more likely to be productive. (Leiter & Bakker, 2010.) The other side of this is that high amount of demands with inadequate resources can cause burnout (Schaufeli & Bakker, 2004).

The fact that burnout and engagement exhibit different patterns of possible causes and consequences implies that different intervention strategies should be used when burnout is to be reduced or engagement is to be enhanced (Schaufeli & Bakker, 2004).

Another thing that is important in terms of engagement is the feeling of progress at work. Amabile and Kramer (2011) introduced the Progress Principle to explain the importance of progress. The main discovery of the Progress Principle is that people feel deeply engaged in their work when they feel that they are making progress and doing something meaningful. The principle also has a dark side. Meaning that when there are setbacks at work or it feels like there is no progress, people tend to feel less and less engaged. (Amabile & Kramer, 2011.) The interviews used in this thesis also pointed out the importance of progress and even more so the negative associations to being interrupted and its negative effects on progress.

The everyday actions of managers and co-workers have the biggest importance in this matter. A work environment that makes employees afraid to make mistakes does not support engagement. And low engagement can lead to less innovation and less success. On the other hand, an environment where mistakes are okay and human spirit is being nourished are the best for engagement. If managers encourage employees when the work is difficult and give them all the support they need, they have much better changes in succeeding. These actions have huge effect on work engagement. (Amabile & Kramer, 2011.)

Progress is key, but actions to support it are needed. Even the small wins in every day work can be really important. People want to success in meaningful work, they want to contribute and they want to matter. When they experience these, they are more engaged and therefore more productive and innovative. Supporting employees and their progress in their everyday work life is not difficult. The problem is that most managers are not aware of the importance on progress. Therefore, they do not encourage employees in their work. (Amabile & Kramer, 2011.)

When progress principle is combined with JD-R model, we can conclude that job demands are stressful because they can hinder progress. On the other hand, job resources help employees to progress in their work, which allows them to experience meaningfulness.

This thesis is, to a great extent, based on the JD-R model. This model was chosen specifically because it allows us to divide different work characteristics into demands and resources, based on their negative or positive effects on employees well-being at work. All the interviews in this thesis included questions about work conditions and

whether they had positive or negative effects to employees work day, therefore the JD-R model provided a good base for dividing these effects into two categories: demands and resources. Therefore, I used the JD-R model to develop the coding scheme in this study.

2.2 Multiple Team Membership

This thesis focuses on MTM and its effects on employees' workday. The whole idea of this study was to look for positive outcomes of MTM and see if there were issues that caused differing opinions and if so, then why.

"Changes in the organizational landscape increasingly call for collaborations that are fluid, externally-linked, and overlapping. Recombinant collaboration is a new perspective on collaboration that shifts focus away from thinking of collaborations as "groups of people" to regarding them as slices in an ongoing process through which a community mobilizes resources to perform concrete tasks in support of long-term objectives." (Mortensen, 2012, p. 26-27).

Due to the dynamism, competitiveness, and scope of work, organizations are forced to utilize teams with fluid and overlapping boundaries that are often disagreed upon (Mortensen, 2015). As a result, multiple team membership (MTM) is constantly increasing way to organize work. According to O'Leary, Woolley and Mortensen (2012) the amount of MTM among knowledge workers is 82%. There are several reasons for this trend.

Knowledge work economy values its workers for their expertise, and to improve productivity and learning, companies have organized work in a way that promotes

knowledge transfer and allows them to leverage their resources more effectively. Another thing that raises the possibility that people get asked to join multiple teams is that organizations have also become flatter and more geographically dispersed. Many companies try to maximize the usage of employee's time. Also the amount of project-based work, which requires individuals to take simultaneously part in more than one fluid short-term team, has increased. (Mortensen, Woolley & O'Leary, 2007; O'Leary, et al., 2011.)

Despite the huge amount of MTM today, we know very little about its effects. Not much research has been done concerning MTM, since most studies assume that individuals work for just one team, which is often an out dated assumption.

2.2.1 Multiple team membership as a resource

There are two competing views in the literature about MTM. The less supported view of MTM is called role accumulation perspective, which sees MTM as a job resource. This perspective looks MTM as an opportunity that can produce more resources, create larger supply for support and enables employees to avoid downtime. MTM can stimulate towards efficiency and even help with career development. According to this view, multiple roles can enhance employee's well-being. (Goode, 1960; Pluut, et al., 2014; Sieber, 1974.)

Some studies suggest that there are both organizational level and group level benefits to MTM. It can reduce organizational slack and help build social networks among employees. MTM can promote learning, when team members get to interact with different teams and projects. Also special expertise becomes affordable, when it is not necessary to employ new person full-time, but use one expert in several projects

simultaneously. MTM provides employees a wider view of the company and its different projects, possibly preventing redundant work in areas that can benefit from other projects. (Mortensen et al., 2007; O'Leary, Mortensen & Woolley, 2010; O'Leary et al. 2011.)

MTM is also related to better performance on individual as well as on team levels. A figure in the shape of an Inverted-U can be used to describe the relationship between multiple team membership and team performance. Meaning that lower performance is experienced by teams whose members are simultaneously engaged in few or many teams. (Bertolotti, Mattarelli, Vignoli & Macrì, 2015.) Chan (2014) also found empirical evidence to support for the Inverted-U shaped relationship between MTM and individual performance. An individual working in multiple project teams simultaneously encounters more diverse sources of ideas across all teams, which enhances his or her innovative performance. This curvilinear relationship is presented in Figure 4.

This curvilinear relationship suggests that when an individual is simultaneously involved in multiple project teams, his or her individual innovative performance will be higher at first. Nonetheless, the individual innovative performance will start to decrease after the individual's involvement goes beyond the optimal number of MTM (Chan, 2014).

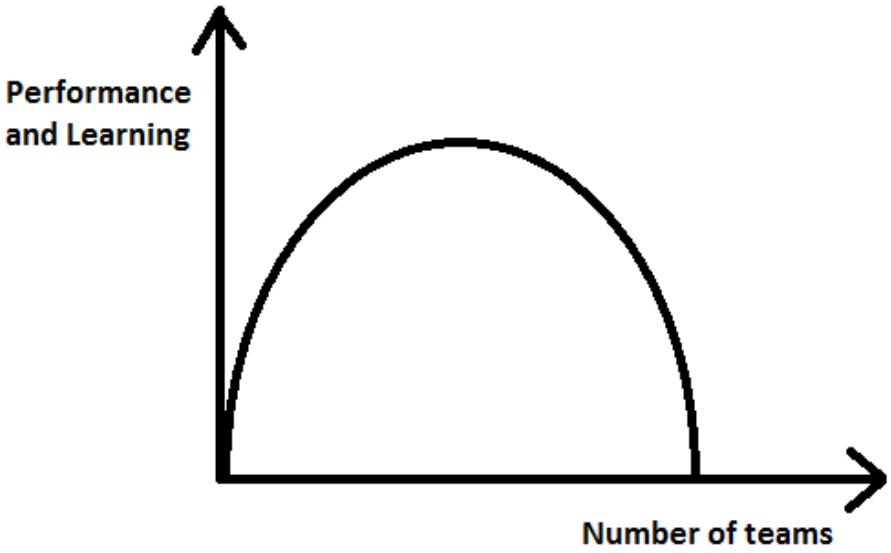

Figure 4 MTM & Performance - A curvilinear relationship (based on O'Leary et al. 2011, Chan, 2014)

O'Leary and colleagues (2011) present that the same curvilinear relationship that can be seen between MTM and performance is also relevant between MTM and learning (Figure 4). MTM allows individuals to learn from different teams, but too many teams likely cause overconsumption of switches and lead to insufficient time and energy to learn. (O'Leary et al., 2011.)

