

BIROn - Birkbeck Institutional Research Online

Adaba, Godfried and Wilson, David W. and Sims, Julian (2015) Challenges to effective collaboration in cross-cultural virtual teams. In: Baptista Nunes, M. and Isaias, P. and Powell, P. (eds.) 8th IADIS International Conference Information Systems 2015. International Association for Development of the Information Society. ISBN 9789898533333. (Unpublished)

Downloaded from: <https://eprints.bbk.ac.uk/id/eprint/15363/>

Usage Guidelines:

Please refer to usage guidelines at <https://eprints.bbk.ac.uk/policies.html>
contact lib-eprints@bbk.ac.uk.

or alternatively

CHALLENGES TO EFFECTIVE COLLABORATION IN CROSS-CULTURAL VIRTUAL TEAMS

Godfried Bakiyem Adaba

*Department of Computer Science and Information Systems
Birkbeck, University of London
Malet Street
London, WC1E 7HX*

David W. Wilson

*Department of Computer Science and Information Systems
Birkbeck, University of London
Malet Street
London, WC1E 7HX*

Julian Sims

*School of Business, Economics and Informatics
Birkbeck, University of London
Malet Street
London, WC1E 7HX*

ABSTRACT

Multinational organisations are increasingly adopting geographically distributed cross-cultural virtual teams to accomplish projects. As organisations seek to exploit the benefits of such teams, they may confront a number of challenges. This research explored challenges to effective partnership in cross-cultural virtual teams through an in-depth case study of the Ghana subsidiary of a multinational organisation in the telecommunications industry. It is an interpretive study based on qualitative data from semi-structured interviews. The study finds that temporal, linguistic, and cultural issues present significant challenges to effective teamwork. The paper discusses implications of the findings for the effective management of cross-cultural virtual teams.

KEYWORDS

Virtual teams; culture; culture; interpretive research; case study; Ghana.

1. INTRODUCTION

Geographically distributed ICT-facilitated virtual teams (VTs) have become progressively common across several industry sectors (Holmstrom, Conchúir, Agerfalk, & Fitzgerald, 2006; Huang & Trauth, 2007; Nicholson & Sahay, 2001; Sarker & Sahay, 2004). As a result, VTs have generated considerable interest among information systems (IS) practitioners and researchers in the last few decades. VTs are groups of geographically and/or organisationally dispersed co-workers that are assembled using information and communications technologies (ICTs) to accomplish an organisational task (Townsend, DeMarie, & Hendrickson, 1998, p. 18). A unique characteristic of VTs is the predominant or widespread use of ICT-mediated communication to overcome for physical distance, organisational boundaries, and time constraints (Staples & Zhao, 2006). Members of a VT may be present locally within an organization's physical facilities, dispersed nationally within a single country or globally dispersed across a number of countries and time zones (Wakefield, Leidner, & Garrison, 2008).

The growing adoption of VTs is attributable to developments in ICTs, growing competition, and benefits associated with such teams (Townsend et al., 1998). As organisations seek to exploit the benefits of VTs,

they may confront a number of challenges, including managing cultural diversity among team members (Huang & Trauth, 2007; Kayworth & Leidner, 2000; Massey, Hung, Montoya-Weiss, & Ramesh, 2001). For example, Staples & Zhao (2006, p. 389) note: ‘teams are usually made up of members from different national backgrounds, meaning the members come from different national cultures, possibly speak different languages, and were raised in different countries that may have different value systems’. However, while diversity has a number of benefits, there are also challenges, the consequences of which may range from project failure to delayed delivery of working systems (Shore & Venkatachalam, 1995).

Organisations need to reap the benefits of VTs by leveraging the positive effects of team diversity while managing the challenges. However, a critical step is to understand the challenges to effective work in VTs (Deshpande, Richardson, Casey, & Beecham, 2010; Evaristo, 2003; Staples & Zhao, 2006). This paper explores the challenges to effective collaboration within cross-cultural VTs and considers the implications for the management of such teams. The research is conducted in a subsidiary of a multinational telecommunications company located in Ghana that uses geographically dispersed cross-cultural VTs to execute projects. The paper provides insights into some of the challenges in cross-cultural VTs and contributes to an appreciation of the importance of managing the challenges to make remote teams more effective.

The rest of the paper is organised as follows: after this introduction, the literature on the concept of culture and its relevance to IS research are discussed. Then, a brief review of prior studies on culture and VTs is provided, followed by the description of the research methodology. Next, the research findings are presented and discussed. The research concludes with an assessment of the limitations of the research and explores avenues for future research.

2. LITERATURE REVIEW

2.1 Cross-Cultural Information Systems Research

Culture has its foundations in anthropology. However, the importance of cultural issues is becoming progressively evident in many applied disciplines, including IS (Davison & Martinsons, 2003). It is a contested concept that has been defined in different ways and from different perspectives (Leidner & Kayworth, 2006; Sackmann, 1992; Straub, Loch, Evaristo, Karahanna, & Srite, 2002; Tayeb, 1994). There is no consensus on the exact definition of culture. However, the varied conceptualizations commonly converge on a few defining characteristics: it is learned and shared by the members of a group; subjective and varies from one group to the next; it is dynamic; and ideational. It is shaped by history, environment, geography, and level of economic development (Davison & Martinsons, 2003; Hampden-Turner & Trompenaars, 2000; Hofstede, 1980; House, Hanges, Javidan, Dorfman, & Gupta, 2004; Myers & Tan, 2002; Schein, 2006). Different levels of analysis of culture are recognizable in the IS literature. Most IS studies of culture use “nation”, “organisation” or “individual” as the unit of analysis. National culture represents a culture shared by the people of a given nation state, whereas organizational or sub-culture signifies patterns of shared behaviour of people in the same organization. Individual or subjective culture signifies the influences of different cultures on individual behaviours. There are many sub-cultures within national culture, as there are organizational sub-cultures.

The IS literature recognises the importance of the culture factor as a variable because of globalisation and IS development and/or use in cross-cultural settings (Kappos & Rivard, 2008; Kumar & Bjorn-Andersen, 1990; Leidner & Kayworth, 2006). In a review of culture in IS, (Leidner & Kayworth, 2006), identified six themes: culture and IS development; culture, IT adoption and diffusion; culture and IT use and outcomes; culture, IT management and strategy; the impact of IT on culture; and IT culture. Shore & Venkatachalam (1995) demonstrate that culture is an important variable in systems analysis, design, and development.

Many cross-cultural studies have applied cultural dimensions as frameworks for analysis (Hall & Hall, 1990; Hofstede, 1980; House et al., 2004; Schwartz, 1999; Trompenaars & Hampden-Turner, 1997). However, the cultural dimensions in IS research have been criticised for perceiving culture as static and falling neatly into a particular set of predefined dimensions of validity. For example, Myers & Tan (2003) are of the view that cultural dimensions are too simplistic to capture the complexities and multilevel influences

of culture on IS. The notion that national culture is aligned with the boundaries of nation states assumes cultural homogeneity within nations and glosses over the fact that many nations are multicultural and many cultures are multinational (Myers & Tan, 2002; Weisinger & Salipante, 2000). As a result of the dynamic nature of culture, Myers & Tan (2002) suggest that researchers take a more dynamic view. The situating culture approach Weisinger & Salipante (2000) conceptualizes culture as a phenomenon that is locally based and grounded in day-to-day work practices. They assert that 'culture is locally situated, behavioural, and embedded in everyday, socially negotiated work practices' p. 306.

2.2 Cross-Cultural Virtual Teams

The use of VTs emerged at the time of increasing global competition and advances in ICTs that have driven organisations to adopt new organisational structures and work processes. Townsend et al. (1998) suggests four main factors driving a shift to virtual teams: first, the rise in flat or horizontal organisational structures. Second, the need for inter-organisational collaboration and growing competition, third, changes in workers' expectations of organisational participation. The move from production to service and knowledge work settings and, finally, the growing globalisation of trade and corporate activity.

Due to the increasingly important role of cross-cultural VTs in the work of organisations, there is growing evidence that cultural issues might have an influence on such teams. On one hand, some researchers see cultural diversity as a source of strength within VTs. For example, in an exploratory study on the effects of cultural diversity and ICT on VT (Shachaf, 2008) found that cultural diversity had a positive influence on decision-making and a negative influence on communication. She concluded that ICT alleviated the negative impact on communications and supported effective decision-making.

In contrast, some studies suggest that cultural diversity is a barrier to the work of VTs, which may negatively affect communication, coordination and control in geographically distributed work teams (Carmel & Agarwal, 2001; Deshpande et al., 2010; Holmstrom et al., 2006). Kayworth & Leidner (2000) in a study of VTs in Europe, Mexico, and the United States found that they face significant challenges in four areas, communication, culture, technology, and project management. They suggest that effective communication is a major problem with VTs as team members cooperate without face-to-face interaction. They further suggest that culture may have a profound influence on the way individuals perceive information, act on it, and relate to others. Thus, tendency for individuals to interpret information through a cultural filter may give rise to distortions or biases. They also found that cultural differences significantly affected the ability of teams to communicate ideas and coordinate projects. Cultures also vary in their attitudes to time, which may affect project schedules, planning, and reliability with deadlines. Similarly, in an experimental study with short term teams to examine the effect of cultural diversity on team effectiveness, Staples & Zhao (2006) demonstrated that heterogeneous teams had more conflict, were less satisfied and less cohesive compared to their homogeneous counterparts. However, there were no significant differences in performance. Moreover, they found that performance of the VTs was superior to that of co-located teams, which led them to conclude that the capabilities of collaborative technologies are valuable to newly formed culturally diverse teams. Kankanhalli, Tan, & Wei (2006) in a study of conflict in global VTs found that cultural diversity is likely to contribute to task and relationship conflicts that affect team performance.

