Communication challenges in managing global virtual teams:

the experience of project managers

Aleksandra Smal

Elina Jõgeva

Master of Communication Thesis

Report nr. 2016: 2016:109

ACKNOWLEDGEMENTS

ABSTRACT

Nowadays, managers often manage teams which members are located in different countries, different time-zones or have different languages as their mother tongues. This is a complex job that requires specific preparation. The first step in training project managers for leading global virtual teams, is understanding which problems they have to deal with in their everyday work. This study explores communication challenges that project managers experience in managing global virtual teams. Through conducting qualitative research and interviewing 12 project managers working in two global companies, we found that project managers face communication challenges which can be divided into four larger groups: challenges related to cultural differences, distance related challenges (including lack of non-verbal cues, lack of trust, difficulties in building relationships and uncertainty in team members' competence), challenges related to communication technology and lack of language competence.

Keywords: communication challenges, global virtual teams, project management.

TABLE OF CONTENTS

1. INTRODUCTION

The development of technology and globalization has influenced how organizations function today. It has become common that projects managers are leading global teams that work simultaneously without meeting each other face-to-face. It is important to provide a thorough and versatile training for managers to prepare them for the work with global virtual teams. This study focuses on the first step of approaching the problem, i.e., - detecting and understanding the communication challenges that virtual team manager's experience in their everyday work.

1.1. Research background

Communication is an integral part of project management and it is one of the main tools for achieving success in project managers' work. Some studies argue that project managers spend more than 75% of their time communicating (Rao, 2011). Their position in the organization often means that they serve as the regulators and managers of communication processes, and they often determine the smooth flow of the work within the project team. The successful outcome of the project is directly connected to the project manager's communication ability. (Kliem, 2008). Communication errors are also connected to project costs (Kliem, 2008). Misunderstandings, communication errors and conflicts can delay the delivery of the project and increase the amount of project members' working hours.

Communication in an organization is a complex and often challenging process. Managing a team that is geographically dispersed, adds another level of complexity to project manager's work. Project managers need to collaborate with people from different cultures, who speak different languages, have different working practices and live in various time zones (Binder, 2012). At the same time, most communication occurs over a distance which requires a skillful application of different communication technology. Today, this kind of teams have become more as a norm that exception. According to a survey conducted by the Society for Human Resource Management (SHRM) 2012 (Minton-Eversole, 2012), nearly a half (46%) of 379 organizations polled use virtual teams in their work. One of the prerequisites for these teams to function successfully is that there are competent managers who can use the potential of global virtual teams and handle the difficulties. To provide relevant preparation and support for the managers, it is important to investigate what are the communication challenges they experience when managing global virtual teams.

The topic of communication in managing global virtual teams is quite new in academia. There is a lot of literature, which is focused on exploring the challenges of managing global virtual teams and more practical guidebooks for managers who work with global virtual teams. For example, "Challenges in Managing Virtual Teams" by Nydegger & Nydegger (2010), "Managing Virtual Teams: Strategies for Team Leaders" by Lyons et al. (2009) and a book by Zofi (2011) called "A manager's guide to virtual teams". In addition to that, there is a lot literature about leadership challenges in global virtual teams. The topic has been popular for the last decade and continues to

be actual as the field of management, economy and technology is constantly evolving. Internal corporate communication, especially in global corporations, is growing in importance. Due to the fact that the number of tasks undertaken by companies in the form of projects is also growing, the issues relating to communication in project teams are now of greater interest than ever before. (Zajac, 2013, 120). Nevertheless, existing literature lacks of quality research conducted among the project managers to reveal their personal experience of communication challenges in managing global virtual teams.

1.2. Research purpose and research questions

This research focuses on exploring communication challenges that project managers placed in Ericsson's and Husqvarna Group's Swedish offices experience when communicating with their virtual team members. The project managers participating in the research were situated in local Swedish offices, but their team members were stationed mostly in other countries like China and USA. The aim of our research is to explore project managers' experience as a whole without putting too much emphasis on any specific aspect more than other.
Research questions are stated as follows:

1. What kind of communication challenges do project managers face in managing global virtual teams?
2. How do project managers experience communication challenges in managing global virtual teams?

The answers to these questions are delivered through a literature review and semi-structured interviews which were conducted with project managers at Ericsson and Husqvarna Group in Gothenburg, Sweden.

1.3. The scope and delimitation of the study

This study focuses on communication challenges related to internal communication between project managers and global virtual project team members. It does not cover communication challenges related to external communication, for example communication issues between project managers and clients.

The study has an explorative character and the main purpose is to explore project managers' experience and communication challenges they face in their day-to-day practices in conditions of geographical dispersion, different cultural backgrounds of team members and mainly technologically mediated media. It is neither intended to create nor to test any specific theory on the subject.

2. **THEORETICAL BACKGROUND**

In this part of the study our aim to is to firstly, define the main terms used in the research and secondly, to give an overview of the theories which provide insight into the characteristics of managing global virtual teams and possible communication challenges that project managers might face in managing these teams. Topics, such as project management, global virtual teams and communication challenges related to physical distribution, communication technology and cultural difference are presented among others.

2.1. Project and project life cycle

There are plenty of definitions of the term "project". Guide to the Project Management Body of Knowledge (hereafter referred to as PMBOK Guide) defines project as followed: "Project is a temporary endeavor undertaken to create a unique product, service, or result" (PMBOK Guide, 2008, 5). Zajac mentions that even if projects are unique, they have "set of project characteristics that are widely accepted as common features of projects" (Zajac, 2013, 92). Projects have a beginning and an end, have complex structure and usually include several phases. Project managers should manage the project scope, time, cost and quality (Zajac, 2013; Mulcahy, 2005).

To complete a project, "project life cycle" methodology is widely used. Project life cycle can be defined as "a model of how to perform a given project within a specific period of time" (Zajac, 2013, 29). PMBOK Guide describe a project life cycle as a "collection of generally sequential and sometimes overlapping project phases, such as project initiation, planning, execution, control and closure" (PMBOK, 2008, 16). During the first stage, initiation, project goals are set. At that point, the scope of the project and the ways how project goals will be achieved should be identified. During the first phase, responsibilities are assigned among those involved in the project. How work will be done, as well as the planning of monitoring and control is defined during the planning phase. Here, project managers also focus on project schedule and make a communications plan. After the planning comes executing phase, when team, assigned to the certain task, needs to know in detail what should be done as well as understand the quality and task completeness criteria. Monitoring and controlling are important during all the project stages. Final phase comes when the task is complete, and project can be closed. Here, project managers analyse the work that was done and formulate the "lessons learned" for future projects (Naybor, 2014).

Project life cycle can be applied to all projects, regardless of the project specifics, complexity or area of project application. It is a primary framework for organizing the project work (Figure 1).
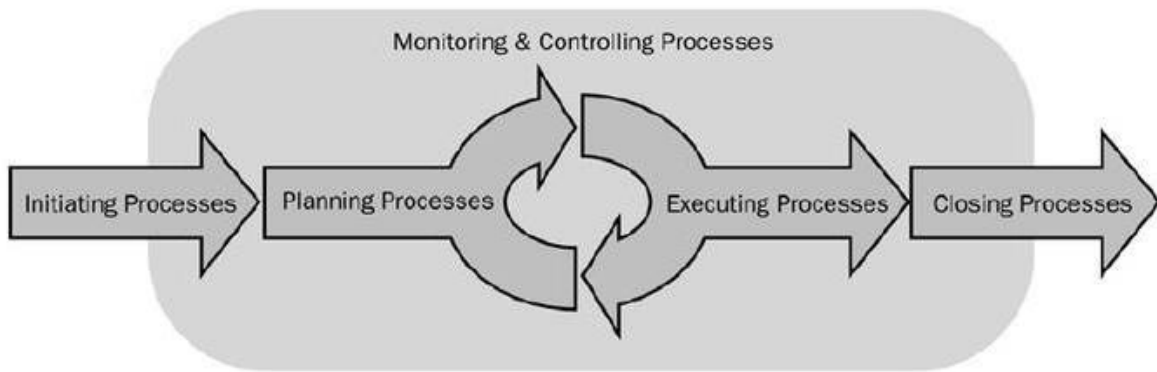
Figure 1. Example of a single phase project (Source: PMBOK Guide 2008, 19).

2.2. Project manager and project management

The project manager is responsible for the organisation and successful task achievement. Project management is defined as "the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements" (PMBOK Guide, 2008, 6). It implies that project manager should have abilities to approach project management problems and to solve them, plus he/she should be knowledgeable about the communication technology tools that are used in virtual teamwork. Project manager organizes implementation processes, manages resource allocation and is responsible for communication among team members and with customers/project beneficiaries. "Some of the Project manager's duties consist of communication, status reporting, risk management, escalation of issues that cannot be resolved by the team, and, in general, making sure the project is delivered on budget, on schedule, and within scope" (Carleton University, n.d. 2). Competent project managers are expected to have necessary abilities to perform their job effectively (Bredillet, Tywoniak, & Dwivedula, 2015). Dr. Martin Barnes, president of Association for Project Management (APM) during 2003-2012 claims: "At its most fundamental, project management is about people getting things done" (What is project management?, 2015).

Lee (2013, 1) categorizes managers as collocated, hybrid and virtual according to the level of the virtuality in their teams. Garton & Wegryn (as cited in Lee 2013) argue that the popularity of collocated management is decreasing and the virtual or hybrid managers are becoming a norm in many industries today. "Managing virtually means designing and managing a network of interdependencies, creating and sustaining many relationships, and all the while keeping the team focused on mission accomplishment. It is active management, focused on connection, communication, and performance". (Hoefling, 2016, 132). Hoefling (2016) emphasizes that excellent communication skills within different media (written and oral) and facilitation skills are a must for the virtual manager.

2.3. Global virtual team

There are many definitions and interpretations of Global virtual teams. Charles P.R. Scott and Jessica L. Wildman claim in their book "Leading Global Teams", that this is due to the recent and rapidly growing nature of this phenomena. They state that for this reason, same phenomena have now a number of different labels, for example: multinational and multicultural distributed teams, multinational group, transnational team, etc. (Wildman & Griffin, 2015). In line with Scott and Wildman, in our study we use most common name - Global virtual teams.

The term Global virtual teams can be divided in several ways, including "Team", "Virtual team", "Global team" and finally "Global virtual team".

2.3.1. **Team**

Cohen and Bailey's (1997) define work teams as: "a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems, and who manage their relationship across organizational boundaries" (Cohen & Bailey 2007, as cited in Pinjani, 2007, 20).

2.3.2. **Virtual team**

With reference to Gibson and Cohen (2003), Martin describe virtual teams as "... teams in which members use technology to interact with one another across geographic, organizational, and other boundaries…" (Martins et. al., 2004, 805). Driskell, Radtke, & Salas define global virtual teams as follows: "Virtual teams, commonly referred to as distributed teams, are groups of geographically dispersed individuals who work interdependently to accomplish an organizational task and who interact predominantly, if not wholly, via technology-mediated communication (Driskell et al., 2003, as cited in Lyons et al., 2009, 8). Finally, Powell, Piccoli, and Ives (2004) define Virtual teams as: "groups of geographically, organizationally and/or time dispersed workers brought together by information and telecommunication technologies to accomplish one or more organizational tasks" (Powell, Piccoli, & Ives, 2004, 7).

Poole and Zhang (2005), claim that virtual team members "are dispersed and do not conduct much work face-to-face" and that "most interaction between members is mediated by information and communication technologies" (Poole & Zhang, 2005, 367). Kerber and Buono also refer to the dependence of virtual teams on information technologies and argue that: "... virtual teams rely heavily on communication and information technologies, such as company intranets, team conference calls, e-mail, video conferencing, and various groupware applications ..." (Kerber & Buono, 2004, 5). Communication technology is an integral part of virtual teams.

Martins (Martins et. al., 2004) claim that virtual teams are becoming more and more common phenomenon in organizations. Increased use of virtual teams, compared to collocated teams, is related to the fact that virtual teams may provide several advantages. "Virtual teams allow organizations to access the most qualified individuals for a particular job regardless of their location, enable organizations to respond faster to increased competition, and provide greater flexibility to individuals working from home or on the road" (Hunsaker & Hunsaker, 2008, 87). But virtual teams can also create communication challenges. Trina Hoefling claims, that managing virtual teams is "exhilarating and challenging" as the "old" management competencies have to be expanded to support broader leadership and facilitative focus (Hoefling T, 2003, 137).

2.3.3. Global team

Jarvenpaa and Leidner describe global teams as teams "which are culturally diverse as well as geographically dispersed" (McDonough et. al 2001, 111). According to business author Jean Binder, many international companies build global teams as they see it as an effective way to operate in global setting. The author adds, though, that companies do not understand the consequences of possible cultural impact on business processes. Work in global teams requires deep understanding of mixed skills of employees from different nations and thinking beyond the collocated project management practices. It is important for global team leaders to be knowledgeable in such areas as team building, trust building, conflict resolution, and coaching to build effective collaboration in global virtual teams (Binder, 2007).

As it was mentioned previously, there are multiple definitions of global virtual teams in scientific and business literature. With reference to Dixon and Panteli (2010) and Kirkman et al. (2002), Carter gives the following definition of global virtual teams: "Global virtual teams are teams comprised of individuals from various geographic locations and/or cultural backgrounds who rely on communication technology to interact with one another to some degree." (Carter et al. 2014, 694). Wildman and Griffin define Global virtual teams: "An interdependent virtual team whose members are geographically and time- dispersed across cultural and national boundaries" (Wildman & Griffin 2015, 14).

In our study we see term "global virtual team" as a combination of above-mentioned terms - virtual teams and global teams. Necessary conditions that a term "global virtual team" includes are geographic/cultural dispersion and reliance on communication technology.

It is important to mention that one feature that is common to global virtual teams explored in our study, is that these teams are created on project basis (project teams).

2.3.4. Project team

Business dictionary (www.businessdictionary.com) defines project team as: "A group of individuals assembled to perform activities that contribute toward achieving a common task related goal". According to Carleton University definition: "The Project Team is responsible

for executing tasks and producing deliverables as outlined in the project management plan" (Carleton University, n.d. 1).

Project team can consist of various individuals with different roles and responsibilities depending on the project i.e.: Project Manager, Project Mentor, Technical Lead, Vendor, Customer, Business Analyst, etc. (Carleton University, n.d.). Team members can be added to and removed from the project team during the project (Mulcahy, 2005; Zajac, 2013). "Project teams are formed to perform a specific task and disbanded when this task is completed" (Zajac, 2013, 105). Therefore, project team has a life cycle that follows the project development cycle, starting with initiation phase that is followed by execution phase and ending with closing activities and disbanding of the team members. Besides company representatives, project teams can include other experts needed for the project completion (Grucza & Ogonek, 2009, 95). The Project manager is responsible for the team performance during the project (Zajac, 2013).

