

## **Virtual Teams In Malaysia: A Qualitative Investigation In Multimedia Super Corridor Status Companies**

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### ***Abstract***

*The proliferation of various communication technologies such as e-mail, Instant Messaging, video conferencing, audio conferencing and others in organizations today has led to the development of a special group called virtual team. A virtual team is defined as a group of people who interact through interdependent tasks by common purpose and work across space and organizational boundaries with links strengthened by webs of communication technologies. A virtual team works with its members scattered across regions with time and cultural differences. These factors pose a challenge to team members in creating and developing a dynamic and productive team. Thus, the aim of this study is to understand virtual teams and its working environment in MSC status organizations. The study uses qualitative method that is in-depth interview with semi-structured and open ended questions. Interviews involving three staffs (project manager, leader and employee) from three multinational organizations such as Motorola, software development and hardware design. The interviews were recorded, transcribed and analyzed according to the thematic analysis. Study results show that work in virtual teams involving team members scattered or geographically dispersed team, the use of communication technologies and team relationship. In addition, the study also found that factors team culture, time zone differences and language contribute to virtual team working environment.*

Keywords: Virtual Team, Communication Technology and Working Relationship

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## **INTRODUCTION**

Working relationships today is increasingly 'informed', turning large portions of corporate employees in all ranks into 'knowledge workers' whose tasks are computer-mediated. This same trend allows work to be carried out over computer networks and reduces the need for collocated teams. Workers communicate instead of collaborate electronically with co-workers or with employees of other companies, relying on information and communication technologies (ICTs) in place of face-to-face discussions (Lipnack & Stamps, 1997; Rooij et al., 2007). People may work with multiple teams distributed over different geographical locations. They work across major time zones, internal business units and cultures.

Continuous developments in ICT have led to flexible and responsive organizational forms (Fulk & DeSantics, 1995; Jarvenpaa & Ives, 1994). The virtual team represents an important example of these new organizational forms (Jarvenpaa & Ives, 1994). Virtual teams are groups of geographically, temporally and organizationally dispersed knowledge workers brought together across time and space by way of ICTs (DeSantics & Poole, 1997; Norhayati, Amelincky & Wilemon, 2004). Globalization has immensely changed team strategies, ways of organization management, and the working relationship that was managed through the usage of computers, internet and information systems. With globalization, many multinational corporations are increasingly employing virtual teams. It was reported that 137 million worker worldwide are involved in some form of remote electronic work (Solomon, 2001; as cited by Norhayati & Shafiz, 2009).

Virtual teams have become important as organizations operate in dispersed geographic context where organizations need to increasingly draw on work processes not confined to one immediate geographical locale and expertise in different parts of the world (Harowitz, Bravington & Silvis, 2006). Second, they have become important as new modalities of communication emerge such as work processes design and time cost reduction (Preiss, 1999). Thirdly, sound business reasons may underpin the rationale for virtual work. These include reduced workspace costs, increased productivity, new ways of enhancing customer service, better access to global markets and environmental benefits (Cascio, 2000).

In this article, we present the phenomenon of virtual teams in Malaysian organizations. The study conducted identifies the phenomenon in a virtual work environment. Based on detailed literature review and discussion, this paper focuses on the following question: What are the views of respondents (employees in MSC status companies) when working in a virtual team environment?

### **What is a Virtual Team?**

A virtual team is an evolutionary form of a network organization (Miles & Snow, 1986). They use advanced ICTs to interact. Members seek to collaborate productively while geographically dispersed. Virtual teams are groups of people working on interdependent tasks. They are geographically distributed, conducting their core work mainly through an electronic medium and share responsibility for team outcomes. They are often 'far-flung' not only regionally but globally, working in the same company and further down the value chain. They may be 'communication challenged, task challenged and culturally challenged' (Malhotra, 2003).

Virtual teaming environments are more likely to include with members who represent different cultures than teams with collocated teams (Duarte & Synder, 2001). Cultural is a set of values shared by a group people, frequently used to distinguish one group from another. Virtual teams may face cultural challenges such as national culture, organizational culture and functional culture (Duarte & Snyder, 2001; Beamer & Varner, 2008). Each team member brings his or her own culture, and as the team evolves, the unique blend of team members' national, functional and organizational culture creates a unique team culture. Cultural values serve as filter for one's perception of the surrounding environment, guiding behavior such as decision-making (Chudoba et al., 2003).

Language, one cultural characteristic, may be especially relevant in virtual teaming environments since most communication is mediated through ICT (Vatsyayan, 1981). Communication through language carries with not only information but often also a very strong social message, a social message which is interpreted, and sometimes also misinterpreted, within the cultural context of the speaker and listeners. Even the very way of words are pronounced carries a cultural burden with it, making people identify or not with the speaker based on national or local culture implied in the accent (Deaux, 1984). Speaking in the accepted dialect can in fact make all the difference between whether people agree or disagree with a speaker based almost purely on the manifestation of the presumed culture of the speaker (Abrams & Hogg, 1987). According to Rooij et al., (2007) virtual teams used English language for meetings across separated locations. Team leaders have difficulty in grasping the English language, and language differences in general, can lead to problems with shared understanding. The inability to communicate in English can for instance lead also to problems with team member participation in team.

While, Hartzler (1998) define a virtual team as a group of people working closely together though geographically separated and in different time zones. A virtual team may also be a 'cross-functional workgroup brought together to tackle a project for a finite period through a combination of technologies'. Virtual teams may therefore work across distance, time, culture and organizational boundaries (Langevin, 2004).

The use of communication technology has led to the creation of virtual teams. A virtual team is any team whose interactions are mediated by time, distance and technology (Driskell, Radtke & Sallas, 2003). ICTs can be used to support virtual teams in four different ways (McGrath, Hollingshead, 1994; Mittleman & Briggs, 1999). Technologies can gather and present information, such as collaborative document management systems and electronic white boards. Second, technologies help team members communicate both globally and with external organizations. Third, information technologies help virtual teams process information by providing structure systems for brainstorming, problem solving, and decision making activities. Technologies may also be used to structure the group process through meeting agendas, assignment charts and project management tools.

Virtual teams are identified by many other terminologies, for example cyberspace, dispersed, long distance, distributed and online. The more popular terminology used other than virtual team is geographically dispersed team (GDT) (Nadeem et al., 2008). GDT is a group of individuals working across time, space and organizational boundaries with links strengthened by webs of communication technology. They possess complementary skills, are committed to a common purpose, have interdependent performance and goals, and share a work approach which holds them mutually accountable. GDT allow organizations to hire and retain the best people regardless of location. Members of a virtual team communicate electronically and therefore may never meet face-to-face. However, most teams will meet at some point in time. A virtual team does not always mean tele-working. Tele-workers are defined as individuals who work from home. Many virtual teams in today's organizations consist of workers both working at home and small groups in the office but at different geographic locations (Southers, Paris-Carew & Carew, 2002).

