Association for Information Systems AIS Electronic Library (AISeL)

ECIS 2012 Proceedings

European Conference on Information Systems (ECIS)

5-15-2012

MEDIA CHOICE IN MODERN ORGANISATIONS: UNDERSTANDING THE USE OF SYNCHRONOUS MEDIA FOR COMMUNICATION IN A GLOBAL IT COMPANY

Radoslava Kadnarova *Warwick University*

Follow this and additional works at: http://aisel.aisnet.org/ecis2012

Recommended Citation

Kadnarova, Radoslava, "MEDIA CHOICE IN MODERN ORGANISATIONS: UNDERSTANDING THE USE OF SYNCHRONOUS MEDIA FOR COMMUNICATION IN A GLOBAL IT COMPANY" (2012). *ECIS 2012 Proceedings*. 216. http://aisel.aisnet.org/ecis2012/216

This material is brought to you by the European Conference on Information Systems (ECIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ECIS 2012 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

MEDIA CHOICE IN MODERN ORGANISATIONS: UNDERSTANDING THE USE OF SYNCHRONOUS MEDIA FOR COMMUNICATION IN A GLOBAL IT COMPANY

Radoslava Kadnarova, University of Warwick, Coventry CV4 7AL, UK, radka.kadnarova.11@mail.wbs.ac.uk

Joao Baptista, University of Warwick, Coventry CV4 7AL, UK, j.baptista@wbs.ac.uk

Julia Kotlarsky, University of Warwick, Coventry CV4 7AL, UK, j.kotlarsky@wbs.ac.uk

Stephen Lloyd, Cognizant, 1 Kingdom Street, London, W2 6BD, UK, stephen.lloyd2@cognizant.com

Abstract

The importance of face-to-face communication in collaborative projects is well understood in the literature. However, many organisations, and even governments are increasingly pushing for greater use of synchronous media such as video-conferencing to replace face-to-face meetings to drive costs down, reduce carbon footprint and improve efficiency. This calls for a review of existing theories that explain the way in which employees choose media to communicate and collaborate. Our study firstly reviews existing theories and identifies how individuals respond to new demands for greater use of synchronous media in organisations. We then present the findings from a qualitative case study in a global IT company, where we analysed the drivers and use of synchronous technology across various areas of the business. We conclude that existing theories only partially explain the way in which employees choose media in modern organisations and propose a new set of factors to encourage and support further research in this area.

Key words: media choice, synchronous communication technologies, information richness, globally distributed and virtual teams

1. Introduction

In the past decade, the literature on organisational communication has predominantly focused on faceto-face interactions (Baltes, 2002; Bordia, 1997; Powell, 2004), often with emphasis placed on group work as a way to "convey complex information, build consensus, and create shared context" (Sakthival and Chang, 2010, p.14). However, in recent years there has been a significant push by organisations and governments for greater use of digital media to support communication and collaboration as a driver to reduce travel costs, improve carbon footprint and drive efficiencies (Erickson, 2010). Additionally, many organisations have been using these technologies to work more flexibly across time and space (Powell, 2004). One of the consequences of this move is the potential decline of face-to-face communication in organisations, and the real possibility of a complete move towards digital working environments (Kleij et al. 2009).

However, the new communication media has limited coverage in existing research (Wilson, 2011). We argue that, although the basic principles of communication have not changed, such as the need for "clear and concise" information exchanges between individuals (Kleij et al. 2009), there is a need to review whether communication tools reflect and explain the new reality of greater reliance on digital media, to support collaborative work between individuals in modern organisations. This study addresses this gap in the literature by studying the underlying concepts of media selection in globally distributed and virtual organisations. In other words, the aim of this research is to understand the factors influencing individuals' choice of media in such organisations.

2. Theoretical foundation

This study draws on the information system literature and applies concepts from the organisational literature to study behaviours and attitudes of individuals towards media selection. The research is focused on modern organisations, with flexible organisational structures where geographical distributed work is common and individuals are reliant on new communication tools. These technologies are aimed at reducing the distances between individuals and enable effective collaborative working (Wilson, 2011). However, the problem with a growing number and variety of communication media available for employees in increasingly globalised and dispersed contexts often means that individuals feel dubious about the appropriateness of tools for a given task (Robert and Dennis, 2005). This is a key issue as the choice of media influences the efficiency and effectiveness of communication practices (Pendharkar and Young, 2004). In this context, a variety of theories have been developed in the past literature to explain media choice as briefly reviewed below.