2.3.5. Global virtual team vs. collocated team

Work processes can differ significantly in global virtual teams and collocated teams. Wildman and Griffin (2015) mention three main issues, which emerge in the new working environment. First of all, global teams are compiled of people with **diverse cultural background,** and often this background is unfamiliar for other team members. The second issue is related to **technological aspect** of communication - it occurs via various types of media, such as email, Skype, and different types of messengers, which can be new for users. In line with Wildman and Griffin (2015), Powell, Piccoli, & Ives (2004) claim that use of technological tools can interfere communication and influence the building of relationship, and those processes can eventually lower team effectiveness: "such problems as delayed communication, misunderstandings arising from lack of response, lack of a shared context within which to interpret messages, and inability to monitor team members, are more pronounced in the virtual environment" (Kayworth & Leidner, 2000, 24). The third issue is connected to **conflicts**, which occur more often in computer-mediated communication. Due to emerged ambiguity, it is more difficult to manage conflicts in virtual space. However, Wildman and Griffin (2015) mention, that research on conflicts in global virtual teams compared to collocated teams is limited.

Compared to collocated teams, virtual team leaders have reduced possibilities in team problem solutions. In collocated teams, increased monitoring and personal face-to-face discussions can be implemented in case of teamwork problems, while virtual team leaders have to come up with more creative solutions (Kayworth & Leidner, 2000). Rita Mulcahy mentions that teams which do not have the possibility to meet face-to-face "will have more conflict, decreased productivity, and other impacts that affect the project schedule and cost" (Mulcahy, 2005, 280).

Although work in collocated and virtual teams has a number of differences, there are some similarities as well. Both types demonstrate some degree of task interdependence between team members and tendency to work toward shared goals (Wildman & Griffin, 2015).

2.4. Definition of communication

Although the term "communication" is widely used, there is no commonly used definition (Luthans, Luthans & Luthans, 2015, 249). Jens Allwood (2013, 18) sees communication as a "sharing of information, cognitive content or understanding with varying degrees of awareness and intentionality". This means that people communicate if and only if both parties share a cognitive content which evolves as a result of influencing each other's perception, understanding and interpretation (Allwood, 2013). It is also possible that one person influences another unintentionally, and another person is unaware of the influence (Allwood, 2002, cited in Allwood, 2013). Jens Allwood also emphasizes the importance of the influence that communicating parties have on each other as a result of communication.

Wrench, J. S., McCroskey, J. C. and Richmond, V. P. (2008, cited in Wrench, Punyanunt-Carter & Ward, 2016) see human communication as "the process whereby one individual (or group of individuals) attempts to stimulate meaning in the mind of another individual (or group of individuals) through intentional use of verbal, nonverbal, and/or mediated messages". This definition can be broken down into characteristics like source, message, channel, and receiver (Wrench, Punyanunt-Carter & Ward, 2016).

One of the most widely used models of communication was developed in 1948 by Claude Shannon and Warren Weaver. This model consists of information source, transmitter, receiver, destination, noise source and the message that is being transmitted. Later, Warren Weaver also added the feedback to the model. The model was originally designed for telephone communication, but has been also applied to other forms of communication. Communication as a process can be described as follows: "source encodes a message and sends it through a channel to receiver, who then encodes it. The receiver provides feedback. Noise can limit the effectiveness of a message in stimulating the desired meaning in another person's mind" (Westerman, Bowman, & Lachlan, 2014, 4).

Similar but more simple model is considered in project managers' professional exam preparation guide book. Rita Mulcahy mentions three parts in her communications model: the message, the sender and the receiver "Each message is encoded by the sender and decoded by the receiver based on the receiver's education, experience, language and culture" (Mulcahy 2005, 304). She stresses as well the importance of the careful message encoding for project managers, right choice of the media for message sending and confirmation that this message was understood.

2.4.1. Communication in project team and project management

In this subchapter, we focus on communication within project teams. More precisely, the communication between the project manager and his/her team members. Khazanchi & Zigurs (2005, 3) define communication as "the process by which people convey meaning to one another via some medium through which they exchange messages and information in order to carry out project activities". This is also how we see communication in our study.

Project management is a coordinated activity and communication is often planned. The output of this planning is a communication management plan which documents how communication is managed and controlled (Mulcahy, 2005). The communication management plan is a compulsory element in project management and it should provide answers to following questions: "Who needs what information? When will they need it? How will it be given to them and by whom?" (Daim et al., 2012, 201).

Another factor that is essential for communication in project management is the communication media that are used to exchange messages and information. In case of global virtual teams, the communication has to take place over a distance, time and cultural differences, therefore the choice of communication media by the project manager is especially relevant for successful communication. The following part of this chapter will give an overview of Media synchronicity theory, which explains the factors that may influence the choice of appropriate communication media in given situation.

2.5. Media Synchronicity theory

Communication medium influences the exchange of messages and information between the communicating parties and is directly connected to communication effectiveness. Daft and Lengel (1968) created the Media Richness theory, which provided a framework for describing a communication medium's ability to reproduce the information without loss or distortion. Dennis & Valacich argue that face-to-face communication is the richest communication medium while written and numeric documents are the lowest in richness. The "richness" depends on the medium's capacity for "immediate feedback, the number of cues and channels utilized, personalization, and language variety" (Daft & Lengel, 1986, 560). According to this theory, the richer media are better suited to equivocal tasks which implies sharing different opinions to solve the task, while media that are less "rich" are best suited to tasks with high uncertainty which mean that there is lack of information for solving the task (Dennis & Valacich, 1999, 1).

Dennis and Valacich (1999) did not find Media Richness Theory convincing and created a Media Synchronicity Theory. "Media synchronicity is the extent to which individuals work together on the same activity at the same time..." (Dennis & Valacich, 1999, 5). This theory states that "the key to effective use of media is to match media capabilities to the fundamental communication processes required to perform the task" (Dennis & Valacich, 1999, 9). Dennis & Valacich (1999) defined five media capabilities: immediacy of feedback, parallelism, symbol variety, reprocessability, and rehearsability. They concluded that face-to-face communication is not always the "richest" medium for communication but the "best" medium or set of media depends on which of these five dimensions are most important for a given situation. (Dennis & Valacich, 1999, 8).

The choice of the communication media depends on whether the communication task is conveyance or convergence of the information. "Conveyance is the exchange of information in

which case not all participants need to focus on the same information at the same time, nor must they agree on its meaning" (Dennis & Valacich, 1999, 5). Convergence is when participants develop a shared meaning, try to understand each other's views and strive to agree on the meaning of information. (Dennis & Valacich, 1999, 5). As most of the tasks require both, transmitting the information as well as discussion and agreeing on the meaning of the information, then switching media may be most appropriate for achieving the efficient communication (Dennis & Valacich, 1999, 9).

Dennis and Valacich (1999, 3) use TIP theory (Time, Interaction, and Performance) to illustrate different functions that the group is performing and which influence the communication media choice. As groups are normally embedded into social and organizational systems, they perform simultaneous functions of production, group well-being and member support as they work. Production function means performing the assigned task and making contributions to their organizations. Group well-being means contributing to the group itself as an intact and continuing social structure. Member-support means making contributions to the individual members.

Within these three functions, groups can be engaged in any of four modes: inception (refers to the selection of project goals), technical problem-solving (involves resolving technical issues about project accomplishment), conflict resolution (the process of resolving conflicting preferences, values, interests and work assignments), and execution (refers to the set of behaviors necessary to carry out the project, group or individual goals) (Dennis & Valacich, 1999, 3). It is important to recognize that "groups may be in different modes in different functions". (Dennis & Valacich, 1999, 3). Every project has its order of these modes. However, all projects, move at least through inception and execution in the production function (Dennis & Valacich, 1999, 3).

Media synchronicity theory assumes that the established work teams and newly formed teams require different use of media for effective communication. "Newly formed groups, groups with new members, and groups without accepted norms for production, group well-being, or member support will require more use of media with high synchronicity (high feedback and low parallelism)" (Dennis & Valacich, 1999, 8). While established groups will require less use of media with high synchronicity.

In conclusion, it can be said that the capability of the media (immediacy of feedback, symbol variety, parallelism, reprocessability, and rehearsability) has to be examined "to support the two communication processes (conveyance and convergence) across the three group functions (production, group well-being, and member support") (See Figure 2). Group development phase can have an impact on the group functions and modes and influence which communication mediums are most efficient to use at certain point.

The situatedness of the effective communication in project management and the importance of communication management is also confirmed by Mulcahy (2005, 305), who states that "In order to have clear, concise communications, the project manager must handle communications in a structured manner by selecting the form of communication that is best for the situation."
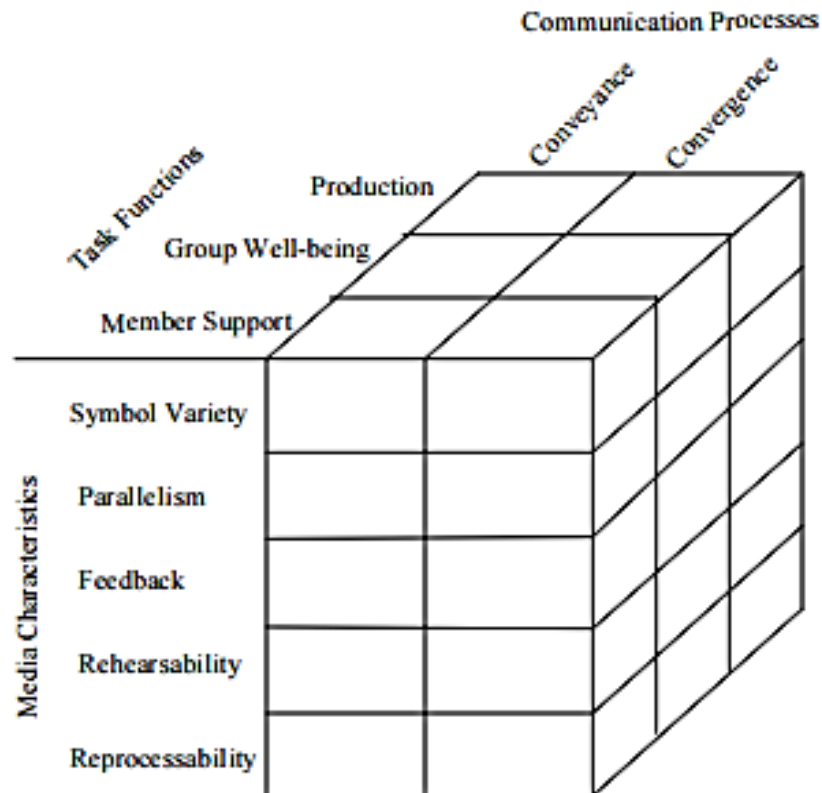
Figure 2. *Dimensions of task functions, communication processes, and media characteristics (Source: Dennis & Valacich, 1999, 5)*

2.6. Communication challenges in managing global virtual teams

Communication challenges in global virtual teams have become a popular topic in the management field. There is a general agreement that the communication aspect is one of the most important challenges that project managers face in project management and project delivery (Martinic, Fertalj & Kalpic, 2012; Mulcahy, 2005). Many management books dedicate separate chapters to communication in global virtual teams (for example Binder, 2012; Lee, 2013; PMBOK Guide, 2008; Wildman & Griffin 2015). There are thousands of related articles on the Internet and numerous training courses on the market that aim to help virtual team managers with overcoming communication challenges in managing their teams. However, there is no complete and recognized theory that would explain communication processes in global virtual team management. Not to mention communication challenges, which deserve separate attention.

The context of this study is virtual project team which is defined as a team "comprised of individuals from various geographic locations and/or cultural backgrounds who rely on

communication technology to interact with one another to some degree." (Carter et al., 2014, 694). Many authors mention **dispersed geographical distribution** (Hinds & Mortensen, 2005; Paul, Seetharaman, Samarah, & Mykytyn, 2004; Kerber & Buono, 2004), **cultural diversity** among team members (Krishna, Sahay, & Walsham, 2004; Staples & Zhao, 2006; Kankanhalli, Tan, & Wei, 2007; Kerber & Buono, 2004) and the use of **communication technology** (Wildman & Griffin, 2015, Powell et al., 2004) as possible communication barriers that are unique for global virtual teams. Latter are seen as the main three challenging factors for communication in global virtual teams which, in turn, are related to other challenges such as lack of face-to-face communication and lack of trust. These and some more specific barriers like **lack of language competence** and working in **different time-zones** which are discussed in this chapter.

2.6.1. Communication challenges related to physical distribution

One of the main characteristics of Global Virtual team is that team members are often working in different geographical places. Connaughton and Shuffler (2007) analyzed the literature that was published about multinational and multicultural distributed teams and found that while distance is mostly viewed as a challenge to multinational and multicultural distributed teams, there are also studies which see distance as not an issue. Authors concluded that as many studies are based on the assumption that distribution is automatically a challenge to the team's work and several studies have proven that distance does not impact team's efficiency, then the role of distance remains still an empirical question. Connaughton and Shuffler's (2007) argue that the distribution factor should not be automatically seen as a constraint to efficient communication within global virtual teams. There are several interconnected communication challenges that are related to the "distance factor" in managing global virtual teams.

It is a prevailing view within the literature that the frequency and continuity of communication is a challenge for communication within global virtual teams. Since global virtual team members are geographically dispersed, their communication is not as frequent and continuous as in case of collocated teams. Research shows that frequent, spontaneous communication is essential as it "mitigates the effect of geographical dispersion of team members in regards to both interpersonal and task conflict" (Hinds & Mortensen, 2005, cited in Scott & Wildman, 2014, 20). It also has been shown to be related to shared identity and shared context (Hinds & Mortensen, 2005, cited in Connaughton & Shuffler, 2007, DeSanctis, Wright, & Jiang, 2001).

However, research conducted by DeSanctis, Wright, and Jiang (2001) showed that frequency of communication matters less than the depth and focus of communication. In their study, teams that showed better results, preferred fewer, deeper conversations to more frequent, shallow conversations. This finding is in line with the media synchronicity theory which states that communication media should be chosen according to the situation. But it does not change the fact that geographical dispersion limits the team's opportunity for choosing the communication media which allows frequent face-to-face communication.

The frequency of communication in global virtual teams also influence the communication technology choices as the medium that can be used is limited and as it has an effect on the level

of trust between team members and the manager (Connaughton & Shuffler, 2007). These aspects and potential communication challenges are explored in the next paragraphs of this study.

2.6.2. **Communication challenges related to trust building and lack of face-to-face communication**

Trust building and lack of face-to-face communication in virtual teams are two distinguishable areas, but as their impact on global virtual team's communication is closely intertwined, we consider it under the same category.

