Remote control

A study on communication management in virtual projects
Summary

As the world is becoming more and more globalized, business has to take the global marketplace into serious consideration. This is not just about new markets to sell products in, but also where to locate production and where to source resources from. With the launch of new communication technology it has also become easier and easier to cooperate across national borders without having to meet face-to-face. This has led to an increased demand on project managers concerning how to manage the communication within their project teams since they now can have members located in different geographical locations.

The main purpose of this research was to develop a deeper understanding about how project managers are managing communication within virtual teams. This was firstly done by through a literature review of the present knowledge in the field identifying five sub topics of interest.

- Communication channels
- Skills for effective communication
- Dealing with technology
- Dealing with differences in culture and language
- Managing trust and relationships

These sub topics were used through the rest of the thesis as the structure of the argumentation. The empirical research consisted of a deductive interview study of four respondents within the ICT sectors in Sweden and Denmark.

Through the analysis and the conclusions all the topics were discussed in detail, where we got to know more about how they can be used to manage communication in virtual project teams. Something that came up in the analysis was the role of corporate culture in dealing with challenges in virtual communication, which in the end was suggested as a main topic for future research.

Different communication channels showed to be good for different things, both in terms of the efficiency of the communication but also for things such as facilitating engagement and accountability. There seem to be no clear understanding of what skills are required for efficient work in virtual teams, both in the present knowledge in the field and among the respondents. For managing technology it showed to be important to make sure that the technology works, that the team members know how to use it and why, and to find ways to warm up the media by making it more personal. Differences in culture and language were found to best be dealt with by building trust within the team and creating an understanding of the existing differences. Asynchronous communication showed to be effective for dealing with bigger language problems. The solutions for managing trust and relationships mainly revolved around social communication and getting to know each other better in the beginning, and around regular and predictable communication in the long run.
# Index

1. **INTRODUCTION** ........................................................................................................1
   1.1 Background .................................................................................................................1
   1.2 Research problem ........................................................................................................2
   1.3 Virtual communication management ........................................................................2
   1.4 Research purpose ........................................................................................................2
   1.5 Demarcations ...............................................................................................................3
   1.6 Definitions ..................................................................................................................3
   1.7 Disposition ..................................................................................................................3

2. **METHODOLOGY** ........................................................................................................4
   2.1 Choice of subject .........................................................................................................4
   2.2 The authors .................................................................................................................4
   2.3 Perspective of the thesis .............................................................................................5
   2.4 Research paradigm .....................................................................................................5
      2.4.1 Scientific idea .......................................................................................................5
      2.4.2 Scientific approach ..............................................................................................5
   2.5 Research methodology .............................................................................................5
   2.6 Selection of respondents ...........................................................................................6
   2.7 Interview methodology .............................................................................................6
      2.7.1 Developing the interview framework ....................................................................6
      2.7.2 Conducting the interviews ...................................................................................7
      2.7.3 Processing the material .......................................................................................7
   2.8 Criticism of primary sources .....................................................................................8
   2.9 Secondary sources .....................................................................................................8
      2.9.1 Collection of secondary sources .........................................................................8
      2.9.2 Criticism of secondary sources ............................................................................8

3. **VIRTUAL PROJECT MANAGEMENT** .....................................................................9
   3.1 Project Management ..................................................................................................9
      3.1.1 Project manager ....................................................................................................10
      3.1.2 Virtual projects ....................................................................................................11
      3.1.3 Virtual project management ...............................................................................11
      3.1.4 Virtual project team ..........................................................................................11
   3.2 Virtual Project Management Process ......................................................................12
      3.2.1 The Roles in Virtual Project ..............................................................................12
      3.2.2 Virtual Project Manager ....................................................................................13

4. **VIRTUAL COMMUNICATION MANAGEMENT** .........................................................15
   4.1 Communication channels .........................................................................................15
   4.2 Skills for effective communication ...........................................................................17
   4.3 Dealing with technology ...........................................................................................17
   4.4 Dealing with differences in culture and languages ..................................................18
   4.5 Managing trust and relationships .............................................................................19
   4.6 Summarizing framework for managing virtual communication ............................20

5. **EMPIRICAL FINDINGS** .............................................................................................21
   5.1 The respondents and their organizations ..................................................................21
      5.1.1 Respondent A – telecommunications professional at Company X ....................21
      5.1.2 Respondent B – IT specialist at Company Y .......................................................21
      5.1.3 Respondent C – Project manager at Company Z ...............................................21
      5.1.4 Respondent D – Project manager at Company Z ...............................................22
   5.2 Virtual communication management ........................................................................22
1. INTRODUCTION

Starting off the thesis, this chapter aims to introduce the reader to the background of the problem to be researched. Firstly, it will try to clarify the relevance of the research problem, and then try to specify interesting topics within it. This will finally narrow down to the research purpose and some information that will make the work easier to follow.

1.1 Background

As the world is becoming more and more globalized, business has to take the global marketplace into serious consideration (Harvey & Griffith, 2007; Johnson, Scholes & Whittington, 2005). This is not just about new markets to sell products in, but also where to locate production and where to source resources from. This means that companies more and more have to monitor operations all over the world. One example is the issue of global product launch, in which timing for rollout and sequence of markets can be a complex process to coordinate (Harvey & Griffith, 2007, p.493).

The use of projects as a way to get things done in business has grown tremendously during the last decade. The nature of project management has changed since it has ceased to be dominated by the construction industry, where much of the case material under this heading is based, and is now applicable in all kind of organizations. Project management is now an advanced and specialized branch of management in its own right. As a result, the nature of project management has had to change. It is no longer simply an extension of a technical specialist, but it requires a full structure to take projects from strategy to action. (Maylor, 2005)

With the launch of new communication technology it has become easier and easier to cooperate across national borders without having to meet face-to-face. Some of the new ways to communicate are e-mail, phone, and videoconference (Grosse, 2002, p.27; Tavčar, et al., 2005, p.566-8), or fax, project web sites, discussion boards, work sharing systems, and instant messaging (Chinowsky & Rojas, 2003, p.99).

Looking at these trends project managers might nowadays end up with virtual project teams consisting of members from different countries, working in different countries. This means that there are increased demands on project managers concerning how to manage the communication within their project teams. There will be no more coffee meetings in the mornings, or after-work at the local pub.

1.2 Research problem

How are project managers managing communication within virtual teams?

1.3 Virtual communication management

So, what is it that project managers have to think about when managing the communication within the virtual teams? One obvious question to consider when regular face-to-face is out of the picture is what other communication channels to use and what to use them for. Using emails might for example have other applications than using videoconferences.
Working in virtual teams also sets new demands on the participants in terms of character, features and skills. (Tavčar, et al., 2005, p.557) Since working virtually means that the face to face contact will be limited, people will have to learn how to communicate effectively with the new tools.

According to Grosse (2002) the biggest challenges in managing communication in virtual intercultural teams are learning to manage the technology and handling cultural differences. Some of the challenges with managing the technology are to make sure that the technology is working properly, and to get the team members to actually use it efficiently. There can be a resistance among individuals to start using these new means of communication (Grosse, 2002, p.26).

Working with team members from all around the world inevitably leads to having to deal with different cultures and language problems. The communication and group behavior of people from different cultures can vary a lot, for example based on if the person comes from an individualistic or collectivistic culture (Jarvenpaa & Leidner, 1999, p.793).

Lack of face-to-face contact makes it harder to build trust in a team, and trust is directly linked to collaborative relationship performance (Paul & McDaniel, 2004, p.185). Studies have also shown that it is not an easy task for project managers to build trust in virtual teams (Grosse, 2002, p.30) The theoretical field of trust in virtual teams could be considered not being fully developed yet, since there for example are many different results and opinions whether trust can be created or not, and to which extent face-to-face is needed for virtual teams to function efficiently (Jarvenpaa & Leidner, 1999, p.791-94). Building on the point that social communication is important for building trust, Tavčar, et al. (2005, p.559) is saying that strong relationships between team members improves the communication and level of effectiveness in a team.

1.4 Research purpose

The main purpose of this study is to develop a deeper understanding about how project managers are managing communication within virtual teams. The focus will mainly be on the management of the internal communication between the members of the project team. We want to see how the current theories in the field are applied in reality, and if possible develop them further.

This will mainly be done through studying the following five sub topics

- Communication channels
- Skills for effective communication
- Dealing with technology
- Dealing with differences in culture and language
- Managing trust and relationships
1.5 Demarcations

The study is not aiming to go into the technical management of aspects such as software and communication tools in any greater detail, but rather focus on the interpersonal aspects. It will also only focus on the perspective of the virtual project managers. As explained in detail in the methodology chapter we are also limiting the study to Information and Communication Technology (ICT) companies in Sweden and Denmark.

1.6 Definitions

*Virtual teams* Teams that consists of people working at different geographical locations, which has to rely on other means of communication than just face-to-face.

1.7 Disposition

In the figure below we would like to show the disposition of our research and the pattern in which way the chapters are arranged. We start with theory and collect information about project management, virtual project management and virtual communication. These helped us to build up our methodology in which we used interviews to gather empirical data to compare with what we studied in theory. Finally we analyzed, concluded and validated our results as a reflection.
2. METHODOLOGY

Before the reader gets introduced to the theoretical field of virtual communication management in projects and the rest of the research, this chapter takes a step back to explain some fundamental questions about how things came about. It will start by looking at some theoretical standpoints the authors have taken, to later continue by explaining how the research was conducted in practice. Finally there will be some critical reflections on the gathered data that is used.

