

**Face-to-face Meeting or Video Conference? Factors Influencing Organisational Choice
of Communication Media**

Master Thesis

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Abstract

Nowadays the advance in technology allows most business meetings to be held virtually. However, the importance of personal contact still matters and regarded as the most effective way of doing business. Based on qualitative interviews, this study identifies factors influencing organisational choice between face-to-face meetings and video conferences, as well as explores meeting types that are best suited for each mode of communication. Attention is also given to the issue of potential replacement of business travel and in-person meetings with video conferencing technologies.

Key words: Video conferencing; Face-to-face meeting; Substitution; Complementarity

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Abbreviations

VC- video conferencing

FTF- face-to-face

ICT- information and communication technology

CMC- computer mediated communication

Introduction

Business travel and face-to face meetings have long been recognized as the most efficient way of conducting business (Denstadli, Gripsrud, Hjorthol & Julsrud, 2013). However, the way how modern companies are organized and their means of communication have changed (Cramton, 2001; Aguiléra, 2008). Information and communication technologies have developed to such an extent allowing geographically dispersed teams and business peers to collaborate and communicate in real time using video conferencing solutions (ibid.). Consequently, the question of whether video conferencing substitutes or complements travel and face-to-face meetings has become more relevant (Julsrud, Hjorthol & Denstadli, 2012). However, despite the fact that modern organisations becoming more international with number of offices across the globe, co-located meetings are still common (Denstadli et al., 2013).

The focus in this paper is on both in-person and virtual business meetings as a way to communicate within organisation and across businesses. The overall purpose of the study is to gain a deeper understanding of factors that impact the choice between face-to-face meetings and videoconferences in a given organizational setting. The paper also intends to identify meeting contexts which are best suited for face-to-face and virtual interaction, as well as to investigate the trend toward substitution. This study, accordingly, is guided by the following research questions:

1. What factors influence the choice between face-to-face meeting and videoconferences in a given organisational setting?
2. What types of meetings are best suited for in-person and virtual interaction?
2. Do videoconferencing technologies have potential to replace face-to-face meetings and business travel?

This thesis begins with a literature review outlying relevant theories and previous research on the topic of investigation. Thereafter the deductive conceptual model is presented based on the theoretical perspective. The methodology section covers the strategies and procedures used for carrying up this study. Finally, the results are explained and discussed following by conclusive thoughts.

Theoretical framework

The intent of this section is to present existing knowledge about the phenomena of investigation. Firstly, an overview over business meeting will be provided. Secondly, video conferencing solutions as business communication tools will be described. Thirdly, relevant theories will be presented along with the findings from previous empirical studies in order to identify the factors influencing the choice between two communication modes. Finally, the relationship between video conferencing and face-to-face meetings will be discussed.

Business Meetings

Business meeting is a central activity in post-bureaucratic organizations independently of number of branches, size and nationality (Heckscher, 1994 cited in Denstadli, Julsrud & Hjorthol, 2012). Schwartzman (1989) defines a meeting as “a gathering of three or more people who agree to assemble for a purpose ostensibly related to the functioning of an organization or group” (p.61). Meetings in generally are seen as a very important part of working life and considered as a significant means of creating and maintaining work routines in a workplace (Räsänen, Moberg, Picha & Borggren, 2010). For example, executives spend between 60-70 % of their time in face-to-face or telephone meetings (Fulk & Collins-Jarvis, 2001; Kloppenborg & Petrick, 1999;), while other office workers spend an average of four hours per week in meetings (Key Organization Systems, 2014). Even though business

meetings sometimes considered unproductive and a waste of time, most managers and employees usually accept the need for regular gatherings at least some of the time (Denstadli et al., 2012).

Business meetings are carried out in companies for a variety of reasons: to share information, discuss issues, make presentations, collaborate, sell, strategize or make decisions (Räsänen et al., 2010; Arnfalk & Kogg, 2003). Often, there is more than one aim for a particular meeting. But it is safe to assume that the ultimate reason for any meeting is the need to communicate, because communication is an essential part and basic element of successful operations of business (Julsrud, Hjorthol & Denstadli, 2012; Arnfalk & Kogg, 2003).

Face-to face meetings have long been acknowledged as the most effective way of doing business (Denstadli et al., 2013). However, in the past decade communication within business and between businesses has altered, because of changes in the structure and working practices of organizations. Globalization and market expansion, development of multi-unit companies and project teamwork has created an increased demand for interaction between persons working in different geographical locations- either within the same firm or in different companies (Gustafson, 2012; Aguiléra, 2008). In turn, these changes have influenced both inter-firm relationship and the distribution of collaborating partners, and raised the need for them to travel long distances in order to meet face-to-face (Denstadli et al., 2012).

Videoconferencing as a Business Communication Tool

Videoconferencing (VC) increasingly being used by companies as a business communication tool allowing to reduce the need for travel and bring remote partners, distant colleagues, and customers together (Denstadli et al., 2013). Like face-to-face (FTF)

communication, this mediated form of interaction enables live audio and video contacts with other users anywhere in the world (Panteli & Dawson, 2001). Moreover, contemporary VC systems, in contrast to conventional concept of video telephony, serve as a collaboration tool providing document and screen sharing, slideshow presentations as well as sharing of electronic whiteboard for annotation and drawing (ibid.).

VC is generally much more available for business users now than it was just a few years ago due to the increased availability of affordable high-speed broadband and better Internet connections throughout the globe. Yet, there are differences in access and use of video conferencing technologies in the business market as a whole. In Norway, for example, the technology is still most common in large multi-unit companies in the area of engineering, IT development, and finance (Denstadli et al., 2012). But small- and medium-sized companies are the most active adopters of video conferencing solutions (ibid.).

Videoconferencing is usually associated with in-house room-based conference, and considered as the most widely used form of VC in European and U.S. businesses (Denstadli et al., 2013). However, VC can be arranged on different technical platforms ranging from cheaper solutions to technically advanced rooms for large multiparty conferences (ibid).

For example, *desktop based videoconferencing* solution is very flexible and permits users to meet with distant partners, clients and colleagues from their personal desktop computer either in the office, home or on the go (Cisco, 2014; Polycom, 2013, 2014a;). Today's technology bring high definition video and high quality of sound to the desktop solutions allowing busy professionals spontaneously contact other geographically separated team members or clients (ibid.). *Mobile videoconferencing* solutions allow remote partners to arrange real time meetings with mobile devices, like smartphones and tablets anywhere on the globe (Lifesize, 2014). This collaboration application allows users to extend videoconferences beyond the room-based settings.

Another type of video conferencing solutions is *web conferencing*, allowing multiple computer users with Internet connection to see and share their screen with one another (Cisco WebEx, 2014). This solution permits to arrange meetings and seminars, online workshops and make slideshow presentations (ibid.). *Telepresence* is quite a new platform and more technically advanced form of video conferencing. The term refers to a set of technologies, such as cinema-quality audio and video, which give users the appearance of being “fully present” in the same room with other distant participants (Polycom, 2014b). This solution provides opportunities for multiparty online meetings and serves as collaboration tool for team members who are physically dispersed (ibid.). In addition, telepresence solutions enable to share documents and presentations as well as different multimedia content.