There are dozens of definitions of trust (Lewis, 1985), but majority of definition describe trust as "the optimistic acceptance of a vulnerable situation in which the trustee believes the trustor will take care of the trustee's interests" (Hall, Dugan, Zheng, & Mishra, 2001, 615). Lewicki, McAllister and Bies define trust as "confident, positive expectations regarding another's conduct" (Lewicki, McAllister, & Bies, 1998, 439). Trust is essential factor for creating good business and interpersonal relationship (Golembiewski & McConkie, 1975). It is crucial in situations, where exist uncertainty risk or interdependence (Mayer, Davis, & Schoorman, 1995; Mishra, 1996). Jarvenpaa and Leidner claim that "Trust is pivotal in a global virtual team to reduce the high levels of uncertainty endemic to the global and technologically based environment" (Jarvenpaa & Leidner, 1998, 792).

Trust and communication are closely intertwined. "At its core, trust is the basis of communication, and communication is key to establishing, maintaining and building trust… Without a commitment to truth and open communication, a solid relationship cannot be formed. Trust—the essential ingredient for collaboration and effective communication …" (Kelly, 2013, 2).

Jeffries and Becker argue that "... trust in the workplace has important implications for the outcomes of individuals, groups, and organizations" (Jeffries & Becker 2008, p.316). Hosmer (1995) points that trust is key for group behaviour, economic exchange and effective management understanding. Trust plays important role in teamwork (Jones & George, 1998), risk-taking (Mesquita, 2007; Colquitt, Scott, & LePine, 2007) and lead to positive team-outcome (Jarvenpaa & Leidner, 1999). If summarizing, "trust leads to better work relationships, improved decision making, and enhanced organizational effectiveness" (Jeffries & Becker 2008, 316). Kerber and Buono mention: "the effort needed by a team leader to build and maintain cohesiveness and trust in a virtual team may be greater than that required for collocated teams" (Kerber & Buono 2004, 9).

Lack of trust in teams may lead to costs increasing and lower team effectiveness. Rita Mulcahy points: "If the team doesn't trust you … the team will not take your direction and follow your instructions, and project will suffer" (Mulcahy, 2005, 279). With link to Ashforth and Lee (1990), Wilson, Straus and McEvily argue: "When members of a team do not trust each other, they are likely to expend additional time and effort monitoring one another, backing up or duplicating each other's work, and documenting problems" (Wilson, Straus, & McEvily, 2006, 16).

Monitoring of other team members furthermore causes lower effectiveness as it decreasing concentration on the main task. Lack of trust related as well to team members work satisfaction and willingness to continue working in the team (Golembiewski & McConkie, 1975).

Informal face-to-face interaction, which is common for collocated teams, play important role in trust building. Wildman and Griffin (2015) mention, that communication during lunch and coffee breaks helps to increase team cohesiveness and to establish better relationship. This important way to build relationship, often is not available in global virtual teams where communication is limited by technical tools. Kirkman and coauthors (Kirkman et al., 2002) state that to overcome difficulties related to isolation and to create social bonds, virtual team members start to orient to predictable performance of the virtual team members.

Daim argues that face-to-face communication can be considered as one of most effective ways for establishing of good communication. When it's not available on a regular basis, Daim suggests to enclose face-to-face communication in the phase when a team is newly formatted (Daim et al., 2012). This can help to improve trust building processes, establish common goals and lead to better productivity and increased innovation (Smith, 2001).

Nevertheless, many recommend to virtual teams to hold face-to-face meetings on project start (Staples & Zhao, 2006), it has been argued, that this is a most efficient way of social bond establishing. Carte and Chidambaram (2004) and Staples & Zhao (2006) claim that "this practice should only be followed if the teams are homogeneous. If teams are diverse, especially on surface-level elements, then rich media meetings, such as F2F, should be avoided until a team identity has been established" (Staples & Zhao 2006, 401). To minimize the risk of subgroups creation in diverse on surface level groups, Staples and Zhao recommend using media with reductive capabilities. However, Staples and Zhao agree with Daim that face-to-face meetings can be advantageous, but only when surface-level diversity is low.

Although the level of trust can be lower in newly formed global virtual teams, compared to co-located teams, there is some research suggesting that trust in global virtual teams can increase subsequently (Wilson, Straus, & McEvily, 2006). Positive communication should be encouraged for overcoming negative effects of team desperation and to reach closer to collocated team level of trust. Jarvenpaa and Leidner (1999) mention the importance of social communication in newly formed global virtual teams. As important factors for establishing of a good relation over time, Jarvenpaa and Leidner mention as well predictability, substantivity, and timeliness.

2.6.3. **Communication challenges related to communication technology**

To minimize the risks which accompany lack of face-to-face communication, project managers are applying different communication technologies which usage can, in turn, present new challenges. Global virtual teams rely on technological tools in order to communicate and coordinate their work. "Without Internet, email, video conference and audio bridges, virtual teams can't even exist" (Daim et al., 2012, 200). For this reason, we find important to consider an impact of technology on virtual team communication.

New technology development brought new possibilities and allowed people to communicate operatively across the globe. This made distribution of work much easier and faster (Montoya-Weiss, Massey, & Song, 2001; Kirkman et al., 2004). However, technology failure can cause various issues in global virtual team communication. In order to perform work tasks, global team members have to adapt to a virtual environment. Managers need to be careful when choosing communication media to different work situations as different media channels create different potential outcome (Shachaf, 2008). Although there are plenty of technical solutions available (Anawati & Craig, 2006), the processes of how to choose the right media are rarely defined (Katainen & Nahar, 2008).

When team members must rely on virtual tools, communication becomes more task-oriented and at the same time more challenging (Wildman & Griffin 2015; Daim et al., 2012; Kirkman et al., 2002). "Increased reliance on electronic communication can lead to misunderstandings, which can erode team communication and productivity, and inhibit the type of social interaction within a team that leads to innovation and success" (Daim et al., 2012, 203). Keller states, that virtual tools "... may play part in whether or not global virtual teams can build trust and form an understanding of intercultural culture. (Keller, 2014, 21).

Non-verbal communication, including gesturing, facial expression, body language, etc., plays a very important role in human communication (Wang, 2009). However, non-verbal communication is often limited in virtual communication. Such elements as tone of voice can be present in phone communication, but completely missing in computer mediated communication. Social and non-verbal cues are not understandable via e-mail, for example (Keller, 2014; Shachaf, 2008). It is critical that effective electronic communication is established so that social interaction can develop (Daim et al., 2012). The absence of nonverbal and social cues can lower the accuracy of the information that is being transmitted and in some cases, "can lead to anxiety, confusion, and miscommunication" (Daim et al., 2012, 203).

As mentioned earlier, communication effectiveness is supported by choosing the appropriate communication media to transfer the message (media synchronicity theory). We suggest, that in order to minimize the risk of communication challenges, global virtual team managers have to be knowledgeable about what kind of communication technology to use in concrete situations and how to use it competently. Media synchronicity theory provides a good basis for choosing media capability that is most useful in certain situation and knowledge about various means of communication technology makes it possible to choose the right tool for communicating.

2.6.4. **Communication challenges related to cultural diversity**

A recurring theme emerging from the literature is the cultural differences that could make the communication in managing global virtual team more challenging. Culture is "the collective programming of the mind which distinguishes the members of one group or category of people from another "(Hofstede, 1994, 5). Jens Allwood (2013, 34) states that "Cultural traits and differences can influence all aspects of communication, that is, production, interpretation, interaction and assumptions about context, for example, assumptions about the proper, or polite,

way to carry out various social activities, like greeting, e.g. thanking, introducing yourself, getting to know someone, negotiating, etc. "Cultural differences may influence what is being communicated as well as how it is done. The same body movement and the same word can have different meaning in various cultures and will be also understood differently by communicating parties. Similarly, the concept of being a manager and subordinate is understood and acted upon differently depending on the culture.

Researchers argue that different cultural backgrounds not necessarily cause conflicts, but increase chances for it to occur (Armstrong & Cole, 1995). Wildman and Griffin (2015) point, that geographical dispersion and cultural diversity can lead to the formation of subgroups which can, in turn, impede communication and contribute to the formation of the conflicts. In addition to the more frequent emergence of the conflicts, Shachaf (2008) states that cultural diversity also increases the complexity, confusion, and ambiguity of communication. All these aspects can create serious communication barriers which can be challenging for both managers and team members.

One of the aspects that can help project manager use full potential of global virtual team is intercultural competence and the ability to adapt leadership style according to the cultures present in the team. Binder (2012, 24) states that "global project managers need to recognise how different attitudes, beliefs, behavioural norms and basic assumptions and values can influence collaboration among team members coming from multiple countries, and learn how to adapt their leadership style to the different cultures involved in the project". Although being aware of the cultural differences may be helpful in preventing or solving communication challenges, Jens Allwood (2013) emphasizes the importance of being cautious about stereotyping and generalizing based on cultural background.

There are several cultural studies that identify and measure cultural aspects among various cultures and classify them under certain dimensions. These studies highlight the differences between the cultures that may create communication challenges between representatives of different cultures. We assume, that these potential communication challenges can also be transferred to global virtual team management context where the communicating parties are project manager and the team members.

2.6.5. Geert Hofstede's five-dimensional model

One of the most influential and most widely used cultural studies is Geert Hofstede's (1994) five-dimensional model of culture. The research began in 1960's and continued over 30 years. Hofstede's study is based on 116,000 questionnaires which were used to collect data about the work-related value patterns of IBM employees from 50 countries and three regions. This model highlights five different cultural dimensions that emerged in the research: power distance, collectivism-individualism, masculinity-femininity, uncertainty avoidance and long term-short term orientation.

Power distance is "the degree to which the culture believes that institutional and organizational power should be distributed unequally and the decisions of the power holders should be challenged or accepted" (Lustig & Koester 2010, 114). In high power distance culture, a person's age, social and professional status play an important role in how he/she communicates with others and expects others to communicate with him/her. While in cultures where the low level of power distance is preferred, above mentioned factors are not perceived as important (Lustig & Koester, 2010). In a global project management context, it may influence how likely are the project team members to be involved in the decision-making process (Binder, 2012). Team members coming from cultures with larger power distance rates may find it more difficult to disagree with their project managers in front of other people (Binder, 2012) and expect project managers to tell them how to act. While individuals from cultures that prefer smaller power distance, expect to be seen as more equal partners to project manager and communicate on a more informal level. Sweden is the country with one of the lowest power distance levels in the world and India is one of the highest (Binder, 2012).

Individualism-collectivism. "Individualism stands for a society where everyone is expected to look after him/herself and his/her immediate family only" while collectivism stands for "a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty." (Hofstede, 2001, 225). In addition to determining the extent of group cohesiveness, this dimension helps project manager to understand the team members' values related to the working conditions and ambitions. "Generally, team members with individualist mindset praise self-determination, are fond of having sufficient time for their personal lives, enjoy freedom on selecting the way they will execute the tasks assigned to them and thrive on challenging activities and competitive environments" (Binder, 2012, 25). Recognizing, whether a team member comes from a high individualist culture increases the chances of productive communication between project manager and the team member. According to Geert Hofstede, the most individualist culture is in the USA and the most collectivist culture is in Guatemala (Binder, 2012, 25).

Masculinity-femininity. This dimension indicates the degree to which "masculine" behaviors, such as assertiveness and the acquisition of wealth, or "feminine" behaviors, such as caring for others and the quality of life are valued in the culture (Lustig & Koester, 2010). The level of discrimination and the differentiation between genders tends to be lower in the more feminine societies. Project managers may need to adjust their communication according to the whether their teammates come from feminine or masculine cultures and acknowledge their standpoints. Female project managers from feminine countries may need to be patient and assertive to overcome perceptions of the team members who come from masculine countries (Binder, 2012). Female team members from masculine countries may need encouragement and support from project managers to contribute and actively express their viewpoint. Japan is considered as the most masculine and Sweden as the most feminine country. (Binder, 2012)

Uncertainty avoidance. The Uncertainty Avoidance dimension describes the extent to which members of society feel uncomfortable with ambiguity (Hofstede 1980, 1994). Individuals from high uncertainty avoidance cultures are more inclined to avoid risks, enjoy working with tight rules and control systems and resist innovation. Team members are likely to enjoy tasks requiring precision, punctuality, and hard work and feel more comfortable with detailed planning and more short-term feedback. People from uncertainty accepting cultures are more flexible, tolerant, open-minded and relaxed about taking risks and facing ambiguous situations (Lustig & Koester 2010). Depending on team members' cultures, project manager can plan the way how the assignments shared and how they are formulated. As well as determine which team members may need more guidance and control and which prefer more freedom of action. The management of the team can be more effective, if the cultural differences are taken into account (Binder, 2012)

Long term/short term orientation dimension. This time-orientation dimension refers to a person's point of reference about life and work (Lustig & Koester 2010). Project team members from the long-term oriented cultures value highly the persistence. They accept it if the results are slow and are more likely to support entrepreneurial activity and stimulate investments. Individuals from short-term oriented cultures value personal stability and reputation and prefer to achieve quick results. (Binder, 2012). It is useful for a project manager to know that some team members prefer to see frequent progress reports and often discuss the benefits that are achieved and what are the next short-term targets. In Hofstede's research, Pakistan culture has has been rated as the least and Chinese as the most long term oriented culture (Binder, 2012)

All cultural values mentioned above influence the perceptual filter through which individuals interpret the information and that they then use to make decisions (Adler, 1997; Hofstede, 1980, cited in Wildman & Griffith, 2014). The weakness of Geert Hofstede's theory is that few dimensions cannot explain such complex constructs as beliefs and values (Shachaf, 2008). Also, cultures are not static or fixed in time, which means, that the characteristics are constantly changing (Neuliep, 2012). And last but not least, it is important to keep in mind that these dimensions do not describe all the people who represent certain culture. Nevertheless, knowing these cultural specifics allows the project manager to some extent predict and prevent potential communication challenges and to use the full potential of the global virtual team.

2.6.6. GLOBE taxonomies

GLOBE is the acronym for "Global Leadership and Organizational Behavior Effectiveness". Project GLOBE is the largest and one of the ponderable research in the area of culture and leadership up to date (Grove, n.d.; Wildman & Griffin, 2015). "The goals of the GLOBE authors were to develop and improve the framework for understanding cultural differences that had been initiated by Hofstede (1980)" (Wildman & Griffin, 2015, 47). GLOBE study consider cultural values with focus on needs of organizational behaviour researchers.