2.1 Choice of subject

The choice of subject is based on a synthesis of the authors’ backgrounds and interests. One of the authors is working voluntarily with virtual coaching of project managers in a not-for-profit organization in Sweden, and the other author is working with project management in a consultancy firm in Denmark. Due to the description of the background of the subject in the introductory chapter, the authors also found the topic of high interest. This means that conducting the study will not just have practical application in the everyday work of the authors, but also be of possible relevance in future careers.

2.2 The authors

To make it easier for the reader to evaluate the findings of this study we will here present our background and experiences. We believe that this is of interest since we are of the opinion that it is not possible for researchers to not let preconceptions influence their studies. Preconceptions are defined as researchers’ previous knowledge, thoughts, impressions, and feelings about the research topic (Patel & Davidson, 1991, p.30). This is not only important for the reader, but also for us to become more aware about how our preconceptions might influence us during the research (Bryman, 2002, p.97).

Leo Hansson was born 1982 in Sweden, and has taken his full course of university studies at Umeå School of Business. At the Bachelor’s level he was studying Business Administration specializing in management and marketing, and he is writing this thesis as a part of the Master’s Program in Management. Previous experience in the field of research mainly concerns virtual coaching of project managers in a global not-for-profit organization.

Cagri Han Karatas was born 1980 in Turkey, and has taken his bachelor degree in Marmara University. He studied Actuarial Science specializing in Risk Management, and he is writing this thesis as a part of Master’s Program in Management. He is working in OMADA since 2006 as a Business Consultant in Copenhagen.

We believe that our experiences will be of benefit to the study, since it will help us to understand the literature as well as the respondents in the interviews better. This view is supported by Patel & Davidson (1991, p.30) who states that preconceptions should be considered an asset and not a hinder when performing qualitative studies with a hermeneutic view of knowledge. Based on our experiences our preconceptions are that the central issues of managing virtual communication are communication planning, face-to-face meetings, trust, communication skills, and well functioning communication technology.
2.3 Perspective of the thesis
Since the focus of this study could be studied from different perspectives, the choice of perspective will have implications on the design of the collection of empirical data. The choice of perspective will be presented in order to make the link between the research focus and the research design more clear.

We will limit our study to the perspective of the project managers. This means that the data we will be gathering will mainly let us analyze the methods, intentions, and perceptions of the project managers, rather than a holistic view of the efficiency and effectiveness of the used approaches. To broaden the study, perspectives from project team members could also be gathered, but we choose not to due to the limited scope and time for the study.

2.4 Research paradigm

2.4.1 Scientific ideal
Due to the nature of the research purpose, which is to create a deeper understanding of the subject, a qualitative research design with interviews will be used. Through the interviews ideas that are not directly covered in previous theories can be found, and more specific follow up questions can be asked to develop the theories further. Another approach could have been to map out an extensive amount of respondents fitting the research purpose for conducting a questionnaire study, and then categorizing the theoretical framework into different dichotomies and scales to quantify. We thought that this approach would narrow down our findings even though it would make them more objective and verifiable. Since we will conduct a limited amount of interviews, the results of the study will not be able to provide any statistically proven conclusions. The results will rather provide interpretations and a more general understanding of the topic, which is the foundation of the hermeneutic view of knowledge (Thurén, 1991, p.46). The other approach would instead have provided a so called objectivistic view of knowledge.

2.4.2 Scientific approach
The study will start by constructing a theoretical framework based on a review of existing theories in the field. This theoretical framework will work as the foundation for the design of the gathering of empirical data. By this approach we aim test how the theories relate to reality, and explore if there are any potential gaps in the theory that can be researched in the future to develop it further. This approach to research is by Bryman (2002, p.21-22) explained as deduction. We did not choose an inductive approach, which is about creating new theories and explore new grounds, since we thought that the research area is already there and we would rather contribute to the development of existing theories. This should be relevant since the area is relatively new and we thought that professionals might be ahead of the scholars at least from a practical point of view.

2.5 Research methodology
Since the purpose of the study was to develop our understanding of the management of communication in virtual teams a qualitative methodology was chosen. Qualitative research methods focus on the collection of words and interpretations rather than quantifiable data, and usually concerns generation of new theories through an inductive
approach (Bryman & Bell, 2003, p.25). We believed that this was a suitable methodology even though our scientific approach was deductive, since we wanted to get a deeper general understanding of the reality which would not have been possible by quantifiable measures. We were still aiming to test, as well as identify possible areas of development, of the theoretical framework according to the deductive approach. According to Bryman (2002, p.35) it is also not uncommon that researchers use this combination of research methodology and approach. To gather our empirical data we decided to conduct interviews, which we describe in deeper detail under the coming paragraphs. To analyze the data we chose to separate the empirical findings and analysis chapters, and to use the same structure of them according the theory chapter in order to provide a clear analysis. In the empirical findings chapter we presented the answers from our respondents, and in the analysis chapter we compared and discussed those findings with the concluding theoretical framework and the theoretical discussions from the theory block. We could have chosen to combine the presentation of our empirical findings and our analysis, but we believe that would have made the text harder to follow and the analysis harder to evaluate.

2.6 Selection of respondents

For convenient reasons we decided to start the selection process by looking for cases from Sweden and Denmark. This would make conducting interviews easier since we are living there and easier to find respondents due to personal networks and knowing the markets. We could have chosen to only use cases from one of the countries, but we thought using both might give some different perspectives.

Our first criteria when looking for respondents to our interviews were to find people with experience in virtual project management. To make the gathered data easier to analyze and compare we also decided to limit ourselves to the Information and Communication Technology (ICT) industry. We could obviously have chosen other industries, but we thought this industry would be good since the technological knowledge should be high and suitable cases easy to find. Within our personal networks we found four people to interview that matched our criteria. Two with different backgrounds in an IT consultancy firm in Denmark, one in a large telecommunications company in Sweden, and one in the IT-department of a large appliances company in Sweden. We chose this selection approach due to convenience reasons, and since our aim with the research was interpretative rather than confirmative, we did not believe that our selection method would have any negative impact on our results.

2.7 Interview methodology

2.7.1 Developing the interview framework

When deciding upon type of interviews to conduct we had two main considerations that we wanted to take into consideration; getting answers relating to our theoretical framework and being open to new perspectives that could help us to develop the theories further. For this reason it was decided to use semi-structured interviews which are interviews with open ended questions based on certain themes (Bryman & Bell, 2003, p.343). We could have used questionnaires, but we believed that it would take too much time to get enough respondents and that it would limit our findings to strictly testing the relevance of our stated theories from a quantitative perspective.
Based on this we took a look at our theoretical framework and made an interview guide with questions covering the relevant areas. The structure of the interview guide was that we had some broad open ended questions to start with, and then some sub questions that could be used to make the respondents elaborate a bit more if needed. The intention of the guide was not to follow it question by question, but rather to have it as a base for discussion. The complete guide can be found in Appendix A.

2.7.2 Conducting the interviews

All the interviews were booked by Cagri Han Karatas by calling or talking to the respondents personally. They were informed that we are currently doing a study in communication in virtual projects, and therefore we would like to interview them about their experiences.

All the interviews were done by physical face-to-face meetings in the respondents respective work places. Cagri Han Karatas conducted the interviews in Denmark, and Leo Hansson the interviews in Sweden. Before each interview the respondents were shortly briefed about the purpose of the study, and asked if they wanted to be anonymous in the written report and if it was fine with them that we recorded the interview. We also made some small talk to create a more relaxed atmosphere, which according to Bryman & Bell (2003, p.122-123) is important in order to get the respondent to participate.

The interview with the telecommunications specialist was conducted in a meeting room close to the respondent’s office. It was isolated from external interruptions, with the exception of the mobile phone that he had to have turned on. The phone rang a few times, but the conversations were short and were not perceived as influencing the interview to any notable extent. The interview with the project manager from the IT-department in the large appliances company was conducted in a corner in his company’s cafeteria. There were not many people around, so the atmosphere was relaxed. The only external interruption was a common friend coming up to say hi. It was also not perceived as influencing the interview to any notable extent. The interview with the first senior consultant in the area of project management was conducted in his company’s office in Copenhagen. There were not any interruptions during the interview. The last interview with the second senior consultant in project management was also conducted in his company’s office in Copenhagen. The interviews took between 30 and 50 minutes.

2.7.3 Processing the material

To get the most out of the conducted interviews we transcribed the recordings to written text. We were writing down everything that was said, filtering words and sentences that the respondents just used for getting forward in their thinking process and some elaborations that were not connected to the topic of the study. Transcribing the recordings is beneficial through assisting the memory and making it possible for more detailed analysis (Bryman & Bell, 2003). By doing this we could during the interviews focus more on listening and asking follow up questions, than taking notes and trying to remember everything that was said. Since one of the respondents wanted to be anonymous we decided to reveal the identity of all of them. We did not believe that including the information would bring much benefit to the research anyway.
2.8 Criticism of primary sources

One factor that could have influenced the primary sources negatively was that we did two interviews each separately. This means that they were not conducted in the same way, which made them harder to compare. We still believe it is acceptable though, since our aim was about interpretation and not comparison.

One of the respondents only had limited experience in project management, and was not formally employed as a project manager. This could be considered negative since the perspective of the thesis was supposed to be from the project manager’s perspective. The tasks he was performing resembled those of a project manager though, so we considered the results of relevance for our study.

