Virtual Teams in the Context of Virtual Daily Life: A Communication Perspective

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ABSTRACT
Perceived as the form of organizing of the future, virtual teams have proliferated all over the world. However, the meaning of virtualization is more than just a work arrangement. People actually enjoy the benefits of remote communication via ICT in daily life. Given the communication difficulties in virtual teams, this paper reviews the literature of virtual teams and the literature of virtual daily life from a communication perspective using a framework that includes media, people and context issues. The findings demonstrate that remote communications in both settings are similar in two of the three key elements of communication – media and people and demonstrate both differences and similarities in the third dimension - context. Drawing on these findings, this paper makes a contribution to theory and research by exploring the potential influences of taking virtual daily life into account on the understanding of virtual team communication. Based on the application of channel expansion theory, self-efficacy theory and concerns about cultural effects, this paper reveals that experiencing virtual daily life may have a positive influence on the effectiveness of communication in virtual teams. Future research directions are suggested to continue the investigation of these relationships.

Keywords
Virtual teams, computer mediated communication, information communication technology.

INTRODUCTION
Information communication technology (ICT) has changed the way people work and live (Chidambaram and Zigurs, 2001). A consequence of this is the virtualization of our society (Igbaria, 1999). Research has recognized that virtual teams are a promising way of organizing (Townsend, DeMarie and Hendrickson, 1998). However, some challenges impair the advantages of virtual teams (Mark, 2001). Computer mediated communication (CMC) results in people encountering communication difficulties in the virtual environment, which are not present in traditional teams (Johansson, Dittrich and Juustila, 1999). These difficulties in turn result in lower performance (Mark, 2001).

From a social perspective, the meaning of being virtual is much more than just a work arrangement. In practice, virtual activities are more and more accepted in our daily life (Igbaria, 1999). For example, virtual activities based on the Internet, such as online chatting, online shopping, online banking and even online dating, have prospered (Bargh and McKenna, 2004). Other disciplines have contributed to the knowledge of virtual activities in daily life. Sociologists and psychologists have been studying the influences of the Internet on people’s social interactions (see Bargh and McKenna, 2004). These studies revealed important insights which we will argue are applicable to the situations in virtual teams. For instance, some social studies illustrate that fast and close relationships are achieved online, which implies that effective communication are just as important and achievable in daily virtual activities as well as in work arrangements (Bargh and McKenna, 2004).

Given this broad picture of virtual activities in both work and daily life, there is surprisingly little integrated research. We will argue that these two areas share commonalities. In essence, ICT plays a crucial role and is the major driving force in both settings (Igbaria, 1999; Townsend et al., 1998). This paper contributes to theory and research by reviewing and integrating the communication issues in virtual teams and virtual activities in daily life and proposing theoretically based reasoning for

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1 CMC is used in this paper to capture various terms, such as virtual communication and online communication, which people use to describe the remote communication via IT in virtual teams.
why virtual daily life (VDL) experiences may contribute to an individual’s virtual team communication performance. We have developed a framework that treats media, people and the context as the three essential elements of communication and we adopt it to capture a comprehensive picture of the communication in virtual teams and VDL. The findings show that communications issues in both settings are alike in two (media and people) of three key elements and share both similarities and differences in the third one (context). From the organizational point of view, this paper also explores potential implications of taking VDL into account on the understanding of communication and performance of virtual teams.

This paper is organized as follows: The following section compares communications issues in virtual teams and VDL and explores each of the three communications elements from the framework that we adopt: media, people and context. This is followed by a discussion of the findings from this comparison that develops the implications for research and practice. The paper concludes with suggestions for management practice and future research.

COMPARING COMMUNICATIONS: VIRTUAL TEAMS AND VIRTUAL DAILY LIFE

Communication in Virtual Teams and Virtual Daily Life

Virtual teams are defined as functional groups, in which members use ICT to interact with each other over geographic, organizational and sometimes temporal distances (Townsend et al., 1998). Compared to traditional ones, virtual teams have many advantages in current business environment and thus are widely adopted (Saunders, 2000). Previous studies have revealed that communication plays a fundamental role in all the existence and processes of virtual teams (DeSanctis and Monge, 1999). One characteristic of virtual teams is that face to face (F2F) communication is not as available as in traditional co-located teams (Saunders, 2000). It is CMC that enables the formation of virtual teams across different boundaries and keeps them running (Townsend et al., 1998). Nevertheless, CMC is a relatively lean media comparing to F2F, which limits the communication in virtual teams (Daft and Lengel, 1986). Also, being located in different places means team members are more likely to come from different backgrounds (Robey, Khoo and Powers, 2000). These cultural differences intensify communication difficulties (Cramton, 2001).