Project started in the 1990s by team of psychologists (Wildman & Griffin 2015). House, Hanges, Javidan, Dorfman and Gupta published in 2004 a book "Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies" (www.globeproject.com), where authors present an investigation on how "cultural values are related to organizational practices, conceptions of leadership, the economic competitiveness of societies, and the human condition of its members" (Grove, n.d. 1). In investigation participated more than 17,000 managers from 951 organizations in 62 different cultures. Using qualitative methods, investigators collected data from three types of companies including telecommunications.

Second important issue of the GLOBE project "Culture and Leadership Across the World: The GLOBE Book of In-Depth Studies of 25 Societies" was published in 2007.

GLOBE researchers, identified nine cultural dimensions: Performance Orientation, Institutional Collectivism, Gender Egalitarianism, Uncertainty Avoidance, In-Group Collectivism, Future Orientation, Humane Orientation, Assertiveness, Power Distance. House, Javidan, Hanges and Dorfman describe 9 cultural dimensions as following (House at al. 2002, 5):

Uncertainty Avoidance: The extent to which members of an organization or society strive to avoid uncertainty by reliance on social norms, rituals, and bureaucratic practices to alleviate the unpredictability of future events.

Power Distance: The degree to which members of an organization or society expect and agree that power should be unequally shared.

Collectivism I: Societal Collectivism: The degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action.

Collectivism II: In-Group Collectivism: In-Group Collectivism reflects the degree to which individuals express pride, loyalty and cohesiveness in their organizations or families.

Gender Egalitarianism: The extent to which an organization or a society minimizes gender role differences and gender discrimination.

Assertiveness: The degree to which individuals in organizations or societies are assertive, confrontational, and aggressive in social relationships.

Future Orientation: The degree to which individuals in organizations or societies engage in future-oriented behaviors such as planning, investing in the future, and delaying gratification.

Performance Orientation: The extent to which an organization or society encourages and rewards group members for performance improvement and excellence.

Humane Orientation: The degree to which individuals in organizations or societies encourage and reward individuals for being fair, altruistic, friendly, generous, caring, and kind to others.

GLOBE study introduced as well 21 "Primary leadership dimensions". Primary leadership dimensions or "first order factors" are related to how cultures evaluate leader's effectiveness or ineffectiveness (Hope, 2007, 3). Later 32 primary dimensions were reduced to 6 main leadership styles:

Performance-oriented style ("charismatic/value-based"): Stresses high standards, decisiveness, and innovation; seeks to inspire people around a vision; creates a passion among them to perform; and does so by firmly holding onto core values

Participative style: Encourages input from others in decision-making and implementation; and emphasizes delegation and equality.

Human style: Stresses compassion and generosity; and it is patient, supportive, and concerned with the well-being of others.

Autonomous style: Characterized by an independent, individualistic, and self-centric approach to leadership.

Self-protective style (and group-protective): Emphasizes procedural, status-conscious, and "face-saving" behaviors; and focuses on the safety and security of the individual and the group.

Analysed countries were divided by GLOBE to cultural clusters and furthermore grouped according to preferences in leaders' styles. In the study were identified as well universal and culturally contingent leader characteristics.

Nevertheless, GLOBE study provides improvements on previous cultural leadership and values studies, it was criticized for a number of flaws in the dimensional part, ambiguity and weaknesses in methodology (Wildman & Griffin, 2015).

2.6.7. Communication challenges related to different languages

Communication challenges related to different levels of the language competence among the team members is an often recurring topic in the literature. Binder (2012, 62) states that "different native languages can generate misunderstandings, and the challenge of addressing personal concerns in another language is higher". Shachaf (2008) also notes the lower level of accuracy in communication and the translation problems are of the most evident aspects of miscommunication in global virtual teams. Scott & Wildman (2015) emphasize the importance of communication factor in the team as critical information might get "lost in translation" due to team members speaking different mother tongues.

Language related misunderstandings can also occur because people with different cultural backgrounds can use language differently. Edward T. Hall has divided the cultures according to the importance people attribute to the context in communication (Rogin, Rhodes, & Guffey,

2009). Cultures where people focus more on the verbal codes than on the nonverbal elements are low context and cultures where people actively monitor the nonverbal elements of the context are high context cultures (Rogin, Rhodes, & Guffey, 2009). In low context cultures, "the rules for communication are implicit, and communicators are expected to know and understand unspoken communication" (Rogin, Rhodes, & Guffey, 2009, 63). As a lot of meaning is already hidden in individuals' roles and other contextual aspects, then it is not necessary to speak a lot to convey meaning in high context cultures. Whereas in low context cultures, a lot of words are used to carry the meaning.

People in high context cultures avoid saying "no" and tend to go around the point, while people in low context cultures can say "no" directly (Hall & Hall, 1990). In high context cultures communication cues are transmitted by posture, voice nuances, gestures and facial expression (Guffey & Loewy, 2014), but in case another person does not know how to read these cues or if communication takes place via communication technology, then there is a bigger possibility for misunderstandings.

2.6.8. Communication challenges related to different time zones

One of the advantages of project team member working in different time zones is that global virtual teams can have continuous project work around the clock (Nedrick, Wellen, Barnwell, Rudolph, & Sesay, 2014). However, team members working in different time zones means, that communication with these individuals can be limited to certain period during the day. It can be especially stressful and inefficient in case of critical projects when delays are unacceptable (Daim et al., 2012) and the fast flow of information is necessary. In these cases, it can be helpful if the procedures and communication rules are precisely defined (Binder, 2012).

3. RESEARCH METHODOLOGY

In this part of the study, we give an overview of what kind of methodology we used to conduct our research. We also provide a description of the companies and interviewees involved in the research. An overview of data collection process, data analysis and ethical considerations are also provided.

3.1. Research purpose and approach

This study aims to explore communication challenges of managing global virtual teams; more specifically, to explore the individual opinions and experiences of the project managers. Consequently, we chose to adopt a qualitative approach and phenomenological strategy of inquiry. "Qualitative research is concerned with social and personal processes and relations"(Creswell, 2003, 9), and investigates "specific meanings, emotions, and practices that emerge through the interactions and interdependencies between people" (Creswell, 2007, 57)."A phenomenological study describes the meaning for several individuals of their lived experiences of a concept or a phenomenon" and the focus should be on describing what all participants have in common as they experience the phenomenon" (Creswell, 2007, 57).

To collect rich data about project managers' experiences, we conducted individual in-depth interviews. An in-depth interview provides qualitative empirical data that allows examining interviewee's experience in details (Hennink, Hutter & Bailey, 2011). In conducting a phenomenological study, it is important for the researcher to be as neutral as possible to avoid influencing the analysis of empirical data (Creswell, 2003). We kept that principle in mind during the collection and analysis of the empirical data.

3.2. Company description

We collected empirical data for the study from two companies - Telefonaktiebolaget LM Ericsson (hereafter referred to as Ericsson) and Husqvarna Group (hereafter referred to as Husqvarna).

Ericsson is a multinational world leading communication technology company, which provides equipment, software, and services (www.ericsson.com 2015). There are 116,281 employees worldwide in Ericsson, including 17,041 in Sweden (www.ericsson.com 2015). Ericsson global headquarter placed in Stockholm, Sweden. Company operates in around 180 countries.

Husqvarna is a world leading producer of outdoor power products, a European leader in garden watering products and a world leader in cutting equipment and diamond tools for the construction and stone industries (Husqvarnagroup.com, 2016). There are above 13,000 employees globally within the Husqvarna Group; manufacturing is done in 9 countries and the sales points are located in more than 70 countries worldwide.

Ericsson and Husqvarna are international companies, in which using virtual teams that consist of people from different countries is rather a norm than exception. Both companies are based in Sweden, and they have offices located around the globe.

3.3. Participants

There were two criteria for the participation in the study: (a) minimum of three years of work experience as a manager of global virtual teams and (b) currently being employed at an office in Sweden. The representatives of each company were asked for the contacts of the 6 project managers, that would fit the criteria and who would be interested in participating in the study. After receiving the e-mail addresses of the project managers, we sent e-mails to selected project managers inviting them to participate in one hour-long interview. In this e-mail, we introduced the topic and the purpose of the interview, as well as asked to confirm if they are interested in participation.

To keep identities confidential, we coded the interviewees' names in the study as E1, E2, E3… E6 and H1, H2, H3… H6. The letter refers to the company of employment ("E" for Ericsson and "H" for Husqvarna) and the number is chosen randomly. The questions regarding participant's age and working experience were in some cases e-mailed to the interviewee before the interview and in other cases asked during the interview. Below, we give an overview of our participants.

- Age of participants at the time of the interview ranged from 29 to 53 years at Husqvarna and from 39 to 57 years at Ericsson. Average age of respondents at Husqvarna is 40 years while average age of respondents at Ericsson is 47 years.

- Educational level corresponds to bachelor degree (4 respondents at Husqvarna and 1 at Ericsson) and master degree (2 respondents at Husqvarna and 5 at Ericsson).

- Years of employment at the present company vary from 2 to 5 years at Husqvarna and from 6 to 16 years at Ericsson.

- The overall working experience as a project manager varies from 3 to 28 years at Husqvarna and from 6 to 18 years at Ericsson.

- Project managers have been involved in leading projects in following countries:
  - Husqvarna: China, USA, EU, Indonesia.
  - Ericsson: Belarus, Russia, Brazil, Norway, Estonia, Latvia, Saudi Arabia, Armenia, Denmark, Finland, Bolivia, Venezuela, Chile, USA, India, Mozambique, South Africa, Panama, Italy, Romania, Ukraine, Denmark, Sudan, UK, Botswana, Guatemala, Colombia, Mexico, Algeria, Norway, Turkey, France, Switzerland, Germany, Nigeria.

The reason for interviewing project managers from two companies is to broaden the diversity of the interviewees. The focus of our data analysis is on exploration of communication challenges that project managers experience in managing global virtual teams. Therefore, we are not separating nor comparing the data collected in two companies and present findings as a whole. The reason why we coded names depending on the respondent's workplace, is that there would remain possibility to separate, compare and analyse the data collected in different companies in potential further research.

3.4. Data collection

Altogether we conducted twelve in-depth interviews with open-ended questions with the project managers at Husqvarna and Ericsson. One pilot interview was conducted in each company, and as they provided valuable insight into the research, we decided to include them in the study. Minor changes in the wording of the questions were made after the pilot interviews. As the time resource was limited, we decided to divide the interviews between ourselves (Elina Jõgeva was responsible for interviews conducted at Husqvarna and Aleksandra Smal for interviews conducted at Ericsson). All six interviews conducted at Husqvarna were face-to-face interviews, while two out of six interviews conducted at Ericsson were made via Skype and one via FaceTime. All face-to-face interviews were conducted at the project managers' workplaces in West Sweden. Online interviews were conducted with project managers placed in different countries. We recorded all the interviews with a dictaphone, for which we got the permission individually from all the participants. Interviews were conducted between 2nd of March and 26nd of April 2016. The length of the pilot interviews was around 2 hours. Other interviews took around 1 hour; the shortest interview lasted 47 minutes and the longest lasted for 2 hours and 8 minutes. The language of the interviews was English. Notes were taken throughout the interview process and were later used during the analysis of the data.

The main interview questions were as follows:

1. What is the most challenging part of communication when it comes to managing global virtual teams compared to "local" teams?
2. If you think back on your experience as a Project Manager, do you remember any teams that were easy to manage and the opposite- very challenging to manage? Why do you think it was so?

3.5. Methods for data analysis

Interviews were first transcribed and then read several times to look for patterns of meanings in the interviews. In order to analyze the collected data, we used thematic analysis, which is "a method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006, 79). The themes capture important aspects in the data which are connected to research question and represent meanings that tend to reappear and form a pattern throughout the data

(Braun & Clarke, 2006). Our analysis was inductive and during the coding process, we were guided by our research questions, i.e. we focused on finding if and which factors project managers perceive as challenging in communication when managing global virtual teams. Throughout the whole process of analysis, we tried to remain as objective as possible.

Coding: in case of both interview questions, we grouped codes in sub themes based on the factor that was perceived as communication challenge for project managers. For example, the challenges that were coded as "not seeing the posture", "not understanding the reaction", "not seeing the face" were grouped under the sub theme called "Lack of nonverbal cues". One of the main themes "Lack of face-to-face communication" was, in turn, developed of sub themes "Lack of nonverbal cues", "Relationship building" and "Lack of trust" as the lack of face-to-face communication can be seen as the primary cause of these challenges. In addition to coding the aspects that hindered communication for project managers, we also focused on whether there emerged any other patterns of factors which challenge communication in managing global virtual teams.

3.6. Ethical consideration

All interviewees were informed about the topic and aim of the study and were asked for the permission to audio record the interview. The confidentiality of the respondents is guaranteed and the representatives from Husqvarna and Ericsson have reviewed the study and confirmed that no confidential organizational data has been disclosed.

3.7. Limitations of the method

This research has a relatively small number of participants - the number of interviews is limited to 12 conversations. Also, the interviews were conducted in two global companies doing business in telecommunication and mechanical engineering industry. The interview time was constrained due to the project manager's heavy workload. As the group of participants of the study was relatively small and specific, results cannot be applicable to all project managers in general.

Moreover, the interviews were exploratory and open. Thus, some topics or questions might be present in some interviews and absent in others. That could have guided some interviewees to talk about some topics more than others, influencing this way the formation of data. Different cultural backgrounds of respondents also could affect the data, as it could cause different levels of self-disclosure on sensitive subjects as, for example, culturally dependent "negative" work behaviour of team members. One more factor, which could affect the data, is that interviews were conducted partly face-to-face and partly via technical communication channels. Technical issues and absence of physical presence can potentially impact communication.

Since only one of twelve respondents was a woman, then potential communication challenges related to the gender difference are not reflected in the study.

4. **FINDINGS**

This chapter presents the communication challenges in managing global virtual teams that participants of the study talked about in the interviews. The subchapters are divided according to the themes which most often appeared in the data and that were seen by project managers as significant. These communication challenges were: cultural difference, lack of face-to-face communication, communication technology, time difference, and language competence related challenges.

4.1. Cultural difference

The aspect which often arose in the interviews was the challenge related to cultural difference within teams. Project managers have experienced that a message can have **different meaning** in different cultures (H1, H5, H6, E1 - E6).

"I think one of the most challenging is the cultural thing that we listen and we speak in different ways and interpret differently, we say the same things but we don't make the same conclusions." (H1)

Two project managers mentioned that one of the most difficult parts in communication with people from different cultural backgrounds is the inability to "read between the lines" and not being able to understand why certain things happen. (E2, E1)

"I think the trickiest part is informal [communication]. Like in India you have this cast system and you don't know, why, why did that happened? And you cannot understand. That I think is the tricky one, when you cannot follow - why did this happened? That I find most weird." (E2)

According to some project managers, the **understanding of time** varies in different cultures. The fact that people follow the time schedule differently in some regions and cultures, causes misunderstandings and obstacles in communication (E4, E1).