According to Cohen and Gibson (2003), the concept of virtual teams has three main attributes. First, it is a functioning team interdependent in task management, has shared responsibilities for outcomes, and collectively manages relationships across organizational boundaries; Second, team members are geographically dispersed; and third, they rely on technology-mediated communication rather than face-to-face interaction to accomplish tasks. In essence, team members are not collocated and they use computer-mediated communication.

However, the fact that a team uses technology does not make them a virtual team instantly, because collocated teams frequently rely on technological support. What is more paramount is the degree of reliance on electronic communication which increases the 'virtuality', as virtual teams have no option as to whether or not to use it, since they depend on 'virtuality'. Virtual teams have no historical work background, and seldom meet face-to-face; in fact, team

members may not even have the opportunity to do so (Norhayati, Amelincky & Wilemon, 2004; Hertel, Geister & Konradt, 2005).

### Dimensions of ‘Virtuality’

Figure 1 provides an illustration of our view on ‘virtuality’. The horizontal axis represents the amount of time the group spends apart. The vertical axis represents the level of technological support used by the group. Note that pure virtual teams take up the far right, regardless of the level of technological support used. These teams never meet face-to-face. Virtual teams that make no use of technology may essentially be a null set, meaning they still exist as a possibility. Pure face-to-face teams form the other extreme. These teams do all their work face-to-face, and make no use of technological support. In the current technology environment, pure face-to-face teams may also be rare. A vast majority of today’s teams are likely to fall into a hybrid category of teams composing of people who interact according to needs of the moment, through media and with the amount of face-to-face contact determined by their own structure (Griffith & Neale, 1999; p. 7-8).

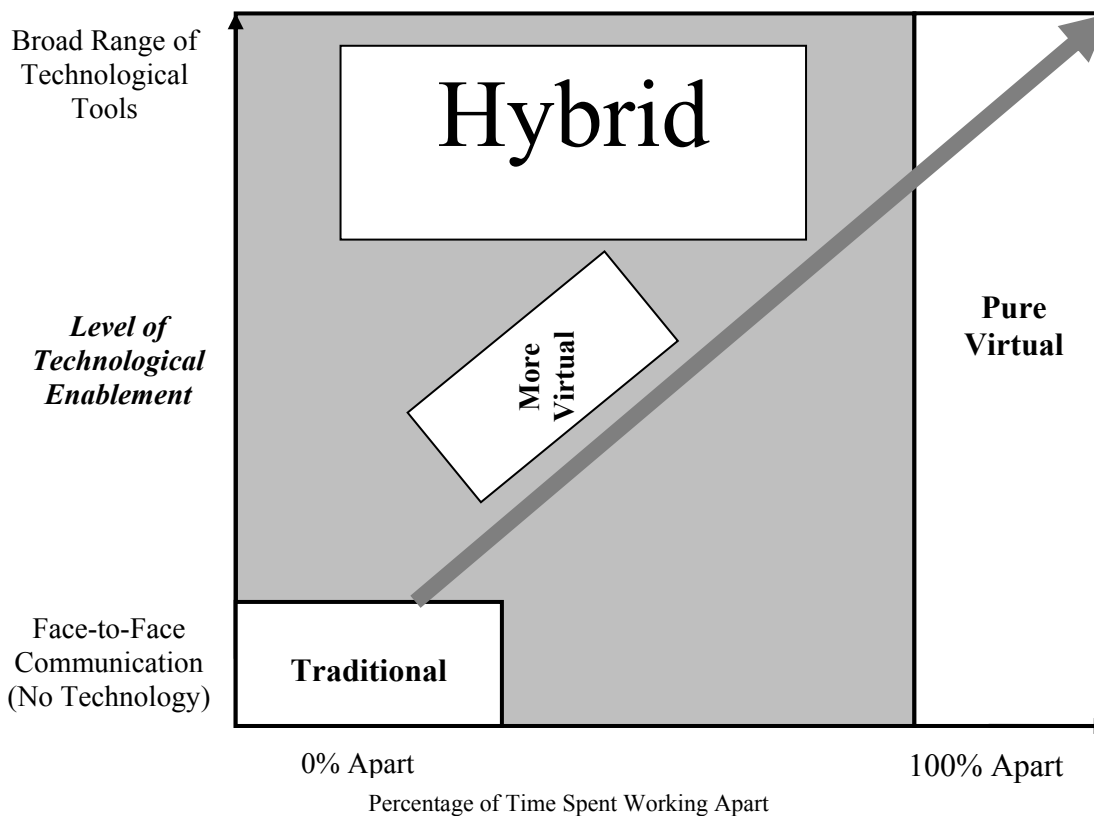


Figure 1: Dimension of Virtuality

Source: Griffith, T.L. & Neale, M.A. (1999). *Information processing and performance in traditional and virtual teams: The role of transactive memory*. Research Paper Series. Graduate School Business, Stanford University: Stanford, CA

## Dimensions of Time and Place

Information technology supporting communication between virtual team members is frequently categorized along two dimensions of time and place (O'Hara-Devereaux & Johansen, 1994). The dimension of time refers to whether the communication tool supports communication occurring synchronously (at the same time) or asynchronously (at different times). Synchronous communication allows members to communicate with one another simultaneously or at the same time, as in a face-to-face conversation, telephone call, video conferencing session, or chat room discussion. For computer-mediated communication to be synchronous, computers must be linked together in real time. Asynchronous communication on the other hand occurs when communication between team members is not simultaneous and does not occur at the same time. Common asynchronous forms of communication are e-mails, shared database systems, and bulletin boards (an electronic notice board where users post notices).

The dimension of place refers to whether the tool allows for collocated (same place) communication or non-collocated (dispersed/different places) communication (Nemiro, 2004). Combining these two dimensions yields four separate categories in which some common technologies used by virtual teams can be classified, as shown in Figure 2.

Same Time and Same Place	Same Time and Different Place
Face-to-face meetings	Audio conferencing
Computer meetings	Video conferencing
	Chat technology (IRC)
Different Time and Same Place	Different Time and Different Place
Shared file on a network	Voice mail
Bulletin board	E-mail
Web pages	Intranets
	Threaded discussion

Figure 2: Dimensions of Time and Place

Source: Nemiro, Jill E. (2004). *Creativity in virtual teams: Key components for success*. San Francisco: John Wiley & Sons, Pfeiffer.

For most individuals, communicating at the same time and at the same place is the most comfortable type of interaction, as in face-to-face meetings. Virtual teams may incorporate varying amounts of face-to-face interaction, especially early on to develop a sense of trust among team members before beginning to work together from a distance. However, this mode of communication is not the predominant form of communication for virtual teams. Virtual team members may also communicate with one another at different times and places (for example through e-mail, voice e-mail, fax machines, computer conferencing and shared database systems). They may also interact at the same time but from different places (for example company meetings or training programs with team members or trainees at different locations linked together at the same time through audio, video, or computer conferencing). In addition, although team members may work at the same place, they may be physically present at different times through shared work stations (Nemiro, 2004)

At the juncture of same time and same place and different time and different place interactions is communication that can be engaged anytime and anyplace. The key to establishing an anytime and anyplace workplace is mobility, consisting of portability and connectivity wherever one is (O'Hara-Devereaux & Johansen, 1994). Technology supporting portability and

connectivity include lightweight laptop computers, modems and cellular phones. O’Hara-Devereaux and Johansen (1994) stated that users may need to “prepare to go to work in the anytime / anyplace office with (indeed probably wearing) a wide range of portable, task-specific computer devices capable of performing such-on-the road jobs as calendaring and note-taking, document reading, or voice and text communications” (p. 88).

**Theory: A Science System of Virtual Teams**

“General systems” provide the theoretical infrastructure for a science network. From that well-established base, particularly in social science, Lipnack and Stamps (2000) developed a simple model with four dimensions: people, purpose, links and time (Figure 3). With this theory, the principles, practice, and place that a virtual team utilizes can be threaded with consistency. Instead of virtual work being haphazard and sloppy, such an approach gives integrity and solidity to what appears impromptu and random. The team structures its information and consciously manipulates it within a context the team itself creates.

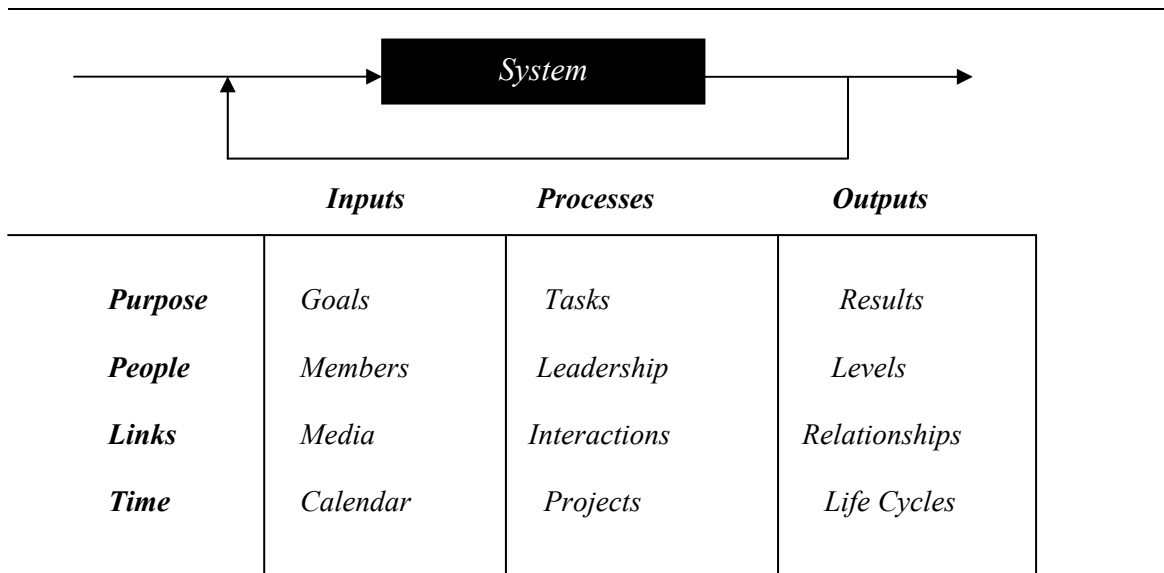


Figure 3: The Elements of a Virtual Team

Source: Lipnack, J. & Stamps, J. (2000). *Virtual teams: People working across boundaries with technology* (2<sup>nd</sup> ed.) New York: John Wiley & Sons, Inc.

**Elements of a Virtual Team**

To account for all the essential characteristics a virtual team must possess, the three elements - model of inputs, processes, and outputs will be discussed in detail to understand ways of managing virtual teams.

**i. Purpose**

Cooperative goals	Do
Interdependent tasks	Doing
Concrete results	Done

According to Lipnack and Stamps (2000), the concept of purpose defines objectives and why teams work together. Purpose implies some minimal level of interdependence among the people involved. Virtual teams are far more reliant on their purposes than face-to-face are. Because they operate outside of traditional organizational life without bureaucratic rules and regulations, virtual teams require a common purpose to stay in tune.

Cooperative goals are what purpose looks like at the beginning of any successful teaming process. A set of interdependent task and a signature feature of teams connect desires at the beginning with outcomes at the end. When a team finishes, it has concrete results, the final expressions of its purpose, and the measurable outputs of joint effort. These three elements – cooperative goals, interdependent task, and concrete results – enable virtual teams to stay focused and productive (Lipnack & Stamps, 2000).

## **ii. People**

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Independent members	Parts
Shared leadership	Parts as whole
Integrated levels	Wholes

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People are the special challenges faced by virtual team members. Independent members, the people and group who make up the team, must act with a significant degree of autonomy and self-reliance. While virtual team leadership tends to be informal, it is also pervasive. The diverse technical and management expertise required means that members share leadership at different points in the process. In cross-boundary and cross-cultural work, shared leadership is the norm. A team is a complex human system with a minimum of two organization levels – the members' level and the group level as a whole. Teams are also part of a larger system, growing out and embedded in organizations. To be successful, virtual teams must integrate levels both internally (sub-teams and members) and externally (peers and sub-groups) (Lipnack & Stamps, 2000).

## **iii. Links**

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Multiple media	Channels
Boundary-crossing interactions	Communicating
Trusting relationships	Bonds

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People need actual physical connections – wires, phones, computers, and the like – as these are the prerequisites for interaction. Multi media transforms virtual teams from being extraordinary to ordinary, as the technology wave of Information Age mainstreams. Connections make boundary – crossing interactions possible. The back-and-forth communication among people – activities and behaviors – constitutes the actual process of work. It is here the boundaries of interaction for virtual teams are truly different. Through interactions near and far, people develop trusting relationships, the invisible bonds (and baffles) of life. Peoples' pattern behaviors mark the outlines of relationships that persist and feed back into subsequent interactions. As important as positive relationships and a high level of trust are in all teams, they are even more important in virtual teams. The lack of daily face-to-face time which offers opportunities to quickly clear things up can heighten misunderstanding. For many distributed teams, trust substitutes hierarchical and bureaucratic controls. Virtual teams with a high level of trust return this valuable social asset to their sponsoring organizations for use in future opportunities to cooperate (Lipnack & Stamps, 2000).

**iv. Times**

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Coordinate calendars	Dates
Track projects	Durations
Follow life cycles	Phases

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Collaboration requires parallel work and mutually agreed-upon dates. In virtual practice, this means a need to coordinate calendars for having conversations and executing work. Virtual teams naturally track projects as they carry out their activities largely in cyberspace, thus ensuring collaborative feedback and learning. The most successful virtual teams consciously follow life cycles of team behaviors. Forming, storming, norming and performing all require extra effort, higher awareness, and greater participation by group members to manage wholly. Each team has its own unique clock (Lipnack & Stamps, 2000).

**METHODS**

This section is divided into three sections, comprising of the concept of a qualitative method, sample and semi-structured interviews, and location and data analysis.

**Qualitative Method**

**The Significance of a Qualitative Approach**

The significance of using a qualitative approach lies in the advantages that it is exploratory and useful when researchers do not know the important variables to examine (Creswell, 1998, 2003). According to Denzin and Lincoln (2000), a qualitative approach is “concerned in capturing the individual’s point of view” and in the need for “securing rich descriptions” (p. 10). In comparison, they argue that “quantitative researchers are deliberately unconcerned with rich descriptions because such details interrupt the process of developing generalization”. Nevertheless, qualitative and quantitative approaches seek to achieve different emphases. In this context, Patton (2002) notes that:

“Qualitative methods facilitate study of issues in-depth and detail. Approaching fieldwork without being constrained by predetermined categories of analysis contributes to the depth, openness and detail of qualitative inquiry. Quantitative methods, on the other hand, require the use of standardized measures so that the varying perspectives and experiences of people can be fit into a limited number of predetermined response categories to which numbers are assigned”



Figure 4: Dimensions for Comparing Five Research Traditions in Qualitative Research

<b>Dimension</b>	<b>Biography</b>	<b>Phenomenology</b>	<b>Grounded Theory</b>	<b>Ethnography</b>	<b>Case Study</b>
Focus	Exploring life of an individual	Understanding the essence of experiences about a phenomenon	Developing a theory grounded in data from the field	Describing and interpreting a cultural and social group	Developing an in-depth analysis of a single case or multiple cases
Discipline of Origin	Anthropology Literature History Psychology Sociology	Philosophy Sociology Psychology	Sociology	Cultural Anthropology Sociology	Political science, sociology evaluation, urban studies, other social sciences
Data collection	Primary interviews and collection	Long interviews with up to 10 respondents	Interview with 20-30 respondents 'to saturate' categories and detail a theory	Primary observations and interviews with additional artifacts during extended times in the field (e.g. 6 months to a year)	Multiple sources – documents, archival records, interviews, observations, physical artifacts
Data analysis	Stories Epiphanies Historical events	Statements Meanings Meaning themes General	Open coding Axial coding Selective	Description Analysis Interpretation	Descriptions Themes Assertions

Source: Creswell, J.W. (1998) *Qualitative inquiry and research design: Choosing among five traditions*. London: Sage Publications. (p 14).

The advantages of a qualitative approach compared to a quantitative approach were highlighted as it is preferable with the aims of this research. Creswell (1998) noted that there were five philosophical assumptions that guide the design and are central to all good qualitative studies. These assumptions relate to the nature of reality (ontology issue), the relationship of the researcher to that being researched (epistemological issue), the role of values in a study (axiological issue), and the research process (methodological issue) (Figure 4). These philosophical perspectives provide guidance to the researcher to consider similar issues underpinning the whole process of the research as discussed in this paper.

In this study, we use the qualitative method approach using phenomenology. It aims at getting feedback and explaining the phenomenon. This approach also enables explanation, interpretation and a wide understanding about anything, including the introduction of themes and categories, and is able to provide detailed information about the case reviewed (Meriam, 1998).

### **Sample and Semi-Structured Interviews**

A series of semi-structured interviews were held with virtual team staffs (project manager, leader and employee: N=3) from three multinational organizations (MSC status companies) in several business domains, such as Motorola, software development (organization A) and hardware design (organization B). The virtual teams were working on a range of tasks, such as development of diverse software and hardware applications, product development, asset commercialization, innovation management, knowledge and experience sharing, human resource, global purchasing, global ICT support, and global cost reduction initiatives on different levels within, or across organizations.

We chose three respondents as this research was only a primary study. Pilot interviews were conducted to test the instrument by interviewing groups or individuals experienced and knowledgeable on the phenomenon examined (Sim & Wright, 2000; Frey & Fontana, 1993). Pilot interviews were aimed at testing diverse question items, words, paragraph styles, understanding, and response from respondents. These pilot interviews served as a "dress rehearsal", in which the intended data collection plan was used as faithfully as possible as a final test run (Perry, 2001; Yin, 1994).

Before the interviews, the researcher conducted a short interview (through telephone) to gather background information on overall task, team size, structure and ICT availability. In-depth interviews (face-to-face interaction) focused in context of these teams (e.g. phenomenon virtual teams, virtual work environment and interaction through electronic communication). During in-depth interviews respondents were asked three questions (e.g. Can you tell me whether your company practices virtual teams?; How do you describe work in virtual teams?; What are the electronic communications you frequently use to interact with team members? Why?).

### **Location and Data Analysis**

Interviews were conducted in Penang (Motorola) on April 16, 2009; Putrajaya (Organization A) on April 28, 2009, and Cheras, Kuala Lumpur (Organization B) on July 30, 2009. Interviews were conducted fully in Malay. Each interview lasted between 45 minutes and an hour. Interviews were recorded and transcribed. Data was then analyzed using a thematic analysis method. In this study, the data was analyzed in Malay and translated into English. The names of respondents and two organizations (organization A and organization B) were changed for confidentiality purposes.

## RESULTS

The following section discusses the qualitative results and comments from respondents. The results are discussed in order of the overall categories of a virtual team environment. Below is a debate on employees' views on the virtual team phenomenon:

### (i) Geographically Dispersed Team

Interviews conducted with three employees reveal that they utilize virtual teams (geographically dispersed team) in their organizations.