2.1 Rational context of media choice

One of the most seminal theories related to media choice is Media Richness Theory (MRT, also referred to as Information Richness Theory (Lee, 2003)). This theory considers perceived richness of electronic media as an inherent property of media (Daft and Lengel, 1986). It emerged in the early 1980s following the tradition of the contingency and information processing theory (Daft and Lengel, 1986; Daft et al. 1987). Its central claim is that communication media differ in their capacity to process rich information (Daft and Lengel, 1986). Richness of media depends on its capacity to provide immediate feedback, the number of cues and channels used, personalisation, as well as language variety (Daft and Lengel, 1986, p.560). The richest medium is face-to-face, which provides immediate feedback, multiple cues, and the opportunity to use natural language. In addition, shifting to (electronic) media reduces richness as people experience different levels of cue transmission and interactivity. This theory considers different degrees of traits" in other words "richness" as a property of electronic media that influences the effectiveness of information dissemination (Daft and Lewin 1993; Rice 1992), and proposes a continuum that ranges from rich media (telephone, personal documents for communications) to lean ones (impersonal documentation, forms). According to MRT, people select media by matching the objective properties of various media with their information processing needs and relating to characteristics of the tasks that individuals attempt to accomplish via (electronic) media. For example, Dennis (2001) proposed that the effectiveness of communication is

dependent on the match between the requirements of individuals for a given task, and the capacity of the specific medium used. Therefore, the choice of media, according to MRT, is based on rational decision-making at the individual level (Markus, 1994), a process known as Experience Account (King and Xia, 1997).

However, researchers challenging the MRT have shown that perceived richness depends on the social context in which the media are used (Carlson and Zmud, 1999; Fulk et al, 1992; Lee, 1994; Markus, 1994; Ngwenyama et al. 1997). They criticised MRT for theorising at the individual level, while communications media are used to connect people, i.e., requiring theories that incorporate the social context. For instance, Marcus (1994) argues that media use is gradually institutionalised in an organisation, and reinforced through collective norms and social control (Markus, 1994), rather than being an individual choice. Furthermore, King and Xia (1997) highlighted that prior understanding of tasks (i.e., if individuals used media in the past to complete a similar task) provide individuals with a better understanding of the project and help them to evaluate how well the technology fitted (or not) the task (King and Xia, 1997). This then influences their perception of fit for recurring situations based on same task, which overtime contribute to the development of norms and institutionalised behaviours. Ultimately the technology becomes embedded in working practices through the ongoing interplay with its organisational context of use (Baptista, 2009).

Based on this more contextualised view of media choice, Channel Expansion Theory developed by Carlson and Zmud (1999), provides an alternative explanatory model that relates perception of media richness to four categories of experiences: a) experience with the channel, b) experience with the messaging topic, c) experience with the organisational context, and d) experience with communication participants (Carlson and Zmud 1999, p.155). More experience in these categories equips people with "(...) knowledge bases that may be used to more effectively encode and decode rich messages on a channel" (Carlson and Zmud 1999, p. 155). Additionally, greater knowledge of the medium makes people perceive channels as richer, since they feel able to exploit minimal cues.

2.2 Social context of media choice

Aiming to address the limitations of the rational approach to media selection for ignoring the social context, recent research has highlighted the importance of social presence in technology-mediated communications. Further, social presence plays a pivotal role, especially when collaborators feel a "personal connection" (Jung, 2011) with each other through acoustic, visual or physical contact (Kaplan and Haenlein, 2010; Jung, 2011). Social presence refers to the "degree to which a medium is perceived as conveying the actual physical presence of the communication participants" (Rice, 1992, p.476). This focus on social context has inspired the development of other media choice theories that incorporate social context as variables used to decide the choice of media in organisational settings. In particular, Trevino et al. highlight (1987, 2000) that the media choice is strongly influenced by the organisational context in which the medium selection is made. Additionally, Lee and Lee (2009) view organisations as social systems where interactions among individuals create norms, shared meanings and understandings. This highlights the importance of considering factors such as behaviours of people as the perceptions of media vary across the individuals (Webster, 2007). The media choice is also influenced by the social stimuli from colleagues, objectives of decision-makers or by routines that are embedded in a particular social setting (Trevino, 2000).

In this context, Social Influence Theory (SIT), presented by Fulk et al. (1990), is another explanation for media selection. SIT argues that the social systems underpinning the functioning of an organisation determine how people choose media to communicate, based on "behaviour, norms, rules, and values" (Lee and Lee, 2009; Fulk, 1990). As a result, the understanding and use of media is determined by organisational values and attitudes, as part of the individual's process of the social construction of reality (Berger and Luckmann, 1966). In contrast to MRT, and following SIT, media choice is neither purely rational nor motivated by efficiency; instead it is subject to social factors, where the aim is not just narrowed down to the achievement of strategic goals of the company (Schmitz and Fulk, 1991). This focus on social context improves the ability for media choice theory

to capture contextual factors shaping the adoption and use of different media, but offers limited ability to explain how specific business factors might influence its adoption.