"In Sudan - they never come to the meeting in time. They can come 20 minutes, one hour later and it is accepted. You should adapt to it or you cannot do business there". (E4)

"They don't respect the time; they keep you waiting." (about Russia) (E1)

Similarly, project managers have experienced that the **meaning of quality is different** depending on the cultures (H1, H5). What is considered as good quality in Sweden or US can differ from what it is in China for example.

"What do I perceive as a good quality level of delivery that may differ quite a lot between different people and also between different cultures. It becomes more apparent the more parallel

activities we have. When you don't have the time to dive into all the details and you sort of lose all of these unwritten and unspoken prerequisites." (H5)

Communication difficulties experienced with Chinese teammates were mentioned by all participants in both companies. It is hard for project managers to understand the real **meaning behind "yes"**. Project managers have experienced that Chinese colleagues often do not want to disappoint colleagues, which means that they try to **hide negative information** from project managers, **avoid saying "no"** and **do not ask for help** when it is needed. The communication challenges with Chinese people seem to be most evident according to conducted interviews. Ericsson project managers mentioned that they also have experienced same issues with Indian teams. In couple of cases it was also mentioned, that it is easier to communicate to those Chinese colleagues, who are more used to working with European colleagues and are not hesitant to say "no". (H1, H4)

"I work a lot with China and if I say "yes" and they say "yes" then it means different things. Chinese tend to answer in a way that they think the one who asked the questions, expects the answer to be." (H6)

"Swedish and Chinese cultures are very different. Because in China people are a little bit humble [...] people in China may feel that (Swedish) guys [...], whatever Swedish colleagues say might be more important than what they (Chinese) say but it's not 100% true so actually we may make mistakes [...] I recommend my (Chinese) colleagues to say "no ". (H4)

"They never say NO, they say YES to everything ... In India or China, they ... say "yes we can!", even if they cannot. This is a culture difference. This is ... blockage for communication". (E1)

"India was the trickiest I have worked with ... They could actually show you a status report and it was totally wrong! They can say "Yes, we are already finished!" And they hadn't even started!... That's kind of annoying for Swedish person." (E2)

"If something is wrong - they don't ask for help." (E5)

It appeared as well that even more problems occur when team members who have two bosses simultaneously (local manager and project manager from Sweden). Saying "yes" to both bosses about decisions can cause unpredictable results for global project managers and may lead to problems with customers. (E2)

"They don't want to upset me or the other project manager. That I found really tricky." (E2)

Communication challenges related to different understanding and expectation of **power distribution** among team members were mentioned by few respondents. In some cultures, team members expect to have more supervision from project manager than in others (H2, H5). Project managers sometimes see it as a waste of resources or unprofessional behaviour of team members. Project managers see necessity to constantly give direct orders as time consuming and not helpful

for the project realization (E2, E5, E1, E4). This cultural aspect can impact the hole organisational structure in certain regions, which also influences communication in the teams. (E2)

"You have to tell them [Chinese team members] exactly what they need to do. They maybe not so innovative to find solutions themselves ... You have to check in with them more, telling them more exactly what they need to do, then they will do the work ... I feel you have to stare at them a bit too much." (E5)

"In Romania employees put in CC (carbon copy) more than Swedes would do. Is it shared responsibility or maybe lack of confidence?" (E2)

"And that might be reflected in organisation chart as well: that beneath me, there will be three teams in Sweden directly with no product manager. And in China I will have a product manager and his two teams or something." (E2)

One more challenging (but not crucial in terms of work accomplishment) factor, mentioned by project managers, was the way people of different nationalities **express** or hide their **emotions,** and **how they build a dialogue.** Interruption of the dialogue in some cultures could lead to blockage of communication (E1, E2, E5).

"In Latin America ... people are very talkative. In Sweden, if you do that, it can be understood in a bad way... It is not good if you have to interrupt when people are talking. And if you interrupt you are already blocking the communication, because people like to start talking about different things before they get to the point." (E1)

"In Italy ... they were very loud, they were screaming." (E2)

"In western Norway, in Sweden you have to calm down a little bit. You don't have to say everything you think. You have to think first." (E5)

Two respondents mentioned the importance of **respect for religion** among team members. Non-acquaintance or non-respectful behavior can cause confusion or conflict situations (E6, E1).

"You have to respect religion. You shouldn't bring religion to projects." (about Nigeria) (E6)

Project managers have to consider also **human factors related to conflicts between some nations or countries.**

"Sometimes you have ... a project for example in Pakistan. And when you have to work with a team in Pakistan, you have engineers that are from India. And they don't accept it for example. They have internal fight with each other. They don't accept when engineers from India work in Pakistan. And if they accept you know that there is always blockage already from the beginning. So this can affect project somewhere on later. So cultural aspects like... you have to consider much before the project starts." (E1)

Several project managers emphasized culture related understandings and beliefs that were seen as important for managing global virtual teams and avoiding communication challenges. Project managers said that they see culture as something that is very difficult to change (E2, E5, E4). They consider it important to be open to different cultures and understand them. Project managers tend to think that it is their responsibility to make a message clear to the team members and also the other way around- to make sure that they themselves understand messages coming from team members. (H1, H2, H3, H6, E1, E2, E6, E5, E3, E4)

"I believe that's it very hard to change culture that is some kind of 1.4 billion [people]" [about China]. (E2)

"And I as a project manager I am responsible for sending the message in a way that the receiver understands it correctly. So the challenge comes back to me. It doesen't matter that the other one has different culture, I need to understand what the difference is and overcome that". (H1)

"We need to find a way to adjust … My feeling is - I'm not from here… from here I will not change the culture, the company there. That's impossible" (E2).

4.2. Lack of face-to-face communication

Lack of face-to-face communication was mentioned as a communication challenge by all project managers. This factor was described by respondents as one of the biggest communication challenges.

The current theme is divided into four sub themes according to respondents' answers: (a) lack of nonverbal cues, (b) relationship building, (c) trust building and (d) uncertainty in team members' competence.

A. Lack of nonverbal cues

Project managers find it more difficult to communicate when they do not see the body language of another person (H1, H2, H3, H6). Seeing people's faces and posture while communicating is important for the interviewees. Although the option of video conference was seen as a helpful method, the quality of the picture and Internet connection is often experienced as poor which decreases its usefulness as communication aid (H1, H2).

"So it's the interaction between people and being able to read their expressions. You lose part or all of that if you don't have them. You're lacking one or two dimensions in the interaction when they are remote. Of course on video conference you can see something but it still takes away the immediate feedback and response, it's hard to see a raised eyebrow for example. It's even worse on the phone call or such." (H2)

B. Relationship building

The other big group of responses is related to the difficulty of building personal relationships. This is seen as a consequence of lack of face-to-face meetings. All respondents in both of the companies thought that meeting face-to-face is a vital factor for building relationships between the team members and that it contributes to more efficient communication.

"You have to build a strong relationship with the people you're communicating with in order for the communication to be wide enough to carry the signals not just explicit things." (H3)

"Relations are extremely important." (E5)

Project managers try to arrange as many face-to-face meetings as possible and they have seen evident progress in communication and work efficiency after the meetings (H1, H6, H2, H3, H5, E1 - E6). The important aspect is also that these meetings would include informal communication. The personal information that is learned during the face-to-face meetings, is later used as a "lubricant" in virtual communication.

"Our team met with them and it was really-really good. Of course we solved a lot of technical issues but I think 50% was just to meet and get a chance to get a better understanding of each other and better relationship overall. I mean you go out and have a drink in the evening and things like that. You can never replace that by just a phone call. It's worth so much". (H6)

"I saw a huge increase in the ease of communication as soon as I went there (China) and met everyone. Had a chance to talk to them face-to-face and get a face to the name, go out and have dinner and talk about something not work related. It actually had a huge impact on efficiency of communication." (H5)

The importance of meeting face-to-face before "going virtual" was emphasized by many project managers (H1, H6, H3, E2, E3, E6, E5, E1, E4). Otherwise later communication in virtual environment can be experienced as challenging. Project managers (H1, H6, H2, H5, H3, E1 - E6) said that they try to meet all the team members face-to-face at the beginning of the project to get to know them better and establish a stronger bond.

"For myself at least it can be a bit uncomfortable seeing someone that you have never met and you know nothing about. If you have met before, you have been out to lunch or whatever, then you're fine. Otherwise it can be a bit uncomfortable". (H6)

"To improve the virtual communication, you need to meet physically and the next time you have a virtual meeting, then you communicate on the higher level than where you started from. I think that it's important. So you can't replace the physical meeting by just going virtual. There is some other values that become very clear when you meet people face-to-face". (H1)

"This is the best way. Seeing face-to-face is easier to have these meeting over the telephone. If they have met you once, so they know who they are talking to." (E5)

One respondent from Ericsson (E4) has mentioned that for some countries face-to-face communication is not only preferable but vital for project delivery. For example, work in Sudan demonstrated that their communication habits during work processes are quite far from accepted in Sweden. I was mentioned, that in Sudan all the important decisions first usually are discussed during informal communication "in the corridors". Official meeting time factually is used just for confirming decisions which were made earlier "on a backstage".

Another effect of lack of face-to-face communication was described as reduced feeling of importance of teams working not in the central offices. In its turn, physical presence of project managers on the spot is noticed to increase team engagement to the project and team bonding. (E2, H5)

"I think, these teams, sitting in Romania China India etc., they don't feel important unless we actually meet with them ... That bonds people together." (E2)

A few managers in Ericsson mentioned that the closer they are located to the team, the easier is communication with it. They as well mentioned that place where project is undergoing is not so important if there is a proximity to the team. (E2, E3, E5)

"It's like an onion. [It's easier] if they are sitting in the same room as I am. If they are sitting in the next building [that] is a bit further. This is very much about proximity." (E2)

"If I'm in the same place where the team is, it doesn't really matter where it is." (E2)

C. Trust building

All respondents from Ericsson mentioned that lack of face-to-face communication in virtual teams leads to difficulties in trust building (E3, E1, E5, E2) which, in turn, impacts projects. It was mentioned as well that trust is connected to the willingness to work with certain team (E5). Often restriction or limitation of travelling is related to cost saving, but effects of those kind of restrictions considers by project managers negatively. It was mentioned as well that trust building in virtual teams takes longer time than in collocated teams (E5).

"Cost saving comes up and travelling is one aspect that always comes up... That actually blocking the progress I think, and blocking the trust. Its trust game I think. If i don't meet with my teams, they don't trust me. I do the same actually. ... I don't trust them, that they actually do their job properly." (E2)

Respondents have mentioned that face-to-face presence allows not only to build better trust, but as well to get important background information related to the project, that makes working processes more clearly understandable. Face-to-face communication helps "to get the whole picture" (E3, E2, E5, E4, E1).

"I get information that I wouldn't get otherwise." (E2)

D. Uncertainty in team members' competence

Uncertainty in team members' competence whom project managers do not know well, was mentioned by few respondents in Ericsson as challenging factor for trust building. This often impacts projects costs and time of delivery (E3, E5, E2).

"Quite often we need specific engineer or some specific customization. [...] they have to be outsourced [...] And it happens that they don't have the experience needed. They say they have experience needed but in fact they don't have it". (E1)

One project manager (H5) mentioned that the fact that he is not meeting his team members often and therefore does not know them personally and professionally, creates a feeling of uncertainty which leads to lack of trust and tensions. Another project manager (H1) mentioned that trust is essential for efficient communication and that he consciously builds trust with the teams.

"If you have someone in a virtual team and you are not involved in their day to day operation, then you don't really know what they are doing. [...] I mean how are they performing the task that I asked for and I don't really know that [...] you don't know the level of competence in different areas depending on the activity you are involved in. It becomes a bit trickier. And in the end it kind of leads to not trusting the people to do the things the way you want them to be done." (H5)

4.3. Communication technology

Video conference seems to be perceived as a valuable tool among the project managers. Project managers say that videoconferencing has showed good results in helping solving problems (H5, H6) and has provided opportunities for seeing each other's body language (H1, H3, H4). Videoconferencing was considered especially useful in situations when meeting face-to-face during the project is impossible (E2, E6). Opportunity to "put a name to the face" in this conditions was considered as helpful. This was seen as especially actual in the beginning of the project (E2, E6).

"We started having video meetings with Chinese colleagues and suddenly a lot of problems got solved. We could see that they haven't done anything that they are ashamed that they don't have the answers etc. And it was both ways of course. I could see when they got angry and they could see when I got angry or happy or whatever. It's something we use here when times are getting tough." (H6)

While some project managers see video conference as a useful tool for remote communication (H1, H4, H5), others admit that they do not use videoconferencing often (H1, H5, E1-E6). Poor Internet connection causes low picture and audio quality which as a result, decreases video conference usefulness as a communication aid. Videoconferencing itself can then become an obstacle for communication. However, some respondents admitted that video conferencing probably should be used more often than it is used now (H5, E1, E2).

Many project managers expressed that they prefer **audio conferencing** to video conferencing as they see it as an easier and quicker option (H5, E1 - E6). Audio calling was described as more familiar way to communicate compared to video conferencing. Some thought that if you already know someone personally, videoconferencing becomes not as important and calling is sufficient (E3, E2).

"We have some facilities now but I don't use it much. Why? I haven't seen that need that much I think. My feeling is that if you know the other person that doesn't matter that much if you have video or not. Then I think voice is enough, but if you don't know them then at least you have a first glance at the face. I'm old fashioned maybe" (E2)

"If you know someone personally, video conferencing is not so important anymore." (E3)

Project managers also mentioned that they prefer audio conferencing to video conferencing because of its better quality. Poor sound quality during audio conferences was also mentioned and perceived as challenging (H1).

E-mail is also seen as a challenging medium for communication (H1, H3, H6) but at the same time, it seems to be the most often used way to communicate. It was mentioned, that e-mails are often written inefficiently and unclearly which could cause misinterpretation of information (H1, E1). Sending an e-mail does not guarantee that receivers have understood the message (H6). However, e-mail is often used by project managers for confirming that what was said during virtual meetings was understood correctly. In this case, communication via e-mails helps to overcome other challenging factors - lack of language competence and possible misunderstandings. (H1, H6, E1 - E6).

"You have to make communication via e-mail quite often, more often than you speak with (team members). And when you writing, it tends to give a different interpretation, other than when you speak, or several (interpretations)." (E1)

Other challenging aspects of communication via e-mail, mentioned by respondents, were: switching between reading different e-mails was referred to be energy consuming (H6); e-mail was characterized as an inefficient way to build relationships with the team members (H1, H3).