According to O'Leary and colleagues (2011) multiple team membership is used to enhance individual and team productivity and learning in organizations. However, the structure of MTM creates competing pressures on information and attention, which makes increasing both productivity and learning fairly difficult. Multiple team membership can enhance both productivity and learning, but only when the costs and benefits it causes are carefully managed. These benefits including productivity and

learning come with high expenses that cause fragmented attention and coordination overhead. (O'Leary et al., 2011.)

Learning increases when MTM provides individuals more information and stimulation. Teams benefit from diversity of experiences and uniqueness and organizations experience more information flows. When it comes to productivity, individuals experience efficiencies and load-balance. Whereas teams experience efficient work practices and organizations benefit from better use of resources. (O'Leary et al., 2010.)

2.2.2 Multiple team membership as a demand

The other and more supported view of MTM in the literature is the role strain perspective, which looks at MTM as a job demand. This perspective sees that multiple roles have negative effect on employee well-being due to things such as role conflict, time scarcity, lack of time to recover and stress. This view suggests that taking part in multiple roles is harmful to employee's well-being and can cause cognitive overload which hampers learning. (Goode, 1960; Pluut et al., 2014; Sieber, 1974.)

In addition to individual challenges, MTM also presents a challenge for leadership, when employees have different demands competing for their time. It is also difficult for leaders to control what is happening in other teams, since they are separate units with their own team leaders. (Zaccaro, Marks, & DeChurch, 2011.) There are also several challenges to MTM both on group level and organizational level. Scheduling and time management issues make MTM hard to difficult to coordinate. These conflicting demands cause constant competition on team members' time and

attention. Also delays in one project can affect other projects and estimating total effort of an individual and timing those efforts can be difficult. (Mortensen et al., 2007; O'Leary et al., 2010; O'Leary et al., 2011.)

As a downside for the benefits that come from MTM, there is a point after which the amount of MTM gets too high and the positive effects it provides on learning and productivity can be undermined. After this point individuals may receive too much information and not enough time to integrate it. Teams may have difficulties to integrating new team repertoires and organizations experience less diversity when it comes to information. This affects negatively on learning. Also productivity can decrease when individuals experience time loss, role conflict and overload. Teams may experience coordination costs and less synchronous work, and organizations may be too tightly coupled. (O'Leary et al. 2010.)

"As the number of MTM increases, the negative effect of task switching and fragmented attention will negatively impact on individual performance." (Chan, 2014, p. 76).

2.3 Studying multiple team membership demands and resources

MTM has been mainly seen as a demand and more importantly it has been studied as a singular matter. In this study, I have opened the effects of MTM into several outcomes and studied those outcomes separately. I do not attempt to determine whether MTM is a demand or a resource, but to divide it into smaller issues and examine whether they are perceived as negative or positive. I have used the JD-R model to evaluate outcomes of MTM that the employees have mentioned during their interviews. I created the coding scheme for this thesis based on the JD-R model, so

that I was able to divide outcomes of MTM into two categories: demands and resources.

In some previous studies MTM has been seen as a resource, which indicates that some of the outcomes it causes are positive. Therefore, it is likely that some benefits related to MTM can be seen from this set of data as well. Therefore, it can be assumed that the answer to my first research question whether there are possible benefits to MTM is yes. With the second research question there are no previous studies taking different work roles into consideration when studying MTM. Therefore, no assumptions can be made concerning this issue.

3 Research Design and methods

This study is a qualitative analysis of demands and resources of multi-project work. The aim of this analysis was to see if there are potential benefits to MTM and whether there is a difference on how people experience things. Therefore, the two research question in this study are:

1) What are the experienced benefits of working in multiple teams?
2) Can work roles make a difference in how some effects of multiple team membership are experienced?

The interviews that have been used in this study were conducted as a part of the Match Design research program in Aalto University. Two globally collaborating companies from two different industries such as software development and chemical technology were interviewed. These two companies were selected for this study based on their organizational structure that consists of MTM. In this chapter the research design and methods used in this study are described in more detail.

3.1 Data collection

Here I will explain how the companies and individuals were chosen for this study. I will also describe the content of the interviews. These interviews took place in autumn 2015 and the research group of Work Psychology and Leadership conducted them. The interviews were conducted as a part of an ongoing study concerning collaborative designs for value creation beyond boundaries. Due to the interview timetable, it was not possible to alter the interview structure based on the specific focus and interests of this thesis. Meaning that any risen questions or gaps in the research need to be studied separately in the future.

3.1.1 Companies

The companies involved in this study were chosen to be a part of the research due to their boundary-spanning activities. Meaning that the individuals working for these companies are crossing team, organizational and inter-organizational boundaries in their work. The companies were also interested in improving their collaboration practices through this research project. Both companies were globally working Finnish companies. For this Master's Thesis I chose these companies based on their involvement in multi-project work. Table 1 below shows the amount of people working in multiple teams in each company.

Table 1 The amount of MTM in each company

The amounts of people currently working in one or multiple teams						
Amount of teams that one person is involved in simultaneously	1 team	2 teams	3 teams	4 teams	5 teams	**Total number of employees**
SoftCo: amount of employees	34	15	27	18	19	113
ChemCo: amount of employees	12	47	37	4	8	108
Total	46	62	64	22	27	221

One of the chosen companies, ChemCo, is a global chemicals company that serves customers in water-intensive industries. The company provides expertise, application know-how and chemicals that enhance their customers' water, energy and raw

material efficiency. They focus on pulp & paper, oil & gas, mining and water treatment.

The other chosen company, SoftCo, is an international company that focuses on positioning-related technology for different industries. They also provide software solutions for advanced building information modeling and structural engineering.

From both of these companies there were two types of employees involved in this research; team members and team leaders.

3.1.2 Ground work for the interviews

The interviews were conducted in two phases. First some "context interviews" with the unit managers or the management team were conducted in order to decide which teams to involve in this study (Appendix 1). The companies themselves made the final decisions concerning which teams were taken along for this study. The decision was typically based on the managers wish to improve collaboration in these teams. Most of the groups also met the following two criteria that were relevant for our research:

1) Teams have global/virtual or inter-organizational collaboration
2) Team members preferably work in multiple projects (consisting of different members) simultaneously

The latter criteria was not always met, partly because the management level did not always seem to know with whom the workers were mostly collaborating. To get a fuller understanding of the collaboration, the research group developed a tool called Boundary Object. The purpose of the tool was to request information about individual's closest collaboration partners. Meaning that all individuals were asked to

fill out an excel form that included background information about each individual as well as questions about their closest collaboration partners and teams. The Boundary Object turned out to be an excellent tool, since it provided a more realistic picture about the collaboration within the companies.

A snowball technique was also used as a part of the selection process. Meaning that the individuals interviewed were asked if they had someone in mind that they thought that should be interviewed. For example, some key experts who are not in the teams, but whose time and collaboration is often divided among several teams or projects.

3.1.3 Participants

The team leaders provided us with a list of employees and they also made the initial interview invitation. After which we made more detailed plans for the interviews. In total 44 interviews were held in the two companies chosen for this study. In the beginning of each interview, the theme and the structure of the interview were discussed.