Social Information Processing Theory (SIPT) developed by Walther (1992) offers an alternative perspective that moves the debate beyond social context of media choice. Although this theory apparently supports both the rational view and the social presence view of social media choice, it mainly emphasises organisational culture as a driver for individuals' behaviours towards media choice. However, through the analysis of existing theories, we can see there are limited studies focusing on how managerial attitudes change and influence the choice of media (Sturdy, 2004; Trevino, 2000; Webster, 2007); for example, studying how the managers' approach may positively or negatively influence their employees' willingness to use different communication tools (Hart et al. 1995).

2.3 Further factors for new media choice

This rich and varied discourse around media selection shows the importance of this issue, but at the same time reveals the lack of agreement about the factors underpinning media choice in organisations. Also, recent penetration of advanced communication media has added more channels and options to communicate horizontally and vertically inside organisations. In this wake, we argue that it is necessary to reflect on existing theories explaining media choice as the majority of work in this field was developed two to three decades ago and it needs to reflect the reality of modern organisations.

Nowadays, firms operate in a more globally distributed environment, using virtual technologies to support remote working practices, and individuals who are reliant to a great extent on information technologies need to develop interpersonal relationships (Nowak, 2003), group cohesion (Salas et al. 2008) and trust (Jarvenpaa and Leidner, 1998). The quality and availability of communication tools and technologies is enhanced, especially concerning synchronous media such as web video-conferencing or immersive video telepresence. Our study focuses on the role that these synchronous technologies play in facilitating communication between individuals, and analyse factors that play a role in media choice (Jung, 2011). In the organisational context, it is expected that the use of synchronous communication technologies will increase due to substantial economic and environmental benefits. However, academic literature on this topic is very limited and calls for future research. To address this gap we formulated the following research question: "How do individuals choose synchronous communication media to communicate effectively with their colleagues in modern organisational settings?"

3. Research methodology

3.1 Data collection

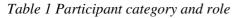
This study explores the adoption of different communication media and real-time uses in the context of work in a large IT organisation. We adopt a case study qualitative interpretive research approach to conduct data collection and analysis. A case study approach using qualitative methods is suitable for studying "how" and "why" questions in the real-life context as they help to obtain an in-depth view of the phenomenon under study (Kaplan and Duchon, 1988).

The main driver for data collection was to understand the use of communication media as well as obtaining a rich description of users' experiences with technology. The procedure for data collection was divided into two main stages. Firstly, a qualitative questionnaire was distributed via email to employees, who were later interviewed, clarifying issues of media selection and to understand individuals' decisions. It is highlighted by Orlikowski (1990) that the structure of a questionnaire plays an integral role as the data needs to be visualised and categorised in a different way to enable the flow and hierarchical order of events. Also, it is important for questions to be explained precisely to prevent any misunderstandings, as explained by Stone (1993, p.1264), who states: "An appropriate questionnaire is one which is capable of providing answers to the questions being asked." This

allowed us to understand the organisational and social context before the series of semi-structured interviews occurred.

In the second stage of data collection, we conducted series of semi-structured interviews to gain a deeper understanding of key issues with regards to the use of different media. The collection of the data took place over a period of three months. We collected documentation explaining the procedures for using different media in the organisation and observed the use of these channels in practice. We then focused on nine individuals, whom we interviewed for approximately an hour each. All interviews were recorded and transcribed. Some interviews were conducted face-to-face, while others took place via web conference, which allowed the researcher to directly explore the views of participants regarding the use of this synchronous media. Although an interview guide was prepared, as the interviews progressed, the topic of conversation would often deviate from the standard protocol. This allowed interviewees to express their feelings and personal views about the wider context of use of these technologies. Table 1 provides information about the interviewees.

User Category	Job Title/Description	Number of	Length of	Selected
		Interviewees	Interviews	Geographies
Management	Director, Advance	1	1.5 hour	United
	Services			Kingdom
	Business Video	1	1 hour	United
	Practice Manager			Kingdom
	Manager, Strategy	1	1.5 hour	United
	and Planning			Kingdom
Individual Contributor	Business Operations	1	1 hour	United Arab
	Manager			Emirates
	Operations Team	2	Each 1 hour	Spain
	Member			
	Strategy and	1	1 hour	Norway
	Operations Manager			
	Network Consulting	1	1 hour	Sweden
	Engineer			
IT	IT Manager	1	1 hour	Holland



3.2 Data analysis

For data analysis we followed grounded theory principles (Glaser and Strauss, 1967). This approach enables a researcher to explore the applicability of existing theories and develop new concepts to explain, in this case, the use and adoption of communication media in organisations. Further, this approach does not solely focus on describing the issues, but it aims to expand further theoretical development in order to understand the social world more precisely. The analysis of grounded theory is the "process of comparison" until "the theoretical saturation" is reached or in other words no other concepts exist (Lacey and Luff, 2003).