"(Travelling) adds a certain communication channel to carry the information back and forth. And to build a relationship. It's so much easier to do it face-to-face than over video or even worse phone, or the worst- e-mail." (H3)

Project managers in general see technological media as simultaneously an aid and a challenge. Lack of competence on how to use technological media among some team members, was mentioned as one of aspects that makes the usage of technology more challenging (H6).

"Sometimes we spend more time on trying to communicate, trying to present problems or ideas instead of actually presenting them and solving them." (H1)

Finally, project managers tend to think that communication technology does not come close to replacing real face-to-face communication, which is preferred for close relationship building between the team members (H1, H3, H6, E1 - E6).

"I'm probably very old-fashioned but everyone says that "Yeah, we should use more telephone and IT features like video", and I say "Yeah, go ahead, but if you really want to have an effective relationship then you need to meet people". (H3)

4.4. Language competence

Lack of language competence was described by one of the project managers as "obvious blocker" of communication (E2). Some respondents in Husqvarna (H1, H3) and all the respondents in Ericsson said that they experienced communication with their Chinese team members as challenging, as latter did not speak good English or could not understand fully what has been said. Strong accent of Chinese team members also impact communication in a bad way. The same problem was detected in work with team members from India and different African regions. Lack of language competence cause time delays during the meetings, as project managers need to double-check if what they said was understood correctly by team members and vice versa.

"You have to say things over and over". (E6)

"It's very difficult to understand what they [Indian team members] say, not always but that happens". (E1)

4.5. Time difference

Respondents at both companies mentioned **time difference as an obstacle to communication** (H1, H2, H6, H3, E1 - E6). At the same time interviewees do not see this issue as crucial. As project managers and their teams are often located in different parts of the world, the number of overlapping working hours is limited. Time difference causes delays in communication (H1, E6). It creates situations, when some team members are feeling alert as the working day is only starting and others are already getting tired as the workday is ending (H6). Finally, it makes it difficult to have all the team members present at the meetings, hindering in such way a good communication flow (H2).

"There are only few overlapping working hours on either side of the globe. You know that if you send an e-mail with the question here in the afternoon to China, then hopefully you will get a reply to it the next day but would it be here, I could just call somebody and have that quick question answered and I could keep on going. But I need to wait 20 hours." (H1)

"You have to make sure that you communicate well and find a balance in the time zones in order to minimize the impact." (E1)

Getting a broader look, not only time difference can be mentioned here, but also different holidays schedule in different countries. Not being able to reach team members when they have national holidays in their country, can impact project time schedule and have to be taken into account far in advance (E6).

5. **DISCUSSION AND ANALYSIS**

Previously we provided an overview of the themes that emerged from the interviews with project managers. In the following section, we are going to discuss the empirical findings in relation to the research questions and theoretical standpoints presented in the first part of the study.

5.1. Communication challenges related to cultural difference

5.1.1. Different meaning of "yes"

Nearly all project managers mentioned that they have faced difficulties in communication with their Chinese colleagues as latter tend to say "yes" to everything although it can mean "no". In the theoretical part of the study, we discussed a theory about high and low context cultures by Edward T. Hall (Hall & Hall, 1990), which can explain this tendency. According to this theory, people in high context cultures attribute significant meaning to the context in communication and assume that others understand their message by acknowledging that context and the bodily cues carry significant meaning. People in low context cultures tend to express themselves more straightforwardly with words and expect the same from others. Furthermore, people in high context cultures avoid saying "no", while people in low context culture can say "no" directly (Hall & Hall, 1990). It can be said that there is a high probability of the occurrence of misunderstandings in communication between Chinese and Swedes for instance, as China is considered to have high context and Scandinavian countries low context cultures (Hall & Hall, 1990). Awareness of the high and low context communication styles is important for both parties to avoid misunderstandings and frustration in teams (Earley & Gibson, 2002).

Another potential reason for ambiguous communication and avoidance of saying "no" by Chinese, can be the fear of losing face. A "face" is an important aspect of Chinese culture, which concerns peoples' honor, reputation, and prestige. The fear of losing face means the fear of having one's ego, and prestige deflated (Yam, 1998). The importance of shame for Chinese makes it hard for a person to admit a mistake or to ask for help (Yam, 1998, 275). That might result in ambiguous communication and avoiding saying "no". This goes in line with the project GLOBE data. According to the project GLOBE, behaviour of saving face is seen as positive in the Confucian Asia and Southern Asia clusters (Grove, n.d).

The hiding of negative information from project managers could also be related to group protective behaviour presented in the GLOBE project. Globe project places South East Asia high on the scale of group protective behaviour, while Sweden is located lower on the scale (House at al., 2004). According to the GLOBE project data, in countries like India and China, being a member of in-group is seen as crucial (Javidan & House, 2001). When a group is located on distance from the management, its members may feel like a separate unit. The feeling of being apart from central management together with culturally related need of being a good in-group member, could result in a demonstration of group protective behaviour towards project manager.

5.1.2. Different understanding of power distribution

Findings show that project managers have experienced communication challenges related to various expectations of power distribution between the manager and the team members. As we discussed in the theoretical part, Geert Hofstede has divided cultures according to the belief that organizational power should be distributed unequally, and the decisions of the power holders should be challenged or accepted (Lustig & Koester, 2010). Interviews conducted with the project managers support the idea that this kind of variation of beliefs exists and that it seems to create communication challenges for project managers. The challenges appear to arise more clearly when the project manager with Swedish cultural background (or with a tangible experience of work in Sweden) manages the team which members come from countries with higher power distance, like Romania, Russia, China or India.

Respondents mentioned that they experienced different leadership style expectations of team members from the managers in different countries. According to the project GLOBE study, besides the degree of inequality accepted in society, power distance dimension also reflects "the establishment and maintenance of dominance and control of the less powerful by the more powerful" (Javidan & House, 2001, 295). According to the study, people from societies with high power distance, have a tendency to obey towards supervisors. In the same time, in countries with low power distance, people expect less power differentiation and "They tend to be more egalitarian and favor stronger participation in decision-making" (Javidan & House, 2001, 296). This could create different expectation regarding appropriate leadership style. As one project manager mentioned, it is sometimes required to change the way they manage and communicate with the teams. The necessity to manage and communicate differently than project managers are used to, is perceived as challenging.

5.1.3. Different understanding of quality

According to the project managers, the understanding of the right quality level differs in the countries. This can be seen as a source of misunderstandings in communication which result in errors in work. As far as we know, there are no theories which would explain the relationship between the understanding of quality and certain cultures. The different understanding of the quality can be explained by the fact that the meaning of words and concepts differs in different cultures. This is in line with Jens Allwood's (2013) suggestion that cultural differences may influence what is being communicated as well as how it is done.

5.1.4. Different understanding of time

Similarly, people use and think about time differently depending of their cultural background. Our findings show that this factor causes communication challenges for project managers. The meaning of "to be on time" for Swedish project managers means that meeting starts exactly the time that was agreed on while in Sudan people started gathering an hour after the agreed time. According to Edward T. Hall, cultures can be divided into monochromic and polychromic time systems (Lustig & Koester, 2010). In cultures with monochromic time system people prefer to do things one at a time. They segment time into precise smaller units and perceive it as an object that

can be scheduled, managed and arranged (Lustig & Koester, 2010). People from cultures with polychromic time system think that several things should be done at the same time and friends and family come before the schedules, appointments, and deadlines. It is common that several meetings are scheduled at the same time. Misinterpretations and conflict can occur when people from monochromic and polychromic cultures work together as both parties may see other's responses to time "commitments" as rude (Lustig & Koester, 2010). Europeans and North Americans are very time-driven while Asians, Africans, and South-Americans tend to be more relationship driven. (Guffey & Loewy, 2014).

5.1.5. **Respect for religion**

Two of managers mentioned the importance of taking in consideration and respect for religion at the workplace. They mentioned that not knowing of central religious norms can be a cause of confusion, conflict situations and schedule disruption. Hage and Posner (2013) support the idea of impact of religion on working processes. They mention that religion affiliation can have an impact on leadership practices at workplace, information processing, decision-making and interpersonal relationship. Respect for religion on organisational level can lead to such potential benefits as increased diversity, inclusion and higher employee engagement (Miller & Ewest, 2013).

In conclusion, it can be said that what seems to be in common between above mentioned culture related challenges, is the aspect of **different meaning behind the same words** in different cultures. The different meaning of "yes" in Asian cultures, different understanding of "being on time", high or low standard of quality and different expectations towards manager's role. The amount of these differences raises the possibility of misunderstandings to occur in communication. In addition, there are often specific aspects regarding religious, historical and political characteristics which might influence communication between representatives of different cultures and which project managers need to know and take in account in order to avoid occurrence of communication challenges.

It can be seen from the findings that project managers see culture as something that is difficult or impossible to change. They take responsibility for understanding different cultures and are conscious about the importance of making their message clear to team members from different cultural backgrounds. We see this understanding as an important starting point for establishing successful communication with global teams.

5.2. Distance-related challenges

In the theoretical part, we gave an overview of possible communication challenges, which are caused by the distance between the team members in global virtual teams. They were lack of face-to-face communication and trust building issues. Interviewees very often mentioned lack of face-to-face communication as a challenge. In relation to project managers' answers, we divided distance dependent challenges to following subthemes: lack of nonverbal cues, difficulties in relationship building, difficulties in trust building, and uncertainty in team members competence.

5.2.1. **Lack of nonverbal cues**

Project managers mentioned that it is difficult to communicate when they do not see the body language of another person. In connection with project managers' opinion on the lack of nonverbal cues, in scientific literature, nonverbal cues as well are considered as crucial part of human communication. While communicating "we are constantly giving signals about our attitudes, feelings, and personality" (Knapp & Hall, 2009, 4). Via nonverbal cues we can communicate emotions, manage identities, influence others and manage relationships (Burgoon, Guerrero, & Floyd, 2009). Nonverbal communication broadens the amount of information perceived by recipient. Through reading nonverbal signals, it is possible to see if those signals go in line with verbal statements or if they are contradictory to what was said. Thus via bodily communication, we could recognise a variety of emotions and to identify deception (Gamble & Gamble, 2013; Burgoon, Guerrero, & Floyd, 2009). According to all mentioned above factors, seeing of nonverbal cues can be considered an important factor in managing team work.

However, it is important to mention, that reading nonverbal cues in multicultural teams require more skills from project managers, as culture can modify the use of nonverbal signals (Gamble & Gamble, 2013).

5.2.2. **Relationship building**

Respondents mentioned that they experienced difficulties in building personal relationships, which is seen as critical for smooth communication within the team. Often difficulties in relationship building are considered as a consequence of lack of face-to-face meetings and informal communication.

All of the project managers mentioned that communication in informal environment has improved the relationships and communication in the team. This conclusion goes in line with Wildman and Griffin (2015) statement that communication during lunch and coffee breaks helps to increase team cohesiveness and to establish better relationship. In most of the cases, when project manager or the whole team visited the other team members in a different country, various group activities were organized which were valued highly by all parties regarding building the relationship. It repeatedly occurred in the interviews that team members could communicate more openly and get to show each other better during these activities and that improvement in communication efficiency was noticeable afterward. This pattern is consistent with the claim, that trust is built and maintained through open communication which leads to creating solid relationships where communication is more efficient (Kelly, 2013).

Another pattern that could be followed in the interviews is that project managers try to meet face-to-face with the team at the beginning of the project. This is in line with the theory that face-to-face communication should be enclosed in the beginning phase of team formatting (Daim et al., 2012), especially in case of teams working virtually and globally. As mentioned in the theory section, meeting face-to-face at the beginning of the project can help to improve trust building processes, establish common goals and lead to better productivity and increased innovation

(Smith, 2001). Based on our observations, project managers see early face-to-face meetings as important for the increasing of communication efficacy in the team.

5.2.3. **Trust building**

Lack of face-to-face communication in virtual teams was connected by project managers with difficulties in trust building. Managers see physical presence as not only possibility to build better trust, but as well to get broader background information related to the project and situation on place in general.

The importance of trust building, mentioned by project managers, goes in line with Jarvenpaa and Leidner statement that "Trust is pivotal in a global virtual team to reduce the high levels of uncertainty endemic to the global and technologically based environment" (Jarvenpaa & Leidner, 1998, 792). Respondents also translated the same idea as Wilson, Straus and McEvily (2006), that lack of trust leads to additional time spent on monitoring project teams and documenting work progress. Same as Golembiewski & McConkie (1975) project managers mentioned that work satisfaction and willingness to work with certain team member on future projects is related to high level of trust between the manager and this person.

Project managers mentioned that it feels more difficult for them to build trust in virtual teams compared to collocated teams. They also see that trust building takes longer time in virtual environment. This goes in line with Lewicki & Bunker study (1996), where it stated that it is easier to generate trust when team is collocated. This can be explained by better knowledge of each other when team is collocated. Nevertheless, it is more difficult to build the trust in virtual environment, important findings of Lewicki and Bunker is that over the time trust in global teams can reach the level of collocated teams.

Although it is possible to build trust in different ways, meeting face-to-face was the most often mentioned by project managers option. It was displayed as well that in connection to trust building, respondents prefer to try to meet team members face-to-face in the beginning of the project. Results of Lewicki & Bunker (1996) study confirm that in conditions of time limited projects, teams which meet face-to-face on start have significant trust advantages.

5.2.4. **Uncertainty in team members' competence**

This challenge cannot be considered clearly as a communication challenge, but it is possible to suggest that different cultural backgrounds could increase uncertainty. Different ways of work accepted in different cultures, including different time and quality understanding, different understanding of the "normal" power distribution, different perception on what should and shouldn't be said could impact the feeling of uncertainty on the project managers side.

In relation to uncertainty in cross-cultural interaction, Gudykunst's Anxiety/Uncertainty Management Theory can be applied (Gudykunst, 1995). According to the theory "*both anxiety (emotion) and uncertainty (cognition) arise when an individual interacts with a person from a*

different cultural group" (Gudykunst, 1995, 10). Theory suggests that as different cultural backgrounds can create uncertainty, uncertainty in its turn impact the way people communicate.

According to Uncertainty reduction theory, presented by Charles Berger (1987), "individuals seek to predict and explain their surroundings" (Knobloch, 2008, 4). In relation to project managers job, uncertainty reduction may be felt as especially needed, as, according to the theory, "we feel especially compelled to alleviate uncertainty when an individual determines the rewards and costs we will receive" (Knobloch, 2008, 5).