The participants in these interviews were both men and women. In total 15 women and 29 men were interviewed and they were in average 42 years old. Also two languages were used in the interviews. 16 of these interviews were conducted in Finnish and 28 were held in English due to foreign nationalities of the employees.

The individuals were located in several locations around the world including Finland, Unite Kingdom, United States, Austria, China and Sweden. And even more nationalities such as Finnish, English, American, Chinese, Austrian, German, Swedish, Russian, Lithuanian, Spanish, Croatian, Vietnamese, South Korean,

Peruvian and Iranian, were involved in this study. The interviewed employees were mostly collaborating within the company and its different locations, but some were also collaborating with outside partners.

The individuals interviewed had mostly two types of positions at work. They were either team leaders or team members. Team leaders working mainly in middle management as contact persons between many teams and team members working as developers or scientists.

3.1.3 Interviews

The interviews themselves took approximately one and a half hours totally, so a lot of information on several subjects was collected. A little over half of the interviews were held as online meetings due to distant locations. The rest of the interviews were held traditionally face-to-face.

All interviews were recorded and transcribed afterwards. There were several themes during the interview. The interview structure (Appendix 2) consisted of questions concerning some back ground information about individual's ways of working, thoughts about MTM, expert roles, global work and collaboration. For the purpose of this study the most interesting part was questions concerning MTM.

3.2 Qualitative data analysis

I used a qualitative data analysis program Atlas.ti to code the transcribed recordings. As a base for developing the coding scheme, I used the JD-R model to help me identify whether employees felt positively or negatively about the outcomes of multi-project work. I coded the negative perceptions as demands and the positive perceptions as resources. I started initially by coding incident to incident, in order to

discover patterns and themes. I then used axial coding, in order to specify the properties of each theme (Charmaz, 2006).

I formed the used coding scheme so that I could detect the situations caused by MTM and to explore the potential benefits it has at an individual level. The idea was to map what individuals felt to be positive in multi-project work and see if there were any themes that were repeated in a larger scale. The aim of this was to see if there are potential benefits to multi-project work. To do this a total of 44 transcribed recordings were coded for this study. Below in Table 2, I summarise the steps used in this analysis process.

Table 2 Steps of the analysis process

Step	**Aim**	**Outcome**
Choosing the interviews/companies relevant for this study.	To remove transcribed recordings that had no relevance in this study.	A set of interviews, which are relevant for this study.
Reading all the transcribed recordings.	To attain a broad understanding of the interviews.	An overview of the interviews. An idea of potential codes.
Coding interviews from the first company.	To create and test the coding used in this study.	A set of initial results.
Coding interviews from the second company.	To complete understanding of the data.	A comprehensive set of results with this set of data.
Choosing the codes relevant for this thesis.	To create properly sized subject for this thesis.	A properly focused structure for the thesis.
Revising the codes.	To check the codes used in this study.	A clear view of the results from this study.

I created the coding in three phases to get a clear view on what context was each comment related to, what actually had happened and whether it was experienced negatively or positively. While coding the interviews the first phase was on finding bigger themes from the interviews. The second phase was about describing the themes in more detail and cutting them into smaller matters to attain a fuller understanding of the data. Third phase was to make notes on whether the issues were seen as positive or negative. In Figure 5 below, you can see an example on how the coding was created phase to phase with the different themes.

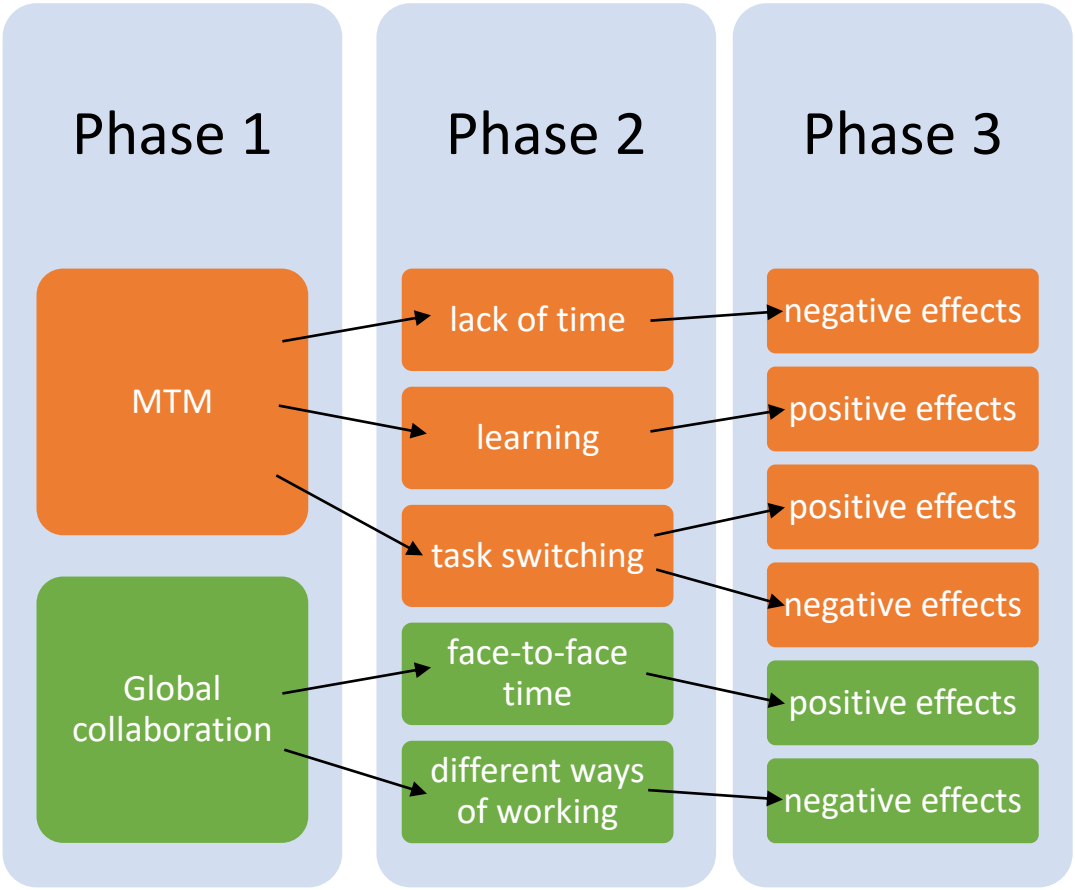

Figure 5 An example of Coding phases

Due to the chosen subject for this thesis that only concerned MTM related issues, I focused only on the codes that were related to the main theme, multiple project work, example shown in orange in Figure 5. Although I did check the other codes like global collaboration, shown in green in Figure 5, as well to make sure I did not miss any comments related to MTM and to attain a fuller understanding over the interview data.

As can be seen in Figure 5, the coding showed that not all outcomes of MTM were simply seen as positive or negative, but as both. One outcome clearly belonged into both categories: demands and resources, while several people placed it in both categories. At this point, I started to wonder what was the difference between these differing views. Therefore, the focus of the coding shifted to these effects, causing dissenting opinions, and trying to find patterns concerning them. I took a deeper look into the roles of the employees, in order to find out whether there was a pattern in all of the answers. I found a pattern between different work roles, when people in one role felt negatively and people in the other role felt positively about this specific outcome. There was a visible difference between different work roles when it came to changing tasks caused by MTM.

Therefore, the interviews were divided into two groups; team members and team leaders. Team members defined as employees that work in actual hands-on work, meaning in these companies that they work in development positions, either as software developers or scientists. While the team leaders were employees in middle management positions, leading one team and coordinating with other teams.