In this paper the term virtual meeting will be used for contexts where distant meeting is arranged with the help of different video conferencing solutions or platforms.

Media Choice Theory and the Value of In-Person Meetings

In modern organisations with distant collaborative work practices, video conferencing is usually used in parallel with conventional in-person meetings. Therefore, organisational participants always need to make a decision on the appropriate meeting form. Factors that influence the choice and use of the communication medium in a given organizational situation are a much-discussed theoretical topic (e.g., Douglas, Lubbe & Fabris-Rotelli, 2013; Denstadli et al., 2012; Lu & Peeta, 2009; Arnfalk & Kogg, 2003).

The most cited theory in the area of organisational communication is *media richness theory* which claims that choice of communication medium is determined by the character of information that needs to be transmitted (Daft & Lengel, 1986). According to this perspective, communication channels are arrayed along a continuum from FTF communication as

“richest” medium to computer mediated communication (CMC) channels as “lean” medium including audio- and videoconferencing, telephone, e-mail and written documents (ibid.)

Under this theory, the richness of media or degree of social presence is based on the following criteria: (1) the ability to provide rapid feedback, (2) the number of information cues that can be supported by a medium and utilised simultaneously, (3) possibility for message personalisation, (4) and language variation (e.g. formal business letter, data printouts) (Denstadli et al., 2012; Arnfalk & Kogg, 2003; Panteli & Dawson, 2001; Walther, 1995). Consequently, FTF has been viewed as the richest communication medium due to its interactive and expressive nature as well as the ability to give an immediate feedback. It is best suited for situations when information has a high degree of complexity and ambiguity, and very useful for dealing with equivocal issues (Fish, Kraut, Root & Rice, 1993). In contrast, straightforward, simple information and handling of routine tasks should be communicated through medium with low richness such as e-mail or telephone (Arnfalk & Kogg, 2003). VC has been considered as rich medium, although not as rich as FTF communication, due to its audio and visual cues, and its potential for interactive communication (Denstadli et al., 2012; Panteli & Dawson, 2001). Moreover, one must be aware, that communication failure can occur when chosen channel is not rich enough for the content (Denstadli et al., 2012).

Literature also demonstrates that relation- building between collaborating partners is a crucial factor influencing the decision on meeting form (Denstadli et al., 2012; Räsänen, et al., 2010). Therefore, personal contact and FTF meetings are regarded as the most effective way to build and sustain business relationships. Research also suggests that physical co-presence during FTF meetings provides a contribution to *social capital* (Lyons, 2013). The possibility for socializing and networking before, during and after a meeting is seen as an integral part of business practice helping to build human relationships (Denstadli et al., 2013).

Additionally, FTF meeting helps to establish trust that is a key factor for the development of partnership (Lyons, 2013). Storpher and Venables (2004) point out “humans are very effective at sensing non-verbal messages from one another particularly about emotions, cooperation, and trustworthiness” (p. 355). Urry (2003) also notes, “eye contact enables and stabilizes intimacy and trust” (p. 164).

Scholars stress the importance of physical co-presence due to the fact that more compound form of communication requires FTF interaction. Aguiléra (2008), for instance, suggests traveling and meeting in-person with external people, particular for those in sales, as an expression of commitments and sign of interest. Likewise, Urry (2003) recommends conducting periodic FTF meetings to address obligations, as well as to maintain weak ties. Apart from that, FTF meeting is a great opportunity to establish, strengthen and reconfirm business partnerships that can reduce the future need for travel (Lyons, 2013). According to Aguiléra (2008), FTF meetings that take place at the very beginning of a business relationship can make VC meetings more efficient during the whole project.

Insights From Previous Research

Factors influencing the choice between in-person and virtual meetings have been identified by both academic studies and industry-based research. For example, Lu and Peeta (2009) found that the *context* within which a meeting is conducted has a considerable influence on the choice of media. Their study findings indicate that videoconferences are adequate for contexts such as information exchange, management meetings, training and consulting, while face-to-face meetings are best suited for negotiations, business discussions, and marketing demonstrations. Likewise, Arnfalk and Kogg (2003) stress that meetings always take place in a context. The results from their study reveal that personal meetings are preferred in the beginning and the end of a project, whereas virtual meetings are sufficient for

follow-up and information tasks as well as for short and repetitive meetings. Similar results were reported by Lian and Denstadli (2004), who found that FTF meetings often involve negotiations and unstructured contact, while VCs have less complex content.

Research also advocates *cost* and *time savings* as key factors in deciding on the most appropriate meeting form (Policom, 2013; Weinstein, 2012; Räsänen et al., 2010; Panteli & Dawson, 200). It is acknowledged that VC technology helps companies to reduce business travel expenses which come in the form of direct costs such as transport to and from the airport, flight, car services, hotels, meals, and client entertainment (ibid.). Moreover, using VC can reduce employee time lost in travelling, which comes in form of salaries as company's indirect cost (Douglas et al., 2013). According to Räsänen et al. (2010) travelling to meetings is a time-consuming activity that also influences the employees' lost productivity. The study result show that some meetings are not even arranged because participants see the estimation of total time spent as being very long in relation to what would be gain. Further, the respondents stress that there is always a pressure to use time wisely and consider costs (Räsänen et al., 2010). Likewise, respondents from another study (Denstadli et al., 2012; Denstadli, 2004;) are concerned with efficiency and productivity gains generated by VC, leading to travel time savings and more effective decision-making process.

Relationship Between FTF and VC Communication

There is a constant debate among academics about the impact of computer-mediated communication (e.g. VC) on FTF communication and travel (e.g., Aguiléra, Guillot & Rallet, 2012; Haynes, 2010; Mokhtarian & Meenakshisundaram, 1999). Generally, the relationship between information and communication technology (ICT) and travel comprises of four possible effects (Denstadli et al., 2013; Haynes, 2010): (a) *substitution*, meaning replacement of one communication mode over another, (b) *complementarity*, also described as generation

of travel, implying that the use of one type of communication increases additional use of another, (c) *modification*, occurs when use of one mode of communication changes the use of another, and (d) *neutrality*, indicating that two communication modes have no effect on each other.

Early studies on the use of VC in organisations have reflected potential of VC to substitute for FTF meetings and thereby decrease number of corporate trips and travel expenses (Andreev, Salomon & Pliskin, 2010; Mokhtarian, 2003). However, researchers emphasize that the relationship between VC technologies and business travel is more complex than simply the hypothesis of substitution that suggest direct effect of VC on the number of trips (Aguiléra et al., 2012; Julsrud et al., 2012). More important is to understand how these technologies modify the nature of travel demand in modern organisations (Aguiléra et al., 2012).

Research carried out by Lian and Denstadli (2004) indicates that the most businesses consider VC as an adequate alternative for distant FTF meetings, but the general opinion is that VC serves as a supplement to FTF meetings. Likewise, study by Julsrud et al. (2012) advocates that in some situations VC might substitute for business travel, while these virtual meetings may also be complementary to other regular meetings. Further, Denstadli et al. (2013) argue that direct substitution is unlikely to occur, since some networking and informal FTF contact with business partners is still required. Rather, these two modes of communication are seen to be complementary to each other, because people who travel a lot for business tend to participate in many VC meetings (Denstadli et al., 2013).