The first stage of the data analysis involved the investigation of the results associated with the questionnaires. The next stage then focused on the transcription of the interviews and the use of Nvivo to code all the data collected. At this stage codes (labels) were assigned to each paragraph or sentence to reflect issues emerging from the data. Some of the codes that were generated during the coding process reflected themes in the existing research question and theory, while others emerged purely from the empirical data. These codes were then analysed looking for similarities or differences and were grouped into categories to see better the interrelations among them. This then aided the researchers to examine the data from diverse viewpoints, and to uncover relationships between various themes that emerged from the data.

4. Case background

Netco is a large multinational IT organisation specialising in the design and manufacture of Internet Protocol (IP) based technology, primarily networking and similar products for the ICT industry. Since its inception, Netco has been the premier technology leader in the Internet infrastructure market. Although Netco offers a wide-ranging product and services portfolio, the areas can be broadly segmented as follows: networking systems and network management services; collaboration, voice and video; and data centre/data centre services. However, in the face of ever increasing competition and dynamic operating environments, Netco was undergoing a transitional change during the period of data collection. The change focused on streamlining its processes and reorganising its activities. Netco stated that the company aims to drive value for its shareholders and deliver cutting-edge innovations for its customers.

The research for this project focused on gathering information from one of the teams in the company, the Advanced Services team. Advanced Services Enterprise Europe is a dedicated team of about 500 personnel, providing planning, design and implementation services, in addition to operation and optimisation for an array of major clients. Encompassing a variety of disciplines and geographical regions, the capabilities of the team include industry-leading consulting, project management and technical skills.

For several years, Netco Services Europe has identified major business challenges that it has sought to overcome. Some of these business challenges include: controlling the escalating travel costs caused by a meeting-focused culture; reducing departmental carbon footprints associated with travel; increasing productivity by reducing the hours of travel; and finally the promotion of a healthy work/life balance. A Netco white paper (2008) described the solution to these business challenges and also shed some light onto the expected business results. The solution was to achieve a needed behaviour change by, for example, reducing face-to-face meetings to only when necessary. Face-to-face became the exception and not the rule, as expressed by one of the managers interviewed: "The business process change was unbelievably difficult and required us to make a decision which, at first, people couldn't believe – that the conventional face-to-face meeting was largely dead. Implementing technology on its own does nothing; however, technology coupled with business change delivers significant value." (VP Services, Netco Europe)

Central to the anticipated transformation change was the technological affordance that would be received from Netco Unified Communications. It was envisioned that a wealth of rich media would enable people to change their traditional work practices, and help Netco to overcome this business challenge. In addition to technology, senior managers would be tasked to lead a cultural change programme, and travel avoidance was to be incentivised through a system of carbon scorecards and targets. Netco Services Europe was on target to achieve a twenty per cent reduction in travel costs and a decrease in carbon footprint.

However, the management recognised the need to move people along this journey but saw technology playing a major role in this significant process of organisational change. One of the managers reflected on this issue saying: "The real significance of what we are doing is the extent to which it changes people's behaviour, over and above any cost reduction...We are beginning to understand what it really means to collaborate, to make use of the options technology gives us, and to benefit from what each option gives us in a particular situation. I'm convinced we're not just saving money and are more environmentally friendly, but we are also more productive as a team."

One of the twists in Netco's strategy to move towards digital communication and reduce face-to-face meetings is the acquisition of a teleconference software company. In 2010, Netco completed its offer to acquire Betha. Betha is a market leader in visual communication products and services, which complements Netco's existing communications and network-orientated technology products. Subsequently, Netco began the integration of Betha technology into its technological infrastructure, underlining its commitment to video-enabled technology for diverse communication media and correspondence across boundaries. The acquisition of this company is an example of Netco's strategy for growth and R&D, which had largely been based on a planned process of mergers and acquisitions.

As part of its strategy for driving innovation, Netco has a history of acquiring smaller companies to incorporate new and innovative developments in the industry. Initially, this approach helped to differentiate the company from its rivals. Netco aimed to fulfil its ambition of growth by "favouring reasons for external growth", whereas its rivals would pride themselves on their cutting-edge internal R&D functions.

Our data shows that, from 2007 to 2010, over 1100 telepresence units were deployed globally in the organisation, in 250 major cities and sixty countries. Our data also shows that almost 1 million telepresence meetings have been scheduled to date, translating to 1.3 million internal business hours in meetings. Perhaps most importantly, data shows a sixty-three per cent overall rooms utilisation based on an average of eight hour days. Of this utilisation, there has also been a steady increase in ad hoc usage of telepresence endpoints, which suggests a behavioural shift towards a preference of telepresence communication for meetings within Netco.