Based on this separation between outcomes, I was able to analyse the results. After analysing the findings, some of the codes were renamed so that they became easier to understand for others as well.

4 Findings

This section presents the results from the collected data. The results were reached with the coding scheme developed for this study and the analysis based on it. The main findings give some responses to both research questions: 1) What are the experienced benefits of working in multiple teams? and 2) Can work roles make a difference in how some effects of multiple team membership are experienced?

Here I will present some examples on how employees perceived different resources and demands and I will highlight the differences between different work roles. All quotes are based on the interviews, though I have carefully altered some of them to provide better readability, while carefully maintaining the original message. Since some of the interviews were conducted in Finnish, I have translated the quotations I used into English.

4.1 Effects of multiple team membership

This chapter introduces the outcomes of MTM that can be seen from the analysis based on the transcribed recordings. Table 3 is based on the most frequently mentioned demands and resources related to MTM and also how these demands and resources split between the two work roles that this study focuses on; Team Members and Team Leaders. In Table 3, I have described the most frequently mentioned demands and resources in an explanatory manner, in order to make some of the codes more understandable for readers. The full list of the used codes in MTM context can be seen in Appendix 3 with the frequencies how often they were mentioned.

Table 3 Job Demands and Resources related to MTM for Team Members and Team Leaders

	Demands	Resources
Team Members	- Switching between different projects causes loss of productivity - Lack of time due to many projects - Different ways of working - Lack of resources - Divided focus - Effect on others	- Knowing your co-workers - New ideas/learning - Workload cycles - Possibility to network -Broader view of the company - Broader knowledge - Similar/related tasks - Interesting/motivating tasks
Team Leaders	- Lack of time due to many projects - Different ways of working - Lack of resources - Divided focus - Effect on others	- Switching between different projects keeps work interesting - Knowing your co-workers - New ideas/learning - Workload cycles - Possibility to network - Broader view of the company - Broader knowledge - Similar/related tasks - Interesting/motivating tasks

As can be seen in Table 3, there are many similar demands as well as similar resources for both team members and team leaders. Both groups experienced that it is important to know with whom you are collaborating in order to have as good collaboration as possible and they also saw the benefits of learning and getting a wider view of the company. Some issues like time caused both: demand when time was limited and resource when workload cycles allowed avoiding unnecessary downtime. As presented, many of these demands and resources were the same for both groups, but there was also a visible difference.

Below I will first give examples on both: the most frequently mentioned demands and resources and finally compare the work role differences visible from the list. The two latter paragraphs respond to my research questions.

4.1.1 Demands of multiple team membership

Here I have listed and given examples of the most frequently mentioned demands during the interviews. These demands were shown in Table 3 and they are based on the complete list of MTM related codes and their frequencies shown in Appendix 3.

One of the major issues MTM causes are time management issues, because MTM compels employees to manage several projects simultaneously. Sometimes there are several things that different people expect employees to manage without considering the actual time it takes to execute these things. In these situations, some prioritizing needs to be done in order for employees to manage their work. Often it also requires setting boundaries for individual's capabilities in order to avoid negative well-being effects. Jonathan a team leader from ChemCo describes the situation the following way:

"Then there's going to be people who also come in and say everything is urgent and sometimes you have to push back on people to also say, here, I can only give you eight hours this week. You tell me what you want done and, you know, you push the prioritisation back on somebody else and make them understand in some cases that this is all you have to offer this week and you can't do, I'm not going to work an extra 12 hours because I just can't. It's not healthy"

Time management issues effect on other things as well. For example, when companies start using different technologies in order to store information so that it is available for everyone, they sometimes have problems getting employees to actually use these technologies due to lack of time. Georgina, a team member from ChemCo brought up the following issue:

"We have this SharePoint collaboration tools, to where we add for example all the articles we buy. So they are available for both teams. We could be using this tool more efficiently in all our information sharing, but we only use it rarely because people do not have time to learn this new technology. We do not know how to use it effectively."

As Georgina described, time management issues can affect other areas such as use of technology, which can turn these other areas into hindrances as well.

Also the different ways of working can cause some issues. Many interviewed employees described situation where they needed to adjust their way of doing things to someone else's habits in order to attain successful collaboration. Vanessa, a team leader from ChemCo, who is currently working with five different teams, told the following about different ways of working within her teams:

"There are some challenges. In my experience, are more related to, two things I would say. One is people's personalities. Not everybody will react the same, to, a command or a meeting. They need to be approached in different ways. Some people prefer to do their own planning, some people prefer help on that planning. So it's kind of difficult to know that. Once you know the person, it's easier, but it's not, it's completely, (fixed) if you can use that word"

The different ways of working sometimes influenced the communication between complete teams instead of just people. Aaron described the following: *"With some teams, the co-operation and the communication is very efficient, and, with other teams, or, in other situations it tends to be, more difficult. It also depends a lot on the Project Manager I would say."* Aaron was working as a team leader at ChemCo and he was involved in three different teams simultaneously.

One of the most annoying parts of different ways of working came from communication styles. Some team members showed almost a complete lack of communication, which caused serious hindrance to projects. Lack of communication can also decrease trust among co-workers when responses are expected but not received. Blair, a team leader described her problems on communications the following way:

"I understand that people are not going to be accessible all the time. But at least be responsive. So, we want to have a meeting this Wednesday but this person is going to be out travelling. I completely understand that they can't participate, but at least let me know that you can't participate and then propose a different date when you will

be available. Unfortunately, that doesn't always happen. Sometimes you don't even know if the person is participating in the meeting, which is very frustrating."

Blair is a team leader at ChemCo and she works in four projects simultaneously. She felt often frustrated with one of her collaborative due to the lack of communication from his part.

Besides these, the lack of resources due to too many projects also caused problems. Lily, a team leader from ChemCo, who divided her time between five different teams, described this problem the following way:

"Another challenge that I face is in terms of resources sometimes you don't have, the amount of resources, needed for the, amount of work that you have. So, basically you have to, put some things, prioritise your work and start from those things that are more important."

Divided focus can lead to several issues, such as slowing down the projects when people need to take care of several things simultaneously. Another team leader from ChemCo, Serena, explained:

"We've had some delays because of the simultaneous roles that people have. We've had to extend the project schedule due to working on other issues as well. I think nobody is skipping things due to lack of interest, but because they have too many things to do simultaneously."

Serena was also collaborating with five teams simultaneously and among other workers she also felt the pressure of effecting others' work when trying to prioritize her work. She explained the situation: *"One thing that drives things forward is the*

effect my actions have on others' work. I of course try to do first those things that can hinder other people's work, which can then hinder the whole project."

4.1.2 Resources of multiple team membership

MTM also has many effects that are perceived as positive among most workers. These positive effects help employees to manage their work and they are therefore seen as resources. These resources reply to my first research question looking for the benefits of MTM. Here I will present some examples of the most frequently mentioned resources during the interviews in this study.