Two of the respondents were employed in the same company, which could limit the diversity of perspectives. This could be seen through them having similar answers in some areas. They had different backgrounds and were working in different projects though, so we still value their added contribution.

2.9 Secondary sources

2.9.1 Collection of secondary sources

To build our theoretical framework we started by collecting theories from secondary sources. For this we mainly used scientific articles that we found through the database Business Source Premier through the University library. To ensure as high quality and relevance as possible we filtered our search with peer-reviewed and gave preference to more recent articles.

We started by using general search words such as virtual communication, virtual projects and virtual project management to get ourselves an overview of the theoretical field. We also found some synonyms and related words such as global teams, distributed teams, and global distributed teams that we used. After getting an overview of the field we started to combine the search words with more specific terms that we found, such as trust and intercultural communication.

When we started to write our theoretical framework we decided to start by writing some general theories about project management, in order to bring more clarity to the later discussions. Theories around this we found in some relevant course literature, Copenhagen Business School online library, and Royal library in Copenhagen. When developing our two theoretical chapters we also continuously filled in with new sources when it was considered needed to develop the theoretical reasoning further. Finally we use business process management practical guideline to be able to set the ideas about our work.

2.9.2 Criticism of secondary sources

Most of the used articles were selected from scientific journals, according to standards they have been reviewed to secure that they are scientific. This should at least ensure a basic level of quality of the articles. We also tried to use as recent articles as possible, and to identify research that was often referred to. One weakness could be that some of the resources were in Swedish, so both of us were not capable to read and get the same understanding since one of us didn’t know Swedish.
3. VIRTUAL PROJECT MANAGEMENT

In this chapter the reader will be provided with a theoretical frame of reference that will act as the base of the research. It will firstly provide an introduction to concepts related to project management and more specifically virtual project management. In the following chapter the theoretical frame of reference will continue by going more specifically into virtual communication management, to finally present a summarized framework that will be used to structure the collection of empirical data and the analysis.

3.1 Project Management

We would like to start the chapter with definitions of project management.

Project Management is as a profession that is almost unique in having institutions concerned with its development who promote what they term their Body of Knowledge. (Maylor, 2005, p.13)

Project management processes help initiate, plan, execute, monitor and control the project stages according to T. Marchewka (2007, p. 79).

Project management concept is based on cross functioning teams who have a common goal to achieve according to a plan and to budget. Project management is a concept to provide a generic solution according to Versus (2003, p.34).

As we can see from the diagram below Concalves (2004, p.95) has split project management to four different stages which are definition, planning, execution, delivery. He also defined different levels of effort in project management life cycle. The graphic shows most of the effort is coming during execution time of project.

![Characteristics of conventional project management](image)

Figure 3.1 Managing Virtual Projects (Goncalves, 2004, p.95)
3.1.1 Project manager

The figure below shows a conventional management hierarchy with the lines on the diagram representing lines of reporting or responsibility. The project manager may have a line management role as well, but is responsible for projects that may run across several functions.

The figure shows the project manager being responsible for people drawn from every function in their activities in relation to that project.

Today business requires new organizational structure as we can see from project organizational structure in figure 3.2. We can see that different department or organizational units are vertically ordered and project manager doesn’t have any specific placement in this order and however we can see that this matrix structure can apply today’s business requirements and project managers have direct connection to all defined units.

Project manager should be seen as a position not just like a temporary annoyance and should have core organizational skills. This will require continues training on project managers (Versus, 2003, p.31).

According to T. Marchewka (2007, p.113) project managers should have unique skill sets that can help them to be successful in projects. These skills are; ability to communicate and deal with people, creating and sustaining relationships, and organizing.

We can see that project manager does not have a direct title in the organizations but can have several different effects in a organization and in the main time project managers should have unique skills to able to perform their role in organizations.
3.1.2 Virtual projects
“The term virtual is fairly new and is associated with concepts such as the virtual knowledge network, the virtual organization, the virtual team, virtual community of practice, and the virtual workplace. These virtual concepts are all part of the collaboration initiative” (Gignac, 2005, p.20).

Net collaboration technologies let companies work with partners to bring new products to market with significant savings in time and money. Such Internet-based collaboration, however, is still in its infancy. In spite of the prevalence and potential of multicultural teams, as some researchers note, "in practice, global teams do not often create the value expected" (DiStefano & Maznevski, 2000, p.45).

As we can see the authors are mentioning virtual teams are not performing as good as expected to be. With next section we will look into virtual project management to have a better understanding of virtual projects.

3.1.3 Virtual project management
Virtual project management in global organizations is both challenging and important. Being able to identify and apply best practices is an essential skill, as is an understanding of how to leverage the right technology for communication and information sharing. We present an assessment approach that allows managers in Sweden and Denmark to determine the nature of their virtual projects and discover and apply patterns for managing them.

Virtual project management will present new challenges for virtual teams since physical and organizational boundaries are not defined. (Marchewka, 2007, p.249)

Given the multi-faceted challenges associated with virtual teams, it was not surprising that virtual team members perceived project management to be an important element of success. And we look in other factor in next section for success in virtual projects.

3.1.4 Virtual project team
We would like to describe virtual team first from Gignac (2005) and continue with deeper definition of virtual project teams and their success criteria from Versus (2003).

Basically, “the virtual team is defined as a group of knowledge workers who are geographically dispersed but not necessarily distributed across expansive geographic locations” (Gignac, 2005, p.21)

The strategic role of projects, especially those processes that the project manager must put in place to deliver the end objective of the project and satisfy the needs of all the projects customers. In this approach, project manager’s integrators, responsible for integrating the required resources, knowledge, and process from the projects beginning to end. This third stage has also been greatly influenced by the changes that have occurred in the in the context in which modern projects operate. In particular, ready availability of technology (especially communications technology) has led to the emergence of virtual teams as a means of running project. (Maylor, 2005, p.7)

All these complexity of virtual project teams bringing new challenges or new ways of using technology according to Maylor. We would like to also introduce what kind of
factors can affect virtual teams. These are the seven critical success factors according to Versus (2003, p.290).

1) Human resources policies
2) Training and on the job education and development
3) Standard organizational and team processes
4) Use of electronic collaboration and communication technology
5) Organizational culture
6) Leadership support of virtual teams
7) Team leader and team member competencies

As we can see from Versus roles and responsibilities are important critical success factor for virtual project in next sections we will focus on process and then roles in virtual projects.

3.2 Virtual Project Management Process

Project managers become project integrators, responsible for integrating the required resources, knowledge, and processes from the project beginning to the end. This third stage has also been greatly influenced by the changes that have occurred in the context in which modern projects operate. In particular, the ready availability of technology has led to the emergence of virtual teams as a means of running projects operate. (Maylor, 2005, p.16)

A virtual project involves virtual teams. The characteristics of the work will be directed virtually according to Gignac (2005) “Process designer meets the virtual team manager to discuss and define the dimensions of the work as follows: social complexity, variety, predictability, and complexity of the work, analyzability or divisibility, difficulty, hierarchy and centralization” (Gignac, 2005, p.21). Virtual project management will affect the traditional way of designing or thinking of processes

3.2.1 The Roles in Virtual Project

To have a clear understanding of roles in virtual projects we have look in to definitions of roles and responsibilities below.

Below, they are different defined roles in a virtual project.

*Organizational executive committee*; this is also known as steering committee as well this group is a decision maker of budget and time of the project. Project execution is monitored by this team and they are generally informed by project managers (Maylor, 2005, p.52).

*Stakeholder* is responsible with budget and the one who can control business benefits are in a satisfactory level for the organization (Maylor, 2005, p.34).

*Project manager (PM)* is the one who is responsible for execution of project tasks and activities. A project manager has a specific role to achieve business objectives and within the time and to budget with resources signed to project. The project manager
controls day-to-day management of the project activities. Project managers should have methodology where they can demonstrate their skills, knowledge, and experiences from different types of industries. Different projects will require different levels of skills and it will require for different levels of project management as well (Maylor, 2005, p.17).

**Business area project manager (BPM)** Is one who will be responsible day-to-day task and make sure all activities are in business area. Business manager can be assigned to a project depending on size and complexity of the project (Maylor, 2005, p.56).

**Project leader (PL)** will be the one who will be responsible with internal and external areas and has overall responsibility for the project. Generally project leader is a senior person (Maylor, 2005, p.246)

**End user (user)** it is a clerk the one who represents final business user in the firm. End user can play important role in business or technical requirements and it could affect go live or no go decisions for projects (Maylor, 2005, p.33).

In global virtual teams, members will be guided with personal and characteristic guidelines. This will help to minimize possible conflicts before they rise. Generally team leaders are concerned about cultural geographical differences could bring possible miss leads. In virtual organizations capacity can be increased, if tacit knowledge can be transferred correctly and translated to companies’ culture and values (Harvey & Griffith, 2007, p. 494).