VDL is the aspect of daily life in which people interact with each other and with organizations (e.g., banks) remotely via ICT. It is the result of the diffusion of CMC. As an embodiment of CMC, the Internet is the cornerstone of VDL (Bargh and McKenna, 2004). The power of the Internet resides in its capacity to connect people globally with just a “click” (McKenna, Green and Gleason, 2002). The Internet and the communication modes that it facilitates are fast becoming an indispensable part of everyday life, which enables people to interact with each other across geographic boundaries (Hoffman, Novak and Venkatesh, 2004). Since most communications in VDL happen on the Internet, communication in VDL is to some extent equal to online communication.

Communication plays a fundamental role in both virtual teams and VDL. This similarity suggests VDL offers a reference for studying virtual teams. However, communication is more than the technology or media adopted. People, media and context constitute the basic elements of communication that we use in this research (Ngwenyama and Lee, 1997). The following sections examine these three elements of communication respectively.

Elements of Communication: Media

Virtual Teams

ICT is the major enabler of virtual teams and it offers numerous applications or packages for remote communication (Townsend et al., 1998). Previous studies have identified several channels used by virtual teams such as email, electronic bulletin board, group support systems, and videoconference, etc. (Saunders, 2000). These channels could be classified according to two dimensions. The first one is synchronicity (Warkentin and Beranek, 1999). Some media only allow asynchronous interactions, such as email, electronic bulletin board and some group support system, while other media may allow instant responses, such as instant messaging (Warkentin and Beranek, 1999). The second dimension is whether the media is text-based (Long and Baecker, 1997). Early CMC are mostly text based. Email is a typical example, which is also the most widely used electronic media in organizations (Haythornthwaite, Wellman and Garton, 1998). With the development of technology, audio and video have been integrated into the applications of CMC (Long and Baecker, 1997). Nowadays, videoconference simulates the normal meeting room where people can see and talk to each other (Townsend et al., 1998). In addition, as an integration of these two dimensions, group support systems or enterprise systems often contain multiple media and support both synchronous and asynchronous communications (Townsend et al., 1998).
Virtual Daily Life

The Internet itself is not a single media or tool that can directly transfer information; it is the platform that carry different applications that can do this job (Bargh and McKenna, 2004). Numerous applications have been developed based on the Internet (Long and Baeccker, 1997). Among them, email is the most popular and widely used communication media (Hoffman et al., 2004). Other applications include instant messaging, chat room, bulletin board, mail list, online game and interactive community, etc. (Long and Baecker, 1997). Besides the text based asynchronous email, these media also enable synchronous and multiple media communications (Long and Baecker, 1997). For example, major instant messaging services allow users to chat with text, audio and video (Nardi, Whittaker and Bradner, 2000).

Same Media in both settings

In both settings, CMC is the major vehicle of communication (Bargh and McKenna, 2004; Townsend et al., 1998). Email is the most widely adopted in both settings (Haythornhwaite et al., 1998; Hoffman et al., 2004). Other asynchronous media, such as forums, bulletin boards and mail lists, are available in both settings (Long and Baecker, 1997; Saunders, 2000). For synchronous media, text based instant messaging and multimedia real time chatting have been integrated in many online chatting services (e.g., MSN messenger, Yahoo messenger) (Nardi et al., 2000). As the counterpart in virtual teams, there is video conference, which is to some extent a more professional version of online chatting (Saunders, 2000). Another major media in virtual teams is group software in which people communicate and cooperate at the same time (Townsend et al., 1998). Online games, such as MUD, simulate such media in VDL (Gonchar and Adams, 2000). Players are able to interact with each other and finish tasks mutually within the software system (Kozinets, 1998). In sum, the media and technologies used in VDL and virtual teams share a great deal of similarity. This observation implies that it is possible to accumulate experience with the media and technologies regardless of the settings. Consequently, it provides a potential mechanism of the interaction between virtual teams and VDL, which will be elaborated in the Discussion section.