One of the clear advantages of MTM is learning. MTM provides opportunities that can enhance learning when employees get to work with several different people and projects. Andrew, a team member from ChemCo collaborating with five teams described it simply: *"People have the most of the knowledge. Why? Because they communicate with people, they talk with the people, and then, as a result they learn from each other."*

MTM clearly enables a wider view of the company and its resources. When people collaborate with multiple teams the knowledge of one team can be used in another team as well. This helps companies to use their workers' full potential and avoid inventing the bicycle more than once. When knowledge sharing across teams is working well the teams are able to use the knowledge of each other and this way increase productivity. Some employees even feel that they can do their own job better when they have understanding over the whole picture. Jack, a team member from SoftCo, working with five teams stated the following:

"*Well, it definitely helps to understand what is going on in different areas of the project. For me personally, it helps in my own tasks, since I know what is the other areas of the project, then I can perform my tasks the best, I believe."*

Another resource of MTM for both groups comes from workload cycles. Most jobs and projects have phases that require waiting for results or a reply or a confirmation from customer. These waiting periods are not at all productive from the company's point of view. With task switching caused by MTM these waiting periods can be minimized since there is usually something else in another project that you can work on while waiting for the results of the other project. This way there will not be unnecessary down time in employees' daily work. A team member, Howie, from ChemCo who worked with four different teams, described this the following way:

"The best thing about working in different projects I think, up to about two or three, it's good because every project has its period of hectic work with a heavy workload, and periods with lower workload. Usually if you're lucky those don't happen at the same time."

Another team member, Bart, also found it positive when he had the possibility to skip downtime between ending and starting projects: *"The best thing is that when one project ends, you have another one that has already started, so there will not be any unnecessary downtime"* Bart was a team member in ChemCo working in collaboration with five different teams.

Collaboration among workers and teams is better when people working together know each other. Especially when collaborating with several different teams, knowing your co-workers helps like Serena, a team leader from ChemCo explained:

"When you know the processes and you know the people, you know from whom to ask and what. Then it is much easier to proceed."

When you know someone it is easier to trust that they will do their job. And trust is crucial when allocating tasks to different people in multiple team environment. Chuck, a team member from SoftCo explains the following: *"I think the first thing is trust. You need to be able to trust that the other person will do their part."*

Also the possibility to meet different people was considered to be positive. Dan, a team member from SoftCo described it the following way: "*you're going to see more people and do different things. Even though working on the same thing, the same code but, different. Sometimes different so, more fun, I think"* Meeting new people increases individual's social networks, which can lead to better social resources.

Multiple projects turned out to be easier to handle when the different tasks and projects had similarities. Nate, a team member from ChemCo, working with five different projects explained: *"I see the connections between the projects. And this helped actually to handle the, several projects."*

Also it was clearly much easier to cope with MTM, when employees liked what they were doing. If they felt motivated and thought that their tasks were interesting, even some extra work tend to be acceptable as Serena explained:

"I like what I do. That helps a lot. Even if I sometimes need to do a little extra work, in order to handle everything, I actually like doing the projects I'm currently working on, so I really want to finish them."

4.1.3 Multiple team membership as a demand or a resource depending on role

This chapter answers to my second research question: Can work roles make a difference in how some effects of multiple team membership are experienced?

Switching between different projects was analysed both as a job demand (hindrance of productivity) and a job resource (facilitator of productivity) depending on a work role. The demanding features of project switching were interruption of workflow, loss of productivity, loss of time and redundant repetition. The resourceful elements of project switching included opportunities for learning, networking, attaining broader knowledge, interesting tasks and skipping unnecessary down time. Figure 6 on the next page presents the different views on task switching between the two work roles: team leaders and team members. The figure also shows the comparison between task switching that causes two dissenting views and another subject that has a congruent view among both work roles.

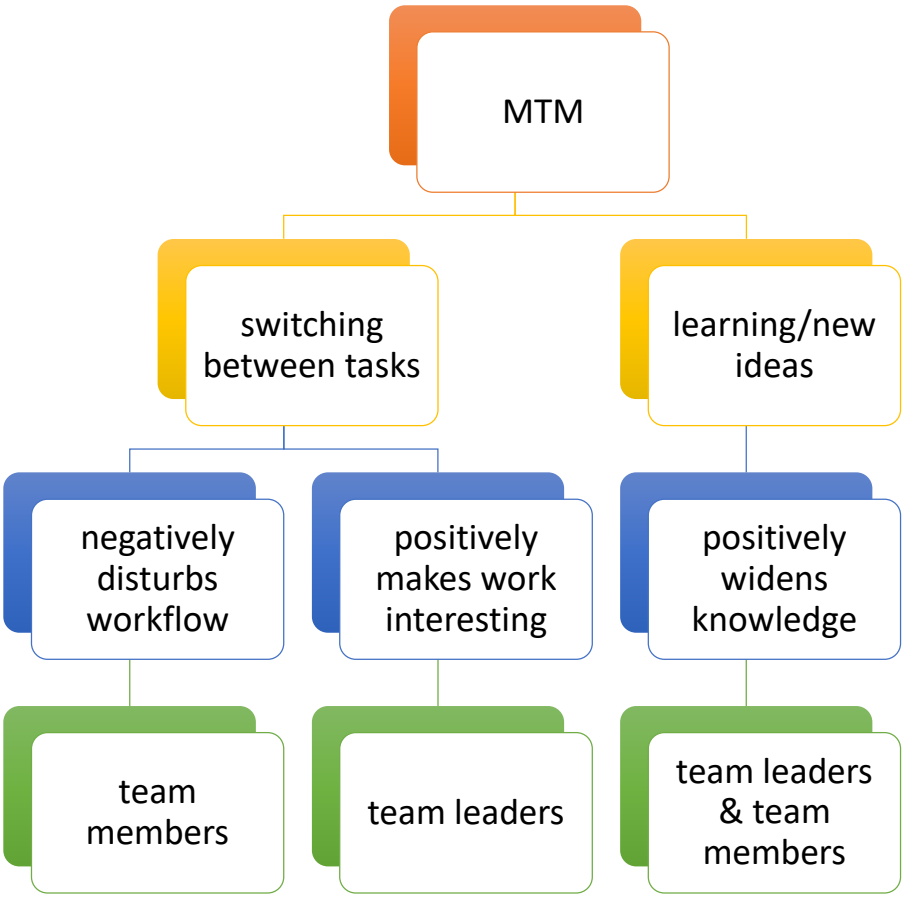

Figure 6 Effects of MTM - work role difference

The effects of project switching were analysed to differ between the different work roles of the interviewees: team members and team leaders. Team member roles in ChemCo included tasks such as product development and product improvement based on customer feedback, while the roles of team leaders in ChemCo included coordinating tasks between different team members and consulting experts from other organizations for problem solving. In SoftCo, the role of team members was to develop software, which required longer concentration. The role of SoftCo team leaders, however, consisted of shorter coordination tasks between different teams and team members.

Due to the different responsibilities of different roles, my analysis revealed that team members' work progress suffered from project switching while the team leaders benefitted from it. Most team members found it annoying and unproductive when they had to change between tasks during the day because every interruption and task switch slowed down the progress of their work. Ben, a team member from SoftCo said for example: *"I don't like switching too much simply because it's not so productive".* Ben worked as a senior software developer in three teams and switching between projects during a workday hindered the flow of his productivity.

The interviewed team members felt that getting back to what they were working on prior to the interruption took a lot of time and therefore they were able to work more productively when they had the possibility to focus on one project at a time without disturbance. If the team members had the possibility to influence their daily work structure, they would continuously work on one project for the whole day or even several days in a row and not make switches in the middle of a project.

In contrast, most team leaders found it refreshing when they experienced changes throughout the day. For them, changing tasks kept the work interesting and increased their job motivation. William, a leader involved in three projects at SoftCo, explained this by saying: *"A little bit variation, makes also the work life a little bit more interesting".* William felt that switching tasks gave him a broader view of the company; it allowed him to see many aspects of the SoftCo's code base. Switching tasks helped him to see the bigger picture, and understand how things needed to work together, instead of knowing just his own module within the company.