Conceptual Model

Based on the above theoretical discussion it is obvious that there are certain factors influencing the choice between VC and FTF communication. These factors are presented as a

conceptual model (Figure 1). It is proposed that choice of the communication mode is influenced by such determinants as time and cost saving, value of personal relationships, content of communicated information, and meeting context. Some of these factors will serve as the framework for the development of research instrument that will be discussed in the next section.

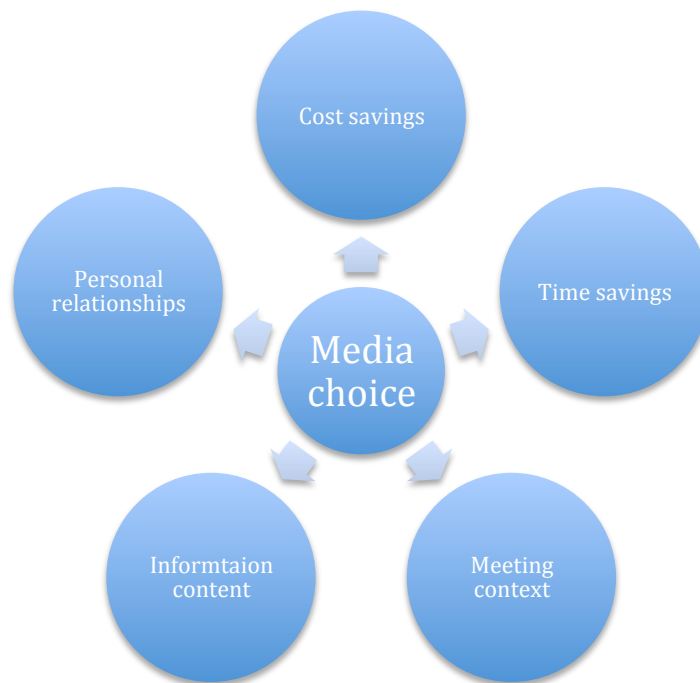


Figure 1: Factors influencing the choice between VC and FTF meetings (deductive model)

Method

This section provides an overview over methodological decisions and procedural steps that has been made and undertaken in order to conduct this empirical study. In the following subsections the justification for chosen overall design will be provided along with discussion of sample, method for data collection and analysis. At the end the issues of reliability and validity in addition to ethical consideration will be described and discussed.

Design

Planning this study was one of the most important steps in the research process. I selected video conferencing topic, as it was an issue of personal interest. However, this phenomenon was only a starting point, because it was too broad for carrying out the study, and it was necessary to focus on specific research questions. Reviewing published scientific articles helped to generate a lot of ideas for my research questions, but there were too many of them and the whole process was very confusing. Trying to better understand the topic I decided to conduct a preliminary study with three specialists from IT companies, who had been selling video conferencing solution to Norwegian business market. The main objective of the pre-study was to gain insight into VC solutions, understand what the reasons were for buying different VC technologies, and why companies invested in it. Informal conversations with IT specialist were very useful and helped to refine the topic into the main research question. I primary wanted to understand why people choose one communication mode over another. Initially I tried to conduct a quantitative survey but dropped this technique, because I was more interested in understanding experiences with video conferencing and motivations behind the choice of two mode of communication. In other words, my intention was to go deeper in nuances. Therefore, qualitative orientation was chosen. I must admit that such practical limitation as time had also shaped the design of this study.

In general, qualitative research attempts to understand the unique interaction in a particular context, as well as to gain deeper understanding of particular characteristics of this context and the meaning brought by the participants (Patton, 1990). This approach allows examining people's subjective experiences in detail by using certain set of research methods (Hennink, Hitter & Bailey, 2011). According to Denzin and Lincoln (2008, cited in Hennink et al., 2011), qualitative research "involves an interpretive, naturalistic approach to the world.

This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them”.

Participant Selection

Decisions about whom to include in the study is an essential part of any research method. In general, the process of participant selection includes two steps: defining a suitable study population and identifying strategies for selecting participants from this population (Hennink et al., 2011). However, a researcher must be aware of different recruitment approaches in qualitative and quantitative research. Quantitative inquiry typically uses probability method, which depends on selection of random and statistically representative sample (Neuman, 2011; Maxwell, 2013; Berg, 2004; Patton, 1990). Random selection of participants is seen as the golden standard for quantitative studies because the main goal is to generalize research findings from the sample to the broader study population (Hennink et al., 2011; Patton, 1990).

In contrast, the method used for sampling in qualitative studies differs from methods in quantitative research. The primary goal of qualitative inquiry is to gain a deeper understanding of studied phenomenon, provide clarity and insight about issues of central importance to the purpose of the research (Patton, 1990). This therefore requires a small number of participants to explore issues in depth (Maxwell, 2013). Moreover, this sampling strategy depends on participants, which are deliberately selected because they have particular characteristics and experiences and can provide valuable information and new aspects that are relevant to the topic of investigation (ibid.). Qualitative research therefore uses non-random methods of participant selection, known as *purposeful sampling* (Maxwell, 2013; Patton, 1990).

The purposeful sampling as a tool for selection of informants was chosen for this empirical study. In the following subsections the process of participant recruitment is

described in detail covering such important components as study population, sample strategy and sample size.

Study population

Before deciding on sample strategy it is recommended to clearly define study population (Hennink et al., 2011). A clear definition of study population is needed to show whom to recruit as well as how to organize this process (ibid.). Target population for this study was informed by previous research on videoconferencing users. According to Denstadli (2004) the videoconferencing users in Norway are largely concentrated within few industries: oil and gas, IT, banking and chemical industries. Therefore petroleum industry was chosen as the main point of departure due to the importance of this industry in the Stavanger region. Companies from IT industry were also included in the population frame. Moreover, the use of VC is affected by both organizational size and geographical structure of a company (Denstadli et al., 2013). Many of the world's leading energy companies are located in Stavanger, most of them are large-size enterprises and they are represented in many countries all over the world.

Sampling strategy

There are several strategies for purposeful sampling that can be employed in qualitative research (Patton, 1990). The purpose of participant selection in this study was to look for variation of informant experiences with both personal and virtual meetings rather than to recruit a large number of informants with those experiences. *Maximum variation sampling* was suitable for this study population because it aimed to capture and describe the central issues of research topic in depth from different perspectives (Patton, 1990). The assumption was made that participants from all level of chosen organizations could have different experiences with both personal meetings and VC and could provide a variety of issues related to the study topic. Therefore the study population was divided into three

subgroups: executives, middle managers and employees without managerial position. By including in the sample diverse individuals with quite different experiences, it is possible to more thoroughly describe the variation in the group and to understand variations in experiences while also investigation core elements and shared outcomes (Patton, 1990).

Study participants from three petroleum companies and one IT firm were recruited via e-mail and telephone during Mars 2014.

Number of participants

As pointed out above, few study participants are needed due to in-depth nature of qualitative inquiry as the purpose is to achieve depth rather than breadth of information (Hennink et al., 2011). A number of issues can affect the sample size, but usually it is determined by the principle of saturation, which occurs when information becomes repetitive and redundant in data collection phase (ibid.). As it was mentioned early, the study population was divided into three subgroups. In this case it is recommended to reach the point of saturation within each group of segmented study population (ibid.). Unfortunately, the information saturation was not reached in the group of executives, because only two of four participants agreed to be interviewed. In general, it was quite difficult to recruit general managers, especially from big companies, due to their tight schedule. However, saturation on the research topic was reached in the group of middle managers after the third interview as well as in the last segment consisting of employees without managerial positions. In total eight informants participated in the study: two general managers, three middle managers and three non-management staff respectively.