Elements of Communication: People

Virtual Teams

In organizations, virtual team members are usually selected according to the task and their expertise (Saunders, 2000). Previous studies show that they have various backgrounds and they may occupy various positions in the organization (Robey et al., 2000; Saunders, 2000). Especially in global virtual teams, the differences between team members may be intensified by language and culture (Jarvenpaa and Leidner, 1999; Johansson et al., 1999). Nevertheless, people who communicate in virtual teams represent a cross section of employees with diverse characteristics who are widely distributed in the work force of the organization and across organizations.

Virtual Daily Life

After being introduced to the public, the Internet has been embraced globally (Bargh and McKenna, 2004). It is true that there are uneven distributions of the Internet users among countries and among age groups, however, the rising trend of use, particularly in North America, is apparent (Bargh and McKenna, 2004). In addition, according to some researchers, the indispensability of the Internet suggests that everyone will be users of the Internet in some way eventually (Hoffman et al., 2004; Igbaria, 1999). In other words, people with different genders, ages, races and education backgrounds benefit from the convenient communication enabled by the Internet (Bargh and McKenna, 2004).

Same People in both settings

Users of CMC in VDL and virtual teams are people who come from diverse backgrounds and positions and it is very likely that these two groups overlap to some extent. If it was reasonable to postulate that people in virtual teams were different from people who used online communications even 10 years ago, this argument has been weakened by the diffusion of technology in the organization and in the home. With the diffusion of CMC and the wide adoption of virtual teams, more and more people use CMC in both daily life and work settings (Igbaria, 1999). In other words, it is likely that the two research areas are targeting the same people. And, this will become even more apparent as today’s public school, high school and university generations hit the work force as they have been born into the information age and are far more likely to use ICT as natural instrument (Townsend et al., 1998). Given this argument, participation in both settings suggests the possibility of mutual influences between them. It is possible for people to bring their experience and perceptions from one setting to the other. We will discuss the consequences of this observation in the Discussion section below.
Elements of Communication: Context

Virtual Teams

The context consists of two components in this study, tasks and constraints. According to the definition, virtual teams are formed to complete tasks (Townsend et al., 1998). In addition, many virtual teams are temporary teams that will dissolve after the task is completed (Townsend et al., 1998). They have a relatively short life cycle (Chase, 1999). Therefore, the communications between team members are mostly task oriented (Hiltz, Johnson and Turoff, 1986).

Another part of the context is about constraints. Though embedded in the organizational structure, virtual teams are less subject to organizational regulations and inherited norms (Sproull and Kiesler, 1986; Suchan and Hayzak, 2001). Members usually rely on common purposes, cooperative goals and sometimes self-discipline to moderate behaviors (Markus, Manville and Agres, 2000).

Virtual Daily Life

Communications in VDL are usually for leisure and social purposes (Walther, 1995). Keeping touch with family and friends, meeting people with the same interests, sharing feelings and seeking information from peers are usually the reasons people conduct online communications (Lee, Vogel and Limayem, 2003). Among them, online relationship has become a large focus of the Internet studies in sociology and psychology (Bargh and McKenna, 2004). Thus, online communication is very much relationship oriented (McKenna et al., 2002).

As to the dimension of constraints, common interests are usually the only bonding among people on the Internet (McKenna et al., 2002). Therefore, people communicate in a relatively voluntary way, which means they might quit anytime they want (Anderson, 2000). This pattern makes traditional regulations irrelevant; online culture and norms play a more important role (Wellman, Salaff, Dimitrova, Garton and al. 1996). One interesting characteristic of these online culture and norms are that some of them are widely accepted regardless of the difference between cultures (Castells, 2002). One reason might be that the Internet enables people to communicate with each other all over the world in the first place (Castells, 2002). Therefore, these online culture and norms are developed mutually by people with diverse backgrounds.