Rufus, who was a leader of four projects at ChemCo also felt that changing between projects during the day kept his activation high throughout a workday: *"I think it's good if you can change the tasks [of different projects]. It keeps my mind more active."* Moreover, to craft their workdays more active and motivating, many interviewed team leaders even scheduled their workdays in a way that allowed them to change from one task to another several times a day. This way the meetings and other interruption during the day did not cut longer focus, but where placed somewhere between different tasks.

In sum, the results of my analysis indicate that when a work role includes tasks that require concentration for a longer period of time, switching between projects causes dysfunctional interruptions to workflow hindering productivity and are thus experienced negatively. This is especially relevant in team member roles in R&D and production projects where long term uninterrupted workflow and concentration are crucial for good outcomes. On the other hand, in team leader roles, including mainly short termed coordination tasks switching between projects is functional for effective performance. In fact, many individuals in middle management positions felt that changing tasks kept the work interesting and allowed them to learn new things. Also the availability of a broader knowledge and the possibility to network were considered positive things.

4.2 Team members' view on multiple team membership

MTM often requires switching between different projects throughout the day. This is a clear hindrance when working on tasks that require focus for longer periods of time. When focus is needed every interruption cuts the work and it takes time to refocus after the interruption. This leads to loss of productivity.

In ChemCo and SoftCo, team members' work was mostly development-oriented and required long-term concentration. These employees felt that with interruptions their work flow was disturbed and it took time from them to refocus and continue the project they were working on before they got interrupted. One team member from SoftCo, Steven, described interruptions being especially disturbing in the implementation phase of a project when he was executing a solution, but could not do it due to the interruption. Steven explained:

"At least, I already have this (you know the in the) [0:09:57 us] already have the solution in mind. In that. When it's not interrupted it's very easy, efficient, to implement that. If you, in parallel with working with several things always need to, recall the background, was it for that."

Steven was working as a member of four software projects and was often asked to switch working from one project to another depending on the urgency of the projects' time schedules. Own choice focus on one task and finish it, switches when someone else needs something, review for example.

The team members felt that meeting in the middle of the day were also interrupting with their work flow, since it required them to leave whatever they were working on to take part in the meetings. Russell, a team member involved in two projects at SoftCo explained: *"I think I'm more productive if there are no meetings. I mean then I could continuously be working, without any interruptions. But that is not happening, because we have meetings."*

Meetings were perceived as especially annoying when a meeting concerning one project interrupted the work flow of another project. Nevertheless, the team members

understood the importance of knowledge sharing and the importance of being aware about what else was going on within the company, in order to avoid working on something that has been already solved before by another team.

Team members found learning to be a positive effect of MTM, although, they did not enjoy when the learning activities interrupted their work on another project. Meaning that when they were able to learn while working on a project it was perceived positively, but when the learning opportunity was provided by an interruption that would have required task switching they were not interested in taking the opportunity. Team members felt that in order for them to do a good job and make progress, it was more important to finish the current task than to learn new things by switching.

In sum, MTM can hinder team members' work progress as it requires them to divide their attention and resources between multiple different projects, decreasing their ability to finish something they are working on.

4.3 Team leaders' view on multiple team membership

In contrast to team members, the tasks of the team leaders did not require long focus, and therefore they did not experience project switching as a demand. On the contrary, they benefitted from project switching. Team leaders' role often consisted of being the middleman for different groups and coordinating work in the team. This type of job was described as more ad-hoc and requiring the leaders to do short tasks instead of long-term continuous concentration. Due to this type of work, project switching was not perceived as problematic. In fact, many team leaders even thought that changing tasks during the day kept them awake and active and prevented them

from getting stuck in their job. For example, Eric, a team leader balancing between three projects, manager duties and expert role at SoftCo explained this by saying: *"When you do not need to do the same thing all the time and people you collaborate with change a little, you stay alert. Then you will not get stuck on the same issue completely."*

The interviewed team leaders also felt that MTM provided them with high learning opportunities. When leading multiple projects at a time they get to learn new things and collaborate with new people. The team leaders talked extensively about learning that was related to collaboration between different projects. MTM enabled team leaders to meet and collaborate with others in a way that expanded their network and therefore helped them attain broader knowledge about the company. This is a clear benefit for them since their job is largely about coordinating with different projects and people. For team leaders it was a huge help that they were able to get different views from different people and based on them make better decisions. These different views were seen especially important when team leaders were part of a global collaboration. Different views also helped employees to come up with totally new solutions, as Carter, a team leader from SoftCo who is involved in four teams, describes: *"Then some(body) might think of an example which, makes me think of like, oh yeah and then, kind of spark comes and I (may have to) [42:32] think of 4 5 more things"*

Many team leaders also felt that they were personally better fitted in this type of work roles, which require task switching throughout the day, so MTM also provides different and more rapidly changing work environment for those who prefer it.

Damian, a team leader from SoftCo described his personal characteristics the following way:

"My attention span is about 45 minutes. I cannot do something for three hours. The last two hours are not really productive. I do need the content to change to be productive. It's counterintuitive and it's against the research but it's what works for me. The different ways of working work for different people."

Damian was working with a total of six different projects, which according to him was a positive thing and kept him motivated in his work.

Based on the analysis, it seems that MTM can create more valuable social capital for people working in leader positions, than for team members doing the operative work. Networking helps leaders to do their job even better in the future, since it helps them to gather more knowledge about the company and its different departments. This way MTM can be seen as a resource for team leaders.

Even though the interviewed team leaders perceived MTM and project switching mainly as positive things, they also felt that sometimes their time was limited and MTM seemed to make work a little hectic. Nevertheless, they still preferred to work with more than one project at a time.

5 Discussion

The aim for this study was to examine how employees experience working in MTM and whether it has potential benefits. The results show that there are several positive effects caused by MTM, such as learning and low amount of down time. Nevertheless, the results also indicate that MTM can cause negative effects like time management challenges. Based on my finding with this set of data, some of these effects were perceived differently between people in team leader and member roles. The findings suggest that the work role can make a difference in how some job demands and resources are perceived. This is something that previous studies have not talked about. Previous research assumes that all job demands and resources are perceived the same way no matter what the work role is.

5.1 Job demands and resources of working in multiple teams

Here I will present the main findings and recap the answers to my research questions. I will also make some practical implications based on my findings.

5.1.1 Working in multiple teams is both a demand and a resource

As a theoretical contribution, this study suggests that not all job characteristics can be seen simply one way, but different work roles can turn some demands into resources. Therefore, when using the JD-R model, the effects of different job characteristics should be taken into consideration. This study specifically suggests that MTM can be seen as both: demand and resource, depending on specific work characteristics.

This is due to the fact that some work roles such as developers need a lot of concentration in order to complete their work successfully. For them MTM presents

disturbance and therefore, is seen as a demand. On the other hand, work roles that require constant communication between units gain more contacts from MTM, which turns MTM into a resource.

Most team members described task switching caused by MTM to hinder their work. It was explained by the discontinuity it caused to the project they were working on while the interruptions took place. Also time management issues where clearly affecting many employees, which is in line with previous studies (ing. Mortensen et al., 2007). Both of these effects can be seen as directly related to the progress principle (Amabile & Kramer, 2011). The progress principle states that when people feel that their work is not progressing anywhere they are less engaged and they experience negative feelings. This is exactly what the team members described. They felt that their project was not moving forward when they were interrupted, thus they related negative feelings to task switching. Therefore, this study is also in line with majority of previous studies that suggest that MTM is a demand.