Data Collection

Qualitative in-depth interview was employed as a data collection method for this study. Chosen technique was optimal for gaining a deeper understanding of the topic of

investigation from the perspectives of study participants with experience in video conferencing (Patton, 1990). Usually in-depth interviews are described as a knowledge-producing conversation and should not be confused with two-way dialog (Hennink et al., 2011). As only study participants express their own understandings and share their perspective, while the researcher's role is to elicit their story and interpret the informants' subjective experiences in an efficient manner (ibid.). All interviews in this study were conducted face-to-face at informants' offices, because work environment helped them to feel most at ease and talk freely. In addition all informants wanted to show company's video conferencing facilities.

Semi-structured interview guide was used as an instrument in the in-depth interviews. It served as a basic checklist of main issues that were to be explored with each informant (Appendix 1). The interview guide was also prepared with the intention to make sure that basically the same information would be obtained from the participants by covering the same topics. In addition, the advantage of using this semi-structured interview guide was its flexibility to explore new topics raised by the participants. It also allowed adapting the interviews along the process of data collection and formulating additional spontaneous questions in response to issues raised by the study participants (Hennink et al., 2011).

The interview guide was developed following the steps described by Hennink et al. (2011) and consisted of: introduction, opening questions, key question and closing questions respectively. *Introductory points* aimed to notify about the objectives of the study, inform about the confidentiality of the interviewee and anonymity of collected data, and to ask permission for audio-recording. *Opening questions* included questions about the background of the interviewee and size of the organisation. *Key questions* were the central part of the interview guide designed to collect the core information to answer the research question (Patton, 1990). Topics in the interview guide were derived from the research literature. Some

probes had being used during the interview phase to explore nuances and to understand the issues from the perspective of the interviewees. The purpose of *closing question* was simply to ask if the interviewees had anything further to add.

After conducting pilot interview, some small changes of the interview guide were made. Questions were refined and few were rephrased. In addition some notes were made as a reminder for the next interview. Each interview helped to make inductive conclusions and go deeper in the research issues.

Data Processing

A total of 10 interviews were conducted for the study: eight with the informants and one pilot interview. Each interview lasted approximately 30-40 minutes. Preparing for further analysis the data was transcribed, translated and anonymized. All recorded interviews were turned to a verbatim transcript and captured both the informants' own vocabulary and the words spoken by the interviewee. Aspects of speech and pauses were also included in the transcripts helping to interpret the meaning of what was said, and convey cultural attitudes.

It was need for translation, because half of the interviews were conducted in Norwegian and Russian. First, verbal data was transcribed word-for-word in the original language of the interview and then translated into English. The translations were checked with the informants to ensure accuracy.

Data Analysis

In general, the qualitative data analysis is inductive, meaning that categories and concepts in the data, as well as relationships are identified through a process of discovery (Hennink et al., 2011; Marshall & Rossman, 1999). However, both inductive and deductive logic was employed in this study throughout the whole research process. The theoretical framework within which the study was conducted heavily shaped the process of categorization and analysis of the findings.

The entire data analysis was based on the following techniques (Patton, 1990):

- Data documentation during the data collection process
- Categorisation of the data into concepts
- Identification and interpretation of related concepts

Generally, data collection and analysis is considered to be an interactive process (Patton, 1990). Therefore, the analysis already started during the stage of the data collection. Frequent field notes were taken at the time of interviewing to identify important statements and issues that would help in understanding the context. Immediately after each interview the transcripts were made, followed by thorough reading and interpretation of the transcribed data and the field notes. In some cases the data collection was adjusted due to additional categories that were identified and needed to be investigated during the next interviews.

Next stage of the analysis included organizing the data into themes or categories (Hennink et al., 2011; Patton, 1990). Both inductive and deductive codes were identified through reading the data. Such deductive codes as “meeting context” and “substitution and complementarity” originated from the questions of the interview guide that were derived from the scientific literature. Also during the data search deductive approach was applied by using concepts from the study’s literature and theory (Hennink et al. 2011). Following categories were identified: “time savings”, “cost savings”, “personal relationships and networking”, and “content of information”. The inductive codes were added after, and were mainly derived from the issue raised by the participants, including “types of participants”, “meeting duration”, “number of participants”, and “cultural differences”. The same codes were collected then in one file, so that it was easier to look across the interviews and find the concepts.

Finally, the data was interpreted and presented followed by the evidence from the interviews. It is worth noting that qualitative analysis is interpretive, and a researcher always

constructs and explains “reality” based on a stories provided by the research participants (Maxwell, 2013; Patton, 1990). However, in case of this study more experienced researchers could reach different conclusions.

Validity, Reliability and Generalization

Every systematic inquiry into the human condition must address the issues of reliability and validity. These questions are associated with how reliable and valid the researcher’s collected data and interpretations of findings are (Marshall and Rossman, 1999; Kvale, 1996).

Validity

The concept of validity in qualitative research refers to quality of study, and means the extent to which chosen design method, collected and presented data is credible and trustworthy (Neuman, 2011; Marshall & Rossman, 1999). During the actual conduct of qualitative study, a researcher is advised to elicit possible threats to validity by implementing verification strategies in integral and self-correcting manner in order to increase the credibility of the conclusions (Maxwell, 2013; Kvale, 1996).

In this study two specific validity threats that could lead to invalid conclusions were researcher bias and reactivity. *Researcher bias* means that the investigator brings his or her subjective perspectives to the research process. However, in qualitative research it is impossible to deal with this issue by fully eliminating researcher’s theoretical frame of reference, beliefs and perceptions. Instead, qualitative research is primary concerned with understanding how a particular researcher’s values and expectations can influences the data collection process, interpretation of findings and conclusions (Maxwell, 2013; Hennink et al., 2011; Kvale, 1996).

Reactivity refers to the influence of the investigator on the studied individuals and settings (Maxwell, 2013; Hennink et al., 2011). However, it is also impossible to eliminate the actual influence of the researcher due to the fact that he/she is a part of the studied world. What the informants say is always under influence by the interviewer and the interview situation. But trying to minimise researcher's influence is not meaningful goal for qualitative research, but rather understand it and use it productively (Maxwell, 2013). Important to understand how the researcher influence what the informant says, and how this affect the validity of the inferences you can draw from the interviews(Kvale, 1996).

In order to avoid these threats following strategies, suggested by Maxwell (2013) and Kvale (1996), were employed in the study:

- I put aside my subjective understanding of the studied phenomenon, and kept focus on multiple participants' meanings and perspectives on the topic of investigation. During the interview sessions I remained neutral and did not give my opinions about raised issues and topics.
- The wording of question could possibly shape the content of informants' answers. Therefore, the interview guide was checked for leading questions. After the pilot interview, part of questions was rephrased, few questions were removed and some were framed neutrally.
- Respondent validation strategy was used in order to get feedback about the data from the informants, and minimize misinterpretations of meaning of what they said.