5. Summary of findings and discussion

Our empirical findings suggest that existing media choice theories only partially explain employees' approach to choosing media in modern organisations where synchronous media has been adopted as a standard communication channel for group work. The tools used for synchronous communications in Netco included web-conferencing tools, desktop video-conferencing tools and immersive video telepresence. Table 2 below summarises key features and highlights differences and similarities in the functionality of these tools.

Feature	Web-conference Tools	Desktop Video-	Immersive			
		conference	Telepresence			
Sense of co-presence	No	No	Yes			
Visual quality	Good quality, colour	Good quality, colour	High definition, life			
	image	image	size			
Number of images per	1+	1+	1+			
monitor screen						
Camera angle	Head and shoulders only	Head and shoulders only	Head and upper body			
See own image	Yes	No	No			
Selective gaze supported	No	Yes	Yes			
Audio quality	Full duplex, no lag	Full duplex, no lag	Full duplex, no lag			

Table 2 Sum almon aug	a anno mia ati an a	nodia wand at N	too (Adapted for	$C_{\rm HIR}$ at al 2000
Table 2 Synchronous	соттипісанов п	neaia usea ai me	aco (Aaapiea ji	Om Guo ei al. 2009)

Table 3 illustrates the average media usage (in hours) per day. Almost all participants reported spending approximately three to five hours in a meeting via any medium (including face-to-face), with the exception of managers. Also, it can be concluded that most meetings occurred in a virtual environment as individuals spent around three to five hours collaborating via web-conference. Interestingly, all individuals spent less than one hour participating in immersive video telepresence, which is explained further through interviews. Almost all individuals reported not using desktop video-conferencing, which is a surprising fact given the nature of their business.

Representative	Any Medium	Web-conference	Desktop Video Conference	Immersive Video Telepresence
Individual	3-5	3-5	0	Less than 1
Contributor				
Individual	3-5	Less than 1	0	Less than 1
Contributor				
Individual	3-5	3-5	0	Less than 1
Contributor				
Individual	3-5	1-3	0	Less than 1
Contributor				
Individual	1-3	1	Less than 1	Less than 1
Contributor				

Manager	More than 5	3-5	1-3	Less than 1
Manager	More than 5	More than 5	Less than 1	Less than 1
Manager	3-5	3-5	0	Less than 1
IT Representative	3-5	3-5	0	Less than 1

Table 3 Average media usage per day (in hours)

Table 4 categorises two different types of media in the vertical axis: a) video-enabled web-conference and b) immersive video telepresence. In the horizontal axis, there are lists of the factors which managers, individual contributors and IT representatives found to be powerful determinants for media selection. Moreover, factors, such as a) location of collaborator, b) choice of media by manager, c) availability of the medium, d) job characteristics, e) possibility of deeper interaction, and f) ability of medium to convey cues, were given a great importance by respondents. The table is meant to summarise our findings from all the interviews regarding the key factors underpinning media choice.

Medium	Location		Default		Availability		Job		Interaction		Cues							
				choice				characteristic										
	М	Ι	IT	Μ	Ι	IT	Μ	Ι	IT	М	Ι	IT	М	Ι	IT	М	Ι	IT
Web-	Х	х	Х		х					Х	Х		Х	х		Х	х	
conference																		
Video																		
Immersive	х	х	х				Х	Х	х				Х	х	х	х	х	х
Video																		
Telepresence																		

Table 4 Decision matrix (manager/individuals contributor/IT representative)

Deeper analysis of the interviews further suggests that the media choice and behaviours are associated with several issues from across the various theories reviewed earlier. One of the major findings is that the user-centric nature of previous theories underplayed the importance of the organisation and management in influencing media choice (Webster, 2007). Even though human factors are an important determinant of media choice, there are other elements impacting on the behaviour of employees. We find that individuals' choice for using synchronous media to communicate is influenced by factors at social, environmental, organisational and individual level as well as elements of the specific situation involved.

One of the factors which influences synchronous media selection, and was the most agreed by interviewees, is the location of individuals. Further, the main reason for this was primarily to do with the telecoms and network infrastructure of the place the individual is located. As an interviewee said "...depending on where I am, it defines the mix of media to use..." and continued, "for example, Pakistan quality is not good, infrastructure is somewhat behind. That can be a hindrance to the conversation. That is when I say, forget it and pick up the phone, or just use email." This shows that the primary factor determining choice was perception that the technology will work as expected, depending on the support at each location.