The same phenomena, described before, can be seen among team leaders, but in the opposite way. Their job consisted of coordinating between different teams and individuals, meaning that each interruption was an opportunity to collaborate with someone. This way task switching was not disturbing a project, but taking the collaboration further. Due to this, team leaders felt that their work was progressing and due to the feeling of progress they attached positive feelings to task switching. This difference between work roles is something that previous studies have not pointed out, but they have mostly focused on the team member perspective when it comes to MTM.

MTM has also been said to increase learning and performance (O'Leary et al., 2011). The results from this study support this view. Most workers, interviewed in this study, thought that MTM could help with learning from others. Also the benefit of not so much down time and the possibility to switch due to workload cycles were considered positive. This supports previous studies with similar results (ing. Pluut, et al., 2014).

5.1.2 Implications for team management

As a practical contribution, this study suggests that for employers, who work in work environments that consist of MTM it is crucial to understand the effects it has on employee's daily work schedule. With this understanding, some measures can be made to create conditions that enable effective MTM. Already in recruitment process, some qualities such as proper social and task management skills that can affect person's ability to work in a MTM environment should be taken into consideration. Some personal characteristics such as individuals' emotional skills and cognitive skills have an impact on individual performance. Therefore, it is important that programme and project portfolio managers, whose job often includes scheduling human resources to multiple projects, are aware of both the positive and negative impacts of MTM when it comes to performance. Furthermore, individuals with high emotional and cognitive skills should be selected as project team members when dealing with high MTM situations. (Chan, 2014.)

In addition to the individual characteristics, tasks and team structure can be well defined, and projects can be modular and deadlines predictable. High familiarity and trust as well as proper knowledge sharing systems are also important. Also the organizational culture needs to promote open access to information, curious climate

and willing information sharing. (Mortensen et al., 2007.) These effects should all be taken into consideration when structuring teams and processes for MTM environments.

The processes that require long-term concentration should be structured in a way that limits the interruptions to one's workflow to minimum. For example, necessary meetings should be scheduled in the beginning or at the end of the workday, or together with lunchtime, so they will not cause extra interruptions. Also teams that work in development could have a coordinating team leader, who does not take part in development, but takes care of the knowledge sharing and communication between the team and other teams.

5.2 Limitations and directions for future research

As a limitation to this study, only the effects of different work roles were considered, so to attain fuller understanding, other factors should be studied as well. Personality is one of these factors that can have an effect on how these job demands and resources are seen. For example people that are more extroverts can feel more confortable in communicating between different teams where as introverts could find jobs with less required communication more appealing. Therefore, it is also possible that people with certain characteristics are more likely to seek certain work roles while looking for job opportunities, which can lead to having more extroverts in collaborator team leader positions and more introverts in developer member positions. These factors were not examined in this study. Also things like nationality, gender or age were not taken into consideration in this study and therefore any effect they might have cannot be seen from these results.

First, according to gender theory, women have stronger need for social relationships than men. Therefore, it is possible that women gain more from MTM than men and they may see a larger amount of MTM as a resource than men do. Second, older people may feel accustomed to their habits and therefore be against new ways of working that come from different people. On the other hand, when someone has a lot of experience on certain matters, some tasks related to those matters can be done with routine. Meaning that those tasks take less time from their workday, which could allow them to work on multiple things faster. And third, it could also be easier for some nationalities to conform to new social communities or teams and their habits. Also the combination of different nationalities in one team could have an effect on how the team collaborates with other teams.

These factors were left out due to the uneven cut between men and women in different roles, the fact that there was only one person representing most nationalities involved in this study, and the small amount of employees that varied strongly from the average age. Therefore, age-, gender- or nationality-based comparisons were not possible to make in the scope of this study.

This study was a qualitative study and cannot be generalized to all professions or companies. The study only consisted interviews from two different companies and the results can be seen as directive. However, these findings can be interpreted a baseline for research in the future. To conduct a larger scale study of this subject, a survey study could be made.

This research suggests that task switching caused by MTM can be seen as both a demand and a resource depending on your work role. This could predict that also

other demands and resources could have similarly dissenting views among different work roles or other factors. These arising questions could be studied in the future to gain fuller understanding over this issue.

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Appendix 1

Context interview structure:

Taustakysymykset työntekijästä

1. Nimi, titteli ja rooli tässä organisaatiossa

Team description

1. Kuvaile tätä tiimiä missä sä johdat (vai onko johtaa oikea sana?)
    a. Pysyvä tiimi?
    b. Tiimin tavoite?
    c. Monta henkilöä tiimissä on, missä he sijaitsee missä he työskentelee (voit samalla sanoa heidän nimensä) Mikä hänen roolinsa on. 100 % tälle tiimille vai ovatko ne myös muissa tiimeissä?
        i. Työvoimajako: Miten nämä roolit nimitettiin? (jäsenten vaikuttamista tähän)
    d. Oletko huomannut että jollain näillä henkilöillä on jotain epävirallisia roolit?
        i. Miten se näkyy sen tai muiden käyttäytymisessä?
    e. Kuinka riippuvainen olet näistä muista tiimijäsenistä sun työssäsi? Kenestä heistä eniten?
        i. Kenen työt ja tekemiset vaikuttaa sun työn onnisumisen ja työskentelyyn Millä tavalla?
        ii. Kuinka riiippuvaisia tiimijäsenet ovat keskenään (keskimäärin) tässä tiimissä?
    f. Teettekse te tässä tiimissä yhteistyötä muiden tiimien tai yksikköjen kanssa omassa organisaatiossa tai organisaatiorajoen ulkopuolella: toimittajien tai alihankkijoiden kanssa?

2. Miten suuri osa työskenteyajasta työskentelet tämän tiimin eteen?
    a. Mukana myös toisessa tiimissa?

3. Kenen kanssa teet itse eniten yhteistyötä ja miksi?
    a. Ihmiset ja niitten sijainti
    b. Ihmiset tiimin ulkopuolella?
        i. Jos mietit avoimesti kaikki eri yhteityötilanteet, missä koet eniten haasteita?

4. Team performance / individual performance mittaaminen

Team coordination

1. Miten teette yhteistyötä tässä tiimissä? Kuvaile työrutiinit tässä tiimissä/projektissa
    a. Onko teillä jotain perusperiaatet tai rutiinit tässä tiimissä? (esim viikkopalaverit)
        i. Miten olette kehittäneet nämä? (tiimin osallistumista: oletteks te luoneet ne yhdessä vai tiimipäällikön määräämiä)
    b. Jos scrum, selitä mitä kaikkea siihen liittyy.
        i. Esim minkälaisia kokouksia, onko tehtävälista avoin jne
    c. Jos ei scrum: Kokoukset: Onko teillä säännölliset kokoukset tässä projektissa/ryhmässä? Mikä on niitten tavoite.

Riippuen ajasta, niin tässä voisimme poimia sisään kysymyksiä tämän

Kyselyä varten (Emme kysy kaikki nämä huomenna)

1. We need to get some idea of the key tasks for the groups we will be working with. You may want to find out, what are the main types of tasks performed by teams and which ones are more critical or important to Elisa.

2. How is the work done in team? Do they have fixed/permanent team? Do members work in multiple teams/projects simultaneously?