Reliability

The concept of reliability refers to the consistency of research findings (Kvale, 1996; Patton, 1990). To demonstrate reliability of this qualitative research, examination of trustworthiness was important. To increase the trustworthiness of the findings, detailed

description of methodological procedures is necessary along with clear statements how personal biases may affect the interpretation of the findings (ibid.).

Generalization

The concept of generalization in its traditional meaning refers to whether the results can be generalized to a broader population (Neuman, 2011; Marshall & Rossman, 1999). In qualitative research generalization is normally problematic due to a small number of participants. Thus, a concept of *applicability* is usually used to reflect generalization, whether study findings and conclusions that are based on particular individuals and settings can be extended to other individuals and contexts (Guba, 1981, cited in Mawell, 2013). Finding of this study, indicating the factors influencing the choice between face-to-face and virtual meetings, can be relevant in another context such as single-unit companies. The study result can also be extended to people with similar characteristics to those in the study population, even though direct generalization from such small sample of participants is not possible in the qualitative research (Mawell, 2013).

Ethical Considerations

During the process of planning and designing this qualitative study, number of ethical issues was considered. First of all principle of *informed consent* was relevant in the participant recruitment stage of the research process. (Hennink et al., 2011; Kvale, 1996). For this study general managers of petroleum and IT companies were contacted via e-mail first. They were provided with adequate information about the topic and general purpose of the study as well as the main features of the design and participants' anonymity so that they were able to consider participating in the research project. Moreover, the general managers gave permission to contact company's employees to conduct the study. Chosen research subjects were also provided with the same information about the research project and procedures as

their managers. In addition *self-determination* principle was applied, meaning that all individuals were informed that participation was voluntary and they had the right to withdraw from the study anytime (Hennink et al., 2011; Kvale, 1996).

During the data collection stage the individuals, who agreed to participate in the study, were once again provided with the information about the objectives of the study and how collected data would be used. Permission to use digital recorder during the interviews was granted from all interviewees.

Maintaining *anonymity* and *confidentiality* were another issues in all stages of the research process. The interviewees were deeply concerned with protection of their identity and nobody wanted to release neither their names nor names of the company. Therefore, all of them were ensured that all identifiable information would be removed from the transcripts and would not be reported, no names of the participants or company would be written on the digital tape and files would have only numbers and the participants' corporate title in the company. The participants were also ensured that all recorded data would be kept confidential.

Results

This section presents results based on the categories that were described in the method section.

Organization Roles

The study participants were employed in multi-national companies with number of offices around the globe (see Table 1). All of them had experiences with the different video conferencing technology, and usually they initiated the active use of VC in their companies.

Code	Company type	Organizational size	Interviewees	Average Number of trips/ FTF meetings	Average Number of VC
Firm 1	Oil exploration & production company	Total 19 offices located in North America, Asia, Africa and Europe	IT Manager	4-5 per year	2-3 per week
			Production Engineer	3 per year	Every day
			Drilling Engineer	2-3 per year	Every day
Firm 2	Oilfield service company	650 employees operating from offices in Europe, North America, Asia and Middle East	General Manager	3-4 per month	3-4 per week
			Project Manager	1-2 per month	2-3 per day
			Petrophysist	5 per year	1-2 per day
Firm 3	Software company developing products for operator companies oil & gas	27 employees operating from offices in Europe, Middle East and North America	General Manager	2-3 per month	2-3 per week
Firm 4	IT Company	12 office locations in Europe, North America and Asia	Sales Manager	15 per year	2-3 per day

Table 1: Organisational profile

Presented table shows that the executives tend to travel for business, and therefore conduct face-to-face meetings, quite often. The average number of such trips ranges from 2-3 meetings per month. Contrary, the middle managers go on business trips once or twice a month. While for the employees without managerial positions the average number of face-to-face meeting that require travel ranges from 2-5 per year. Regarding the use of video conferences in the studied companies, the participants without managerial position use VC

more often than the executives and middle managers, because they constantly collaborate and exchange information with their colleagues who are located in different countries.

Types of Meetings

Context of a meeting was identified as a very important factor in deciding on the form of communication. In addition, all participants stressed that one had to distinguish between intra- and inter-organisational meetings. Figure 2 provides a summary of main types of these meetings which are best suited either to be conducted via VC or in-person. Intra-organisational meetings have largely characterized daily use of VC facilities in all studied companies. Main types of meetings suited for this mode of communication were project status meetings; team meeting for the purpose of technical information exchange and exchange of experience between geographically separated team members; daily report meetings with offshore rigs and platforms. One of the participants explained:

We have many cross-border projects, so it is necessary to hold status meetings. I work in a project team consisting of a team leader who lives in the UK and colleagues working in Ecuador, Africa, Iraq and the USA. All of them will attend the meetings. We use videoconferences for follow-up and status meetings. To put it differently, we use videoconferences from projects to daily operations. (IT Manager, Firm 1)