Similarities in Different Contexts

Virtual communications happen for different aims in VDL and virtual teams. While the aim of CMC in virtual teams is to complete tasks, CMC in VDL is more relationship oriented (Cumming, Butler and Kraut, 2002; Townsend et al., 1998). However, under this fundamental difference there are still some similarities. One is the importance of relationship building. Though completing tasks are the final aim of virtual teams, relationship building in virtual teams plays an important role in this process (Pauleen and Yoong, 2001). The antecedents of successful virtual teams, trust, shared knowledge and frequent interaction, are all explicitly or implicitly related to relationship building. Furthermore, in the second dimension of context - constraints - virtual teams and virtual life share some common characteristics. In both cases, socially constructed norms are more important in moderating people’s behaviors than formal regulations (Suchan and Hayzak, 2001; Wellman et al., 1996). For instance, the need to maintain identity is an important incentive for proper behaviors in both settings (Castells, 2002; Markus et al., 2000).

Therefore, there are many similarities between the contexts of communications in virtual teams and VDL though they have different orientations. These similarities justify the mutual influences between virtual teams and VDL. They make these two settings comparable and thus possible to generate insights for managers. If we treat the arguments about same media and same people as the possible mechanisms by which these two settings are linked, the similarities in the contextual factors make it meaning to link them from an organizational point of view.

DISCUSSION

Though theoretically separated as virtual teams and VDL, these two areas mutually influence each other. The dichotomy between these two areas was reasonable because in the early days of virtual activities through CMC, there might be less overlap between the users of CMC in work and those of CMC in daily life due to scarce IT resources. Now, growing up in an environment of computers and networks, the young generation of future employees will be technologically sophisticated and be more like to expect virtual work settings (Townsend et al., 1998). To them, working virtually is an extension of the way they have communicated in school and socially in their daily lives. Therefore, these two settings are more likely to interrelate with each other in current and future environment.
Given the similarities of VDL and virtual teams we found above, the question for business researchers is: How will the understanding of VDL help us in the study of virtual teams? More particularly, given the argument about virtual society, how does the increase of virtual activities in daily life influence virtual teams? To answer these questions, we adopt channel expansion theory, self-efficacy and culture lens to explore the potential effects of virtual experience on the media, people and the context respectively in following sections. Our discussion reveals that experiencing VDL helps people communicate effectively virtually by improving perceived media richness, self-efficacy towards CMC and skill at creating shared mutual understanding.

Towards the Media

Media richness theory has been criticized for its deterministic view of richness (Carlson and Zmud, 1999). According to channel expansion theory (Carlson and Zmud, 1999), the perceived richness of media is actually influenced by individuals’ characteristics, experience with the media (learning effects) and the context. Among four kinds of experience, experience with the channel directly pertains to the media itself. Since people are using the same media in both virtual teams and VDL, the accumulation of experience towards the media happens in both settings. As VDL experiences increase it will in turn help to improve communication in virtual teams in terms of enhanced perceived media richness (Carlson and Zmud, 1999).

Towards the Person

Changes also happen to people who use media to communicate in VDL and virtual teams. Training in virtual communication use has been found helpful to improve communications in virtual teams (Warkentin and Beranek, 1999). In the training process, beside mastering the skill of using IT, people also change their mental perceptions (Warkentin and Beranek, 1999). Self-efficacy theory describes such a process in which individuals develop confidence in conducting certain behaviors (Bandura, 1986). According to this theory, people develop their confidence towards technologies through their experience of observing, using and evaluating them (Staples, Hulland and Higgins, 1999). Furthermore, people with higher self-efficacy tend to have better performance (Bandura, 1986).

VDL can be viewed as a self-training for team members. In this setting people expose themselves to more of these technologies and thus have more chances to develop their self-efficacy towards remote communication via ICT. Two types of self-efficacy may be enhanced by the experience in VDL: 1) computer efficacy (Compeau and Higgins, 1995), which describes the confidence in computers and networks; 2) remote work self-efficacy, which is the confidence in the remote mode of communication (Staples et al., 1999). As a consequence, people feel more comfortable and capable to use CMC and this will lead them to communicate better and achieve better outcomes in virtual teams than those with lower confidence and lower experience.