While task-fit frameworks ignore the contextual aspects, focusing too much on the idea that high equivocal tasks require rich media and vice versa, this case reported different results. In the case of managers, they declare that, even when the equivocality is low, they tend to use the web-conferencing medium, which is evaluated as a rich medium. For example, this tool was utilised for regular status updates and team meetings, where the equivocality is low, but also for brainstorming or relationship building, where the equivocality is high. Rather than focusing on equivocality, the users have made their tool selection based on convenience, because it is easy to access from workstations, as noted by respondents: "It's the easiest one we can set up, everyone has it, there's no limitations on access, availability, it's everywhere", "It's available when you need it as you need it". Often the fast and easy access led to too many meetings and a culture of "meeting syndrome", which can be counterproductive if people within an organisation meet for the sake of meeting (Khawand, 2010);

this is especially the case with high equivocal job characteristics when managers are likely to call for more meetings (Trevino, 2000).

Another key factor that emerged from the interviews is the effect of the organisation's vision that is leading to the "practice what we preach" approach. The choice of media was clearly influenced by managers and organisational rhetoric. Some leaders in the organisation were clearly keen to push through the use of video-conferencing and insisted in the use of video to help people to focus: "I use the video much more to have a conversation to see how people are [because] you can see facial expressions."

All these diverse attitudes towards media choice affected the pace of adoption in different areas of the organisation, creating at times sub-cultures depending on where a part of the organisation was along the adoption curve. These sub-cultures have been identified especially as being in the IT and business sectors'. For instance, the IT department reported that business users choose web-conference media without enabling video. By contrast, almost all IT interactions were video enabled.

Interviewees used video-enabled web conference and immersive video telepresence because they expected these media to be more effective at conveying verbal as well as non-verbal cues in communication and teamwork. Teams that enable video during their web conference expected to increase ease of understanding, develop shared language (Salas et al, 2008; Gressgård, 2011) and facilitate relationship-building (Fulk et al. 1990; Carlson and Zmud, 1999), which corresponds with the literature as well as our findings. Although many respondents stated that these synchronous tools are sufficient for collaboration, face-to-face interaction would be preferred in those circumstances where media could not replace the social elements of meeting a colleague, as stated by an interviewee: "You can't go for a drink, you can't go for lunch, you can't have those side conversations that you would normally have with people in the same office."

Individuals also agreed that immersive telepresence enables eye gaze and the perception of body language: "You can tell a lot by the way people are sitting... it helps around the intimacy of communication." In general, the use of immersive telepresence was seen by all as a way to increase levels of interaction, as well as to improve relationships and perhaps increase levels of trust, as noted by an interviewee: "If you're ramping up a level of trust required, then you need to get people together in a room, and have an open discussion." This seems to correspond with the rational social presence theorists (Lee and Lee, 2009) where, by having a sense of co-presence, social presence can be created, which in turn improves relationships between individuals (Kappas and Kramer, 2011). While immersive telepresence is considered to be the best substitute for face-to-face interaction, in Netco the use was highly restricted due to the limited availability and subsequent scheduling conflicts. A priority system meant that internal teams were of tertiary importance, after customer meetings and senior management meetings. As a result, even if there was a need to use immersive telepresence, the medium would often not be available. One of the interviewees said: "We don't have that many rooms set up. We have one major room with a semi-circle set up. It's always occupied by senior people. There is a priority system in place. We're fighting to get into the rooms at times. If they were open for us to use, that would be great, but that is not the case." This shows how contextual practical factors affected adoption and use in the minds of the employees.

6. Conclusions and future research

This paper discussed the factors influencing synchronous media choices in a global IT company. Although there are several studies concerning the use and choice of media adopting a variety of theoretical perspectives such as Media Richness Theory (Daft and Lengel, 1984), social influence models (Fulk et al. 1990), technology acceptance models (Davis, 1989), our study is unique because it captures the adoption of new technologies in modern organisations and offers specific insights on the use of synchronous media as a medium for communication.

Previous studies see media choice as a rational process depending on the "richness" of the medium or the suitability to the task (Daft and Lengel, 1984); however, our empirical findings suggest other

factors at play than those proposed by existing theories such as MRT. Although rational decisionmaking influences media selection to a certain extent, our findings suggest that social and organisational factors represent more important roles as proposed in the Social Influence Theory (Fulk et al. 1990). We agree with O'Learry and Cummings (2007, p.17) who state that "given that virtual teams are not a uniform category, we expect that their technology needs and use will not be uniform either". This explains existing literature showing that globally distributed and virtual teams often implement different mechanisms to facilitate the building of social ties and inter-personal relationships to compensate for the lack of face-to-face interactions in such teams (Kotlarsky and Oshri, 2005). The degree of familiarity with the counterpart's context and the strength of social ties between specific individuals (Oshri et al. 2007) would therefore play a role in deciding the suitability of communication media for a specific situation as well as task (Kotlarsky et al. 2008).