### 3.2.2 Virtual Project Manager

Virtual Project Manager is one of the many emergent professions in the knowledge and information age. New technologies have eliminated the need to make space and times coincide, but they also have imposed new rules and new conditions. This means that in regard to their degree of awareness, these professionals operate within working structures that require new means of organization and communication. Distance project management has become both an opportunity and a challenge for them, and taking control of this factor requires both knowledge management and project management practice. This entails to continuing training needs to secure the professionalism, specialization, and retraining of e-project managers, e-leaders, and virtual team workers. (Marcus, 2004, p.274)

![Typical ePM Environment](image-url)

**Figure: 3.3 VPM** (Goncalves, Marcus 2004, p.273)
In Figure 3.3 we can see that different departments are getting involved in different roles and responsibilities where they are geographically located in different locations. In this particular figure illustrates centralized knowledge management system is implemented and divisions can feed the data center and share information in this case different business models are diffident and each session or project is controlled by session or project responsible.

We would like to investigate how can the resources around the world can work together and communicate according to project in next chapter.
4. VIRTUAL COMMUNICATION MANAGEMENT

Looking at the development of project management and the role of the project manager with regards to the new communication technologies, the management of communication becomes an important subject of concern for successful virtual project management. In this chapter the reader will be introduced to different theories regarding the management of virtual communication. In the end a summarized framework that will be used to structure the collection of empirical data and the analysis will be presented.

In the previous chapter we outlined the concept of virtual projects and virtual project management. One crucial part of virtual project management, is as mentioned in the introduction, the management of the communication within the virtual team. One obvious question to consider when regular face-to-face is out of the picture is what other communication channels to use and what to use them for. Working in this new form puts new demands concerning the characters, features and skills of the participants of the teams (Tavčar, et al. 2005, p.557). For this reason we will also outline theories regarding skills for effective communication in virtual teams. According to Grosse (2002) the biggest challenges in managing communication in virtual intercultural teams are learning to manage the technology and handling cultural differences. Another topic that is widely discussed is the role of communication in managing trust and relationship building within virtual teams (Jarvenpaa & Leidner, 1999; Grosse, 2002; Chinowsky & Rojas, 2003; Tavčar, et al., 2005).

This brings us to the five subtopics this research aims to discuss.

4.1 Communication channels
4.2 Skills for effective communication
4.3 Dealing with technology
4.4 Dealing with differences in culture and language
4.5 Managing trust and relationships

4.1 Communication channels

When working in virtual teams there are many means of communication to choose between. Some of them are e-mail, phone, videoconference, and face-to-face (Grosse, 2002, p.27; Chinowsky & Rojas, 2003, p.99). Here we will outline the different communication channels that we identified in the current theories in the field that might be of interest when managing communication within virtual teams.

E-mail – E-mail can have several advantages as a communication channel, mainly due to its asynchronous nature. People get more time to process the message and to think of how to formulate the answer as clear as possible, which can be even more useful when members of a team have different language backgrounds. Then there will for example be enough time to use a dictionary in order to increase the understanding. People also tend to be less reluctant to ask for clarification when communicating with e-mail compared to more direct communication such as conversing over the phone or face-to-face. (Grosse, 2002, p.27-8) According to this, email could be of special interest to project managers when communicating more complex and important things, especially
when there are members on the team with limited language skills in the used language. It is nothing we have encountered in our professional lives though, so it will be of interest to see if our respondents are using and are conscious about such advantages.

**Phone** – The phone can be used as a more personal and direct way of communication. It can also be better than using e-mails when there is a need for dialogue. Using the phone for communicating can also be hard since you cannot observe any visual cues and it can be harder to understand people from different nationalities. (Grosse, 2002, p.29) Since the phone probably is the oldest communication channel for communicating over the distance, if we don’t count writing letters, there should be plenty of practical experience out there to tap into. We find it a bit surprising that we could not find more theoretical knowledge on the subject.

**Videoconference** – Using videoconferences to communicate can be effective when a large group of people have to talk. Compared to using the phone it is easier to know who is saying what. Something that can be a challenge though is that the quality can be low, which can make the medium less useful and potentially frustrating. (Grosse, 2002, p.29) Videoconference can be essential for complex tasks such as product development, compared to only communicating with audio (Tavčar, et al. 2005, p.559). Considering the novelty of this technology there might be important recent development of both the technology and its usage that still have not made it to theoretical studies.

**Face-to-face** – Face-to-face can be the most powerful mean of communication since it adds personal chemistry and it is easier to observe all the nuances of what is being communicated. It can also be a way to create stronger personal relationships. A drawback can be that it takes a lot of time and money to travel. (Grosse, 2002, p.29) Since the challenges with virtual communication might be a lot due to it being relatively new it will be interesting to see if the importance of face-to-face communication is becoming less and less important due to increased experience of other means of communication, or if it remains an important element in the communication mix.

Some other communication channels mentioned in the literature are fax, project websites, discussion boards, work sharing systems, and instant messaging. Chinowsky & Rojas (2003) are categorizing are dividing the different communication channels in three different collaboration categories; communication, cooperation, and collaboration; communication being simpler ways to exchange messages, such as email, fax, and phone conference; cooperation being ways for a group to asynchronously interact and manipulate data of a project, such as project websites, discussion boards, and work sharing; and collaboration ways to doing the same synchronously, such as video conferencing with data sharing, and ‘virtual teaming’ – meaning real-time data manipulation and exchange. Advantages and disadvantages with these additional channels of communication are not discussed in length by the authors, but we still want to use them for reference in our study. One note about the collaboration tools is that they when used fully can re-create an electronic meeting place with physical interaction as the only missing element of human interaction (Chinowsky & Rojas, 2003, p.100).
4.2 Skills for effective communication

Few articles explicitly address the demand of skills especially needed for members in virtual teams. Tavčar, et al. (2005) are doing so on a general level though, shown in the table below.

Considering the limited previous research of the topic and the arguably not so intuitive nature of it, our study should hopefully be able to add some clarity and develop the mentioned aspects further. Looking at the presented skills in the table of Tavčar, et al. (2005) we can see that they are vague and not that specific. There is a clear gap that this study hopefully will be able to start bridging.

4.3 Dealing with technology

Using technology for communication has two possibly obvious areas of concern for successful project management, namely making sure that the technology works and to get the team members to use the technology efficiently (Grosse, 2002). As can be seen in the table below, the main approaches to handling the technological challenges are to make sure that the team members really know how to use it and why, and to compensate for the impersonality by finding ways to make the interactions more personal.
Here the literature is clear, concrete and straightforward. Besides the table the different elements are discussed and explained properly. There are no obvious gaps as we can see it, but it is still possible that new things can come up when studying in more depth.

4.4 Dealing with differences in culture and languages

With the opportunity to create teams consisting of members not restricted to physical locations, there will inevitably be teams with members from all parts of the world, from different language and cultural backgrounds. According to Grosse (2002) some of the main approaches to dealing with the cultural differences are to be open, build trust and an increased understanding of the differences, as can be seen in the table on the next page. What is already mentioned in 4.1 is that email can be a good tool to deal with differences in language, since it will give participants more time to process the given information. This is also supported by DeSanctis, Wright & Jiang (2001, p.80-81) who argues that asynchronous communication tools is even more important to teams separated by cultural differences and multiple time zones, and for participants with language differences or different levels of expertise.
We did not find any literature with any conflicting views to this, and what is mentioned sounds credible and is easy to accept. What we hope to find out by the study is probably more about how to apply these things more concretely and in more detail rather than identifying new opportunities and challenges.

4.5 Managing trust and relationships

Can trust exist in a virtual team? How can it be facilitated and managed? There are topics discussed and studied by Jarvenpaa & Leidner (1999), who in their analysis presents a table, which can be seen on the next page, with trust-facilitating communication behaviors and member actions.

Looking at this there are some hands on behaviors and actions that we can evaluate when analyzing our empirical data. The importance of building trust in virtual teams is also discussed by Grosse (2002, p.30), which mentions the difficulty for managers to achieve trust. Jarvenpaa & Leidner (1999, p.791-94) shows the uncertainties of the theoretical field by presenting some different opinions about whether trust can be created or not, and to which extent face-to-face communication is needed for virtual teams to function efficiently. We are not sure how conscious project managers might be about these issues, so we will both look at conscious approaches as well how the theories are reflected in the processes used. Building on the point that social communication is important for building trust, Tavčar, et al. (2005, p.559) is saying that strong relationships between team members improves the communication and level of effectiveness. Both Tavčar, et al. (2005, p.559) and Jarvenpaa & Leidner (1999) are also specifically mentioning problem solving as key drivers of trust and relationship development.
4.6 Summarizing framework for managing virtual communication

In the figure below we summarize the theories we have been presenting about virtual communication management. We will use it throughout the rest of the thesis to structure our presentations of the empirical data as well as our analysis. We believe that these five areas are the most relevant to study since they are reoccurring in all the different articles we have come across during our literature search. All the challenges and strategies mentioned goes into either of the five categories in one way or another. Discussing communication channels should be of interest since not being able to communicate face-to-face means that other ways of communicating have to be used. What are these communication channels, and what are they best used for? Within this new context of managing projects, traditional preferred skills of project members might not be applicable. For this reason it should be of interest to evaluate what skills are desirable for effective communication within virtual project teams. Since the level and quality of social interaction in this kind of teams could be considered limited, we consider it relevant to study how trust and relationships can be managed. Due to the possibility for cooperating over national borders, is should also be relevant to see how differences in culture and language can be managed. Finally we also find it of interest to see what can be done to deal with the challenges of communicating through technology. All together we believe that these five areas cover the different perspectives relevant to the research topic.