According to the UR theory (Berger, 1987), uncertainty is negatively associated with verbal communication, which means that uncertainty decreases when amount of verbal communication increases. Verbal communication is limited in virtual environment and this can increase the level of uncertainty. Uncertainty is also negatively associated with nonverbal affiliative expressiveness, which means that absence of nonverbal communication in virtual environment and physical distance between team members increases uncertainty. The level of uncertainty also depends on the similarities between the people who are communicating. The more similarities team members can find, the lower the level of uncertainty will be between them. This dependence can be considered as important in conditions of different cultural backgrounds of team members. It can be said that the decline of uncertainty is important as a lower feeling of uncertainty leads to higher satisfaction and supportive behavior in the team (Berger & Calabrese, 1975).

According to the GLOBE project data "Sweden is among the highest ranked countries on uncertainty avoidance" (Javidan & House, 2001, 302). This can be one of the factors why project managers with Swedish cultural background feel that it is important to avoid uncertainty.

In addition to previously mentioned challenges, we can add an assumption made by one of the project managers, that team members located remotely have a feeling that they are not important for managers located in central offices. This can be explained by the feeling of isolation and detachment, which occurs when employees are located on distance from the hub offices (Kirkman et al., 2002). We see that this issue might also be connected to lack of face-to-face communication.

5.3. Challenges related to communication technology

The opinions about using communication technology are divergent in the interviews. Project managers value video conferencing as it enables to see each other's face expressions and body language. However, all interviewees emphasize the importance of meeting team members face-to-face, especially in the beginning of the project, and admit that communication technology alone is not sufficient for building relationships with team members. This can be explained by the position in theory that face-to-face communication helps to build trust, establish common goals and lead to better productivity and increased innovation (Smith, 2001).

The importance of face-to-face meetings during the first phases of the project is in line with what was discussed in the theoretical part about Media synchronicity theory. Namely, Media synchronicity theory assumes that newly formed groups require more use of media with high synchronicity (high feedback and low parallelism) while established groups with accepted norms will require less use of media with high synchronicity (Dennis & Valacich, 1999). It means that when trust and personal relationships have been established in the team, then it can effectively start using communication technology.

It seems that some project managers prefer audio conference to video conference because of the practical reasons. Calling is often easier option than setting up a video conference which involves more preparation. In addition, it was mentioned repeatedly, that the Internet connection or the video conference technology is not good enough to guarantee flawless communication. We find that this is a place where companies have the possibility to take action to improve the communication possibilities for project managers and their teams.

Project managers' answers revealed that they combine different communication technologies to achieve efficient communication. Nevertheless, it is apparent that every communication tool has some kind of limitations for effective communication. It can be said that although communication technology has developed quickly, it still has flaws which continue to present challenges for managers.

5.4. Challenges related to lack of language competence

Project managers mentioned difficulties in communication in relation to lack of language competence of team members. This is especially true in relation to team members from China. One of the mentioned aspects that make communication with those who have the Chinese language as a mother tongue challenging was unclear pronunciation. This can be related to specifics of Chinese language, where some sounds have "approximate" pronunciation and are not comparable to sounds in the English language. Thus, it is difficult for Chinese to pronounce some sounds in a proper way. Lack of oral practice in language studies and in team members' everyday life may also have an impact on the language competence of Chinese team members. Project managers experience communication with Chinese team members as challenging, as they need to double check if what their Chinese colleagues said was heard and understood correctly.

The table below (see table 1) summarizes communication challenges in managing global virtual teams which were analyzed in the discussion chapter.

Table 1. *Communication challenges in managing global virtual teams*

Communication challenges in managing global virtual teams			
Cultural difference	**Distance related challenges**	**Communication technology**	**Language competence**
• Different meaning of "yes"; Avoidance of saying "no"; Hiding of negative information. • Different understanding of power distribution • Different understanding of quality • Different understanding of time • Respect for religion	• Lack of non-verbal cues • Relationship building • Trust building • Uncertainty in team members' competence	• Insufficient for building relationships with team members • Flaws related to audio and video quality • Every communication tool has certain limitations for effective communication	• Lack of language competence

6. CONCLUSION AND FURTHER RESEARCH

6.1. Conclusion

The purpose of the study was to explore communication challenges that project managers face in managing global virtual teams. Our study showed that project managers perceive mainly four types of communication challenges: cultural difference related, distance related, communication technology related and lack of language competence.

Results indicate that one of the most significant culture related communication challenges is that the same words and concepts have different meaning depending on the culture. The various understanding of "yes" and the avoidance of saying "no" in Asian cultures is perceived as problematic for project managers. The expectations of power distribution between the manager and the team members, different understanding of time and quality, is also experienced as arduous. Project managers see culture as something that is difficult to change and they take responsibility for understanding cultures and make sure that their messages are perceived correctly.

Respondents mentioned distance-related challenges have significant impact on communication with team members. Among distance-related communication challenges, such aspects as lack of nonverbal cues, difficulties in building personal relationships, difficulties in trust building, and uncertainty in team members' competence were listed. Distance-related challenges seem to be closely intertwined with lack of face-to-face communication.

Study reveals that the biggest drawback of communication technology for project managers is that it is insufficient for building relationships with team members. However, communication technology can be used successfully when trust and personal relationships have been established via face-to-face communication in the first phase of the project. Although communication technology has developed quickly, it continues to have various flaws which in the eyes of project managers decreases its efficiency.

Lack of language competence is seen as a cause of misinterpretations. Language barriers create situations where project managers have to constantly ask for feedback from team members in order to make sure that everyone understood information correctly. Consequently, lack of language competence is perceived as time-consuming factor in communication.

6.2. Further research

We hope that our study will provide important insight for constructing a versatile training for managers in order to prepare them for the work with global virtual teams.

Our research can serve as a basis for future research concerning managing global virtual teams. We think that this overview of communication challenges that project managers face in real life setting, provides a good starting point for broader research about effective communication in global virtual team management. We believe that working with global virtual teams continue to be an actual topic in coming years due to globalization.

REFERENCES

About Husqvarna group. Retrieved March 13, 2016, from http://www.husqvarnagroup.com/en/about

About the studies. (2016). Retrieved April 12, 2016, from Project GLOBE, http://globeproject.com/studies

Allwood, J. (2013). A framework for studying human multimodal communication. In Rojc, M. & Campbell, N. (Eds.) Coverbal Synchrony in Human-Machine Interaction. Boca Raton, FL: CRC Press, Taylor & Francis Group

Alnsour, B. H. (2014). The use of virtual project teams for project management in Jordanian corporations. Eurasian Journal of Business and Management. doi:10.15604/ejbm.2014.02.02.004

Anawati, D., & Craig, A. (2006). Behavioral adaptation within cross-cultural virtual teams. IEEE Transactions on Professional Communication, 49(1), 44–56. doi:10.1109/tpc.2006.870459

Armstrong, D., & Cole, P. (1995). Managing distances and differences in geographically distributed work groups. In S. E. Jackson & M. E. Ruderman (Eds.), Diversity in work teams: Research paradigms for a changing workplace (pp. 187–215). Washington, DC: American Psychological Association.

Ashforth, B. E., & Lee, R. T. (1990). Defensive behavior in organizations: A preliminary model. Human Relations, 43(7), 621–648. doi:10.1177/001872679004300702

Berger, C. R. (1987). Communicating under uncertainty. In M. E. Roloff, ed. & G. R. Miller (Eds.), Interpersonal processes (pp. 39–62). Newbury Park, CA: Sage.

Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. Human Communication Theory, 1, 99-112

Binder, J. (2007). Global project management: Communication, collaboration and management across borders. Aldershot, England: Gower Publishing.

Binder, J. (2007). Global project management: Communication, collaboration and management across borders. Aldershot, England: Gower Publishing.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. doi:10.1191/1478088706qp063oa

Bredillet, C., Tywoniak, S., & Dwivedula, R. (2015). What is a good project manager? An Aristotelian perspective. International Journal of Project Management, 33(2), 254–266. doi:10.1016/j.ijproman.2014.04.001

Burgoon, J. K., Guerrero, L. K., & Floyd, K. W. (2009). Nonverbal communication. Boston: Allyn & Bacon.

BusinessDictionary.com. (2016). Project team. Retrieved from http://www.businessdictionary.com/definition/project-team.html#ixzz46SnwiZfw

Carleton University. Project manager. Retrieved February 12, 2016, from Carleton University, http://carleton.ca/ccs/project-office/wp-content/uploads/Project-Team-Roles-Definition.pdf

Carleton University. Project Team Roles Definition. Retrieved February 12, 2016, from Carleton University, http://carleton.ca/ccs/project-office/wp-content/uploads/Project-Team-Roles-Definition.pdf

Carte, T. & L. Chidambaram. (2004). A Capabilities-Based Theory of Technology Deployment in Diverse Teams: Leapfrogging the Pitfalls of Diversity and Leveraging its Potential With Collaborative Technology, Journal of the Association for Information Systems 5(11–12), 448–471

Carter, DR, Seely, PW, Dagosta, J, DeChurch LA & Zaccaro, SJ. (2014). Leadership for Global Virtual Teams: Facilitating Teamwork Processes. Leading Global teams. Springer Science+Business Media, New York.

Cascio, W. F. (2000). Managing a virtual workplace. Academy of Management Perspectives, 14(3), 81–90. doi:10.5465/ame.2000.4468068

Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. Journal of Applied Psychology, 92(4), 909–927. doi:10.1037/0021-9010.92.4.909

Company facts. (2015, November 2). Retrieved January 30, 2016, from http://www.ericsson.com/se/thecompany/company_facts

Connaughton, S. L., & Shuffler, M. (2007). Multinational and Multicultural distributed teams: A review and future agenda. Small Group Research, 38(3), 387–412. doi:10.1177/1046496407301970

Cornelius N. Grove. (n.d.). Leadership Style Variations Across Cultures: Overview of GLOBE Research Findings. Retrieved May 15, 2016, from www.grovewell.com/pub-GLOBE-leadership.html

Creswell, J. W. (2003). Research design: Qualitative, quantitative, and mixed methods approaches (2nd ed.). Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2007). Qualitative inquiry and research design: Choosing among five traditions. Thousand Oaks, CA: Sage Publications.

Curşeu, P. L., Schalk, R., & Wessel, I. (2008). How do virtual teams process information? A literature review and implications for management. Journal of Managerial Psychology, 23(6), 628–652. doi:10.1108/02683940810894729

Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. Management Science, 32(5), 554–571. doi:10.1287/mnsc.32.5.554

Daim, T. U., Ha, A., Reutiman, S., Hughes, B., Pathak, U., Bynum, W., & Bhatla, A. (2012). Exploring the communication breakdown in global virtual teams. International Journal of Project Management, 30(2), 199–212. doi:10.1016/j.ijproman.2011.06.004

Dennis, A. R., & Valacich, J. S. (1999). Rethinking Media Richness: Towards a Theory of Media Synchronicity. Retrieved April 5, 2016, from Proceedings of the 32nd Hawaii International Conference on System Sciences - 1999, http://www.cs.uu.nl/docs/vakken/b3ii/Intelligente%20Interactie%20literatuur/College%207.%20 multimodaliteit%20(Beun)/extra/media%20synchronity_Dennis.pdf

DeSanctis, G., Wright, M., & Jiang, L. (2001). Building A global learning community. Communications of the ACM, 44(12), 80. doi:10.1145/501317.501352

Dixon, K. R., & Panteli, N. (2010). From virtual teams to virtuality in teams. Human Relations, 63(8), 1177–1197. doi:10.1177/0018726709354784

Duarte, D. L., & Snyder, N. T. (2006; 2001). Mastering virtual teams: Strategies, tools, and techniques that succeed (2nd, 3rd eds.). San Francisco, CA: John Wiley & Sons.

Earley, C. P., & Gibson, C. B. (2002). Multinational work teams: A new perspective. United Kingdom: Routledge

Facts and figures. Retrieved March 20, 2016, from http://www.ericsson.com/se/thecompany/company_facts/facts_figures

Gamble, T. S. K., & Gamble, M. W. (2013). Interpersonal communication electronic version: Building connections together. United States: SAGE Publications.

Gibson, C. B., & Cohen, S. G. (Eds.). (2003). Virtual teams that work: Creating conditions for virtual team effectiveness. San Francisco, CA: Jossey-Bass Inc.,U.S.

Golembiewski, R., & McConkie, M. (1975). The centrality of interpersonal trust in group process. In C. L. Cooper (Ed.), Theories of group process (pp. 131–185). New York: Wiley

Grove, C. N. (Ed.). Introduction to the GLOBE Research Project on Leadership Worldwide. [GROVEWELL LLC]. Retrieved May 23, 2016, from Global Leadership Solutions, http://www.grovewell.com/wp-content/uploads/pub-GLOBE-intro.pdf

Gudykunst, W. B. (1995). Anxiety/uncertainty management (AUM) theory: Current status. In R. L. Wiseman (ed.), Intercultural communication theory (pp. 8–58). Thousand Oaks, CA: Sage.

Guffey, M. E., & Loewy, D. (2014). Business communication: Process and product (8th ed.). United States: CENGAGE Learning Custom Publishing

Hage, J., & Posner, B. Z. (2015). Religion, religiosity, and leadership practices. Leadership & Organization Development Journal, 36(4), 396–412. doi:10.1108/lodj-07-2013-0096

Hall, E. T. T., & Hall, M. R. (1990). Understanding cultural differences: [Germans, french and Americans] (First ed.). Boston, MA: Intercultural Press

Hall, M. A., Dugan, E., Zheng, B., & Mishra, A. K. (2001). Trust in physicians and medical institutions: What is it, can it be measured, and does it matter? The Milbank Quarterly, 79(4), 613–639. doi:10.1111/1468-0009.00223

Hennink M., Hutter I. & Bailey A. (2011). Qualitative research methods, SAGE publications

Hinds, P. J., & Mortensen, M. (2005). Understanding conflict in geographically distributed teams: The moderating effects of shared identity, shared context, and spontaneous communication. Organization Science, 16(3), 290–307. doi:10.1287/orsc.1050.0122.

Hoefling, T. (2003). Working Virtually: Managing People for Successful Virtual Teams and Organizations. Sterling, VA, USA: Stylus Publishing, 2003. ProQuest ebrary.

Hofstede, G. (1994). Cultures and organizations: Software of the mind: Intercultural cooperation and its importance for survival. London: HarperCollins Publishers.

Hofstede, G. H. (1980). Culture's consequences: International differences in work-related values, Vol. 5. United States: Sage Publications.

Hofstede, G. H. (2001). Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations (2nd ed.). Thousand Oaks, CA: Sage Publications.

Hosmer, L. T. (1995). Trust: The connecting link between organizational theory and philosophical ethics. The Academy of Management Review, 20(2), 379. doi:10.2307/258851

House, R.J., Javidan,M., Hanges P.J & Dorfman, P.V. (2002). Understanding cultures and implicit leadership theories across the globe: an introduction to project GLOBE Journal of World Business 37 2002) 3±10 Pergamon

House, R.J., Javidan,M., Hanges P.J & Dorfman, P.V., Gupta V. (2004). Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies, Sage Publications, 2004.