3. Roughly how long are the team projects? a few weeks? months? etc.

4. How large are the typical teams? small, large or vary widely?

5. What are the main barriers they see for effective task coordination, team performance, successful outcomes, etc.?

Brandin kysymykset:

DEFINITIONS

- **INTER-ORGANIZATIONAL TEAM**: teams/projects/programs composed of individuals from the focal organization and from a partnering organization
- **INTER-ORGANIZATIONAL BOUNDARY-SPANNER**: individuals from the focal organization that work with individuals from the partnering organization

KEY CONTEXTUAL QUESTIONS

1. How many partnerships/alliances does [Elisa] maintain?
2. Do you have an alliance management group, a centralized group or an individual that oversees your alliance partnerships? *NOTE: If so, it would be ideal to acquire a contact person.*
3. What is the primary type of work conducted within [Elisa's] partners [resource procurement(supplier)/out-sourcing(expertise)/co-development or other joint activities]?
4. How is work organized with your partners? Do you have teams of individuals or is it primarily individuals who work with your partners? [inter-organizational teams vs. individual boundary-spanners]
5. Depending on answer to Q4:
    1. Approximately how many inter-organizational teams do you have within each partnership?
    2. Approximately how many individual boundary spanners do you have working within each partnership?

NOTE: I would love to know more about the teams (size, membership, projects, team lead, etc.) and/or boundary-spanners, but I think this might be better for the Theory Development type questions for round two.

Do let me know if you have any questions!!

Appendix 2

Interview structure:

Part 0: Background

1. Tell me about your role in this organization

Multiple team / project memberships

2. How many teams / project groups are you currently working in? Please name them.
    a. Local vs distributed teams?
    b. Long term vs short term teams?
    c. How much time do you allocate for each?
    d. Do you have different roles in each?
3. What is the reason you work for these different teams (and not only for one)? (Comment: Here I want to find out the persons motives for being part of more than one team)

Part 1: Own ways of working

1. Please describe a **normal work day**, from that you wake up in the morning and go to bed in the evening.
2. Do you **plan or structure** your workday somehow? Can you illustrate your answer with **reasons for why** do you do it in the way you do?

Part 2: MTM

4. Tell me about your experiences of working in multiple teams, if you compare to working in only one team? (feelings (e.g. stress), challenges, benefits)
5. How about, do you have to adapt your ways of working or approach different teams differently? Why? How do you find that this is working?
6. What kinds of **challenges / benefits** do you face when working in multiple-teams (project-teams)? (or with people working in projects / teams)
    - Can you give **an example of a problematic situation or a conflict related to multi-team work**? How did you solve it?
    - What helps you to manage or deal with these challenges?
    - If PM/Leader role: What kind of challenges do you face leading/managing a group of people where members work for more than just your team (i.e. belong to multiple teams/project teams)
7. **What helps you to manage multi-team work in general?** (resources) (If person is silent, you can mention that: Think about how it differ from working in only one team, and if you do something different, if you try to manage the multi-team work somehow differently than you would working with only one team? Why / Why not?)
    a. **Does it help you to have different/same roles in all teams? How?**
8. **How do you allocate your time for different teams/project teams on a daily or weekly basis? Why?** (*Are they bouncing from project A to B and then back to A. Or do they only touch each project once in a given day. Find out why*)
9. **What influences your decisions on which teams/project groups you focus at each time? (drivers of switching/Inlfuence from others)**
    a. Influence from others near or far (does distance matter?)
    b. Closeness of relationship to a person trying to get your attention

c. Status of the person, does it matter if its a person high up the latter or a lower level employee/team member
d. Own preferences,
i. you like some team's tasks more than the other?
ii. You like some team more than the other?

10. Can you name a couple of reasons to why you would switch from one team to another on a certain day (*can be from one day to another, on a week level?*)
a. Can you sometimes just continue on what you were working on and delegate further to someone else? How do you do this?

11. Last question here abour MTM, if you would rythm your multi-team work yourself, how would you craft your work?

Part 3A. Next, we are interested to hear what you **consider important in your <u>own ways of working</u>.**

1. Do you have certain **ways of working, like habits or routines, that you consider important**?
   a. For example how do you approach a new task (familiar vs **complex task**)?
2. **How have your own ways of working developed?** (Have you always worked this way?)
3. How do **other people influence** your ways of working?

Part 3B. Next, we would like to hear about your thoughts on **your role as an expert.**

Implicit theories of expertise in general

1. In your own words, could you tell me about your own beliefs on **what makes an expert**? (*Anything beyond skills?)*
2. So how about then, ***what makes an expert successful?***

Personal Implicit theories of expertise

3. To what extent do you see yourself as an expert? Why / Why not?
4. Do you see yourself as a **successful expert**? Why / Why not?
5. In your opinion, ***what makes you successful as an expert?***

Antecedents

6. What reasons do you see behind your own success as an expert?
   a. What is the **role of other people** in your success as an expert?

Part 4. Global work – we focus on your core global team (jos ei ole core team voi silti kysyä collaborationista in general)

1. Tell about your experiences from collaborating with distant collaborators/team members.
   a. collaboration practices
   b. challenges
   c. how is expertise distributed and how is it integrated?
   d. Does your collaboration with people from your own location differ compared to people from distant locations?
   e. Technology use – function well? Challenges?
2. How has your collaboration developed over the duration of the project?
   a. any difficulties that has been overcome and how?
3. What makes (would make) your team successful, and what hinders your success?
4. Next if you think about leadership in the team. How is team leadership structured in your team, who takes care of what?
   a. What functions are to be performed by the formal leader? Why?

b. What functions can as well be performed by the team members? Why?
    i. Have the formal leader/(you *if in leader role*) in any way supported this direction?

5. Would you say that you yourself can influence in the team and take part of leadership? Why/ why not? On what issues?
6. How does this shared influence (or the fact that you are not able to influence) impact your work motivation, work enagagement?

Part 5: Working with others

2.1 If you think about collaboration practices you have with others,

1. In your opinion, **what kind of collaboration practices have worked well** and succeeded? **Why**?
    a. **What is needed for good collaboration**?
    b. Please give a concrete example (from which project this example is form?)
2. How about **unsuccessful collaboration**? **Why**?
    a. Please give a concrete example.
3. **Last, when you still have an anonymous voice, what would you like to improve in teamwork or just general throughts on what is not working well?**

Appendix 3

List of the used codes in MTM context and the frequencies:

mtm - divided focus - D	27
mtm - changing tasks - R	18
mtm - lack of time - D	18
mtm - broader knowledge - R	15
mtm - new ideas/learning - R	12
mtm - knowing your co-workers - R	12
mtm - workload cycles - R	10
mtm - networking - R	8
mtm - similar/related tasks - R	6
mtm - lack of resources - D	6
mtm - loss of productivity - D	6
mtm - broader view of the company - R	5
mtm - different ways of working - D	5
mtm - effect on others - D	5
mtm - interesting/motivating tasks - R	5
mtm - experience - R	4
mtm - planning/organizing - R	4
mtm - personal chemistry/common language - D	4
mtm - to do lists - R	3
mtm - flexibility - RD	3
mtm - over hours - D	3
mtm - keeping others informed - D?	3
mtm - trust - R	2
mtm - same people - R	2
mtm - borrowed knowledge - R	2
mtm - no borders between teams - R	2
mtm - autonomy/possibility to influence - R	2
mtm - lack of mutual time - D	2
mtm - time consuming tasks D	2
mtm - good collaboration tools - R	2
mtm - upfront discussion/knowing the goal - R	2
mtm - open work environment - R	1
mtm - knowledge sharing - R	1