<table>
<thead>
<tr>
<th>Table 4.4 Trust-Facilitating Communication Behaviors and Member Actions (Jarvenpaa &amp; Leidner, 1999, p.807)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication Behaviors that Facilitated Trust Early in a Group’s Life</strong></td>
</tr>
<tr>
<td>• Social communication</td>
</tr>
<tr>
<td>• Communication of enthusiasm</td>
</tr>
<tr>
<td><strong>Member Actions that Facilitated Trust Early in a Group’s Life</strong></td>
</tr>
<tr>
<td>• Coping with technical uncertainty</td>
</tr>
<tr>
<td>• Individual initiative</td>
</tr>
<tr>
<td>• Phlegmatic response to crises</td>
</tr>
</tbody>
</table>
5. EMPIRICAL FINDINGS

In order to fulfill the purpose of the research, the next step of the process is to go out in the real world to see how the theories are reflected in practice. In this chapter the reader will be presented the information that was gathered through the conducted interviews. For clarity, the answers from the five sub topics of the research purpose will be presented one by one. The answers from the respondents will also be separated in order to be able to make a more detailed analysis.

5.1 The respondents and their organizations

5.1.1 Respondent A – telecommunications professional at Company X

Respondent A is originally from Turkey and has for the last five years been working in Company X, which is a large Swedish telecommunications company. Today he is working as a product manager in the global services department, managing relationships between the company and its partners from an operational perspective. He is also working with creating deployment and service delivery strategies. His academic background is a bachelor’s of science in computer engineering.

In the current work setting respondent A is working with multiple countries to make sure that services are deployed to the market properly. He has a group of people in The Netherlands working with operational tasks in the project, and when something new is deployed coordination has to be done between many different countries. The latter is through a bigger team around the globe since communication has to be done through the entire organization. Within this team he is the product manager of some of the products, owning the life cycle process, and member of some others.

5.1.2 Respondent B – IT specialist at Company Y

Respondent B is originally from Turkey, and has been working for Company Y for the last three years, where he the first six months was an intern through a global student organization called AIESEC. He has been employed in the IT-department during the whole duration, and is now involved in several IT projects. Before coming to Sweden he had been working for some different companies in Turkey, and studied computer engineering in Istanbul.

When he joined the company he was working in a big project for the purchasing department that was outsourced to India. They were two people in Sweden taking care of the project, and most of the resources were in India. After that project he has mainly been working on small projects with either very few people or working alone. There are continuous communication with the customers though, who are from different departments in different countries of the company.

5.1.3 Respondent C – Project manager at Company Z

Respondent A has been working as a project manager for four years, the two last at Company Z as a project management consultant. His educational background is economics and computer science at Copenhagen Business School.
He is since a year back working as a project manager in a project that is developing an application for stock exchange for trading of electric energy and power exchange for the Nordics region. The project has members from Denmark, Finland and Norway, and some other stakeholders in some other different countries.

5.1.4 Respondent D – Project manager at Company Z

Respondent D has been working as a project manager for the last 15 years. He has been working in PricewaterhouseCoopers, IBM, and now in Company Z where he is working with the management perspective of projects. He has been working in the areas of distance management and international projects.

In his current project he has stakeholders who are located in Germany, Holland, Sweden, Norway, Finland and Denmark. Some of the people in the project are working full time and others part time. When more man work is needed they also use consultancy. As the project manager he has to make sure that the communication is coordinated so it is clearly understood in all the involved countries.

5.2 Virtual communication management

5.2.1 Communication channels

Respondent A

In the projects for respondent A most of the communication is done through email, and is dictated by toll-gates and a reporting structure that are defined in the beginning of the project. Conference calls are used when more clarity is needed. For the ‘product decisions’ taken at the toll-gates, physical meetings are arranged through decision boards. In these decision boards a couple of people might also participate through phone. For more important decisions a product council is used where higher level managers are attending.

Sometimes when coordinating the team in other countries and there are more than 20 participants, they are using online conference tools. Through it they cannot just talk and use instant messaging, but also share slides, documents, presentations, and the desktop. Through the desktop sharing tool you can show whatever you are doing on your screen, for example browse different web pages. These online tools enable another level of collaboration. With normal phone conferences it can be challenging to coordinate who speaks if you are many people, but with the online tools there are built in functions to deal with that. Another tool they use is called “Project place”, which is a space for asynchronous collaboration. With it project members can upload and download documents and resources, as well as post on forums. The tool then proactively sends notifications to subscribed members when there are changes.

Usage for the different communication channels:

Email – Is useful to send out packages of information which need to be reviewed and commented. They enable collaboration when you try to develop some material.
Telephone – Helps when you need instant answers or communication, and to take instant decisions that generally are taken one to one.

Conference calls – Are useful when you have five to seven people and you have to come to a common decision about something, since it is easy to share opinions.

Collaboration tools – Are useful when you have to present some material or introduce something new. People can then raise their hands, ask questions, and give comments. It is good to use for groups bigger than eight or so.

Project place – Is useful for gathering resources and people in the same place. Having automatic notifications is also a good way to keep people updated with changes. It can also be opened for access by other people within the organization that you want to involve in the process.

Respondent A thinks that the tools do not have any disadvantages as long as you know what purpose you are using them for. You need to know what you want to achieve with each of the tools, and diversification of their use is important for efficient communication. The company has a corporate policy about how to use the different tools, more specifically what tools there are and how they are supposed to be used.

Respondent B

Most of the communication for respondent B is through email, and when that is not enough through the phone. Initially mail is often used, and when the answer is not satisfactory he calls them up on the phone. There can be a lot of misunderstandings through mail, and it can be easy for people to forget answering them. Other communication channels they are using are video conferences and desktop sharing.

Usage for the different communication channels:

Email – Is useful for things that are very specific and easy to understand for the receiver.

Phone – Can be used when something have to be clarified or when something is hard to understand

Video conference – Is good when you want to discuss something in a group, and better than phone conference since you feel more responsible to participate since you know that people can see you.

Desktop sharing – Is very useful when you need to show someone something, or someone to show you. For example teaching someone unfamiliar software. Using this tool is then much quicker than reading through the manual.

Respondent C

All the data and documentation is stored through an internal application. Through the application different users can get different access, and it is easy to track who did what and to allocate tasks and deadlines. Besides that they are using emails, phone, phone conferences, and physical meetings to communicate. They are not using instant messaging since they found out that it is bringing too much interruption when you are constrained in your work.
He thinks that communicating through phone can be difficult, since it is cutting all body language and language differences can bring misunderstandings. For this reason they have several physical meetings, in which cultural differences can be easier to identify. He thinks that even though everyone from the project is from Scandinavia, there are still differences in business cultures.

Respondent D

In the Respondent D’s project they have distance management tools and applications for internal communication. They are communicating through weekly status meetings, regular conference calls, business meetings, phone or Skype meetings, and emails. They also use an internal application to store and share project documentation and deliverables. A lot of the communication is through email, so they have specific formats for how mails should be used and who should get them in order to be more efficient.

He believes that there is a difference between how you communicate in a conference call compared to how you communicate individually. In open conference calls people generally takes more personal responsibility. He also thinks that there is a big difference between conference calls and physical meetings. Having people from different countries and company cultures can sometimes make conference calls hard to understand and escalate the situation. During physical meetings it is easier to understand the other person since you also can see body language. It is also easier to break the ice.

The internal application for storing and sharing of documents and deliverables can give a good picture over what kind of changes that has been done to different documents, and who should have access to what.

He thinks that it is best to agree on the usage of the different communication channels in the beginning of the project. Then you can also see if there is required any training for the external applications.

5.2.2 Skills for effective communication

To make it easier to compare and get an overview the skills of team members needed for effective communication that are mentioned by the respondents are entered in the table below

<table>
<thead>
<tr>
<th>Respondent A</th>
<th>Respondent B</th>
<th>Respondent C</th>
<th>Respondent D</th>
</tr>
</thead>
</table>
| • Collaboration  
• Cooperation  
• Intercultural communication  
• Open minded  
• Proactivity | • Technical skills  
• Team player  
• Responsible mindset | • Open minded  
• Communication skills  
• Team oriented  
• Social skills | • Business skills  
• Tools and applications  
• Open minded  
• Empathy  
• Cultural sensitivity  
• Written and oral communication skills  
• Project methodology |

Table 5.1 Skills for effective communication
5.2.3 Dealing with technology

**Respondent A**

One of the challenges respondent A sees when using technology for communication is that it is hard to know whether the information sent is received or understood. When you communicate verbally you get instant feedback, but that is not the case here. To deal with this there are technological tools that you can use that can actually tell you if the sent information is accessed or not. This does not make sure that the information is understood though, so sometimes it can be an idea to check it personally with the receiving person. You can also establish a question-response relationship.

Another challenge he mentions is that there can be a competence gap, meaning a lacking understanding and willingness to use the tools. This can be dealt with both through different training programs and to make an effort to encourage people to use them. One way of doing this is to not make usage optional, by making it corporate. This means that if you are not using the tools you will not be able to participate, instead of the group deciding not to use the tools because some people do not want to use them.

On the other hand he also sees a lot of benefits by using technological tools to communicate. They can connect a lot of different things in the communication, such as not just being able to hear and see each other, but also being able to see slides and write down comments directly. Using instant messaging can also be a good tool to use when you need instant response on something when people might not want to be available over the phone or have too many emails waiting to be read.

**Respondent B**

The first challenge that comes to respondent B’s mind is differences in time zones. If the difference is big it requires some extra effort in planning the days. This is solved by sometimes having to start days early, and other times communicate from home in the evenings.

Another challenge can be the internet connection speed, especially from some countries. If it is too slow it can be big problems getting the different applications to work. To deal with this there are some software that can be used on a server in the middle between the two computers with connection problems that can mitigate the problems.

As a third challenge he believes that something is missing when you are communicating with technology and not sitting next to each other. Video conferences can take it to a certain level, but it is not the same thing. He thinks that ‘normal’ communication makes you feel more responsible and committed.

**Respondent C**

One challenge as Respondent C sees it is that it can be hard to capture everything that is needed in written format. They for example had some communication problems in the project between the developer and the person coming up with the specification of what has to be done. All the specification was in written format and no verbal communication
had taken place, which led to misunderstandings. To deal with this they are now monitoring progress and communication as detailed as possible.

**Respondent D**

One way to make communication through technology easier is for example to spend a lot of time to prepare for the conference calls. Since it is harder to communicate this way and people are attending from different places it is especially important to make the meetings smooth. It is also important to write down meeting output that can be stored and sent out to the participants.

### 5.2.4 Dealing with differences in culture and languages

**Respondent A**

Respondent A has not had that many challenges with language issues. He says that it might be because in his company there is a strong requirement of good level of English. There might be some challenges with different accents, for example when someone from southern Italy meets someone from India. To deal with this there is always taken written output on the meetings that can be read and commented afterwards if needed for clarification.

Cultural aspects are something that he has not had any problems with within the company either. There have been challenges when meeting external clients, but within the company he believes that the corporate culture is managing to set a good basis for everyone to work with that prevents challenges due to cultural differences. He sees the core of the culture to be based on rationality, human aspects, and clear values. In his experience this does not differ much between different countries either, where things as values, priorities and how to communicate stays the same globally within the organization.

**Respondent B**

Respondent B has had some challenges with cultural differences. In the project with India for example, people were constantly giving optimistic promises that could not be kept, and would not ask any questions if they did not understand. People would rather spend five hours finding the answer out for themselves than asking about it. Such things are according to him dealt with through knowing what to expect, either through own or others’ experience, and then adjust accordingly. It was also approached through talking about it openly.

When it comes to language differences Respondent B did also not have any big problems, since everyone knows quite good English.

**Respondent C**

Within the project the first language is English, since there are differences in language in the Nordic area. He says that the Danish and Norwegian cultures are very similar, but Finland is a bit different. The solution he proposes is to be aware of the differences and just learn how to communicate with them.
Since the members of the project are from different countries there are effects on the interaction between them. There are both different preferred ways of working and communicating. There have also been some conflicts due to documents having been written in own languages instead of the agreed language English. One important way to cope with this is as he sees it to have physical meetings, since it is the best way to get to know each other and understand differences.

5.2.5 Managing trust and relationships

Respondent A

Respondent A says that he does not have any conscious approach to managing trust and relationships within teams, based on that it is already considered to be there. Again he thinks that it is due to the corporate culture, where there is a strong emphasis on having clear priorities as the basis for working. These priorities are set and managed both top-down and bottom-up, and is also used for handling conflicts. When there is a conflict the conflicting arguments will be broken down to the level where you can see which different priorities they are between, and then the side with the higher priority will be used. If an agreement cannot be made, the arguments are written down and escalated to higher management where the decision then will be taken.

Respondent B

Respondent B’s recipe to success here is to take things to a personal level and being friendly. Talking about personal things and trying to be friends instead of colleagues creates a more relaxed atmosphere and increases the effectiveness of the communication. Concerning conflicts he thinks that having them over email is not good. If a conflict is approaching he calls the people it concerns and try to lighten the mood up a bit. People tend to understand each other in a very different way over email, and not everyone knows the standard etiquette while communicating on the internet. Extensive usage of exclamation marks and capital letters can for example be offending for some people.

Respondent C

Respondent C thinks that it is very hard to build personal relationships when you don’t meet the people physically. What he personally tries to do when a new person is joining the project, is to arrange a physical meeting in order to build up the trust and personal relationship more easily. He also consciously communicates and manages different people and personalities differently. When having to handle conflicts he can use the advantage of being an external person, since he is not representing any of the companies or clients, or rather all of them.

Respondent D

To break the ice Respondent D says that they use to arrange kick-offs where project members can meet face-to-face. There trust and personal relations can be built, and they
can feel more like a team. He is also trying to build personal relations with the project members, to understand them better and to try to be a good example through his own commitments. He also thinks that you have to let the members feel that you trust them during the project and the communication. To handle conflicts he tries to have a close communication with project members and stakeholders, in order to identify conflicts in their early stage. He can also use his role as an external consultant, through representing different stakeholders in different meetings.
6. ANALYSIS

After having presented theories in the fields of project management and virtual communication management, as well as the information gathered through the conducted interviews, it is time to analyze the differences. In this chapter the approaches to virtual communication management of the respondents will be compared with the theories presented about the same topic. For clarity, the five sub topics of the research purpose will be analyzed one by one. To make the chapter easier to follow short summaries from the theoretical and empirical chapters will be integrated into the text. Additional areas of analysis that came up will be in the end.

6.1 Virtual communication management

6.1.1 Communication channels

Email

According to the theories we found (Grosse, 2002, p.27-8), the advantages of using email to communicate are that people get more time to process and answer a message, which can be especially beneficial when there are members with different backgrounds, and that people get less reluctant to ask for clarification when something is unclear.

According to our respondents the main advantage with emails is that it is an efficient way to quickly send out information and specific questions that are easy to understand. It can be good to use when you develop some material and want it reviewed and commented.

We believe that the reason for the respondents not mentioning the advantages from the theories is that they either are not conscious about it, or they think it’s obvious. Another possibility is that there could be few problems with language in their projects, so the advantage is not relevant in the context. This is reasonable since none of the respondents seemed to have any bigger challenges with language when asked about it.

The reason for the theories not mentioning what the respondents are saying could also be because it is too obvious. The perspective used is probably also more from a strict communication point of view, and not about efficiency. It might for example not be better to use mail to get simple information out in terms of the understanding of the receiver, but it is from the perspective of making best use of the time available.

Something new that came up in the interviews was the actual format of the email. Several of the respondents mentioned things like specific formats and training about how to write and use, or how not to write and use, emails most efficiently.

What could be considered a bit contradictory is that in our study email seems to be considered as a communication channel preferably used for content easy to understand, whereas the theories (Grosse, 2002, p.27-8) implies that it could be good to use when communicating more complex matters. It is for example mentioned that team members
are more inclined to ask questions for clarification when using email and that they can spend more time on processing the messages by reading them carefully and using dictionaries if so needed. This could be considered to support the delivery of complex messages, but our respondents do not seem to agree. On the other hand our sample is very limited, so it is hard to draw any certain conclusions.

Another possible explanation that we see is that email could make it easier for the receiver of a message, but harder for the sender. In an email the receiver gets many chances to interpret the message by reading the email over and over again, but the sender only gets one chance. Over the phone the sender gets a chance to rephrase and tailor the message after instant feedback from the receiver. This would mean that an increased emphasis is put on the sender’s ability to phrase a message in a comprehensible manner.

**Phone**

According to the theories we found the phone is a more direct and personal way of communication, which can be used when you need instant answers (Grosse, 2002, p.29). Compared to email it is also more suited for situations where there is a need for dialogue and clarification. A drawback can be that it is not possible to observe any visual cues, and that communicating with other nationalities can be harder.

Our interpretation of the answers from the respondents is that there are no big differences compared with the theoretical standpoint. We believe that the reason for this might be that the phone is the oldest of the communication channels, physical meetings excluded. It is a straightforward tool for communication that everyone is familiar to.

Just our discussion in the email section there are some things that are less clear regarding using email or phone for topics that can be hard to understand. From a technical communication point of phone seems to be the better option, but from the psychological point of view emails have an advantage since people are more inclined to ask for clarification. Email also seem to be preferred compared to the phone when dealing with language problems, but this we could not confirm through our practical study which we think might be due to language not being a big problem for any of the respondents.

**Conference calls**

Conference calls were not specifically discussed in the theoretical framework we used, but two of the respondents shared some of their opinions on the matter. Respondent A said that conference calls are good when you have a smaller group of people that you want to share opinions with and come to a common decision. Respondent D said that people behave differently in a conference call, where you are in a group, compared to if you speak to them individually. He said that in a conference call people take more personal responsibility. We do not know how or have seen any theories discussing the phenomenon. We think that it could be either that people feel more committed when they are interacting with peers and not just the project manager, or that they consciously or subconsciously for esteem purposes step up in order to compete with the other members of the team. This is something that could be researched further.
According to our theories videoconferences is an effective tool when you want to communicate with a large group of people. (Grosse, 2002, p.29) Since you can see each other it is easier to know who is saying what. It can also be essential when you are working on complex tasks compared to using an alternative only using audio (Tavčar, et al., 2005, p.559). A drawback can be that people can get frustrated if the quality is low.

Only one of the respondents mentioned any experience with video conferences. He thought that it is good for discussing things in groups, and that you feel more responsible for the discussions since you know that people can see you. One of the other respondents mentioned that their online conference tool had video conferencing possibilities, but that they did not use that function because it was not needed.