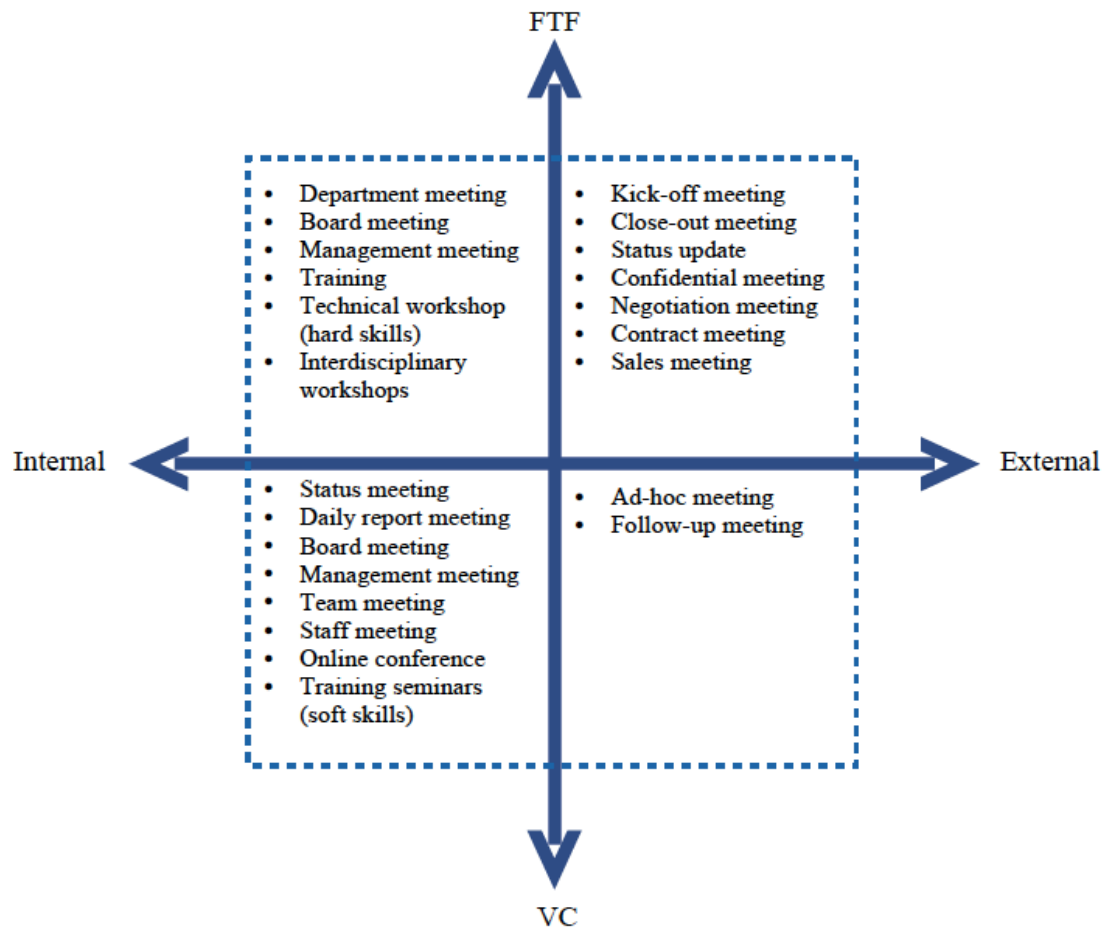


Figure 2: Types of meetings suitable for virtual and face-to-face communication

Both General Managers and middle managers pointed out that they had conducted board and management meetings both with the help of VC and in-person. Conferences and seminars were also mentioned as types of meetings appropriate to be held virtually. One of the participants expounded:

[...] we even use VC for courses. If it is a soft skills business course, business management training course or team leading course, and things like that, we can have it via VC. But if it is a technical workshop, we need to travel and present physically. If it is a one-day course, they [general managers] gather 2-3 offices at the same time. It

[virtual course] can be all day long, but we have our breaks like during normal conferences. (Petrophysicist, Firm 2)

Another participant also indicated that it was a normal practice in his company to arrange training seminars and courses via real time videoconference. He said:

Courses can be conducted both live using VC equipment and they can be videotaped. We have made a videotape of one such course and showed it to our colleagues after using Internet. And it worked! So, it was the same as a webinar. The benefit with any webinar is that you can stop, pause, resume or rewind playing. (General Manager, Firm 3)

VCS were also used, but in less extent, during external meetings with customers, suppliers, and business partners. The participants specified such types as ad-hoc meetings as well as follow-up meetings during projects, and meetings with customers where a good relationship had already been established. The General Manager of Firm 3 pointed out that even customers had demanded the use of VC. However, general comment from the participants holding managerial positions was that meetings with customers were preferred to be held FTF. Following meeting contexts were mentioned: contract meeting where two parties signed a contract; kick-off meeting in the very beginning of a project involving planning and budget discussions; status update meeting of each stage of a project; close out meetings where project results were usually delivered; confidential meetings and negotiations; and sales meetings.

Time and Cost Savings

The study participants were especially concerned with “time” and “cost” savings as key factors influencing the choice between two modes of communication. Travelling to meetings was seen as a very time-consuming process, particularly with customers and

partners living on another continent. Moreover, travelling to one-day FTF meeting was perceived as a waste of time, because the participants used more of their time in taxis, queues and planes. The majority agreed that the use of VC in this case could improve their efficiency and productivity. Moreover, both the general and middle managers pointed out that VC allowed to exchange information faster and accelerate decision-making process. Consequently, VC use created competitive advantage for their companies. As one of the participants explained:

Time aspect is very important. Video conferencing solutions help to speed up business, because it is all about productivity. Advances in technology for my company have always been about efficient work process and productivity of employees in addition to travel cost reduction. VC helps us to make faster decisions and complete projects faster. So, we deliver faster and gain competitive advantage. (General Manager, Firm 3)

Another participant stressed: “Video conferences help me to avoid long days and evenings, because I have life besides the job. It gives me and my company flexibility, productivity and efficiency” (Project Manager, Firm 2).

The majority of participants, as it was mentioned above, also raised financial concerns. General Managers from both Firm 2 and 3 presented VC as a way of reducing travel costs, because they spent annually a lot of money on flights, accommodation and restaurants. Moreover, choice if this media was integrated in companies’ travel policy.

We have travel rules in our company. The travel is necessary if it is more than one meeting; if it is not less than two hours or if it is impossible to have meeting via VC or other video conferencing platforms like Blue Jeans or Skype. In addition, employees can travel if the purpose of a meeting will fail without FTF contact. Otherwise, we prefer to use VC. (General Manager Firm 2)

However, the IT Manager from Firm 1 noted:

Cost savings is not the most important argument in using VC. Actually we can travel, because we can afford it. Use of VC comes out naturally, because it saves time and improves work process effectiveness. But there are no requirements for VC in our travel policy.

Personal Relationship and Networking

Another important factor identified by the study participants was personal relationships among members of a meeting as well as the importance of networking. Business travel and FTF contact mattered both for internal and external meetings. In case of intra-organizational meetings, in-person communication was important for establishing a new geographically distributed team in order to enable collaboration. Videoconferences were used straight after to sustain communication and collaboration between globally dispersed colleagues. The IT Manager of Firm 1 expressed opinion regarding this issue:

It is not a written rule, of course, to meet first in-person. But I believe it is appropriate and simply because of the ease of collaboration and better communication in the future. Successful collaboration is based on strong personal relationships. Informal meeting, like dinner at a restaurant and chat, make people to relax and know each other better.

Other participants expressed similar opinions in regard to external meetings. They stressed that the first meeting was best to be arranged face-to-face in order to establish relationships with customer and business peers, while the following meetings could be conducted via VC. The General Manager of Firm 3 emphasized that he would always meet his customers in person because of “chemistry” between partners, which would always lack in virtual communication. The consensus among the interviewees was that travel is crucial for doing business and establishing trust:

I choose business travel to meet new people, build new relationships, and maintain established ones. Moreover meeting face-to-face is the most sensible way to establish trust. (Sales Manager, Firm 4)

In addition, two participants pointed to the importance and the need to meet FTF occasionally despite available video conferencing technologies and established relationships:

I host videoconferences on a daily basis, but I also choose to travel one or two times a month, because it is important to meet our clients in-person, and show that you actually care and that they [the clients] are very important. (Sales Manager, Firm 4).

Another participant also indicated:

Personal relationships and networking is much easier if you met face-to-face. So in that respect I even encourage my team to take a business trip and meet people from other teams, because we work globally in IT departments. But of course it should be a balance: important to meet people in-person, but when it is a weekly meeting we usually use VC. (IT Manager, Firm 1)

Content of Information

Information content was also seen as a determinant factor in deciding what mode of communication to choose. Two participants expressed that FTF communication was best suited for complex information and difficult meetings:

If it is a long, complex or difficult meeting, I always choose to travel (General Manager, Firm 3)

If I feel that it is enough to just sit and talk, I choose video. But if I need a bit more, for example, to discuss difficult and sensitive issue, I prefer to meet in- person. (General Manager, Firm 2)

However, one participant noted that communicating complex information does not stop using video:

I do not see the relationship between complex information and the VC use. We have had complex issues that we had solved equally well using video. I experience approximately the same as sitting in the same room while sharing high-resolution data. Perhaps, it is because we have facilities of high quality. (Sales Manager, Firm 4)

In addition, two participants pointed out that it is easier and more effective to send and receive video messages:

Actually video replaces 80% of what I would use telephone or e-mail for. We use more video [desktop VC solutions] than telephone, because it is easy for me to make a video call. I think e-mail is very bad. Of course we use it, no doubt about that. But if you are going to communicate a lot or inform so it will be a very long process. It is much easier to make a video call and inform, possibly share documents and data. I think e-mail is best suited for short and concise messages. (Sales Manager, Firm 4)

Another interviewee noted that VC allows easy interpretation of communicated information:

I prefer making video calls than telephone, because it removes language barrier and you can see people you are communicating with. You can read their body language and see their emotions. (Production Engineer, Firm 1)

Meeting Duration and Number of Participants

The interviewees expressed that meeting duration and number of meeting participants was crucial factor in choosing appropriate meeting form. All participants indicated that optimal virtual meeting duration was 35-45 minutes or one hour at most. However, two interviewees had experienced virtual meetings lasting two hours, but they further explained

that it was too long and tiring. The consensus among the study participants was that video conferencing were more appropriate for short meetings.