Towards the Context

Besides the tasks, culture and norms are important components of the context in which people communicate remotely (Johansson et al., 1999). Culture and norms are beliefs that cross boundaries of organizations as long as they are constructed and shared by a certain group of people (Mark, 2001). VDL has engendered shared cultures across geographic and racial communities for individuals participating in various activities online (Castells, 2002). Given the argument about the virtualization of our society, people may bring these shared cultures into virtual teams, which are part of the whole virtual environment. Shared culture means two things. First, people know each other better (Sackmann, 1992). In virtual teams, it means more experience with other parties in communication, which is believed to influence the perceived richness of media (Carlson and Zmud, 1999). Secondly, shared culture implies shared knowledge (Mark, 2001; Sackmann, 1992). Therefore, people have a better basis to understand the content of communications (Cramton, 2001). As a result, communication may be improved due to this shared culture. Furthermore, peoples’ experience in creating and adopting these VDL shared cultures can assist them in developing shared norms in their virtual team work. In other words, because they have experience in creating a sense of shared culture and norms in their VDL, they will be more successful in developing these important features of virtual teams.

In sum, VDL improves the communication in virtual teams via experience and shared knowledge. The theoretical perspectives of channel expansion theory, self efficacy theory and culture provide the mechanisms that explain such linkages. As a contribution to theory and research we have created Figure 1 to summarize the links of VDL and virtual teams from the communication perspective. This diagram depicts the three mechanisms, media richness, self-efficacy and culture, which bridge virtual teams and VDL. Individuals develop the perception of the media and self-efficacy in both settings. They actually cross the boundaries of work and daily life. Culture constructing experience in VDL is brought to virtual teams by individuals.
CONCLUSIONS AND FUTURE RESEARCH

Virtual teams and VDL have been studied for years by researchers in different disciplines. We have argued that they are closely related given their core mode of operation is via ICT. We have made a contribution to theory and research by using three theoretical perspectives to demonstrate how similarities between the two domains may be better understood.

The experiences of VDL may change the perceptions of electronic media and people. People may perceive CMC in virtual environment as richer and permitting more effective interactions and feel more confident to use it (Carlson and Zmud, 1999; Staples et al., 1999). In addition, the norms and patterns developed in virtual life enable people to develop knowledge and skills which they can then bring to their virtual team participation (Cramton, 2001). Consequently, experiencing VDL can have a positive effect on people’s communications in virtual teams.

Future Research

A basic assumption made by this paper is that virtualization of our society is a long term trend (Igbaria, 1999). Some would argue that this may not be true for the whole population. Therefore, empirical studies to reveal this trend will be important to lay out a clear background for future research.

From a communication perspective, this study explores the potential influences of VDL on virtual teams. Further empirical studies are required to test this theoretical argument. According to the proposed model (see Figure 1), four research questions are worth further empirical investigation and are listed in Table 1.

<table>
<thead>
<tr>
<th>Research question 1</th>
<th>How does VDL experience influence media perceptions in virtual teams?</th>
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<tr>
<td>Research question 2</td>
<td>How is computer self efficacy in virtual teams members influenced by their VDL experience?</td>
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<tr>
<td>Research question 3</td>
<td>How are team member relationships influenced by individual VDL experience?</td>
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<tr>
<td>Research question 4</td>
<td>How is communication and performance of virtual teams influenced by individual VDL experiences?</td>
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</tbody>
</table>

Table 1. Research questions for further investigation

Managerial Implications

Understanding how virtual life may influence communication in virtual teams also has managerial implications. People’ exposure to VDL may be an indicator of their abilities to perform in virtual teams (DeRosa, Hantula, Kock and D’Arcy, 2004) and could serve as a hiring criterion. Secondly, firms may benefit from supporting employees to purchase home computers since this would serve as the foundation for an employee’s ability to develop a capability in VDL activities.
In conclusion, putting VDL experiences into the research context of virtual teams extends our orientation in our research. A lot of research opportunities are available in this area both for business researchers and researchers in other disciplines. Studies in this area will contribute to our understanding of virtual teams, an organizing form of tomorrow (Townsend et al., 1998).

REFERENCES:


