University of the Western Cape

UNIVERSITY of the
WESTERN CAPE

School of Business and Finance

M.Com.

Virtual Project Teams: A case study of virtual project team effectiveness in a South African Financial Institution

Research Project for the Master's in Commerce Degree Programme

by

Calvin van Wyk

2351517

Abstract

The South African financial services sector has experienced phenomenal growth over the past two decades, and financial institutions that were previously regional are now operating nationally. To enhance operations and meet customer expectations, financial institutions have turned to technology and virtual project teams. There is mounting evidence of the use of virtual project teams throughout the financial services sector; however, the effectiveness of virtual project teams in South Africa, and the support they receive, is yet to be determined. This case study aims to investigate the effectiveness of virtual project teams by focusing on the organisational systems and group dynamics of the virtual project teams at one of South Africa's leading financial institutions. The study involves a cross-sectional survey conducted by means of a Lickert-scale questionnaire distributed among all 23 project team members (10 in Cape Town and 13 in Johannesburg). The findings are predicted to indicate the support provided by this particular financial institution to the virtual project teams' operations, while also identifying the organisational systems in place and measuring the effectiveness of the virtual project teams. The financial institution on which this case study is based gave consent for the case study to be conducted, on condition of anonymity.

Keywords: virtual teams, virtual project teams, group dynamics, organisational systems, virtual communication, support structure, infrastructure, team composition

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1. Introduction

This study focuses on virtual project team dynamics at a leading South African financial institution. The research is initiated by presenting the background to the study, and is then followed by the statement of the problem, the objectives of the study, the preliminary literature review, the research methodology, and the approach to data analysis. A statement indicating the ethical principles guiding the study is also provided.

The background to the study provides insight into how traditional project structures have been required to evolve. Furthermore, the study provides a practical and true-life situation, which dictates the need for an understanding of the role of virtual projects and how best to incorporate such practices in order to achieve the best results. In order to understand this in detail, it is necessary to explore the suggestions of the literature and past theory.

The literature review has been structured in such a way as to chronologically depict the evolution of various definitions and practices surrounding virtual teams and virtual project teams. Although the study is based primarily on the work of Lurey and Raisinghani (2001), more recent literature is referenced in view of illustrating the development and growth of the concept.

Furthermore, the adoption of a case study research design is meticulously described in order to explain the reasons behind the adoption of certain practices, and the methods followed in that regard, in the effort to answer the research question. The subsequent chapters describe the use and interpretation of the data, leading to a discussion of the findings and, more importantly, an explanation thereof in relation to the research questions, allowing for greater

insight in terms of future research. The study culminates in a number of relevant recommendations in this regard before reaching a final conclusion.

1.1 Background to the Study

Organisation is a management function that involves the development of an organisational structure and the allocation of human resources to ensure that the organisation achieves its objectives (Smit & Cronje, 1997). Historically, organisations have been defined in terms of functional areas such as marketing, human resources and information technology, with each of these areas possibly having individuals working alone, or working in teams within that functional area, or working with teams from other functional areas (Smit & Cronje, 1997). Teams have been increasingly utilised over the years, with organisations allowing team members to share ideas and collaborate on various organisational activities. In recent years, the growth in information and communication technology (ICT) has seen the proliferation of virtual teams within organisations as a response to new business needs (Gressgård, 2011).

As a result of globalisation, global competition and the need for a rapid response to consumer needs, organisations are compelled to adopt different strategies and structures. This situation has led to an increase in organisational change, with a common trend being the use of virtual teams (Gressgård, 2011; Powell, Piccoli & Ives, 2004). Similarly, Gibson and Cohen (2003) expressed the viewpoint that the use of virtual teams constitutes a competitive instrument for businesses globally.

In light of the recent growth in various business sectors in developing economies such as South Africa, the importance of virtual teams cannot be underestimated. Standard Bank serves as an example of a well-known South African financial institution, currently operating

in more than 18 African countries. In the early 1990s, Standard Bank was a predominantly South African institution with its operations based at various regional centres. Today, however, the company serves a vast global market thanks to the acquisition of various strategic entities (Standard Bank, 2009). Young (2013) points out that the growth in the South African financial services sector has been a function of the growth in banking infrastructure, facilitated by institutions such as the Development Bank of Southern Africa. To augment the creation of such infrastructure, globalisation has served to develop access to world markets. Lurey and Raisinghani (2001) described the growth in global markets as a catalyst for the growth in virtual teams, associating the adoption of virtual teams by organisations with the phenomenon of globalisation.

Closely linked to the concept of the organisational virtual team is the new phenomenon of the virtual project team. The literature (Gareis,2004; Turner & Keegan, 2001)seems to point to the growth in management through projects, resulting in the introduction of projects to launch new operations and achieve long-term objectives through smaller but incremental projects. While organisations may use virtual teams to conduct operational business, they use virtual project teams to collaborate among project members at different geographical locations, where sites are internationally distributed and could potentially include multiple organisations within a country, and also across countries and continents (Evaristo, 2002). This is an important aspect in terms of how organisations are currently structuring their work activities. The associated development in ICT infrastructure, and its use in the 21st century, calls for managers to understand the dynamics associated with project virtual teams.

Piccoli and Ives (2003) found the dynamics of virtual project teams to be a neglected topic of research. This study seeks to add to the growing body of knowledge on virtual project teams

by investigating the dynamics associated with the operations of a virtual team at a leading South African financial services firm.

1.2 Problem Statement

There is mounting evidence that virtual project teams are becoming ever more popular in organisational structures (Herzog, 2001). While this may be the case, there is little understanding of the dynamics associated with the functioning of such project teams (Ebrahim, Shamsuddin & Taha, 2009; Lee-Kelley & Sankey, 2008), which can be ascribed to the limited research in this regard (Badrinarayanan & Arnett, 2008). There is a need for a better understanding of the dynamics of virtual project teams in relation to their performance (Kirkman, Rosen, Tesluk & Gibson, 2004), as well as their structure, their dynamics, and the organisational systems supporting them (Lurey & Raisinghani, 2001). There are several approaches to the formation and design of virtual project teams, with different organisations designing different types of support systems for this purpose. The fact that there are several different approaches to the design of virtual project teams makes it essential to evaluate the effectiveness of these support structures for virtual project teams.

The literature (Berry, 2011; Ebrahim *et al.*, 2009; Evaristo, 2002; Gibson & Cohen, 2003; Marshall, Burn, Wild & McKay, 1999; Powell *et al.,* 2004) suggests that although organisations have thus far acknowledged the need for proper infrastructure and support in ensuring the effectiveness of virtual project teams, this challenge has been mostly neglected in terms of research (Evaristo, 2002). As such, Badrinarayanan and Arnett (2008) suggested that due to the novelty of virtual teams, many areas have not yet been examined. The reality is that businesses and organisations are not adequately equipped to do so, since they lack sufficient

information. El-Tayeh, Gil and Freeman (2008) supported the notion that further research is required to explore ways in which to enhance the performance of virtual teams.

This study involved participant observation and a questionnaire that was completed by the members of the virtual project teams operating within the selected South African financial institution, based on the variables identified by Lurey and Raisinghani (2001). The case study also provides details as to why these constructs are able to contribute to the effectiveness of such virtual project teams.

1.3 Research Question

The study sought to answer the following research questions:

- How do organisational support systems impact on the effectiveness of virtual project teams operating within Financial Institution X?
- How do group dynamics impact on the effectiveness of such virtual project teams?

1.4 Objectives of the Case Study

The objectives of the case study can be outlined as follows:

- To evaluate the effectiveness of the virtual project teams, based on the organisational support systems in place at said financial institution.
- To review the organisational systems currently in place to support the virtual project teams at said financial institution.

2. Study Area Context

Business models and networks have been compelled to change in order to meet public and consumer demands. While the current trend in the 21st century is for organisations to be comprised of virtual teams and networks of teams, previous decades saw the emergence of the "agricultural" era (focusing on hierarchy) and the "industrial' era (focusing on being robust), resulting in the emergence of bureaucracies (Lipnack & Stamps, 2007). It is due to such constant technological advancement and growth (the "information" era) that organisations have seen the need to adopt virtual teams and virtual project teams as part of their business model (Lipnack & Stamps, 2007).

Financial Institution X has its information technology department based in Johannesburg and its project team based in Cape Town, comprising 23 members. Since the inception of a virtual project environment, the project teams have encountered several challenges inhibiting their ability to successfully complete projects. The most common of these challenges are centred on two particular concepts, namely communication and performance, which can be interlinked but also viewed separately. This can result in projects being delayed or poorly executed, leading to unnecessary costs and a negative impact on financial profitability.

3. Literature Review

While there is an abundance of literature on virtual teams, not much has been transcribed/ delineated in respect of virtual project teams – hence the decision to focus this case study specifically on virtual project teams. The literature review presented here outlines the shift from virtual teams to virtual project teams, including the structure, composition and characteristics of each.

3.1 Virtual Teams

There are many definitions of virtual teams, with recent definitions differing somewhat from earlier ones, which tended to lack depth. Initially, the focus was primarily on the time spent on face-to-face interaction through the use of technology (Kristof, Brown, Sims & Smith, 1995), but over time the concept of virtual teams started being defined and described in more culturally diverse and geographically dispersed terms (Jarvenpaa & Leidner, 1999). Virtual teams have subsequently been defined as "groups of geographically and/or temporality dispersed individuals brought together via information and telecommunications" (Powell *et al.*, 2004:7), or as "groups of people who work interdependently with shared purpose across space, time and organisation boundaries using technology to communicate and collaborate" (Kirkman, Rosen, Gibson, Tesluk & McPherson, 2002:67). Ebrahim *et al.* (2009) conceded that irrespective of the numerous definitions, the most widely accepted definition is that of Powell *et al.* (2004), as mentioned above. These definitions cover the foundation of what comprises a virtual team and how it operates. However, it is understood that for a team to be considered virtual, it must meet four specific criteria, in that it must be: (a) Geographically dispersed; (b) Driven by common purpose; (c) Enabled by communication technologies; and (d) Involved in cross-boundary collaboration (Ebrahim *et al.,* 2009).

3.2 Virtual Project Teams

It has already been acknowledged that the existence of virtual teams is necessitated by globalisation (refer to point 1.1, paragraph two), and that the definition of virtual teams has changed over time. Virtual project teams have also become increasingly important in the midst of globalisation and the need for organisational flexibility to meet external demands. Evaristo (2002:1) pointed out that although the term "virtualness" has had several definitions over time, the concept of a virtual project can be defined as "involving collaboration between project members, at different geographical sites, where the sites can be internationally distributed and include different organisations". The literature refers to both virtual projects and distributed teams, and it is therefore important to understand the difference between these two concepts. The key difference lies in the timeframe: Virtual projects are more *ad hoc* in nature and therefore temporary, with specific starting and ending dates, and furthermore can be conducted within a traditional organisational structure (Evaristo, 2002). Further examination, however, reveals that a virtual project team can be most accurately defined as a group of people who are not co-located, but who make use of electronic communication to work together to accomplish a particular goal (Jones, Oyung & Pace, 2005). This is similar to the definition of a virtual team, in terms of having a specific duration. As such, a virtual project can be defined as a group of people who, despite being geographically distant from one another, are able to work together toward a common goal within the specified project timeline. See Table 1 for a concise summary of the differences between traditional conventional teams, virtual teams and virtual project teams.