We believe that one reason why videoconferences do not seem to be that popular is that the more modern online collaboration tools solves many of the needs videoconferences were made to satisfy. This could be things such as sharing presentations on the screen as well as other visual support tools. Since missing body language being a problem have been mentioned a couple times, we are not sure why video conferences are not used more than they are. Carletta et. al. (2000, p.1239) discusses some different issues that could be the causes, such as the tendency of participants to ignore looking at the pictures of other participants and that even if they do look it can be hard to pick up visual cues such as turn-taking.

Collaboration tools

In the theories we have used for this study collaboration tools were just briefly mentioned. They are defined as tools that enable the participants to interact synchronously through functions such as video conferencing, and real-time data manipulation and exchange. They are supposed to fully being able to re-create an electronic meeting place with physical interaction as the only missing element of human interaction. (Chinowsky and Rojas, 2003)

The respondents are mentioning many things that could be considered collaboration tools. One of the respondents has access to an online conference tool through which he for example can use instant messaging and share presentation slides, documents, and even the desktop of the computer. The tool has functions for coordinating who is speaking, and through the desktop sharing people can show and demonstrate what they have on their screens. Another respondent had also used desktop sharing for training of specific applications. The collaboration tools were considered useful when presenting material or introducing something new. It is also good for bigger groups.

We believe that the stronger emphasis on collaboration tools in the empirical part compared to the theory is because of the time difference. The technological development is rapidly going forward, and our empirical study is much more recent than the articles we have found. One of the articles for example mentioned one challenge with video conferences is that it can be of low quality, and another that it can be frustrating if connection is not working properly. We believe that the internet connections, at least in the western world, and video quality have improved a lot lately. For this reason the articles that are a few years old might be a bit out of date.
Cooperation tools

Another category of tools mentioned in our theories is cooperation tools. Cooperation tools provide ways for a group to asynchronously interact and manipulate data of a project, such as project websites, discussion boards, and work sharing. Little is mentioned about it, but it is said to have an advantage over communication technologies such as email, phone and fax through letting the participants manipulate project data and not just communicate thoughts (Chinowsky & Rojas, 2003).

Three of the respondents mention use of so called cooperation tools. They were used for discussion forums, sharing documentation and resources, and keeping track of deliverables. Some of the advantages mentioned were the possibility to subscribe to notification of changes in the documents, and to be able to track who did what and different deadlines.

Here theory and practice seems to be on the same page. We believe that cooperation tools might not be a direct way of communicating, but having it as support can provide an environment where communication is made easier. Having automatic subscriptions to changes in documents and deliverables visible in a central location is for example not a direct way of communicating, but it will make things more clear and communication easier due to less misunderstandings. One thing we have noticed that has been growing a lot in this area recently is Google Docs which is provided free of charge.

6.1.2 Skills for effective communication

In table 4.1 we could see the only references to skills needed for virtual team members that we have found in the literature. (Tavčar, et al., 2005, p.574) The list could be considered a bit vague and unspecific; mentioning skills such as “Effective communication in a virtual team” and “Willingness to cooperate and work for common project goals”.

In table 5.1 we could also see the respondents’ perceptions on what skills are needed. When comparing the tables it can be seen that there are similar skills mentioned even if the naming is a bit different.

Looking at that we can see that the theories seem to be applicable in practice, since the two tables are almost matching perfectly. What is not mentioned by the respondents is language skills. When analyzing it a bit further though, our opinion is that the mentioned skills from both sides are vague and quite general, as well as somewhat obvious. We believe that it could be of interest to research the topic more in depth; by looking at what skills more specifically are needed to make a good virtual team member. What is it in specific that makes an outstanding virtual communicator stand out? We believe that proactivity / initiative taking could be one answer since it is mentioned by all parts and is something we do not think are needed for communicating in more traditional environments where communication is done physically. This could be argued to be in line with Furumu’s (2009) study of conflict management in virtual teams. In her article she discusses how an active approach to team work and conflict management increases team effectiveness and decreases social loafing. Our respondents also mentioned social loafing in relation to people taking more responsibility in
conference calls compared to one-on-one phone calls, and in video conferences compared to conference calls.

6.1.3 Dealing with technology

In figure 4.2 we could see how opportunities and challenges with technology can be managed in virtual teams. Some of the main categories of approaches are to make sure that the team members know how and when to use the technology, why they should use it, and to compensate for the impersonality by finding ways to make the interactions more personal (Grosse, 2002, p.25).

The respondents mentioned many different challenges and strategies to cope with them. Respondent A mentioned that it can be hard to know if written information you send to someone is received or understood. Compared to verbal communication you do not get instant feedback to perceive if the receiver understood you or not. There are both technical solutions that can tell you if the information was accessed, or you can just follow up with the receiver personally.

Another challenge mentioned was that there can be competence gaps; meaning a lack of understanding or willingness to use the tools. This was dealt with through training and encouraging people to use them. Making tools corporate is also a way that leaves people no choice to use them, since not using them would mean not being able to work. An advantage with using technology is that you can connect a lot of different mediums to work together efficiently.

Some other challenges mentioned by the respondents were different time zones, connection speeds in some countries, and commitment. These were respectively dealt with through being flexible with day planning, special server software, and face-to-face communication. One approach to make virtual meetings a better experience is to make sure they are thoroughly prepared.

What comes up through our interviews that are not covered by the existing theories that we found in the field are the lack of feedback regarding written messages you send and technical solutions to cope with poor connections. The former is something we believe are an important issue to consider, since we can relate to it from own experience. When you send out information to a group of people and do not get answers from all of them, it is really hard to know why. You do not know if they just not care, did not have any comments, or just did not receive the information for some reason. We believe that this can be a discouraging factor for people to start using these mediums for communication. For this reason we think that it can be a good idea for project managers of virtual teams to set up communication principles regarding feedback to written communication. This is also supported in the discussions about managing trust in virtual teams, where it said that substantial and timely responses are needed to maintain trust (Jarvenpaa & Leidner, 1999, p.807).
6.1.4 Dealing with differences in culture and language

The theoretical approach to dealing with differences in culture and language revolves around being open to the differences and to develop the understanding about them (Grosse, 2002, p.31). This also seems to be the approach in practice, since all but one of the respondents mentioned it explicitly.

The reason why the fourth person did not mention it might be simple, because he said that they do not really have any challenges with neither language nor culture. This is interesting since he is also the person with the projects with the most global scope. He thinks that the reason for the lack of problems with language might be that there is a strong requirement for a good level of English in the corporate recruitment process. There are some problems with accents, but there are no big issues in general. The lack of cultural challenges internally in the company he believes comes from the corporate culture. The corporate culture sets the basis for how people should work through clear values, priorities, and communication principles.

We believe that what he is saying have some credibility, but also that he could be a bit too optimistic about the lack of challenges. Either he might just not see the challenges, or has not been involved in any intense cross-cultural work. What makes sense with the reasoning is that cultural clashes usually stems from differences in values and behavior, so a strong corporate culture directing values and behavior could be able mitigate cultural differences based on different cultural backgrounds. If corporate priorities and communication principles are crystal clear, there should be little space for cultural differences to create conflicts.

What makes this interesting is that it is a way to cancel out the effect of cultural differences before they show up, instead of dealing with them when they appear. It would probably reduce the need for intercultural skills of the project members since behavior is directed by the corporate culture. A potential drawback to look out for as we see it is that it might reduce the benefits that can be achieved through diversity if not managed right. Some people might be held back if the communication principles are too far from their usual habits.

Something else that is interesting is that no one of the respondents seems to have had any serious problems with language. No one of them even mentions language skills as important for effective communication in virtual teams, which we assumes comes from them thinking the English language is so natural that they did not even reflect on it. This could be due to the English level in the involved countries being high or that the English level in general nowadays is so good that it is not really an issue anymore.
6.1.5 Managing trust and relationships

This topic has received a lot of theoretical interest, which can be seen through it being the focus of or at least showing up in most of the articles regarding virtual communication (Jarvenpaa & Leidner, 1999; Grosse, 2002; Tavčar, et al., 2005). What seem to be agreed upon is that social communication is crucial for building trust in virtual teams. Some other factors that we presented in the theory were that communication is predictable and that responses are timely and substantial (Jarvenpaa & Leidner, 1999). This means that you should know when to expect communication to happen, and that people are responding adequately to messages in time. Face-to-face meetings are also considered effective for building trust and relationships. More can be seen in table 4.4 (Jarvenpaa & Leidner, 1999, p.807).

Our respondents seem to be on the same page as the theories regarding this. For two of them the main approach seems to be to arrange physical meetings and to build personal relationships with the team members. For another it is to take things to a personal level and being friendly. Predictable, timely, and substantial responses it not mentioned as a conscious approach to managing trust and relationships. On the other hand this should already be dealt with since the respondents mention establishing communication guidelines and milestones in the beginning as important for communication. What is interesting is that the same respondent who said he did not experience much challenges with differences in language and culture, here says the same about trust and relationships. He says that there is no conscious approach to managing trust and relationships, since it is considered to already be there. Again he mentions the corporate culture as the source.

Jarvenpaa & Leidner (1999) is discussing different sources of trust in depth. One of the discussed sources is a concept called “swift trust” developed by Meyerson et. al. (1996, in Jarvenpaa & Leidner, 1999). Swift trust is building on Social Identification/Deindividuation theory (SIDE) (Lea and Spears, 1992, Lea et. al., 1992, in Jarvenpaa & Leidner, 1999), and is essentially about trust being imported as a function of categorization. This means that trust will not be based on first hand information, but rather on the stereotype of the category the other members are placed in.