Martinic, A., Fertalj, K., & Kalpic, D. (2012). Methodological Framework for Virtual Team Project Management. *International Journal of Innovation, Management and Technology*, 3(6)

Project management processes and phases. Retrieved April 9, 2016, from Association of project management, https://www-apm-org-uk.ezproxy.ub.gu.se/blog/project-management-processes-and-phases#.U6GdaZRdV8E

Hunsaker, P. L., & Hunsaker, J. S. (2008). Virtual teams: A leader's guide. Team Performance Management: An International Journal, 14(1/2), 86–101. doi:10.1108/13527590810860221

Jarvenpaa, S. L., & Leidner, D. E. (1998). Communication and trust in global virtual teams. Journal of Computer-Mediated Communication, 3(4), 0–0. doi:10.1111/j.1083-6101.1998.tb00080.x

Jarvenpaa, S. L., & Leidner, D. E. (1999). Communication and trust in global virtual teams. Organization Science, 10(6), 791–815. doi:10.1287/orsc.10.6.791

Jarvenpaa, S. L., Knoll, K., & Leidner, D. E. (1998). Is anybody out there? Antecedents of trust in global virtual teams. Journal of Management Information Systems, 14(4), 29–64. doi:10.1080/07421222.1998.11518185

Javidan, M., & House, R. J. (2001). Cultural acumen for the global manager. Organizational Dynamics, 29(4), 289–305. doi:10.1016/s0090-2616(01)00034-1

Jones, G. R., & George, J. M. (1998). The experience and evolution of trust: Implications for cooperation and teamwork. The Academy of Management Review, 23(3), 531. doi:10.2307/259293

Kankanhalli, A., Tan, B. C. Y., & Wei, K.-K. (2007). Conflict and performance in global virtual teams. Journal of Management Information Systems, 23(3), 237–274. doi:10.2753/mis0742-1222230309

Katainen, T., & Nahar, N., (2008). Using Methods and IT Tools Innovatively for the Management of International IS Development Projects, PICMET Proceedings, pp. 1851–1863.

Kayworth, T., & Leidner, D. (2000). The global virtual manager: A prescription for success. European Management Journal, 18(2), 183–194. doi:10.1016/s0263-2373(99)00090-0

Keller, M. R. (2014). Effective global virtual teams: The impact of culture, communication, and trust. ProQuest Dissertations Publishing, University of Maryland University College.

Kelly, N. (2013). Building Trust in Communications. Retrieved April 29, 2016, from www.trustacrossamerica.com, http://www.trustacrossamerica.com/documents/building-trust-reports/KellyCommunications.pdf

Kerber, K.W., Buono, A.F. (2004). Leadership challenges in global virtual teams: lessons learned from the field SAM Advanced Management Journal, 09/2004, Volume 69, Issue 4

Khazanchi, D., & Zigurs, I. (2005). Patterns of effective management of virtual projects: An Exploratory Study. Newtown Square: PA Project Management Institute

Kirkman, B. L., Rosen, B., Gibson, C. B., Tesluk, P. E., & McPherson, S. O. (2002). Five challenges to virtual team success: Lessons from sabre, Inc. Academy of Management Executive, 16(3), 67–79. doi:10.5465/ame.2002.8540322

Kirkman, B. L., Rosen, B., Tesluk, P. E., & Gibson, C. B. (2004). THE IMPACT OF TEAM EMPOWERMENT ON VIRTUAL TEAM PERFORMANCE: THE MODERATING ROLE OF FACE-TO-FACE INTERACTION. Academy of Management Journal, 47(2), 175–192. doi:10.2307/20159571

Knapp, M. L., & Hall, J. A. (2009). Nonverbal communication in human interaction (7th ed.). Boston, MA: Wadsworth, Cengage Learning.

Knobloch, L. K. (2008). Uncertainty Reduction Theory: Communicating under conditions of ambiguity. In L. A. Baxter & D. O. Braithwaite (Eds.), Engaging theories in interpersonal communication: Multiple perspectives (pp. 133-144). Thousand Oaks, CA: Sage.

Koryakina, N. (2011). Cultural differences Russian companies encounter in Finnish markets. Retrieved April 10, 2016, from Saimaa University of Applied Sciences Business Administration, https://publications.theseus.fi/bitstream/handle/10024/32480/koryakina_natalia.pdf.pdf?sequence =1

Krishna, S., Sahay, S., & Walsham, G. (2004). Managing cross-cultural issues in global software outsourcing. Communications of the ACM, 47(4), 62–66. doi:10.1145/975817.975818

Lee, M. R. (2013). Leading virtual project teams: Adapting leadership theories and communications techniques to 21st century organizations. United Kingdom: Auerbach Publishers.

Lewicki, R. J., McAllister, D. J., & Bies, R. J. (1998). Trust and distrust: New relationships and realities. Academy of Management Review, 23, 438-458.

Lewis, J. D., & Weigert, A. (1985). Trust as a social reality. Social Forces, 63(4), 967. doi:10.2307/2578601

Lustig, M. W., & Koester, J. (2010). Intercultural competence: Interpersonal communication across cultures (6th ed.). Boston: Pearson/Allyn & Bacon.

Luthans, F., Luthans, B.C. and Luthans, K.W. (2015) Organizational behavior: An evidence-based approach. United States: Information Age Publishing.

Lyons, R., Priest, H. A., Wildman, J. L., Salas, E., & Carnegie, D. (2009). Managing virtual teams: Strategies for team leaders. Ergonomics in Design: The Quarterly of Human Factors Applications, 17(1), 8–13. doi:10.1518/106480409x415152

Martinic, A., Fertalj, K., and Kalpic, D. (2012). Methodological Framework for Virtual Team Project Management International Journal of Innovation, Management and Technology, 3(6).

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. The Academy of Management Review, 20(3), 709. doi:10.2307/258792

McDonough, E. (2001). An investigation of the use of global, virtual, and colocated new product development teams. Journal of Product Innovation Management, 18(2), 110–120. doi:10.1016/s0737-6782(00)00073-

Mesquita, L. F. (2007). STARTING OVER WHEN THE BICKERING NEVER ENDS: REBUILDING AGGREGATE TRUST AMONG CLUSTERED FIRMS THROUGH TRUST FACILITATORS. Academy of Management Review, 32(1), 72–91. doi:10.5465/amr.2007.23463711

Miller, D. W., & Ewest, T. (2013). Rethinking the Impact of Religion on Business Values: Understanding Its Reemergence and Measuring Its Manifestations. In R. Stephan & H. Parissa (Eds.), Dimensions of teaching business ethics in Asia (pp. 29–38). United States: Springer.

Minton-Eversole, T. (2012, July 19). Virtual teams used most by global organizations, survey says. Retrieved January 28, 2016, from http://www.shrm.org/hrdisciplines/orgempdev/articles/pages/virtualteamsusedmostbyglobalorganizations,surveysays.aspx

Mishra, A.K. (1996). Organizational responses to crisis: The centrality of trust. In R.M. Kramer and T.R. Tyler (eds.), Trust in Organizations: Frontiers of Theory and Research. Thousand Oaks, CA: Sage, 1996, pp. 261–287.

Montoya-Weiss, M., Massey, A. P., & Song, M. (2001). Getting it together: Temporal coordination and conflict management in global virtual teams. Academy of Management Journal, 44: 1251–1262.

Mulcahy, R. (2005). PMP exam prep: Accelerated learning to pass PMI's PMP exam on your First try! (5th ed.), Rmc Pubns.

Naybor, P. (2014). Project management processes and phases Association for project management. Retrieved January 29, 2016, from

Nedrick, S., Wellen, W., Barnwell, D., Rudolph, E., & Sesay, M. (2014). Leadership of International and Virtual Project Teams. International Journal of Global Business, 7(2), 1–8. Retrieved from http://www.gsmi-ijgb.com/Documents/IJGB%20V7%20N2%20P01%20Dwayne%20Barnwell%20-International%20and%20Virtual%20Project%20Teams.pdf

Neuliep, J. W. W. (2012). Intercultural communication: A Contextual approach (5th ed.). Thousand Oaks: Sage Publications

Nydegger, R., & Nydegger, L. (2010). Challenges in managing virtual teams. Journal of Business & Economics Research (JBER), 8(3), . doi:10.19030/jber.v8i3.690

Paul, S., Seetharaman, P., Samarah, I., & Mykytyn, P. P. (2004). Impact of heterogeneity and collaborative conflict management style on the performance of synchronous global virtual teams. Information & Management, 41(3), 303–321. doi:10.1016/s0378-7206(03)00076-4

Pinjani, P. (2007). Diversity in global virtual teams: a partnership development perspective. Greensboro, ProQuest information and learning company, Ann Arbour.

Poole, M. S., & Zhang, H. (2005). Virtual teams. In S. A. Wheelan (Ed.), The handbook of group research and practice (pp. 363–386). Thousands Oak, CA: Sage.

Powell, A., Piccoli, G., & Ives, B. (2004). Virtual teams: A review of current literature and directions for future research. ACM SIGMIS Database, 35(1), 6–36.

Project Management Institute. (2008). A Guide to the Project Management Body of Knowledge (PMBOK® Guide) (4th ed.) PMI.

Rao, N. (2011, December 8). Communication: Importance and Definition. Retrieved from http://nraomtr.blogspot.se/2011/12/communication-importance-and-definition.html

Richmond, V., Wrench, J.S. and McCroskey, J.C. (2007) Human communication in everyday life: Explanations and applications. United States: Allyn & Bacon.

Rogin, P., Rhodes, K., & Guffey, M. E. (2009). Business communication: Process and product. United Kingdom: Nelson Canada.

Scott C.P.R., & Wildman J.L., (2015). Leading Global Teams, Springer Science+Business Media New York

Scott, C. P. R., & Wildman, J. (2014). Culture, Communication, and Conflict: A Review of the Global Virtual Team Literature. In Wildman J. & Griffith R.L. (Eds.), Leading global teams; translating Multidisciplinary science to practice (pp. 13–32). United States: Springer New York.

Shachaf P., (2008) Cultural diversity and information and communication technology impacts on global virtual teams: An exploratory study Information & Management. Volume 45, Issue 2, March 2008, Pages 131–142

Shachaf, P. (2008). Cultural diversity and information and communication technology impacts on global virtual teams: An exploratory study. Information & Management, 45(2), 131–142. doi:10.1016/j.im.2007.12.003

Smith, P.G., (2001). Communication holds global teams together. Machine design. URL: http://machinedesign.com/article/communication-holds-global-teams-together-07262001.

Staples, D. S., & Zhao, L. (2006). The effects of cultural diversity in virtual teams versus face-to-face teams. Group Decision and Negotiation, 15(4), 389–406. doi:10.1007/s10726-006-9042-x

Zajac, J. (2013). Communication in global corporations: Successful project management via Email. Germany: Peter Lang GmbH.

Zofi, Y.S., (2011) A manager's guide to virtual teams. New York, NY: American Management Association.

Tracy, S. J. (2013). Qualitative research methods: Collecting evidence, crafting analysis, communicating impact. United Kingdom: Wiley-Blackwell (an imprint of John Wiley & Sons Ltd).

Wang H., (2009) Nonverbal Communication and the Effect on Interpersonal Communication. School of Foreign Languages, Asian social science vol.5 #11 Nov. 2009

What is project management? (2015, March). Retrieved May 4, 2016, from Association for project management, https://www.apm.org.uk/WhatIsPM

Westerman, D. K., Bowman, N. D., & Lachlan, K. L. (2014). Introduction to computer mediated communication: A functional approach. United States: Kendall/Hunt Publishing Co,U.S.

Westerman, D. K., Bowman, N. D., & Lachlan, K. L. (2014). Introduction to computer mediated communication: A functional approach. United States: Kendall/Hunt Publishing Co,U.S.

Wildman, J. L., & Griffith, R. (Eds.). (2014). Leading global teams: Translating Multidisciplinary science to practice. United States: Springer-Verlag New York.

Wilson J.M., Straus S.G., McEvily B. (2006) All in due time: The development of trust in computer-mediated and face-to-face teams Organizational Behavior and Human Decision Processes 99 (2006) 16–33

Virtual teams: What do we know and where do we go from here? (2004). Journal of Management, 30(6), 805–835. doi:10.1016/j.jm.2004.05.002

Yam, T. K. (1998). Competitiveness of the Singapore economy: A strategic perspective. Singapore: World Scientific Publishing Co Pte.In-line Citation:(Yam, 1998)

Appendix 1. Interview questions

1. Age
2. Gender
3. Education

4. How many years have you worked in international project management in general?

5. How many years have you worked in international project management at Husqvarna/Ericsson?

6. What countries have you worked with while working in Husqvarna/Eriksson? In general?

7. Have you been involved in any kind of courses or trainings related to communication? For example: managing virtual teams, intercultural communication, managing global teams etc? (In Husqvarna/Ericsson + in general)

8. What channels do you use for communication?
   with your team members?
   with clients?

9. What is the most challenging part of communication when it comes to managing global virtual teams compared to "local" teams?

10. How would you solve this (communication) problem/challenge?

11. What could Husqvarna/Ericsson do to support you in overcoming this (communication) problem/challenge?

12. If you think back on your experience as a Project Manager, do you remember any teams that were easy to manage and the opposite- very challenging to manage? Why do you think it was so?

13. What has changed in your job as a project manager over the years (when it comes to communication aspect)? How do you think it will change in the future?

DIVISION OF WORK

This overview provides information about who of the authors was responsible for writing which part of the study.

Elina Jõgeva
Was responsible for organizing and conducting interviews at Husqvarna AB, as well as transcribing and analyzing the interviews conducted there.

Some parts of the study which were in big part written by Elina:
Research purpose and research questions
Definition of Communication
Communication challenges in global virtual teams and intercultural communication
Geert Hofstede's five-dimensional model
Communication challenges related to language
Communication challenges related to time difference
Data collection
Methods of data analysis

Aleksandra Smal
Was responsible for organizing and conducting interviews at Ericsson, as well as transcribing and analyzing the interviews conducted there.

Some parts of the study which were in big part written by Alexandra:
The scope and limitations of the study
Definition of global virtual teams
Global virtual teams vs. collocated teams
Role of intercultural communication in communicative challenges in GVT
Trust building and lack of face-to-face communication
GLOBE taxonomies
Lack of face-to-face communication (geographical distance)
Communication technology related aspects.

Most parts of the work were nevertheless, written together. During the writing of empirical part of the study, we tightly worked together to comprehend the data collected from the interviews and find the patterns of meaning emerging from them. The findings, discussion and conclusion parts of the study is a result of tight cooperation.