Effective use of video conferencing was also dependent on the number of meeting participants. The interviewees stressed that 2-3 meeting participants at each site were more than enough. Virtual meetings worked well only in those cases when meeting participants were familiar with general guidelines on how to interact during VC sessions, for example, talking one at a time, how to attract attention and make a comment. However, general discussion was not experienced as effective with a large group due to the difficulties in identifying who was speaking and when. In addition, some interviewees pointed out that unequal number of meeting participants at each site was perceived as very problematic, since the majority in a room usually takes over the meeting. Therefore, long meetings with many participants were considered more appropriate for face-to-face meetings than for video conferencing.

Cultural Differences

Three interviewees stressed that cultural environment within which a meeting was conducted also defined the choices between one communication form over another. They further noted that it was important to understand different cultures and mentalities of the clients before offering them to meet virtually. One participant expounded:

Of course not all our clients are willing to have meeting via VC like, for example, in the UK and Norway it is pretty common. But when we have a project with the Middle East their culture is to have face-to-face meetings during all stages of the project. They prefer this and they pay for my travel, so it is fine for me. (Petrophysicist, Firm 2)

Substitution and Complementarity

The study participants were also asked whether VC had a potential to substitute FTF meetings. All participants said that for the internal meetings VC was seen as an adequate substitution, but for the external meetings with the clients and business partners VC was a complementary solution and not a substitute for travel and FTF meetings. The consensus among the interviewees was that it was not either VC or FTF meeting, but the adequate balance of both types of communication. The participants gave detailed comments on this issue emphasizing personal relationships as the main constrain for the substitution:

Video conferencing will never substitute for face-to-face meetings. Yes, video conferencing is effective way of doing business, but it is necessary to meet in- person. Mix of both methods is very important. (IT Manager, Firm 1)

Virtual communication will never substitute face-to-face contact, but complement. I admit substitution in some degree, for example for the meeting within our company. But I would never say that virtual communication is as good as in-person. However, if you have a ground and have already established good relationships with either client or suppliers, VC would be preferred. (Sales Manager, Firm 4)

I don't think VC will ever substitute all communication. Then technology should be so advanced that we do not see the difference. We do need to meet up sometimes, cheer up and encourage each other, pat on the shoulder. Despite all we are humans. (Drilling Engineer, Firm 1)

Discussion

The data from the qualitative interviews have provided a clear picture of the role that VC technologies and FTF meetings play in the studied organizations. Moreover, the

interviews have provided the opportunity to understand in nuances how virtual meetings interrelate with conventional face-to-face meetings, and what factors influence organizational choice between these two modes of communication.

Factors

The first research question asked about the factors influencing the choice between VC and FTF meeting. The study results show that a range of factors drives the organizational decision on the meeting form, including *time and cost savings, type of meeting participants, content of information, personal relationships and networking, meeting duration, number of meeting participants, and cultural differences, meeting context*. These factors are presented in the inductively derived model in Figure 3.

The results show that the main factor for utilizing VC is to save employees' working *time*, gain efficiency and improve productivity, as well as to make decisions faster. Consequently, accelerating business processes leads to competitive advantage. This study confirms the findings of Denstadli (2004) who reported "time saving" as the key motive for executing video conferencing equipment. He also stressed efficiency gain as the benefit of using VC and indicated that time savings also led to effective decision- making. Likewise, study of Douglas et al. (2013) indicates that VC as a travel alternative affords employees more efficient use of their working time and it improves productivity.

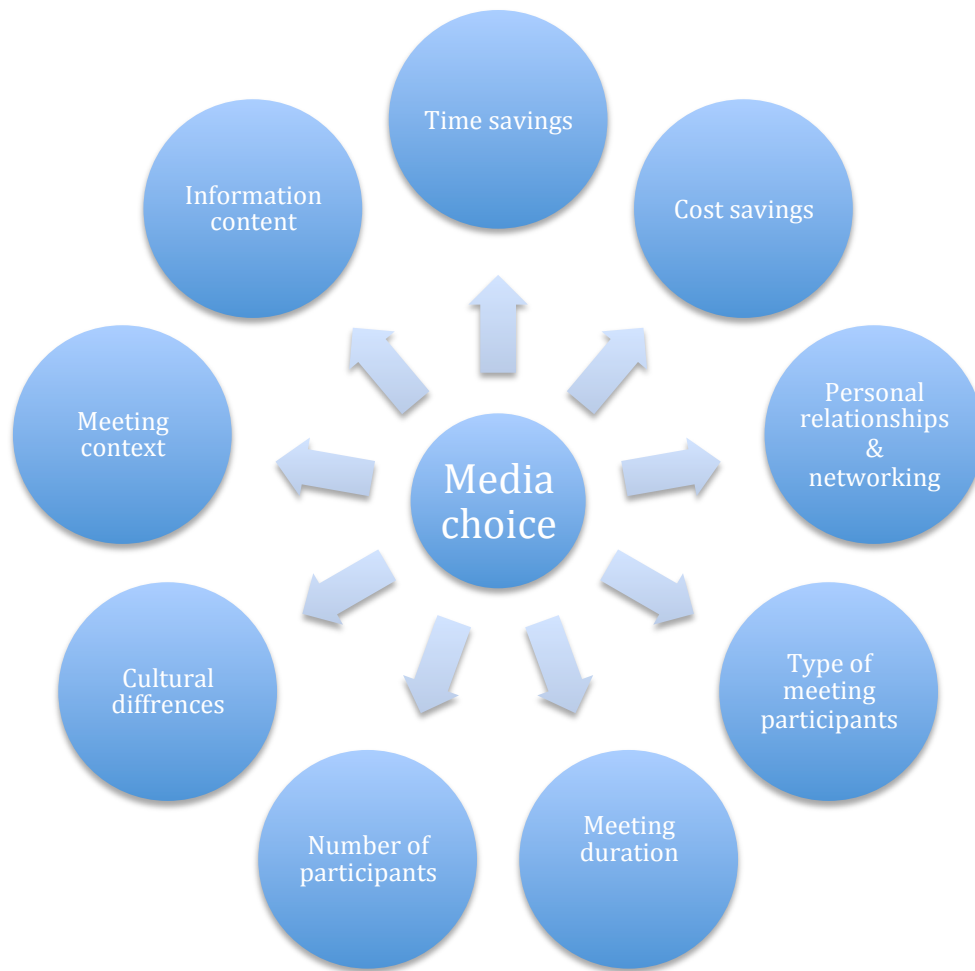


Figure 3: Inductive model of factors influencing the choice between VC and FTF meetings

The study results also indicate that *cost saving* factor is very important when considering the appropriate meeting form. Due to the budget constraints, the studied participants are very cost-conscious. Therefore, the employment of VC helps them to reduce travelling costs associated with flight tickets, hotels, transport and food, and helps to obtain financial improvements. Moreover, the results show that the cost factor is closely related to the time factor, because while reducing travel time a firm reduces employees' salary-related costs.