3. RESEARCH METHODOLOGY

This research based on an interpretive single case study with the aim to unearth the culture-related challenges of cross-cultural VTs. Case study is one of a variety of accepted research strategies in IS (Benbasat, Goldstein, & Mead, 1987; Cavaye, 1996; Eisenhardt, 1989; Galliers & Land, 1987). A case study explores a phenomenon in its natural context, using multiple methods of data collection to gather information from one or a few entities (people, groups, or organizations) (Benbasat et al., 1987). Case study research is valuable for exploring 'how' and 'why' questions that the investigator has little or no control over (Yin, 2011).

Case study research based on the interpretive paradigm has been effectively applied to organisational IS research (Orlikowski, 1993; Walsham, 2002) and has been adopted for this study to understand the views of the participants on the challenges cross-cultural VTs within the context of the study organisation. The interpretive IS research perspective regards knowledge of reality as socially constructed by human actors,

therefore, it is important to adopt research approaches that emphasise human interpretations and meanings (Walsham, 1995). The validity of interpretive studies rests on the logical reasoning behind the description of the results, the depiction of inferences, and the reaching conclusions from the results rather than statistical generalisations (Walsham, 2006).

3.1 Data Collection

Interviews are one of the main ways of accessing the interpretations of interviewees in interpretative studies (Myers & Newman, 2007; Walsham, 2006). Thus, in-depth semi-structured interviews with organisational participants collected primary data for this study. Semi-structured interviews allowed for improvisation and probing of the respondent based on the answers to previous questions (Leech, 2002). To allow the exploration the problem domain of this research, a semi-structured interview guide with open-ended questions was created to help the interviewing process. The interviews focused on company information, work practices, and cultural challenges on the work of virtual teams. The semi-structured interviews gave informants the opportunity to articulate their views and experiences regarding the issue under investigation.

Primary data was collected through 10 in-depth semi-structured interviews in two rounds of interviewing with a range of individuals working with the study organization in Ghana over voice over Internet Protocol (VOIP) between 2013 and 2014, as detailed in Table 1. The data are part of a broader study into the culture influences on strategic alignment and work practices in multinational organisations. Some of the participants were interviewed more than once. This was either to clarify information given in a previous interview or because of interruptions regarding a previous interview. The average length of the interviews was approximately 52 minutes. An audio recorder captured the interviews, while the researcher to notes on a notepad. The interview transcripts were subsequently transcribed for analysis.

Table 1. Summary of Interviewees and number of Interviews

Interviewee	Number of interviews
Project Manager	3
Engineer	1
Performance Reporting Manager	2
Incident Alert Manager	1
Head of Business Support Systems	2
Assistant Engineer	1
Total	10

Document reviews provided a complementary source of secondary data. They include company information, strategy documents, newspaper articles, and reports, some of which were freely available on the organisation’s website and elsewhere on the internet. The triangulation of across data sources is important in interpretive studies because it provides different perspectives on the issue under investigation and allows cross-checking of information (Yin, 2011).

3.2 Data Analysis

Nvivo 10 computer-assisted qualitative analysis software by QSR facilitated the analysis of the data. The interview transcripts were uploaded to the Nvivo for analysis using grounded theory coding techniques (Glaser & Strauss, 1967; Strauss & Corbin, 1998) . The use of qualitative data analysis has been growing in popularity in recent years as an alternative to manual methods. The tools of Nvivo supported the efficient and effective coding and analysis of the data. The software enabled the task of organising the data more efficiently, effectively and transparently compared to manual qualitative data analysis (Beekhuyzen, Nielsen, & von Hellens, 2010). For example, the tools of the software allowed searching through the data to find specific keywords and organising similar ideas into nodes made up of concepts and categories. This aided the cultural factors that affected VTs to emerge. However, while the software was valuable for the inductive coding of the data, the researcher decided on what to code (Bringer, Johnston, & Brackenridge, 2006).

3.3 Case Description

The case organization is the Ghana subsidiary of a multinational telecommunications company. ERSG is a European telecommunications company that provides mobile and fixed networks, equipment and services, and multimedia solutions. The company entered the Ghana market in 2011 to provide efficient services to its clients in sub-Saharan Africa. The Ghana subsidiary provides support to corporate customers across Africa.