*Work in a virtual team? ... I definitely work in a virtual team... My team members are scattered all over, some are in Johor, Kedah and there is even a team in US... My team is not set... it depends on projects... like this company... we develop software development for our branch in Johor... setting up a new product for the branch over there... we need to communicate with each other... when we first got this project, we used face-to-face communication once, and went to Johor to ascertain the smoothness of the project... when I was satisfied with the implementation, I ordered my team members to report to me... there were three of them there... all dependable on doing their work... (Aini)*

*Like Motorola, yes it is a virtual team. It is scattered, separate and starting of the product... Motorola has their own product... like I said, the engineers are here, but the master product could be anywhere... Motorola is different, like I say, we want to develop products... we want input from every region... just say for example Motorola... its headquarters is in the US... we also have special key expertise in Germany, China... (Rita)*

*This company deals with hardware design and is a Japanese company... team members are in Japan, also in Kuala Lumpur, Penang... when you mentioned the criteria for a virtual team..., yes this company does have virtual teams... scattered, and uses communication technologies to communicate with team members related to the company product... (Cho)*

### (ii) Use of Communication Technologies

ICTs can be used to support teamwork in a working relationship. Team members can communicate with each other in the same or different places. The most popular communication tools used by teams in this study were e-mail, video conferencing and audio conferencing.

*In terms of using communication technologies, yes... I usually use video conferencing, at least once a week to communicate with team members regarding progress of a project or important matters that need my decisions... this saves time and cost, there is no need to go to Johor, and anyways here in Kuala Lumpur I have to also lead other team members... sometimes team members in Johor will e-mail or call me through hand phones... but I will make sure all my team members are able to finish their projects within the given time frame by communicating through CMC with them, of course sometimes differences in opinions arise especially through video conferencing, sometimes non-verbal expressions are important to see my team members' facial expressions, whether they are satisfied or not with the decisions I made... when projects are successful and I see the happiness in team members during video conferencing, I am satisfied (happy) and team members also enjoy and are satisfied with their achievements during the communication in video conferencing... (Aini)*

*In terms of frequency it usually depends on which phase the project is in, during the initial stage (phase where the new product develops) we communicate a lot because many decisions have to be made, even simple things like what color should be put on the product, what product to use to keep the environment safe, whether or not to plumb trees communication is usually through e-mail and actually starts with a net meeting, video conferencing and call conferencing we do not always do but during the initial stages we have to (net meeting, video conferencing and call conferencing) because we need to see the person, it is simpler, so video conferencing is excellent, because sometimes we need to show some things... but as the project goes on, and we already have a clear picture, we share the same file attachment, then we do not need video conferencing... certain technology like IM (Instant Messaging) is sufficient... more frequent use of video conferencing when many decisions have to be made during the initial phase of the project... (Rita)*

*The use of e-mail is frequent as this company has a branch in Penang...when there is a need for a meeting regarding urgent management matters in Penang, we communicate through video conferencing, set the meeting time... sometimes we also use audio conferencing, it saves cost... there is no need to use phones, we never met face-to-face with team members in Penang... for the team in Japan, I frequently use video conferencing and audio conferencing... sometimes e-mail to attach documents... I have also not met face-to-face with the Japanese team, we only communicate through technology... (Cho)*

### **(iii) Team Culture**

A virtual team environment is more likely to include members representing different work cultures than teams with collocated members. The team culture may also influence their performance and decision making.

*In terms of culture, in my experience working with the US people, they need much justification, for example, say I want to color this product red... the US people asks why? Why did I choose that color? Is it suitable etc? If they reject it, then there is no talking out of it, we must follow what they want... I have a lot of experience working with the US people... every time there is a meeting with them, I have to prepare a content or justification... one thing that the US people are very particular about is decision making...I have to give strong reasons before they make any decision... the US people have a high value of individualism which makes me feel very pressured every time there is a discussion with them... (Aini)*

*But at Motorola, no matter whether you stay in China, Germany or even Israel, we share the same organizational culture... in terms of communication on understanding, it is the same because we are from the same organization. Motorola has set a culture... so when you join Motorola you automatically have a Motorola team culture... you behave like Motorola... but there are some values that go according to religion, for example Muslims cannot shake with outsiders (e.g men cannot shake hands with women)... but internally we share the same organizational culture... of course differences in opinion exist... but because Motorola shares the same goals... but I have noticed that in a virtual team... when the US people says No... it is No... Malaysians on the other hand may change their mind, sometimes No can be changed into Yes... Normally the engineer is the one that has more say... engineers communicate a lot through CMC... (Rita)*

*When I joined this company, I was told earlier on by my leader that I must be competitive and cooperate with my team... and at the same time achieving the necessary target or aim of the company within a set period of time... My employer is Japanese... working with a Japanese company, we must be disciplined and adhere to meeting times or project datelines... cooperation is high and efforts are appreciated... commitment and team loyalty is the key to success when*

*handling a project... Whilst discussing or there is a work problem, every team must work together to overcome it... even though my leader is fussy in work, but he still discusses together with his team members... the working culture of the Japanese is to be competitive to improve self and also the organization... my experiences interacting with the Japanese, whether using face-to-face communication or electronic communication, working with them is definitely different... (Cho)*

#### **(iv) Language**

All virtual teams in this study used English for meetings across geographically separated locations. Respondents in this study mentioned that difficulty to interact in English was one of the phenomena existing in virtual teams.

*I noticed that if I have a problem with the China team, it is because sometimes their grasp of English is not strong, therefore when we need to understand what they are trying to say, I will just ask my Chinese team member to talk in Chinese... it is faster and after that my friend will translate it for me... when the China people try communicating in English, they become slow, as they are not fluent... so it is better to let them speak in Chinese and let my friend translate for me, that way it is faster and more effective... (Rita)*

*When my boss first asked me to attend a meeting with the US people, I had problems understanding their style... meaning their slang... even though Malaysian English and US English is the same, it sounds different... some words that they pronounce are difficult to be understood and I was forced to ask them repeatedly what they were saying... I do not really understand what they are saying... (Aini)*

*Some Japanese are also not literate in English, therefore there exists a communication problem... luckily I have a team member working in Malaysia who is originally from Tokyo to translate for me... there are also team members from Japan who can interact in English, which makes my job easier... (Cho)*

#### **(v) Time Zone**

Time zone is a dimension that virtual teams working across multiple time zones and countries have to deal with. Schedules, milestones, calendars, processes, coordination, and life cycle are some examples of what time zone affects.