Although individuals recognise the different characteristics of the various media available, in practice their selection is often influenced by elements associated with organisational norms such as managerial influence, availability of media, as well as communication infrastructure. For instance, while synchronous media such as immersive telepresence was recognised as a rich medium enabling the development of trust and shared understanding and perceived to be a viable replacement for face-to-face interactions (Oshri et al. 2007), business users persisted with the use of web-conferencing without enabling video.

Our study aims to make three contributions: 1) reflect the value and applicability of existing theories explaining media choice in communication in organisations, 2) propose new factors explaining media choice in this new organisational context, 3) suggest specific factors affecting adoption of synchronous media as a communication tool. Overall, our intention is to reinforce existing literature that has emphasised the role of organisational and social context in media choice theory. This study also shows that synchronous media can play an important role in the functioning of organisations with the potential to replace face-to-face interactions in many situations where other media do not have the required properties. The study has made several theoretical contributions but also aims to raise awareness of practitioners about the importance of organisational context in determining the adoption of virtual channels of communication in organisations.

References

- Baltes, B. (2002). Computer-Mediated Communication and Group Decision Making: A Meta-Analysis. Organisational Behaviour and Human Decision Processes. 87 (1). Pp.156-179.
- Baptista, J. (2009). Institutionalisation as a process of interplay between technology and its organisational context of use. Journal of Information Technology. 24(4), 305-319.

Berger, P. and Luckmann, T. (1966). The Social Construction of Reality. New

York: Doubleday.

- Bordia, P. (1997). Face-to-Face Versus Computer-Mediated Communication: A Synthesis of the Experimental Literature. The Journal of Business Communication. 34(1). Pp.99-120.
- Carlson, J.R., and Zmud, R.W. (1999). Channel Expansion Theory and the Experiential Nature of Media Richness Perceptions. The Academy of Management Journal. 42 (2). Pp.153-170.
- Daft, R. L. and Lewin, A. Y. (1993). Where are the theories for the "new" organisational forms? An editorial essay. Organisation Science. 4 (4).
- Daft, R. L., Lengel, R. H. and Trevino L. K.(1987). Message equivocality, media selection, and manager performance: Implications for information systems. MIS Quarterly. 11 (3). Pp.355-366.
- Daft, R. L. and Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. Management Science. 32 (5). Pp. 554-571.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. MIS Quarterly 13 (3). Pp.319-339.
- Dennis, A. R., Wixom, B. H., Vandenberg, R. J. (2001). Understanding fit and appropriation effects in group support systems via meta-analysis. MIS Quarterly. 25. Pp.167-93.
- Erickson, T. Kellogg, W.A. Shami, N.S, Lavine, D. (2010). Telepresence in Virtual Conferences: An Empirical Comparison of Distance Collaboration Technologies. Workshop on New Frontiers in Telepresence at CSCW 2010. Pp.1-6.
- Fulk, J. Schmitz, J. and Steinfield, C.W. (1990). A Social Influence model of technology use. Organisations and Communication Technology. Pp.117-140.
- Gressgård, L. J. (2011). Virtual team collaboration and innovation in organisations. Team Performance Management. 17 (1/2). Pp.102-119.
- Guo, Z. D'Ambra, J. and Zhang, H. (2009). Improving the Effectiveness of Virtual Teams: A Comparison of Video-Conferencing and Face-to-Face Communication in China. IEEE Transactions on Professional Communication. 52 (1). Pp.1-16.
- Hart, P. Svenning, L. and Ruchinskas, J. (1995). From face-to-face meeting to video teleconferencing: Potential shifts in the meeting genre. Management Communication Quarterly. 8. Pp.395-423.
- Jarvenpaa, S. L. and Leidner, D. E. (1998). Communication and trust in global virtual teams. Journal of Computer Mediated Communication. 3 (4).
- Jung, Y. (2011). Understanding the Role of Sense of Presence and Perceived Autonomy in Users' Continued Use of Social Virtual Worlds. Journal of Computer Mediated Communication. 16 (4). Pp.492-510.
- Kaplan, A. M. and Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. Business Horizons. 53(1). Pp.59-68.
- Kaplan, B. and Duchon, D. (1988). Combining qualitative and quantitative methods in information systems research: a case study. MIS Quarterly. Pp.571-586.
- Kappas, A. and Kramer, N. (2011). Face-to-Face Communication Over the Internet: Emotions in a Web of Culture, Language, and Technology. First Ed. Cambridge University Press.
- Khawand, P. (2010). Click here to find out more! Today's Tip Stop Having So Many Meetings. Available from: http://www.businessweek.com/smallbiz/tips/archives/2010/11/stop_having_ so_many_meetings.html. [Accessed 6th Sept 2011].
- King, R. C. and Xia, W.D. (1997). Media appropriateness: Effects of experience on communication media choice. Decision Sciences. 28(4). Pp.877-910.
- Kleij, R., Schraagen, J.M., Werkhoven, P., and Dreu, C.K.W. (2009). How Conversations Change Over Time in Face-to-face and Video-Mediated Communication. Small Group Research. 40(4). Pp.355-381.