All organisations communicate both internally and externally. The results indicate that such factor as *type of participants*, either employees communicating within a company or a

company communicating with its partners and customers, usually affect the choice of communication mode. This factor was not articulated in the scientific literature, but a number of studies have indicated that VC is a strong component of internal (e.g., Denstadli et al., 2012; Arnfalk & Kogg, 2003). This is confirmed with the results of the current study showing intra- organisational meetings to be best suited to the use of VC, because it allows geographically dispersed teams members to collaborate and interact in an approximation of FTF communication. While external meetings should be conducted in-person, especially when it is the first meeting and business relationships are not established.

This study confirms that the *content of communicated information* strongly influences the choice between VC and FTF meetings, and supports media richness theory by Daft and Lengel (1986). The study finding indicates that complex information with high ambiguity is best suited to be communicated in-person than via VC. Perhaps, information and tasks with high complexity lead to multiple interpretations. Therefore, to minimize misunderstanding it is best to be co-present during business meetings.

Another factor of importance, according to the study findings, is *personal relationships and networking*. The study results stress the importance and effectiveness of business trips and personal meetings for building networks and deeper personal relationships both with distant co-workers, customers and business peers. The study also suggests that use of VC is appropriate only in the situations when business relationships are already established. These results go in line with studies by Denstadli et al. (2012) and Räsänen et al. (2010), which highlight the value of face-to-face communication despite available technologies and importance of socializing and networking. Likewise, study by Arnfalk & Kogg (2003) demonstrates that face-to-face meetings will continue to offer benefits to companies and should never be completely exterminated. Literature also demonstrates that in-person meetings help to establish and maintain trust (Lyons, 2013; Urry, 2003). The study

findings strongly support the issue of trust stressing its role in the development of business relationships in the studied companies.

The present study also adds *duration of a meeting* and *number of participants* as factors impacting the choice between two modes of communication. The results show that long and difficult meetings are best suited for face-to-face interaction, while short and regular meetings with simple context are the most effective when using VC solutions. Moreover, optimal number for effective VC meeting is 2-3 participants at each site.

The results also show that *cultural differences* have to be taken into account, because people from different cultural background have different attitudes to the video conferencing technologies. Knowledge and understanding of these differences may improve communication and strengthen business partnership.

Types of Meetings suited for Videoconferencing and Face-to-Face Contact

The second research question asked about the types of meetings that best suited for VC and FTF contact. The types of meetings in this study relate to the purpose or context of meetings described by Lu and Peeta (2009) as the main factor that impact the choice of business travel, and thus face-to face meetings, and video conferencing. Räsänen et al. (2010) also argue that two modes of communication have different purposes and can be utilized in different organizational settings.

According to the study results, the types of meetings that are preferred to be held FTF closely fit with those defined in the literature review (e.g., Lian & Denstadli, 2004; Lu & Peeta, 2009). These types of meetings mostly include communication targeting customers and business partners: kick-off, close-out meeting, status-update, confidential meetings, negotiation, contract and sales meetings. In addition, FCF contact are also best suited for such business contexts as training involving hard skills, technical and interdisciplinary workshops, and department meetings. Whereas videoconferencing meetings are mainly used for internal

communication and include: status meeting, daily report meeting, team and staff meetings, online conferences and training seminars involving soft skills. Board and management meetings, according to the interviewed general managers, can be carried out both in-person and virtually. Moreover, videoconferences can be used also for internal communication in such settings as urgent ad-hoc meeting with clients and follow-up meeting during a project stage with well established personal relationships.

Face-to-Face Meeting and Videoconferencing Relationship

The last research question asked whether VC technologies had the potential to replace travel and face-to-face meetings. The findings indicate that the study participants used VC as an adequate substitute for FTF contact only for the intra-organisational meetings. While for the external meetings with partners and business peers, VC was employed as a complimentary communication tool and not as a substitute for travel and FTF meetings. In other words, VC was used as an independent communication method supplementing conventional FTF meetings. This study substantiates the findings of Arnfalk and Kogg (2003) and Aguilera (2008) who reported that different communications methods have to be seen as complementary tool and not a substitute for one another.

Conclusion

The purpose of this study was to gain an in-depth understanding of the factors influencing the choice between face-to-face meeting and video conferencing in modern organizations. In addition, the objective was to identify the types of meetings suitable for face-to-face interaction and computer mediated communication. Attention was also given to the issue of potential replacement of business travel and in-person meetings with video conferencing technologies.

The main conclusions, which can be drawn from this study, indicate that video conferencing technologies play a very important role in modern organisations, and serve primarily as an additional communication tool for conventional face-to-face meetings. This study indicates that videoconferences are mainly utilized for internal use in multi-unit companies in order to facilitate collaboration and communication between geographically dispersed teams. Contrary, business travel and face-to-face meetings still plays a crucial role in building and maintaining relationships with customers and business partners. Therefore, emerging use of video conferencing technologies will unlikely replace personal contact and face-to-face meetings in the nearest future.

Certain limitations have to be mentioned. Firstly, the research sample is very restricted due to the choice of qualitative approach and in-depth interviews as a method for data collection. Therefore the generalization of the study results requires caution and may need additional research to confirm the findings. However, the present study reports the valid information on the participants' experiences with video conferencing and face-to-face meetings. Secondly, the intent of the sampling strategy was to investigate possible variance among executives, middle managers and employees without managerial position to gain a deeper understanding of the use of two modes of communication among these groups. Further study, either using qualitative or quantitative approach, is recommended in order to recruit a bigger sample and explore these issues in more detail.

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Appendix - Interview guide

Introductory points

Notify about the objectives of the study, inform about the confidentiality of the interviewee and anonymity of collected data, and to ask permission for audio-recording.

Opening questions

1. What is the size of the organization you are working for? What is the number of employees?
2. How many offices does your company have?

Key questions

Face-to-face business meetings

1. How often do you travel for work? What is the average number of trips per year?
2. What is the average duration of business meeting you attend?
3. What are the purposes of such face-to-face meeting?/ How can you characterize these meeting?
4. Do you have travel policy for business trips?

Experiences related to the use of video conferencing

1. How often do you participate in video conferencing meetings?
2. What types of video conferencing platforms/solutions do you use
3. What is the average duration of a virtual meeting?
4. What are the purposes of such virtual meetings? / How can you characterize these meeting?

5. Do you have some points regarding video conferencing in your company's travel policy?

Organizational factors

1. What factors influence your decision on the choice between virtual and face-to-face meetings?
2. How do you weight factors in relation to each other?

Relationship between virtual and face-to-face meetings

1. What do you think about the potential of replacing face-to-face meetings and travel with virtual meeting?