*For example if we want to communicate between US and Malaysia, it depends. Sometimes the Malaysians have to stay back or work nightshift because our time difference is, for example, US is 8.00AM, Malaysia will be 8.00PM... Germany is easier... theirs is 8.00AM, ours is 3.00PM... China is even easier because the difference is only one or two hours... so it depends, if we need the whole team to sit down together that means we have to set a day to work nightshift, due to the difference in time zone yet there is a discussion going on... (Rita)*

*Of course there is a difference in time... because the time in Malaysia and the US is different... but there is no problem meeting the US people... as there is video conferencing... we communicate with each other... we will arrange a time with the US people before communicating through video conferencing... there was a time when the US people wanted a meeting at 10.00AM, Malaysia was 10.00PM... so I had to be in the office at 10.00PM... I have experienced that due to meetings with them... there is no choice... this is work... (Aini)*

*I have had a meeting where the Malaysian time was 9.00AM while the time in Japan was 10.00AM... due to different time zones, we have to arrange a meeting time early on if we want to have a meeting with team members from Japan... we cannot be late even for one minute if we have meetings with team members from Japan, they are very punctual... (Cho)*

#### **(vi) Team Relationship**

Team relationships are built with the approval of team members based on certain norms. Respondents in this study stated that a team relationship must include trust, leadership style, power, performance and satisfaction.

*For me, there is no problem working with technology... the facilities are there for us to use... the problem is with team work... relationship with team members is important... sometimes team members are dissatisfied when projects do not follow dateline or there are misunderstandings...of course I would not be satisfied with their performance, because we have datelines and it involves cost... but we settle it professionally, by identifying the problem... working in a virtual team, it is important to have trust in each other... I trust that my team will do their work and we share the same goal... another thing is that working in this team, I have to listen to all views from the team. If there is a problem with the project, we discuss it and everyone provides input and makes decision... (Aini)*

*it depends on the individuals' characteristic... whether or not the person is dominant... a leader's characteristic... some leaders listen, some don't... if you work at Motorola, I do not think many are too dominant... there is none in Motorola... the leader will listen to all inputs from team members... a team comprises of different units and expertise, then there is a project manager... as a project manager, he may not know what our concerns are in supply change... he has to listen to inputs from supply change, or maybe he knows but then what are the problems that supply change causes? For example, he knows that some supplies take 10 weeks... but he does not know that a member from supply change might say: oh but we can order in advance or we can have monthly consumption which we can revise... so he has to accept all inputs... depending on the individual characteristic and in terms of work, he must listen to every team member... (Rita)*

*it is difficult bonding with unknown team members during the early stages if we interact using technology... dissatisfaction between team members will arise... then there is the leader who always reminds me that our work must be of quality... these add to my working stress... there are also team members who hold all the power and dominance in decision making... only his idea is correct... this fuels the difficulty in handling the team members... but as a project manager, I remind my team about commitment and loyalty, not only for themselves but also for all team members... we also have to take into account ideas and views of other team members... till this moment I have had a good relationship with my team members no matter whether they are in KL, Penang or Japan... team members must be given the trust to participate in discussions and contribute ideas... I have a good relationship with my leader there are no problems even though he is fussy and hardworking... (Cho)*

## **DISCUSSION**

Discussion results of this study is divided into six themes, namely:

#### **(i) Geographically Dispersed Team**

The aim of this study to identify the phenomenon working in virtual teams. Research shows that organizations in Malaysia practice a virtual team working. It is also known as geographically dispersed team (GDT) (Nadeem et al., 2008). GDT is a group of individuals working across time, space and organizational boundaries with links strengthened by webs of communication technology. They possess complementary skills, are committed to a common purpose, have

interdependent performance and goals, and share a work approach which holds them mutually accountable. GDT allow organizations to hire and retain the best people regardless of location.

According to one of informan interviewed in this study *“Like Motorola, yes it is a virtual team. It is scattered, separate and starting of the product... Motorola has their own product... like I said, the engineers are here, but the master product could be anywhere... Motorola is different, like I say, we want to develop products... we want input from every region... just say for example Motorola... its headquarters is in the US... we also have special key expertise in Germany, China...” (Rita)*

Working in virtual teams also involve team members in Malaysia and overseas. Team members everywhere. For example, there informan state *“I definitely work in a virtual team... My team members are scattered all over, some are in Johor, Kedah and there is even a team in US...” (Aini)*. Based on the feedback two informan, it shows that organizations in Malaysia working in virtual teams. Their team members from various geographic locations. Working with team members separated by a distance requires a channel to facilitate interaction work.

## **(ii) Use of Communication Technologies**

Interaction virtual teams use technology as a medium of communication work. Team member have adopted a variety of new communication technologies (Levi, 2007). These new forms of team communication include electronic mail (e-mail), Instant Messaging, video conferencing and audio conferencing.

One example of an interview about the use of communications technology informan are as follows *“The use of e-mail is frequent as this company has a branch in Penang...when there is a need for a meeting regarding urgent management matters in Penang, we communicate through video conferencing, set the meeting time... sometimes we also use audio conferencing, it saves cost... there is no need to use phones, we never met face-to-face with team members in Penang... for the team in Japan, I frequently use video conferencing and audio conferencing... sometimes e-mail to attach documents... I have also not met face-to-face with the Japanese team, we only communicate through technology...” (Cho)*. From the results of this study, researchers found that informan use e-mail to interact. In fact, studies prove that the staff has been using new technologies such as video conferencing and audio conferencing to meet or make a call. Use this new technology can save costs.

Communication technologies have had widespread effects on team members (Levi, 2007). Technology directly affects work design, and communication patterns (Sproull & Kiesler, 1991). The primary goals of virtual teams are to improve task performance, overcome the constraints of time and space on collaboration, and increase the range and speed access to information (McGrath & Hollingshead, 1994). These goals are related to the direct of technology. The use of communication technologies has increased amount of communication, easier connection to others, and improved planning and decision making (Levi, 2007).

There is an example informan opinion about the use of communication technology for work design in virtual team:

*“In terms of frequency it usually depends on which phase the project is in, during the initial stage (phase where the new product develops) we communicate a lot because many decisions have to be made, even simple things like what color should be put on the product, what product to use to keep the environment safe, whether or not to plumb trees communication is usually through e-mail and actually starts with a net meeting, video conferencing and call conferencing we do not always do but during the initial stages we have to (net meeting, video conferencing and call conferencing) because we need to see the person, it is simpler, so video conferencing is excellent, because sometimes we need to show some things... but as the project goes on, and we already have a clear picture, we share the same file attachment, then we do not need video conferencing... certain technology like IM (Instant Messaging) is sufficient... more frequent use of video*

*conferencing when many decisions have to be made during the initial phase of the project...”*  
(Rita)

Based on the example informan opinion can be proven that the use of technology depends on the level of development projects. In the early stages, many decision-making and communication between team members is required. Then held a meeting via video conferencing. Informan also use audio conferencing, Instant Messaging or e-mail to interact with other team members.