The company is an interesting organisation for examining the role of culture in VTs because it employs a culturally diverse workforce and relies on VTs to execute projects. The mission of ERSG is to support a networked society around the world. Their mission is to provide high quality services to their clients. The company has three core values of perseverance, professionalism, and respect. It currently has a workforce of about 50 people on location in Ghana from diverse nationalities and cultural backgrounds. Other employees work from various locations around sub-Saharan Africa. Employees are largely well educated, with most of them possessing computer science and engineering related qualifications. The company is also making some efforts recruit young engineers and computer scientists. New employees are usually given a comprehensive training in the company's operations and organisational culture.

The corporate culture within the organisation is largely informal. Furthermore, adherence to democratic principles of management that requires consultation and consensus building in the making of decisions and policies is one of the cornerstones of the corporate culture. Another dimension of the informal culture within the organisation is the option for employees to work remotely.

Ghana, the local context of the subsidiary the corporate culture is a high power distance West African culture. The work environment and organisational structure in Ghana is generally characterised by a recognition and acknowledgement of inequality and institutional hierarchies (Hofstede, 1980). There is also a high degree of paternalism and submission to authority and power; authority is centralised, and decision-making styles tend to be autocratic as superiors make decisions without consultation or participation of subordinates, while subordinates are generally unwilling or afraid to disagree with superiors (Gyekye & Salminen, 2005; Hofstede, 2001). In contrast, the North European culture of the headquarters setting is characterised low power distance, with less hierarchy, equal rights, and access to superiors. The management style is generally informal, communication is direct, and decision-making is consultative (Hofstede, 2001).

4. RESEARCH FINDINGS

The analysis of the data identified four major themes associated with the use of cross-cultural VTs in the study organisation (see Table 1 for a summary of the findings). The first relates to the nature of the deployment of VTs. However, the remaining themes recount three main cultural issues that affect VT effectiveness based on ERSG's experiences: cultural barriers to effective communication, the challenges of different work practices and attitudes to time, and conflicts arising from cultural misunderstanding. The next section discusses the findings in detail.

Table 2. Summary of Research Findings from Coding and Analysis of the Data

Categories	Concepts	Interpretation from the Data
Context	• Virtual Teams at ERSG	ERSG uses VTs for coordinating and accomplishing project in physically dispersed locations mainly in Africa, Europe, and Asia. Collaborate with outsourcing companies handling software development work offshore in India.
	• Enabling technologies for VT work	Email, chat room communications, web-based streaming, and teleconferencing are the preferred means of communications among VT members.
	• Cultural diversity and VTs	An Enterprise system standardizes work across operations in different countries. There is high diversity among VTs with members from India, Reunion Island, Senegal, Nigeria, Ghana, Kenya, Uganda, Tanzania, South Africa, Pakistan, Singapore, and Sweden.
	• Benefits of VTs	Bring together talents to complete projects across time and space, saving on travel and other costs.
Challenges to effective VT work at ERSG	• Effective verbal Communication	Different accents and inability to understand each other
	• Work Practices and Attitudes to Time	Different work practices, temporal differences (time zones and attitudes to time) adversely affecting collaboration
	• Conflict	Disagreements and frustration as a result of cultural differences

4.1 The Use of Virtual Teams at ERSG

Based on the responses, ERSG deploy VTs for coordinating and accomplishing project tasks in physically dispersed locations, mainly in Africa, Europe, and Asia. As a multinational organization, the company deploys enterprise systems to promote standardization, efficiency, and to enable critical business processes across both domestic and cross-cultural settings. ERSG has a generally decentralised management structure that reflects efforts by its European headquarters to relax control of subsidiaries. The company adopted this decentralised approach to allow flexibility for its subsidiary to respond to the needs of customers. However, its goal to reduce cost of operations has meant that IT has been outsourced to third party vendors offshore in India. This allows the workforce to concentrate its energies on the delivery on the core business. It also implies that the VTs have to collaborate and coordinate work with the Indian IS developers. A respondent described the use of VTs at ERSG as follows:

We work across many countries, we have people who are not sitting together in their conventional offices, but they have to do their work through technology. To put it simply, I will call it LVT, meaning Leading Virtual Teams. For example, I have four managers reporting to me. Two of them are in Nigeria; two of them are in South Africa. We also have people in Sweden, India, and Kenya. My manager, for instance, is in Kenya. In my last role, I had somebody working in Reunion and I am sitting in Accra. He has to do his job and I have to do my job. There are people who are in the field deploying solutions, sitting down, engaging with customers, and understanding their business requirements. Therefore, it is important that our IT services are scalable to accommodate this kind of work structure – Head of Business Support Systems.