- Kotlarsky, J. and Oshri I. (2005). Social Ties, Knowledge Sharing and Successful Collaboration in Globally Distributed System Development Projects. European Journal of Information Systems, 14(1). Pp.37-48.
- Kotlarsky, J. Oshri, I. and van Fenema, P.C. (2008). Knowledge Processes in Globally Distributed Contexts Palgrave, London.
- Lacey, A. and Luff, D. (2003) Qualitative data analysis. Trent Focus Group.
- Lee, A. S. (1994) Electronic Mail as a Medium for Rich Communication: An Emperical Investigation Using Hermeneutic Interpretation. MIS Quarterly, 18(2). Pp. 143-157.
- Lee, Z., and Lee, Y. (2009). Emailing the Boss: Cultural Implications of Media Choice. IEE. Transactions on Professional Communication. 52(1). Pp.61-74.
- Markus (1994). Electronic mail as the medium of managerial choice. Organisation science. 5 (4). Pp.502-527.
- Ngwenyama, O. K. and Lee, A. S. (1997) Communication Richness in Electronic Mail: A Critical Social Theory and the Contextuality of Meaning. MIS Quarterly.
- Nowak, K. L. and Biocca, F. (2003). The effect of the agency and anthropomorphism on users' sense of telepresence, copresence, and social presence in virtual environments. Presence: Teleoperators & Virtual Environments. 12 (5). Pp.481-494.
- O'Leary, M. B. and Cummings, J. N. (2007). The spatial, temporal, and configurational characteristics of geographic dispersion in teams. MIS Quarterly. 31 (3). Pp.433-452.
- Oshri, I. Kotlarsky, J. and Willcocks, L.P. (2007). Global Software Development: Exploring Socialization and Face-to-Face meetings in Distributed Strategic Projects. Journal of Strategic Information Systems, 16 (1).Pp. 25-49.
- Pendharkar, P. C. and Young, K. (2004). The development of a construct for measuring an individual's perceptions of email as a medium for electronic communication in organisations. IEEE Trans. Prof. Commun. 47(2). Pp.130-143.
- Powell, A. Piccoli, G. and Ives, B. (2004). Virtual Teams: A Review of Current Literature and Directions for Future Research. The Database for Advances in Information Systems. 35 (1). Pp.6-36.
- Rice, R. E. (1992). Task analysability, use of new media, and effectiveness: A multi-site exploration of media richness. Organisation Science. Pp.475-500.
- Robert, L.P. and Dennis, A.R. (2005). Paradox of richness: A cognitive model of media choice. IEEE Trans. Prof. Commun. 48(1). Pp.10-21.
- Sakthival, S., and Chang, J. (2010). A Preliminary Study Exploring the Performance of Systems Development in a Face-to-Face Setting in relation to Television Video Conferencing. Journal of Information Technology Management. 21 (4). Pp.13-28.
- Salas, E., Cooke, N. J. & Rosen, M. A. (2008). On teams, teamwork, and team performance: Discoveries and developments. Human Factors: The Journal of the Human Factors and Ergonomics Society. 50 (3). Pp.540.
- Schmitz, J., and Fulk, J. (1991). Organisational colleagues, media richness, and electronic mail. Communication Research. 19(4). Pp.487-523.
- Stone, D. (1993). Design a questionnaire. British Medical Journal. 307 (6914). Pp.1264.
- Sturdy, A. (2004). The Adaption of management ideas and practices: Theoretical perspectives and possibilities. Management learning. 35 (2). Pp.155-179.
- Trevino L.K., Lengel, R.H and Daft, R.L. (1987). Media symbolism, media richness, and media choice in organisations. Communication Research. 14. Pp.553-574.
- Trevino, L.K. Webster, J. and Stein, E.W. (2000). Making Connections: Complementary Influences on Communication Media Choices, Attitudes, and Use. Organisation Science. 11 (2). Pp.163-182.
- Webster (2007). The role of Structure in Media Choice. Evolving perspective on Media choice: A theoretical and empirical overview.
- Wilson, D. Lin, X. Longstreet, P. Sarker, S. (2011). Web 2.0: A Definition, Literature Review, and Directions for Future Research. AMCIS 2011 Proceedings. Pp.1-11.