### **(iii) Team Culture**

A team's culture is the shared perception of how the team should operate to accomplish its goals. Team norms, member roles, and patterns of interaction are included in the team culture. Teams do not develop their culture from scratch; they incorporate cultural norms and values from their organization and society (Wheelan, 2005).

Virtual teaming environments are more likely to include with members who represent different cultures than teams with collocated teams (Duarte & Synder, 2001). Virtual teams may face cultural challenges such as national culture, organizational culture and functional culture (Duarte & Snyder, 2001; Beamer & Varner, 2008). Each team member brings his or her own culture, and as the team evolves, the unique blend of team members' national, functional and organizational culture creates a unique team culture. Cultural values serve as filter for one's perception of the surrounding environment, guiding behavior such as decision-making (Chudoba et al., 2003).

For example, quotes an interview informan about his experience working with team members from different cultural backgrounds:

*“In terms of culture, in my experience working with the US people, they need much justification, for example, say I want to color this product red... the US people asks why? Why did I choose that color? Is it suitable etc? If they reject it, then there is no talking out of it, we must follow what they want... I have a lot of experience working with the US people... every time there is a meeting with them, I have to prepare a content or justification... one thing that the US people are very particular about is decision making...I have to give strong reasons before they make any decision... the US people have a high value of individualism which makes me feel very pressured every time there is a discussion with them...”* (Aini)

Informan interview results show that working with team members from the U.S. have a different culture. Culture is the discussion and decision making in teams. Working with the U.S. requires a strong reason or justification in the decision-making. These groups have high value of individualism.

### **(iv) Language**

Language, one cultural characteristic, may be especially relevant in virtual teaming environments since most communication is mediated through ICT (Vatsyayan, 1981). Communication through language carries with not only information but often also a very strong social message, a social message which is interpreted, and sometimes also misinterpreted, within the cultural context of the speaker and listeners. Even the very way of words are pronounced carries a cultural burden with it, making people identify or not with the speaker based on national or local culture implied in the accent (Deaux, 1984). According to Rooij et al., (2007) virtual teams used English language for meetings across separated locations. Team leaders have difficulty in grasping the English language, and language differences in general, can lead to problems with shared understanding. The inability to communicate in English can for instance lead also to problems with team member participation in team.



The following are two examples of the views or results interviews informants about language

*“I noticed that if I have a problem with the China team, it is because sometimes their grasp of English is not strong, therefore when we need to understand what they are trying to say, I will just ask my Chinese team member to talk in Chinese... it is faster and after that my friend will translate it for me... when the China people try communicating in English, they become slow, as they are not fluent... so it is better to let them speak in Chinese and let my friend translate for me, that way it is faster and more effective...” (Rita)*

*“When my boss first asked me to attend a meeting with the US people, I had problems understanding their style... meaning their slang... even though Malaysian English and US English is the same, it sounds different... some words that they pronounce are difficult to be understood and I was forced to ask them repeatedly what they were saying... I do not really understand what they are saying...” (Aini)*

Based on analysis of interviews, the English language became the main medium of interaction in virtual teams. However, team members have trouble interacting with other team members from China and the US. This is because there is a virtual team member from China cannot speak English. There is also a member of the team in Malaysia difficult to understand conversation US team members. Their English pronunciation different.

#### **(v) Time Zone**

According to Orlikowski (2002) virtual team work with collaboration across time zones. Duarte and Sydner (2001) stated that teams face more complexity when members across multiple time zone, in large part because of increased difficulties in scheduling and coordinating work activities. Maznevski and Chudoba (2000) also stated that the importance of establishing a predictable rhythm of communication exchange, which become increasingly challenging when team membership encompasses different time zones.

Based on this literature review, the study results show that there is a virtual team in Malaysia working across boundaries of time zones with different team members at the other country (US, China, Japan and Germany). Here is an example of interview informant about time zone:

*“For example if we want to communicate between US and Malaysia, it depends. Sometimes the Malaysians have to stay back or work nightshift because our time difference is, for example, US is 8.00AM, Malaysia will be 8.00PM... Germany is easier... theirs is 8.00AM, ours is 3.00PM... China is even easier because the difference is only one or two hours... so it depends, if we need the whole team to sit down together that means we have to set a day to work nightshift, due to the difference in time zone yet there is a discussion going on...” (Rita)*

*“I have had a meeting where the Malaysian time was 9.00AM while the time in Japan was 10.00AM... due to different time zones, we have to arrange a meeting time early on if we want to have a meeting with team members from Japan... we cannot be late even for one minute if we have meetings with team members from Japan, they are very punctual...” (Cho)*

#### **(v) Team Relationship**

Effective virtual team members not only fulfill the team's objective but also, in the process built up team relationship. Team relationship includes trust, leadership style, power, performance and satisfaction. According to Duarte and Sydner (2001) trust is critical structural and cultural characteristics that influences the team's success, performance, satisfaction, and collaboration. Without trust, building a true team is almost impossible.

Trust has been defined as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (p. 712) (Mayer, Davis & Schoorman, 1995). Trust involving the relationship between those who believed and those who give trust. Lack of trust occurs if there is one party does not have confidence in the competence and motivation to perform work as directed (Van der Smagt, 2000).

Meanwhile, leadership is a process in which an individual influences the progress of team members toward attainment of a goal (Levi, 2007). Leadership also plays an important role especially working in virtual team. Virtual teams require new ways of working across boundaries through systems, processes, technology and people (Duarte & Sydner, 2001), which require effective leadership. Despite the widespread increase in virtual teamwork, there has been relatively little focus on the role of leaders within these teams (Bell & Kozlowski, 2002).

According to Levi (2007) leaders in virtual teamwork vary in the power or authority they possess. When a leader is assigned by an organization, the leader, the leader may have the authority to make the team’s decisions. It is then up to the leader to decide how team decisions should be made. At the same time, virtual team leaders also need have new competencies and skills include technological proficiency and appropriate use of technology, cross-cultural management skills; ability to coach distant team members; ability to build trust among dispersed team members, networking with others outside the team, such as customers or other stakeholders; and remote project management skills (Nemiro, 2004).

Virtual team relationship also associated with the team performance. Team performance refers to the actual output of the team efforts in terms of product, service or meeting goal and timeline (Liu & Burn, 2006). According to Lurey and Raisinghami (2001) team performance refers to output teams, products or services, and meet the required standards. It is determined by the supervisor should examine the output, or evaluated by the customers who receive products or services. Therefore, a person is outside the limits and be responsible for assessing the level of team effectiveness.

There are certain steps to ensure successful team performance. According to Twomey and Kleiner (1996), the first step in creating a team for success is to establish a common goal for the team to create the direction for the team. Then, it is the team leader’s responsibility to inspire the entire team member to commit to this performance goal. Guidelines on specific objectives to be achieved, and timelines will then be clarified so that the members will know exactly what the expectations are. Thus, promote the possibilities of achieving the set goals.