The quote above suggests that members of the teams are significantly geographically dispersed. Similarly, there is a high degree of diversity in the makeup of VTs in ERSG, with members from various cultural backgrounds, as explained by a respondent:

If I look at the entire team, I have people from India, from francophone West Africa, from Nigeria, Ghana, and East Africa – Kenya, Uganda, and Tanzania. We also have people from southern Africa, most of them from South Africa. We have Pakistanis, people from Singapore, and Sweden – Performance Reporting Manager.

Effective communications are essential to successful teamwork. However, in the absence of face-to-face interaction, VTs potentially face a greater challenge regarding effective communication. VTs rely on ICT-

mediated communications for the coordination and control of work. Given the constraints to communications in remote teamwork, VTs need to employ assorted channels to promote effective electronic communications (Kayworth & Leidner, 2000). Analysis of the data demonstrates a preference for both synchronous and asynchronous communication tools at ERSG. Email, chat room communications, web-based streaming, and teleconferencing are the preferred means of communications among VT members. A project manager illustrates the importance of rich communications to the operations of VTs:

Communication is the key to our business, if you can't communicate effectively, you can't do the work. Another thing about communication is that we used a tool called sametime, which was not exactly user friendly. Now we have Microsoft link, a very good communication tool, you can initiate with video, initiate voice and text and sometimes it gives room for multiple chats. It can also serve as a pseudo-video conferencing tool, which is important currently where flexibility is one of the key drivers of success. That improves access all over the continent and anywhere in the world, you can open documents, communicate with team members and clients - Head of Business Support Systems

Technology mediated communications enable the company to assemble various talents, skills and experience to complete projects without physically relocating individuals, saving time and cost. Furthermore, the diversity inherent in the teams allows for cross-fertilisation of ideas.

My team virtually does all the deployment in sub-Saharan Africa; we are looking at 47 different countries. There are a number of delivery models I could use. For example, I could use people within Africa, or teams outside of Africa based on scale, cost, and industrialisation. In terms of industrialisation, I mean skills that can replicated at a fraction of the cost – Project Manager.

4.2 Culture-Related Challenges with Virtual Teams at ERSG

While the use of VTs allows ERSG to make cost savings, pull together talents from various locations, and to overcome time and space constraints, the analysis of the data demonstrates that the diverse cultural backgrounds of team members present a number of challenges.

4.2.1 Cultural and Linguistic Challenges to Effective Communication

ERSG's VTs use various communications channels to facilitate synchronous and asynchronous interactions between team members in disparate locations. However, the data analysis suggests challenges regarding communications. Based on cultural values, individuals from diverse cultural backgrounds may interpret work-related issues differently. Thus, the same issue may be interpreted in various ways by different team members, which sometimes cause distortions that adversely affect teamwork. Moreover, while the corporate language at ERSG is English, most team members are not native English speakers. The respondents cited language as a significant cultural issue that negatively affected verbal interactions amongst VT members. This problem is particularly acute when dealing with offshore vendors, causing some frustration and delays in delivering on project tasks. A respondent reflected on issues with language:

Currently, based on the fact that most of our job has been outsourced, we have the language barrier. Sometimes, when they talk, we do not understand and we talk, they do not understand, based on our pronunciations. At the end of the day, nothing will go on. Before we get to understand each other, it takes two weeks – Engineer.

Previous studies have established that culture may have a profound influence on the how individuals perceive information, act on it, and relate to other individuals (Holmstrom et al., 2006; Nicholson & Sahay, 2001; Shachaf, 2008). Cultural filtering of communications may cause misinterpretations or distortions that may lead to misunderstandings and even conflict (Kankanhalli et al., 2006; Wakefield et al., 2008).

4.2.2 Differences in Work Practices and Attitudes to Time

Apart from the issues that affect communications, different work practices, and attitudes to work pose significant challenge for VTs within ERSG:

We also have time difference, so things that can be done during the day can take two weeks to be done. We are not on the same page in terms of time zone and secondly, when we talk, they don't understand – Incident Alert Manager.

The quote above indicates that the challenge presented by differences in time zones adversely affected work through the delays in accomplishing tasks. Working within the same time zone enables effective

synchronous communication. On the other hand, working in different time zones makes the use of synchronous communications difficult.

Another issue that emerged from the data analysis is the negative effects of differences in work practices on the work of the VTs. Members of the VTs often have diverse attitudes to work, sometimes related to their cultural backgrounds. Other members of the team may sometimes perceive these differences as poor attitude to work or a lack of commitment. The following sentiment from one of the respondents shows the challenges of working with people from different cultural backgrounds:

I have challenges with some of the team members. We are in a high-paced environment where you push for things to be done, but some people generally take it a bit slow, a bit easy. On the other hand, you find members from other cultures that are more dutiful, they have a little more drive – Project Manager

A project manager perceived the different attitude to work by some of his VT members as a sign of disrespect on account of a feeling of superiority. The project manager prefers a more ‘aggressive’ approach to work than was demonstrated by some of the VT members. Similarly, VT members from some cultures misconstrued the concept of flexible working, which allows team members to work from home, to mean working less. A respondent expressed the following sentiment:

The only thing about it is that the flexible working can sometimes lead to laziness. Where somebody can work from home, he just takes it easy. Ideally, he will be a little more productive in the office and you see that more in southern Africa – Project Manager.