In our case this could mean that the strong corporate culture in the company of our respondent could make up the category that the virtual team members imports their trust from. This could mean that if the members trust the values and principles of the company as a whole, the other participants could be trusted through deindividuation and categorization as stereotype employees of the company.

Another way of managing trust is studies and discussed by Thomas & Bostrom (2008), and it is through the adaptation of technology. What they stress is the importance of adapting the used technology according to the emerging needs of the specific team with regards to trust related issues. None of the respondents mentioned adaptation as a way to manage trust or any technology adaptation at all. The tools and way of using the tools seemed to be predefined in clear processes, just in different level of complexity in the different cases. In order to analyze why this is the case we believe that a more in depth
study of the actual cases would be needed. It could be due to things such as low complexity and interdependence in the projects, or just a lack of awareness of the respondents.

6.2 Corporate culture as a virtual communication management tool?

What stand out in this study are the answers of the telecommunications professional from the large Swedish telecommunications company. It seems like virtual communication is working almost effortlessly there even though it seems to be the case with least focus on physical meetings, which was not even mentioned. This is even more interesting since he is involved in the projects in the study with most global scope. Something that seems to be recurring in the answers is the role of the corporate culture, which is discussed in more detail in the rest of this chapter.

What we can learn from this might not have serious implications on the management of virtual communication within a project, since it takes a lot of power over the success to the corporate level. A single project manager might have a hard time to affect the corporate culture regarding virtual communication, but we believe that any serious organization relying on project management should take this into account. By consciously shaping the corporate culture regarding virtual project management and its links to corporate strategy we believe that you can save virtual project managers from a lot of trouble. We believe that the strongest impact through this seems to be on trust and dealing with cultural differences, which also might be the hardest and most intangible issues to handle for project managers.
7. CONCLUSIONS

When things comes to an end it is time to look back at the journey to reflect on the learning points that can be taken. In this chapter the conclusions of the research will be presented. This will be done through looking back and trying to answer at the research problem and purpose. To make this as clear as it possibly could the headings will be based on the sub topics of them.

7.1 How are project managers managing communication within virtual teams?

7.1.1 Communication channels
It seems like the approach to how to use communication channels to manage communication within virtual teams is to understand and define which communication channel are good for what purpose. Email seems to be the backbone of the communication, even though it has its limitations. It is an efficient tool for simpler communication purposes. After that comes the phone. The general reasoning seems to be that the more complex communication situation, the more sophisticated and time consuming communication channel are chosen. It starts with email, then phone, phone conference, and then video or online conference. In general video conferences do not seem that popular in our studied Swedish and Danish companies.

There seem to be some theoretical areas in the usage of communication channels that are still not very clear. We found some contradicting or at least overlapping ideas with respect to this; both from present knowledge in the field and from our study. Email is for example considered as a communication channel for less complex topics at the same time as it is found to make team members more prone to ask for clarification if they do not understand something, as well as giving them more time to think about and evaluate what has been communicated. This could be of interest for deeper studies in the future.

The choice of communication channel also seems to facilitate the level of engagement and accountability of the members of the virtual team. This is something that some of our respondents mentioned, but was not mentioned in previous research that we found. Since our sample was very limited we cannot make any strong conclusions, but it could also be a topic of interest for future studies.

7.1.2 Skills for effective communication
There were no strong conclusions of what skills are required for effective communication in virtual teams in neither the present knowledge in the field nor from our empirical study. Some broad categories were covered but we believe they are too vague to be of any use on a practical level, and our empirical study did not contribute to any new knowledge. The skills valued by our responding project managers were open mindedness, team work, and communication skills, which all was mentioned in one way or another in our literature review.

Though, if we would be to take one thing out of the material it would be proactivity. There seems to be a need of people who take initiative and can provide regular communication to compensate for the increased ambiguity created by the lack of face-to-face communication.
7.1.3 Dealing with technology
The main approaches for dealing with technology seem to be to make sure that the technology works, that the team members know how to use it and why, and to find ways to warm up the media by making it more personal. Technical problems don’t just limit the communication; they also contribute to creating a resistance towards using the new tools. This makes it important for project managers to make sure that things are working effectively and as they are supposed to. It is also important for them to identify knowledge gaps and make sure that proper training is given.

One general approach dealing with many of the behavioral issues with technology was found to be to create standardized guidelines and processes, and to make them mandatory. If using the tools is left to be optional there is a lower chance that they will be used properly.

7.1.4 Dealing with differences in culture and language
The main approaches for dealing with differences in culture and language seem to be to build trust within the team and to create an understanding of the differences that exist. A practical approach to language problems is found in present knowledge in the field is the use of asynchronous communication channels. Using them can make it easier for team members to participate by giving them more time to process the information and if needed use a dictionary. It will lead to increased inclusiveness and less discrimination due to differences in language proficiencies. For cultural differences both the found theories and the empirical findings are stressing the importance of being open minded and spending time with learning more about them. For the respondents in our empirical study language does not seem to be a challenge, since none of our respondents seemed to have any concerns about it. For that reason we did not manage to develop any theories further.

7.1.5 Managing trust and relationships
Managing trust and relationships is directly or indirectly mentioned in most of the studies of virtual communication and virtual teams. The solutions mainly revolve around social communication and getting to know each other better, especially in the beginning of the project. Setting up face-to-face meetings is generally recommended, but exchanging personal information virtually is also considered useful. What is also stressed is the importance of regular and predictable communication, which can be made happen by project managers by setting up clear communication guidelines and expectations. Later in a group’s life it is important to shift the focus of the communication towards a task orientation.

Some new things came up during our empirical studies. One of the respondents claimed that their corporate culture were so strong that trust is there all the way from the start and does not have to be created. It was also the respondent that seemed to have least problems with virtual communication, so it could be of interest to study deeper in the future. For conflict management one respondent mentioned that they write down their conflicting arguments and escalate to higher level management if it cannot be solved internally, and another respondent that when conflict seems to emerge over email he makes sure to call the other part up and deal with it verbally.
7.2 Recommendations for future research

What we believe to be of highest interest to research further from this study in the future is the topic that opened up in the end of the analysis chapter. It should be of interest to in deeper detail research the effect of corporate culture on virtual communication management, and how it could be used from a strategic perspective to increase the effectiveness of project management in multinational corporations. Connecting to this it should also be of interest to study the effect of corporate culture on the concept of swift trust in organizations.
8. CREDIBILITY OF THE RESEARCH

After finishing a study it can be good to take a critical look at what you have done and evaluate the relevance of the claims you are making. In this chapter some stands on the trustworthiness of the study will be made.

8.1 Trustworthiness

Since we have chosen to build our study on a hermeneutic view of knowledge, we do not believe that using truth criteria would have been a good idea for this chapter. Arguing for what is true or not might seem pointless if you consider knowledge to be based on interpretations rather than facts. For this reason we will use trustworthiness for our measure to validate what we have been doing. According to Bryman & Bell (2003) trustworthiness can be divided into the four categories credibility, transferability, dependability and conformability.

8.1.1 Credibility

In order to increase the credibility of our research we sent the finished empirical presentations to the respondents for their approval. By doing this we made sure that we did not misinterpret what the respondents when processing the gathered material. The corrections we received were not about the content, just about some personal information that was wished to be changed.

8.1.2 Transferability

Regarding the transferability of our results we believe that it is possible to some extent. Even if we have not explained the social contexts of the respondents in detail, we have given some information about their responsibilities and their projects. We also believe that our results are general rather than specific, and somewhat practically oriented, which we think should increase the transferability for some of the parts. We do not for example believe that the differences between advantages and disadvantages for emails and telephone as communication tools to be that different between different research contexts. On the other hand we believe that the transferability of our results regarding for example language differences could be limited, since in other parts of the world the level of language capabilities is for sure much lower.

8.1.3 Dependability

Supporting the dependability of our research is that we have saved all the data and resources we have been working with. We still have all the transcriptions and recordings in digital format left, as well as all the articles we have been using. Together with our methodological chapter other researchers should be able to recreate most of what we have been producing.

8.1.4 Conformability

For the conformability of our research we would just like to say that we understand that we probably have not been able to be completely objective while performing our study, but we for sure tried our best.
9. REFERENCES

Articles


Books


Appendix A - Interview guide

Please tell us briefly about your background

What experience do you have in Project Management and Managing virtual project teams?

Could you please give us more information about your current project?
How is the project structured?
- How many members / which countries are they from, how do you define their roles?

How are you communicating within the team?
- What communication channels are you using?
  - For what purpose do you use the different communication channels?
  - Advantages / disadvantages
  - What kind of tools or applications do you use for project management?
- What kind of communication guidelines do you have within the team?
  - Standards / protocols
- How often do you have meetings?
  - Physical, phone, online, etc
- What are your concerns when it comes to communicating with the team members?
- What strategies are you using to make sure that the communication within the team is effective

What skills of team members are necessary for effective communication?
- How do you define team member’s responsibility for communication?

What are the challenges with using technology to communicate within the team?
- How are the challenges dealt with?
- What are the opportunities?

How are differences in culture and language approached within the team?

Do you have a conscious approach to managing trust and relationships within the team?
- What do you do and why?

How do you handle conflicts?
- Could you please give us one of the sample when you faced a conflict/challenge and how did you solve it?
  - What strategies are you using to address these challenges?

How are you managing the relations within the team?

What are the main challenges that you have been facing?

Is there anything you would like to add?