Apart from the team performance, team member satisfaction in key virtual team relationships. Team member satisfaction is defined as a positive and pleasant emotions as a result of experience rating or any work in teams (Nelson & Quick, 2002). It involves the positive feelings and beliefs. It can be built through good working conditions, affordable and high reward opportunities and promotion of good. Satisfaction in the work force available to reduce absences and turnover even if it does not necessarily improve performance.

Satisfaction is the individual level feel satisfied as a team member. It is the attitude that was born based on what has happened in the team. When team members have high satisfaction, members tend to feel satisfied with the state team. As a member of team, members need to know some things about the team and satisfaction have also involving elements of dissatisfaction known to the team members of the team (Keyton, 2006).

Briefly, the concept of satisfaction team members work may be referred to a sense of fun and forward a member (Locke, 1976; Middlemist et al., 1983; Bullock, 1984), and when team members feel satisfied with the work he or she was doing and the level of working environment that meet its requirements.

Based on literature reviews, the virtual team relationship is important in the formation of teams. This was due to distance and background of different team members may complicate relations team. Under this, there are examples of the results of interviews informan virtual team relationship:

*“For me, there is no problem working with technology... the facilities are there for us to use... the problem is with team work... relationship with team members is important... sometimes team members are dissatisfied when projects do not follow dateline or there are misunderstandings...of course I would not be satisfied with their performance, because we have datelines and it involves cost... but we settle it professionally, by identifying the problem... working in a virtual team, it is important to have trust in each other... I trust that my team will do their work and we share the same goal... another thing is that working in this team, I have to listen to all views from the team. If there is a problem with the project, we discuss it and everyone provides input and makes decision...” (Aini)*

*“it depends on the individuals’ characteristic... whether or not the person is dominant... a leader’s characteristic... some leaders listen, some don’t... if you work at Motorola, I do not think many are too dominant... there is none in Motorola... the leader will listen to all inputs from team members... a team comprises of different units and expertise, then there is a project manager... as a project manager, he may not know what our concerns are in supply change... he has to listen to inputs from supply change, or maybe he knows but then what are the problems that supply change causes? For example, he knows that some supplies take 10 weeks... but he does not know that a member from supply change might say: oh but we can order in advance or we can have monthly consumption which we can revise... so he has to accept all inputs... depending on the individual characteristic and in terms of work, he must listen to every team member...” (Rita)*

*“it is difficult bonding with unknown team members during the early stages if we interact using technology... dissatisfaction between team members will arise... then there is the leader who always reminds me that our work must be of quality... these add to my working stress... there are also team members who hold all the power and dominance in decision making... only his idea is correct... this fuels the difficulty in handling the team members... but as a project manager, I remind my team about commitment and loyalty, not only for themselves but also for all team members... we also have to take into account ideas and views of other team members... till this moment I have had a good relationship with my team members no matter whether they are in KL, Penang or Japan... team members must be given the trust to participate in discussions and contribute ideas... I have a good relationship with my leader there are no problems even though he is fussy and hardworking...” (Cho)*

## CONCLUSION

It is a known fact that research on virtual team working environment is lacking in Malaysia. This study thus is a novel attempt to understand in detail through qualitative investigation the working environment of virtual teams among Multimedia Super Corridor status companies.

Based on qualitative responses from three staffs (respondents) working in MSC status companies, this study found that virtual team is a phenomenon in many modern organizations today. There are six dimensions often associated with virtual team’s working environment namely geographically dispersed team, the use of latest communication technologies, team culture, language, time zone, and team relationship as presented in Figure 5 below. These dimensions or issues are found to be exceptionally pertinent in virtual team environment compared to other working conditions such face-to-face working interaction.

There are several limitations of the study especially in terms of number and selection of sample. Due to difficulties in getting participants for the in depth interview as they were busy and often occupied with hectic working schedules, only three key informants were managed to be interviewed. Despite the small number of key informants of the study, the collected data was very rich, thorough and very informative.

To conclude, the present study provides interesting understanding on key important issues or dimensions facing virtual team’s working environment. Virtual team is a phenomenon of today’s working environment and will continue to expand and flourish in the future.

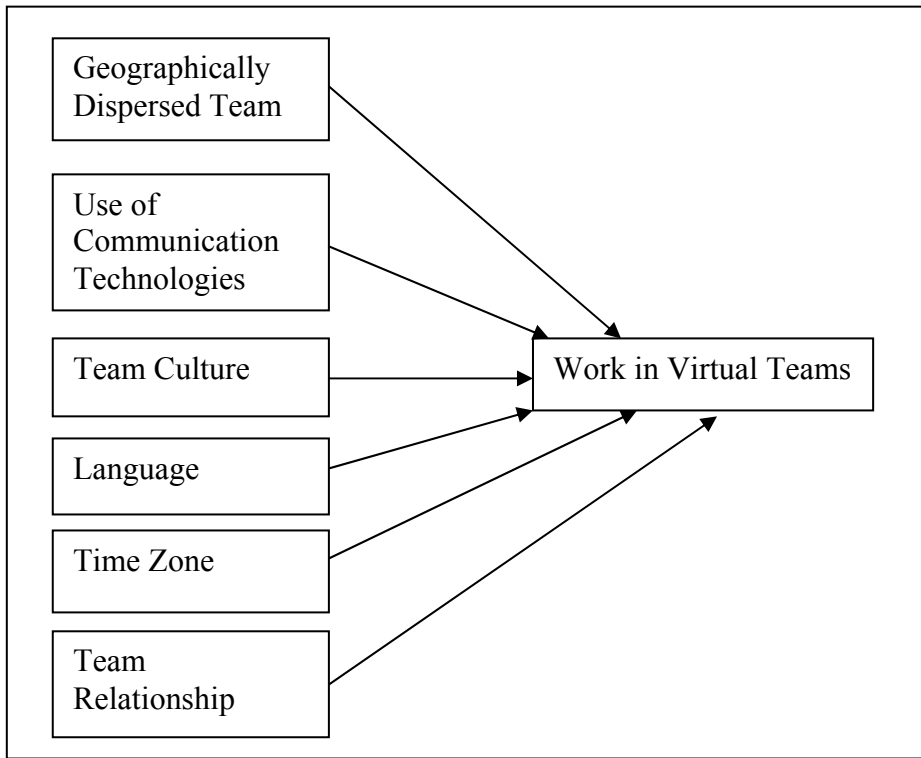


Figure 5: Dimensions Work in Virtual Teams

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