Similarly, delay in responding to asynchronous communications such as interactions was a source of frustration and the source of delay in the advancement of projects.

4.2.3 Culture-Related Conflict

Cultural distance reflects the degree of national and organisational cultural differences, and differences in terms of language, norms, values, beliefs, and traditions. Cultural differences may influence how different individuals perceive and interpret information. Because of different interpretations of issues by people from diverse cultural backgrounds, there is always a potential for conflict. Conflict is disagreement between members of team that may take the form of task or relationship conflict that may be detrimental to team performance (Kankanhalli et al., 2006). The interpretation of the data suggests instances of conflict among VT members based on cultural differences. Issues with cross-cultural understanding, differences in work practices and effective communications occasionally created frustration and conflict among team members. Some of the respondents branded some of their colleagues as lazy and laid back and appeared to exhibit tendencies of superiority over others. Other respondents, while not recounting instances of direct conflict talked about their frustration with some team members and latent conflict.

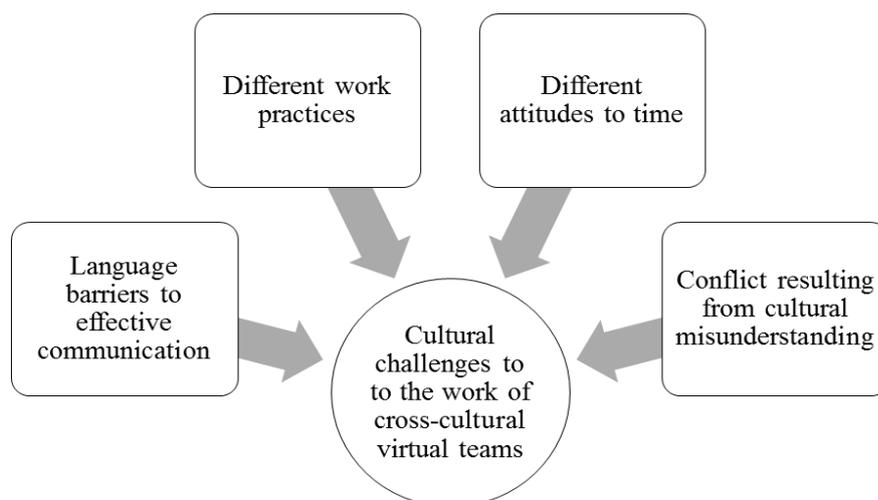


Figure 1. A Model of Cultural Barriers to Virtual Team Work Emerging from Research

5. DISCUSSION

This paper has explored challenges to effective collaboration in cross-cultural VTs, based on the experiences of a subsidiary of a multinational organisation based in Ghana. The paper confirms the previous findings of some previous studies that while VTs presents organisations with some opportunities, they also pose some challenges. ERSG's use of VTs to accomplish project tasks across time and space is the part of a growing trend towards use of remote work teams facilitated by the use of enterprise systems and synchronous and asynchronous ICT-mediated communications. The use of VTs allows the company has been able to save cost and time of having to co-locate team members. This is consistent with the findings of previous studies that report some cost and time savings with the use of VTs. Furthermore, the culturally and functionally diverse teams working together can improve innovation through the cross-fertilisation of ideas.

However, temporal and linguistic differences are important challenges. Furthermore, the findings indicate that bringing individuals with disparate cultural values together could adversely affect the work of VTs. An individual's cultural background shapes the way their communication preferences, work practices, attitudes to time and language preferences, which affect how they collaborate in virtual work. The findings support the conclusions of prior studies that report that cultural diversity creates problems with effective communications, work practices, attitudes to time, which may sometimes lead to misunderstanding and conflict in VTs when compared to traditional teams (Huang & Trauth, 2007; Kankanhalli et al., 2006; Kayworth & Leidner, 2000; Sarker & Sahay, 2004).

The implications of the findings for practice are that organisations and managers of VTs should appreciate that cultural diversity has implications for the effective use of VTs. While VTs compress time and space, they may inhibit the effectiveness of teams. This implies the need for efforts to manage the cultural elements to reduce conflict and make VTs more effective. This may be accomplished through the development of strategies to create cultural awareness among team members and the use of team building exercises and formal training. Kayworth & Leidner (2000) suggest a number of factors that need consideration to help reduce the negative effects of culture in VT settings. For example, they recommend periodic face-to-face meetings where possible between team members. They also inspire a sense of cultural awareness among team members and the need to select team members from complementary or similar cultures. Furthermore, they recommend the setting of clear team goals and promoting continuous performance feedback and building teams that are more cohesive.

6. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

This study built on prior research that examined barriers to effective partnership in cross-cultural VTs. It emerged some evidence of the effects of cultural diversity on the work of cross-cultural VTs in a subsidiary of a multinational telecommunications company. The findings demonstrate that organisations that deploy VTs for executing projects need to take cultural diversity seriously. The negative effects of culture need to be managed effectively to leverage the positive aspects

Like every research, this research has a number of limitations that need acknowledgement. The research findings came from an inductive in-depth single case study. While the research approach allowed rich findings to emerge, the results are not necessarily generalisable to other organisations. Notwithstanding the limitations, however, the findings provide an insight into cultural issues with VTs and support some previous studies. The current study provides a number of opportunities for future research. Future research could include, for example, a more detailed analysis of cultural issues within VTs using multiple case studies and a larger number of interviews. Furthermore, future research could test some of the cultural issues that emerged in this study could be tested using quantitative data.

REFERENCES

- Beekhuizen, J., Nielsen, S., & von Hellens, L. (2010). The Nvivo looking glass: Seeing the data through the analysis. In *Proceedings of QualIT2010: International Conference on Qualitative Research in IT & IT in Qualitative Research, Brisbane, Australia, Griffith University*.
- Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The Case Research Strategy in Studies of Information Systems. *MIS Quarterly*, 11(3), 369–386.
- Bringer, J. D., Johnston, L. H., & Brackenridge, C. H. (2006). Using Computer-Assisted Qualitative Data Analysis Software to Develop a Grounded Theory Project. *Field Methods*, 18(3), 245–266.
- Carmel, E., & Agarwal, R. (2001). Tactical approaches for alleviating distance in global software development. *IEEE Software*, 18(2), 22–29.
- Cavaye, A. L. M. (1996). Case study research: a multi-faceted research approach for IS. *Information Systems Journal*, 6(3), 227–242.
- Davison, R., & Martinsons, M. (2003). Guest editorial cultural issues and it management: past and present. *IEEE Transactions on Engineering Management*, 50(1), 3–7.
- Deshpande, S., Richardson, I., Casey, V., & Beecham, S. (2010). Culture in global software development—a weakness or strength? In *Global Software Engineering (ICGSE), 2010 5th IEEE International Conference on* (pp. 67–76).
- Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *The Academy of Management Review*, 14(4), 532–550.
- Evaristo, R. (2003). The management of distributed projects across cultures. *Journal of Global Information Management*, 11(4), 58–70.
- Galliers, R. D., & Land, F. F. (1987). Viewpoint: choosing appropriate information systems research methodologies. *Communications of the ACM*, 30(11), 901–902.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Transaction Publishers.
- Gyekye, S. A., & Salminen, S. (2005). Responsibility assignment at the workplace: A Finnish and Ghanaian perspective. *Scandinavian Journal of Psychology*, 46(1), 43–48.
- Hall, E. T., & Hall, M. R. (1990). *Understanding Cultural Differences*. Intercultural Press.
- Hampden-Turner, C. M., & Trompenaars, F. (2000). *Building Cross-Cultural Competence: How to Create Wealth from Conflicting Values*. Yale University Press.
- Hofstede, G. (1980). *Culture's Consequences: International Differences in Work-Related Values*. SAGE.
- Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*. SAGE.
- Holmstrom, H., Conchúir, E. Ó., Agerfalk, P. J., & Fitzgerald, B. (2006). Global software development challenges: A case study on temporal, geographical and socio-cultural distance. In *Global Software Engineering, 2006. ICGSE'06. International Conference on* (pp. 3–11).
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Thousand Oaks, CA: Sage.
- Huang, H., & Trauth, E. M. (2007). Cultural influences and globally distributed information systems development: experiences from Chinese IT professionals. In *Proceedings of the 2007 ACM SIGMIS CPR conference on Computer personnel research: The global information technology workforce* (pp. 36–45). New York, NY, USA: ACM.
- Iveroth, E. (2012). Leading global IT-enabled change across cultures. *European Management Journal*, 30(4), 340–351.
- Kankanhalli, A., Tan, B. C. Y., & Wei, K.-K. (2006). Conflict and Performance in Global Virtual Teams. *Journal of Management Information Systems*, 23(3), 237–274.
- Kappos, A., & Rivard, S. (2008). A three-perspective model of culture, information systems, and their development and use. *MIS Quarterly*, 32(3), 601–634.
- Kayworth, T., & Leidner, D. (2000). The global virtual manager: a prescription for success. *European Management Journal*, 18(2), 183–194.
- Kumar, K., & Bjorn-Andersen, N. (1990). A cross-cultural comparison of IS designer values. *Commun. ACM*, 33(5), 528–538.
- Leech, B. L. (2002). Asking Questions: Techniques for Semistructured Interviews. *PS: Political Science and Politics*, 35(4), 665–668.
- Leidner, D. E., & Kayworth, T. (2006). Review: A Review of Culture in Information Systems Research: Toward a Theory of Information Technology Culture Conflict. *MIS Quarterly*, 30(2), 357–399.
- Massey, A. P., Hung, Y.-T. C., Montoya-Weiss, M., & Ramesh, V. (2001). When Culture and Style Aren'T About Clothes: Perceptions of Task-technology 'Fit' in Global Virtual Teams. In *Proceedings of the 2001*

- International ACM SIGGROUP Conference on Supporting Group Work* (pp. 207–213). New York, NY, USA: ACM.
- Myers, M. D., & Newman, M. (2007). The qualitative interview in IS research: Examining the craft. *Information and Organization*, 17(1), 2–26.
- Myers, M. D., & Tan, F. B. (2002). Beyond Models of National Culture in Information Systems Research. *Journal of Global Information Management*, 10(1), 24–32. 3
- Nicholson, B., & Sahay, S. (2001). Some political and cultural issues in the globalisation of software development: case experience from Britain and India. *Information and Organization*, 11(1), 25–43.
- Orlikowski, W. J. (1993). CASE Tools as Organizational Change: Investigating Incremental and Radical Changes in Systems Development. *MIS Quarterly*, 17(3), 309–340.
- Sackmann, S. A. (1992). Culture and Subcultures: An Analysis of Organizational Knowledge. *Administrative Science Quarterly*, 37(1), 140–161.
- Sarker, S., & Sahay, S. (2004). Implications of space and time for distributed work: an interpretive study of US-Norwegian systems development teams. *European Journal of Information Systems*, 13(1), 3–20.
- Schein, E. H. (2006). *Organizational Culture and Leadership*. John Wiley & Sons.
- Schwartz, S. H. (1999). A Theory of Cultural Values and Some Implications for Work. *Applied Psychology: An International Review*, 48(1), 23–47.
- Shachaf, P. (2008). Cultural diversity and information and communication technology impacts on global virtual teams: An exploratory study. *Information & Management*, 45(2), 131–142.
- Shore, B., & Venkatachalam, A. R. (1995). The Role of National Culture in Systems Analysis and Design. *Journal of Global Information Management*, 3(3), 5–15.
- Staples, D. S., & Zhao, L. (2006). The Effects of Cultural Diversity in Virtual Teams Versus Face-to-Face Teams. *Group Decision and Negotiation*, 15(4), 389–406.
- Straub, D., Loch, K., Evaristo, R., Karahanna, E., & Srite, M. (2002). Toward a Theory-Based Measurement of Culture. *Journal of Global Information Management (JGIM)*, 10(1), 13–23.
- Strauss, A., & Corbin, J. M. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. SAGE Publications.
- Tayeb, M. (1994). Organizations and National Culture: Methodology Considered. *Organization Studies (Walter de Gruyter GmbH & Co. KG.)*, 15(3), 429.
- Townsend, A. M., DeMarie, S. M., & Hendrickson, A. R. (1998). Virtual Teams: Technology and the Workplace of the Future. *The Academy of Management Executive (1993-2005)*, 12(3), 17–29.
- Trompenaars, F., & Hampden-Turner, C. (1997). *Riding the Waves of Culture: Understanding Cultural Diversity in Business*. (C. H. Turner, Ed.) (2nd Revised edition.). Nicholas Brealey Publishing.
- Wakefield, R. L., Leidner, D. E., & Garrison, G. (2008). Research Note: A Model of Conflict, Leadership, and Performance in Virtual Teams. *Information Systems Research*, 19(4), 434–455.
- Walsham, G. (1995). The Emergence of Interpretivism in IS Research. *Information Systems Research*, 6(4), 376–394.
- Walsham, G. (2002). Cross-Cultural Software Production and Use: A Structural Analysis. *MIS Quarterly*, 26(4), 359–380.
- Walsham, G. (2006). Doing interpretive research. *European Journal of Information Systems*, 15(3), 320–330.
- Weisinger, J. Y., & Salipante, P. F. (2000). Cultural knowing as practicing: Extending our conceptions of culture. *Journal of Management Inquiry*, 9(4), 376–390.
- Yin, R. K. (2011). *Applications of Case Study Research*. SAGE.