Table 1: Summary of Differences between Traditional Conventional Teams, Virtual Teams and Virtual Project Teams (Ebrahim, Shamsuddin, & Zahari, 2009)**;** (Gibson & Gibbs, 2006)

Traditional Conventional Team	Virtual Team	Virtual Project Team
Team members are co-located – one location	Team members are in different locations	Team members are in different locations
Communication is primarily face to face (personal)	Communication is done via asynchronous means Use of technology – Skype, Lync, telephones/cellphones	Involves collaboration amongst project members at different locations, where the sites can be internationally distributed, with different organisations involved Technology is a massive enabler and is dependent on modern media to communicate effectively. Lync, Skype, video conferencing, telephones and cell phones are some of the media that can be used
Team members co-ordinate team tasks together	Teams are highly structured, hence co-ordination by the team is rarely required	Differentiating factor: Timeframe – virtual projects are more ad hoc and temporary in nature Can also operate or be conducted within a traditional organisational structure
Ability to share work and non-work-related information	Very little informal exchange of information	Can also operate or be conducted within a traditional organisational structure
Utilisation of resources – much opportunity to share resources	Each unit or collaborating unit has access to the same technical and non-technical infrastructure	Access to resources and use of infrastructure are dependent on time – each project has a specific start and end date
Project manager maintains control and accountability	Each unit is accountable to the task, but there is no control, as it may be difficult to enforce penalties	Similar to a virtual team in terms of difficulty of control, but the project manager remains accountable

Working environment is constrained to the company, making it difficult to access information and interact with others outside the team	Working environment makes it difficult to share ideas with other partners	Environment not conducive to the sharing of knowledge Individual members of the virtual project team have specific duties and skills that they action to completion only
Culture and education – members are more likely to have similar backgrounds	Culture and Education - team members vary in their backgrounds, expertise, time orientation and language	Difficulty in fostering a culture, as the team is virtual (across time and space), thus making the management of culture difficult
Technology compatibility – single organisations, thus minimal incompatibility of technological systems	Compatibility among the different systems of collaborating organisations must be managed from the beginning	Technology is the enabler for a virtual project team and must therefore be compatible with the other teams involved

3.3 Structure of Virtual Teams

According to Lurey and Raisinghani (2001), the structure of virtual teams is fundamentally important, with clear and explicit roles and responsibilities, as well as clearly identified objectives. The composition of the team and its structure must make provision for technological methods of enabling face-to-face discussion. Lurey and Raisinghani (2001) stated that although the adoption of virtual teams will have an impact on communication (specifically face-to-face), team leaders can utilise group telephone and online computer conferencing/videoconferencing to enhance the personal connection amongst team members. Certain challenges related to virtual teams are certainly to be expected, but in light of increasing global competition and the constant need to respond quickly to customers, it is essential for organisations – and more importantly, successful organisations – to be organised in a dynamic network through the use of information technology (IT) as the enabler (Powell *et al.*, 2004).

The decision to operate through virtual means depends on a number of factors, namely the group structure (group dynamics), the tasks to be completed, and the frequency of interaction (Kirkman & Mathieu, 2005).

Organisations are constantly reviewing and changing the way in which virtual teams operate. An organisation's stance and viewpoint are critical to the establishment of any virtual team (Kirkman & Mathieu, 2005). Furthermore, the decisions made by the organisation affect the way in which any virtual team is composed and also determine the effectiveness of that team. Organisational systems and support can be provided through means of a rewards system and education. Management and leadership styles were highlighted by Lurey and Raisinghani (2001) as part of the organisational system component functioning within virtual teams.

The dimensions and composition of the virtual team are critically important, as they affect the decision on the organisational system to be adopted, and ultimately the success of the virtual team. Identifying the organisation's location compared to that of the relevant teams will dictate the frequency of face-to-face interaction. Therefore, if teams are situated some distance away from the organisation, the dependence on technology will increase, while face-to-face interaction will be minimal (Kirkman & Mathieu, 2005). Team size also plays an important role, in that the larger the team is in size, the more difficult it is to maintain control and the more standardised the processes must be. Discipline is critical when working according to these processes, while staff skills and competencies are also important factors in the composition of the virtual team. A virtual team is required to have the various skills and aptitudes necessary to meet the specified objectives (Lurey & Raisinghani, 2001).

The success of virtual teams is dependent on their composition (group dynamics) and structure (organisational systems). Lurey and Raisinghani (2001), in concluding their study,

made specific reference to this point by stating that the process of virtual teams and the interaction between them (composition and structure) are the dependent variables in achieving their objectives. This case study is therefore based on the study of Lurey and Raisinghani (2001), with the framework (instrument) adapted to a virtual project team environment.

It takes time to successfully compose a virtual team, since it is bound to mature and evolve. The skills within the team are expected to improve, making it important to continually manage the entire process and not just the results. Kirkman and Mathieu (2005) argued that virtual teams are constructed on the basis of the organisational structure, the task to be completed, and the level of interaction required.

In the process of establishing a virtual team, an organisation will adopt those tools and technologies that are considered to be in alignment with the company strategy and structure (Lurey & Raisinghani, 2001). Most important is the communication process, which is inculcated within the organisation and specifically linked to virtual teams and the way in which they communicate (Lurey & Raisinghani, 2001).

3.4 Structure of Virtual Project Teams

Evaristo (2002) suggested that organisations have taken for granted the need for proper infrastructure and support to facilitate virtual projects. The lack of adequate literature on this subject points to it being an area that few have researched (Evaristo, 2002). In support of the comments above, Piccoli and Ives (2003) stated that temporary virtual teams could be set up to focus on the completion of particular projects. There is a link between socio-emotional processes and the outcomes of virtual team projects, keeping in mind that virtual teams and

virtual project teams face unique difficulties in meeting the needs of virtual team members (Powell *et al.,* 2004). Thus, the link between virtual teams and virtual project teams becomes evident in terms of virtual project teams being limited only by time in the form of a starting date and ending date.

3.5 Measuring Virtual Team Effectiveness

Lurey and Raisinghani (2001) stated that virtual team effectiveness is a measurable concept that is dependent on the process of conducting work, and which can be measured firstly by looking at the actual output based on production; secondly in terms of the process of conducting work, and finally according to the team members' level of satisfaction. This would serve to foster an environment of innovation, as staff members have the opportunity to learn from the process and contribute dimensions that could add value. This would not be possible if the project were to be managed by results alone (Kirkman & Mathieu, 2005).

Organisational systems therefore provide input into the composition of the virtual team. It is evident that the decisions made by the organisation in the initial stages of the process are contributing factors when it comes to virtual team effectiveness. This supports the claim that the manner in which organisational systems flow into the group dynamics of the virtual team determines the effectiveness of that team.

3.6 Characteristics of a Virtual Project Team

Kotlarsky and Oshri (2005) discussed the composition, structure and systems within dispersed projects, noting that co-ordination and communication within the project team are of paramount importance in the effectiveness and efficiency of that team. Similar to virtual teams, virtual project teams are dependent on and enabled through technology.

Since both virtual teams and virtual project teams are dependent on technology, it follows that the tools used to communicate, as well as the processes and communication patterns adopted, would be similar as well. Tools and technology are critical enablers in the functioning and communication of virtual teams (Powell *et al.*, 2004). Depending on the type of organisation and virtual team involved, the type of technology to be used is selected with the aim of producing the desired outcome (Anderson, McEwan, Bal & Carletta, 2007). Thissen, Page, Bharathi and Austin (2007) provided great insight into the types of media used to enable communication, ranging from text messages, shared services and web conferencing, to e-mail and telephone communication. Berry (2011:192) defined communication as "the process of transferring information, meaning and understanding between two or more parties". Organisational systems use communication patterns to support virtual teams and virtual project teams. Communication patterns, which refer to the frequency of meetings to ensure the clarification of requirements, are often problematic due to the incorrect medium being used, resulting in meetings being less interactive and less informative (Horwitz, Bravington & Silvis, 2006).

Lurey and Raisinghani (2001) referred to the concept of "external support systems" or "organisational systems" as a contributing factor in team effectiveness. These external support systems comprise a number of concepts, namely education systems, reward systems, executive leadership styles, tools and technology, and communication patterns. The review of post-2001 literature primarily involves studies that refer to these concepts as a means of ascertaining team effectiveness. Horwitz, Bravington and Silvis (2006) used concepts similar to those of Lurey and Raisinghani (2001) in order to identify the key factors influencing virtual team effectiveness. Since this case study is based on the model devised by Lurey and Raisinghani (2001) as a means to measure the effectiveness of virtual teams, the focus is therefore on the abovementioned concepts. The methodology employed in the case study is based on that of Lurey and Raisinghani (2001), aimed at establishing which concepts and variables contribute to the effectiveness of the virtual project teams at the financial institution in question. The case study is also aimed at investigating whether the organisational systems and group dynamics inherent to a virtual project team would have an impact on the effectiveness of that team.

4. Conceptual Framework

This study is based on concepts and constructs derived from the work of Lurey and Raisinghani (2001), with the model being adapted and elaborated upon within a South African context. Team member relations and leadership styles are aspects that had to be adapted to fit the diverse and multicultural nature of South African society and business. This model is therefore representative of the unique South African context, consequently providing new insight and knowledge in this regard.

The interview questions designed for purposes of this study are therefore also based on the framework developed by Lurey and Raisinghani (2001). The conceptual framework comprises the group dynamics and organisational systems of virtual project teams, based on specific concepts as shown in Figure 1 below.

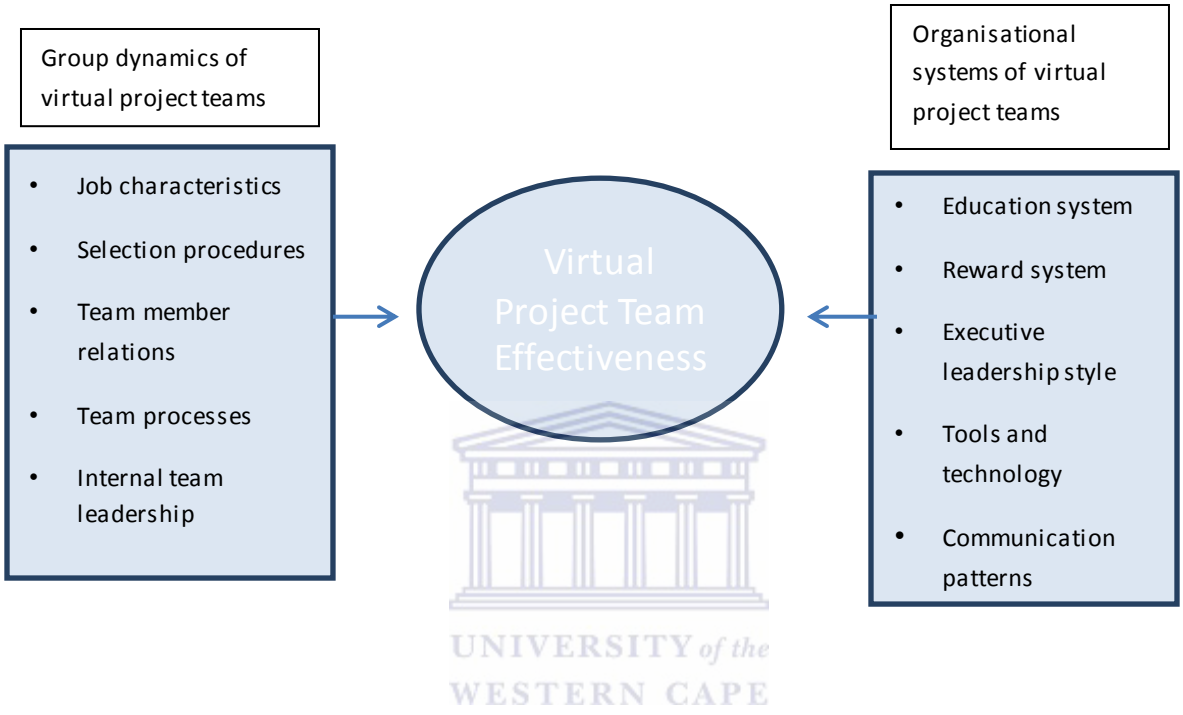


Figure 1: Conceptual Framework for Virtual Team Effectiveness (Lurey & Raisinghani, 2001)

The reason for adopting this particular model lies in the fact that it makes provision for all possible variables and constructs. Although the model proposed by Martins, Gilson and Maynard (2004) can be considered more extensive, it lacks clarity and is less focused than the model of Lurey and Raisinghani (2001). The model devised by Lin, Standing and Liu (2008) to show how virtual teams can be constructed would be of no value in this case, as it would not provide the detail required to answer the research questions in full.

5. Research Design

5.1 Research Methodology

This study adopts a case study design as proposed by Yin (2003), utilising a mixed-method approach as a method of enquiry, with the suggestions proposed by Creswell (2009). The aim of the research was to establish the dynamics associated with the virtual project teams operating within the organisation in question, through a cross-sectional survey of the members of a virtual project team set up in 2011 to manage projects related to the company's strategic intent. The aims of the research were to identify the current dynamic challenges that have an impact on virtual project team effectiveness. As such, the study was best performed at a particular point in time. According to Lee and Lings (2008), a cross-sectional study collects data on all the variables in a study at a single point in time, which supports this choice. In terms of available resources such as cost and time, it was more feasible to use a cross-sectional design rather than a longitudinal design.

The topic of virtual teams, and more specifically virtual project teams, is characterised as part of the "information era" and can thus be considered an emergent field (Lipnack & Stamps, 2007). Although this field of study has been explored since the early 1980s, there are many areas within the field that require further study (Powell *et al.*, 2004). This is the main reason for the case study adopting the study of Lurey and Raisinghani (2001) and adapting it to the context of one of South Africa's largest financial institutions, through means of a case study research method.

According to Robson (2002), a case study involves the empirical investigation of a specific phenomenon within its real-life context. This particular case study sought to identify the

correlation between variables and to explain why and how these variables lead to virtual project team effectiveness – hence the appropriateness of the selected case study method.

The initial plan was to collect the qualitative data through in-depth interviews, with themes being identified from the qualitative data collected from such interviews. According to Yin (2009), such interviews can provide more informative and extensive material than that provided by of surveys or even the open-ended parts of survey instruments. However, it subsequently became necessary to take a different approach than originally planned, with the reasons for this change and the results thereof being discussed in the sections to follow.

5.2 Revised Methodology

The methodology initially envisaged was revised, leading to the research being conducted as a case study, which, according to Robson (2002), involves the use of both quantitative and qualitative data (mixed-method approach). However, a change in methodology did become necessary, with the survey ultimately being conducted on a face-to face basis to ensure the maximum response from participants (after the poor response rate achieved with the initial survey in electronic format).

There are many definitions of the mixed-method approach to research, some of which are rather simplistic in their explanation, suggesting that the approach includes at least one quantitative method (collection of numbers) and one qualitative method (collection of words), with neither method inherently linked to any specific inquiry paradigm (Creswell, 2009).

Some other definitions are more explanatory, however, describing mixed-method research as an approach whereby the researcher is able to combine elements of both quantitative and

qualitative research as a means to collect, analyse and interpret data. The use of this approach ensures a better understanding of research problems than the use of one research approach alone (Creswell, 2009).

Creswell (2009) supported the definition of the mixed-method approach as a research design with philosophical assumptions, as well as methods of inquiry. This particular methodology involves certain philosophical assumptions that guide the collection and analysis of data in terms of this mixture of qualitative and quantitative approaches in many phases of the research process. Furthermore, at its core is the fact that quantitative and qualitative approaches are used in combination to enable a greater understanding of the situation and to ensure a wider reach than either approach on its own. A mixed-method research design is therefore adopted when seeking to fundamentally answer questions that cannot be answered by either a quantitative or qualitative approach alone (Creswell, 2009).

Although this study followed a mixed-method approach throughout, the method of gathering data was revised at a certain point. Initially, data was gathered by means of a questionnaire (quantitative) and in-depth interviews (qualitative), with the questionnaire being conducted by means of Survey-Monkey (10 December 2014). However, this approach yielded poor results, with the response rate to the questionnaire being less than 50%, prompting the researcher to consider alternatives in an attempt to resolve this shortcoming.

Subsequently, once the staff members had returned to work following the festive season break, a three-day team-building exercise was scheduled for 4-6 March 2015 in Cape Town. It was at this point that the researcher proposed to management that during one of the team-building sessions on the final day of the event, staff members should be asked to complete the questionnaire. Management gave the necessary consent, and all staff members in

attendance completed the questionnaire, securing a 100% participation rate. In addition to the questionnaire, the researcher acted as a participant observer over a period of four months, with such (participant) observation replacing the need for in-depth interviews (refer to p. 18, par. 2).

Yin (2003) defined participant observation as a unique mode of observation in which the researcher is not simply a passive observer, but rather engaged in a variety of roles within a case study situation and thus an active participant in the situation being studied. Adopting this technique provides a unique opportunity to perceive the reality from the viewpoint of someone "inside" the case study rather than from the outside. As such, this technique is rather invaluable in producing an "accurate" depiction of the case study phenomenon (Yin, 2003).

The questionnaire itself remained unchanged, with the results providing input in terms of the correlation between concepts. Furthermore, the results were used to identify areas or themes whereby information could be interpreted to support a potential theory. The latter part of the questionnaire allowed participants to express their own thoughts on the various issues, as the questions were in an open-ended format.

Participant observations documented by the researcher were used to supplement the open-ended questions posed in the questionnaire. As mentioned above, the purpose of this particular questionnaire was to uncover or identify certain common themes that could explain the real-life situation at the company in question.

Given the duration of the team-building exercise, the researcher and management were in agreement that the scheduling of in-depth interviews would not be feasible in terms of time, cost and potential information to be gathered.

Following on the explanation of the forms and methods of data collection employed in the effort to answer the research questions involved in this study, the subsequent sections and paragraphs explain how the relevant data was used and interpreted.

The overall questionnaire was considered separately and handled independently from the participant observation notes. According to Creswell (2009), the~~se~~ two strands (quantitative and qualitative) are independent of each other and will only be mixed when necessary to draw conclusions during the overall interpretation on conclusion of the study.

Although the quantitative and qualitative datasets were viewed as independent and held separate from each other, the timing of their adoption is important. Creswell (2009) suggested that the first step should be to identify priority between the strands of data (quantitative and qualitative). According to Creswell (2009), two distinct questions need to be asked at this point, namely:

- Is the quantitative data more important than the qualitative data?
- Which set of data is dependent on which in order to answer the research questions?

With respect to this study, both can be considered equally important. The questionnaire (survey) provides information that would be equally important as that from the participant observation notes. Furthermore, the findings in terms of which dataset would either support or contradict the other would add value to the understanding of the current phenomenon or

relationship that exists. Having established that both are equally important, the timing of the implementation of the methods in order to obtain the data is vital.

Referencing Creswell (2009), this study adopted the concurrent approach, which involves the implementation of both the qualitative and quantitative strands during a single phase of the research study. This is in line with the fact that this study is cross-sectional in nature and at a point in time, with the survey having been conducted on 6 March 2015 and the participant observations having been recorded over a period of four months (February to May 2015).

Furthermore, the mixing of data and the timing thereof is integral, and subject to the way in which the researcher will be using the data to answer the research questions. Having established that both strands are equally important, and noting that they are independent from each other, the study incorporates the convergent parallel design as explained by Creswell (2009).

The researcher adopted the convergent parallel design by implementing the qualitative and quantitative approaches during the same phases of the research process, giving both methods equal priority and, critically, keeping the strands independent during analysis. Data and results were mixed at the end of the research process, at the point of interpreting the data and drawing conclusions.

The revised methodology provides the best solution in terms of answering the research questions put forward by the researcher.

5.3 Case Study Sample

The virtual project team at this particular financial institution comprises 23 members, of which 10 are based in Cape Town and 13 in Johannesburg.

5.4 Justification of the Methodology

The justification of the methodology (refer to 5.1, p. 17, and 5.2, p. 18) is dependent on several variables, namely ontology, epistemology and axiology from the researcher's perspective (philosophical view). This contributes to the decision on the type of design and data collection best suited to answering the research questions posed by the researcher – thus justifying the approach taken.

According to Saunders, Lewis and Thornhill (2011) the philosophical assumption is crucial in the approach taken to any study. It is understood that the philosophical stance taken serves as the foundation to the study and ultimately guides it in the right direction to effectively answer the research questions (Saunders *et al.*, 2011). The pragmatic approach taken in this case employs the use of both quantitative and qualitative methods to derive the best possible data to accurately answer the research questions.

The research questions and objectives for this study are clearly defined (refer to p 5). It is important to note that according to the design framework proposed by Creswell (2009), the researcher's approach was that of a pragmatist – i.e. in terms of ontology, the approach was to use external or multiple methods/views, or any means whereby the researcher would be best able to answer the research questions. As a pragmatist, the researcher was driven to solve and understand the problem using any method necessary (Creswell, 2009).

With reference to epistemology, Creswell (2009) stated that the research question dictates the acceptable knowledge required. The integral importance of values in the next process (axiology) is of imperative concern to the researcher (as a pragmatist). For this particular study, the research took a rather objective view of proceedings. According to Creswell (2009), based on the researcher's pragmatic viewpoints (ontology, epistemology and axiology), the mixed-method approach stands as the best data-collection method for use in case studies.

A case study, by definition, is "an empirical inquiry about a contemporary phenomenon set within its real-world context – especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2009:18). Case studies are therefore best used when the researcher addresses either a descriptive question of "what" or an explanatory question of "why". Furthermore, when emphasising the study of a phenomenon in the real-world context, the case study method makes use of data in the natural settings rather than relying on data derived previously (Bromley, 1986).

This study sought to answer two research questions relevant to a specific company, and as such can be considered a "real life context", thereby rendering it plausible to use a case study design. Within a case study design, Yin (2009) confirmed that both quantitative and qualitative methods could be used.

Furthermore, based on the research questions, the researcher identified the need for both quantitative and qualitative data to be used in finding the best answer to those questions.

Both the quantitative method and the qualitative method were adopted to ensure that all relevant information/data was gathered in order to best answer the research questions. According to Creswell (2009), when researchers study a few individuals qualitatively, the

ability to generalise the results to many is lost, and when quantitatively examining many individuals, the understanding of one individual is diminished. Therefore, the limitations of the single-method approach can be countered by the strengths of the mixed-method approach.

The combination of quantitative and qualitative data allows for a more holistic understanding of the research problem than the use of either approach alone (Creswell, 2009:8). In order to remain objective, the researcher sought to keep the quantitative data independent and separate. The participant observation notes were considered to have been taken on the same date/day as this was the start date. However though the survey and participant observation notes started on the same day the observation notes were taken over a period of four months. It is important to note that the researcher did not look at the results of the survey while commencing the participant observation note exercise. This was done in an effort to remain objective and not look specifically at certain themes that could have been derived from the quantitative survey.

A decision was made to adopt a convergent parallel design, only mixing the results when requiring a conclusion or interpretation of the findings.

Furthermore, the study was cross-sectional and not longitudinal in nature. The aim of the research was to determine whether the current dynamic issues have an impact on virtual project team effectiveness. As such, the study was best done at a particular point in time. If the study had been aimed at resolving the current challenges, it would have been beneficial to conduct another study thereafter in order to measure or identify the exact amount of change since the initial study, thus requiring a longitudinal study (Creswell, 2009).

Although a variety of methods could have been employed for this case study, the researcher – an employee at the financial institution in question – determined that the selected methodology would be the most effective and feasible method of obtaining data and other related information pertinent to this study (refer to 5.1, p. 17, and 5.2, p. 18).

In addition to ensuring that the methodology is feasible, the research must convey that the undertaking of the study has validity, and that the findings have reliability. The term "validity" refers simply to whether the findings are exactly matched to the question that was initially asked or posed (Saunders *et al*., 2011). The instrument proposed for purposes of the questionnaire does have face validity, as per the study of Lurey and Raisinghani (2001), whose findings have been referenced and used as the foundation for several related studies (Powell *et al.*, 2004).

According to Easterby-Smith, Thorpe, Jackson and Lowe (2008), reliability refers to the manner in which the data collection techniques or analysis procedures used would yield consistent findings. Since this case study is specific to one particular financial institution, the context is concise and consequently the level of reliability is high.

5.5 Data Analysis and Synthesis

The case study utilised thematic analysis to analyse the qualitative data obtained. Information gathered during the in-depth interviews was analysed using "Atlas.ti" qualitative data analysis software. Thematic analysis is specifically used in qualitative studies to identify, analyse and report patterns within the data. It is organised in nature, describing the dataset in rich detail. It also interprets various aspects of the research topic (Braun & Clarke, 2006).

6. Limitations of the Study

Although the study may be limited in terms of the statistical analysis of a single financial institution, the findings could still form the foundation for other studies focusing on virtual teams in the financial services sector in South Africa. Irrespective of the statistical limitation, an opportunity for future research exists without being constrained to the financial services industry. This study will therefore form the basis of future research on virtual teams/virtual project teams, especially within a South African context, and can be applied to any industry. The fact that the researcher was a participant observer in the study could suggest a certain amount of bias in the findings.

The adoption of the convergent parallel design could provide a limitation in terms of findings. If both strands were not implemented at the same time, it is plausible that if the quantitative strand was implemented first, the researcher could have reviewed the findings of that survey and thereafter engage by means of participant observation in order to understand the findings more intrinsically. This would mean that the two strands were not equal and that the quantitative strand would be considered more important, with the qualitative approach merely serving to support the quantitative.

Another limitation of the study is that although the survey was conducted face to face, the participant observation notes were not always taken on site. Being based in Cape Town, the researcher could easily take observation notes in person at the Cape Town office, but the observation notes relating to the Johannesburg team had to be based on teleconference encounters, virtual “face-to-face” meetings, and only occasional face-to-face meetings held in person with the team in Johannesburg, when specifically asked to do so.

7. Ethical Considerations

For purposes of this case study, ethical clearance was sought from the University of the Western Cape. All participants in the proposed case study were sourced through legitimate means, while the data collection process allowed for voluntary participation. Informed consent in respect of the questionnaire and participant observation notes was secured prior to the collection of data. The financial institution on which this case study was based did give formal consent, on the express condition of anonymity.

8. Results

Lurey and Raisinghani (2001) identified numerous variables, including formation, characteristics, process, team member relations, organisational environment, leadership and tools, and sought to establish a correlation amongst them. The results discussed below focus on group dynamics (namely team formation, team characteristics and team process) and then support systems (namely, team organisation environment, team tools and leadership) in relation to their impact on the effectiveness of the virtual team. The results from a quantitative perspective are given first, followed by the qualitative results.

8.1 Quantitative Findings

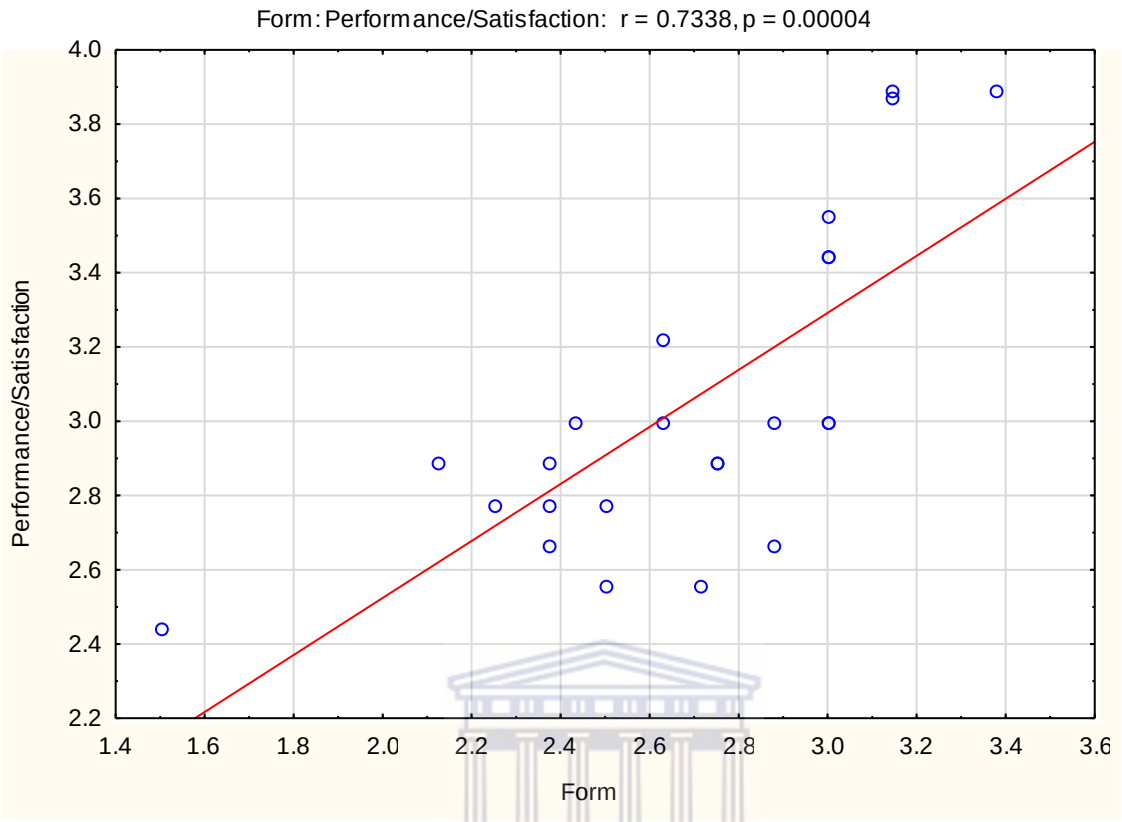
8.1.1 Group Dynamics

8.1.1.1 Form:

The majority of the participants acknowledged that they had been involved in some way when the team was formed. Questions were focused on how the team had been formed and to what extent participants had been encouraged to be involved in the process. The results supported this statement, finding that more than 70% (average) of participants agreed that they had been involved in some way in the initial formation of the team. However, within this category, participants highlighted the lack of adequate training for new members (44%) and the lack of accessibility to documentation relating to team processes (52%). The findings therefore confirm the impact of the situation on new members as they face the challenge of becoming accustomed to the business, as well as the process and methodology of the team. In addition, 44% of participants agreed that they had not been properly informed as to the purpose of the team and the reasons for its formation.

Despite the conflicting viewpoints reflected above, the results point to a direct correlation between the way in which a team is formed and the performance of that team (see Figure 3). The circles on the diagram reflect the participants' answers and show the answers and subsequent results were in relative consensus in relation to the straight graph line. Had the answers been further from the line, it would have indicated that there was disparity or inconsistencies in what the team members viewed to be the reality of the topic/variable. These results indicate congruence in this matter relating to 'form'. Should team members not fully understand their purpose within the team, or be uncertain of the process to be followed, team performance would be directly impacted.

Figure 3: Relationship between Form and Performance



8.1.1.2 Characteristics:

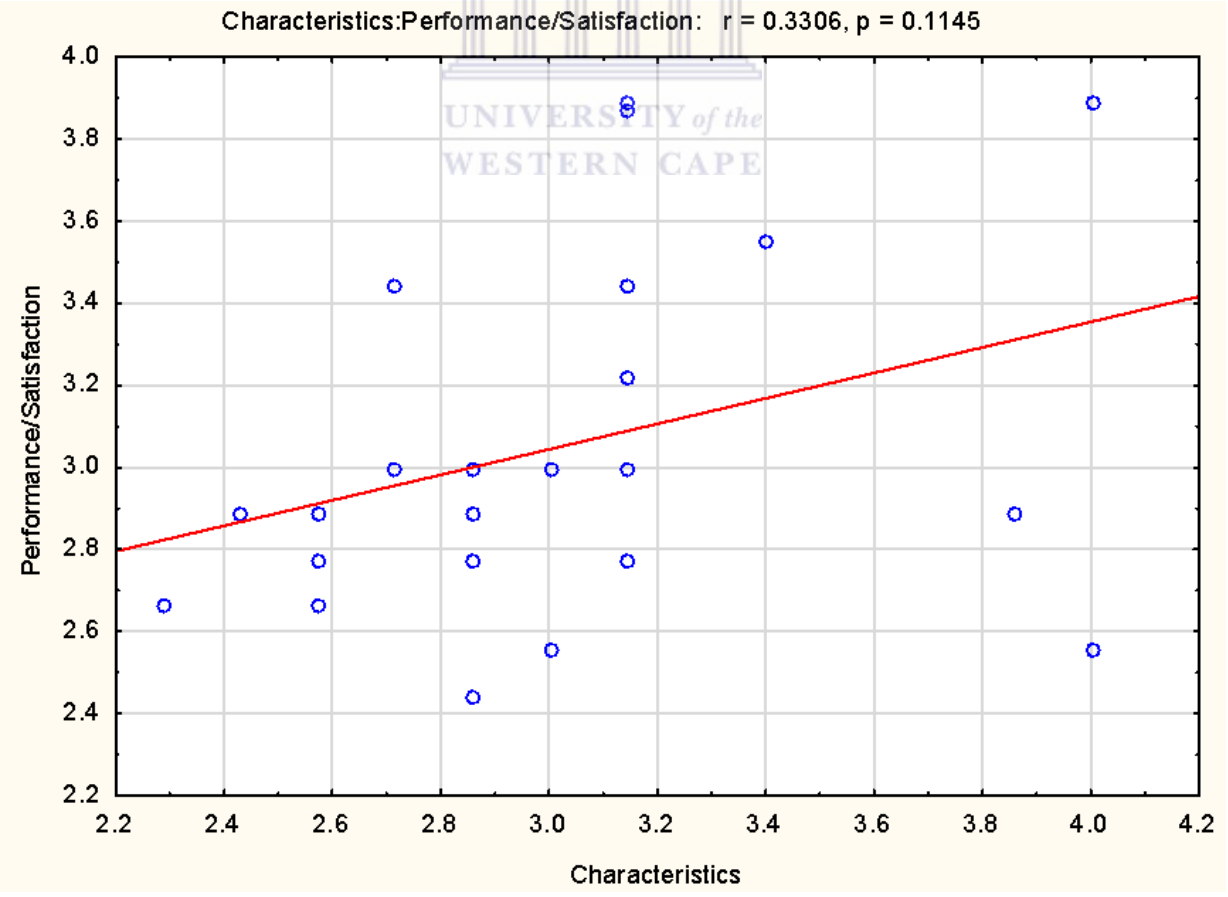
The questions highlighted in this category focused on various attributes within a team, culminating in certain key characteristics that enable the team to function. The attributes relate specifically to skills development, skills competency, and the intrinsic reward of the work and the associated challenges.

Participants were unanimous (100%) in seeing themselves as being able to add value to the team and the work being done. In support of this, 88% of participants were found to agree that all members of the team are utilised in accordance with their strengths, abilities and talents, while 68% stated that the individuals within the team are indeed technically competent. Furthermore, the majority of participants concurred that the team and its role

allow for further development to take place, thus also allowing for self-development and team growth, leaving only 20% of participants in disagreement with this statement.

The relationship between characteristics and performance is not as distinctly correlated as in the case of formation, but some correlation is evident in the results (see Figure 4). This diagram shows that respondents' answers varied when it came to the impact that a team's characteristics had on the performance of that team. The varied response therefore indicates that the team is divided on this matter, clearly shown in the graph with the results scattered away from the line of best fit. Furthermore, the results seem to support the analysis presented in the previous paragraph.

Figure 4: Relationship between Characteristics and Performance



8.1.1.3 Process:

Team process is of significant importance in terms of group dynamics, but with various viewpoints to be considered, as revealed in the results. Although 88% of participants agreed that face-to-face meetings are held to discuss relevant matters, 32% expressed the opinion that more time should be dedicated to the process of building social relations and addressing business issues.

Team members were found to have an understanding of their roles and responsibilities, thus ensuring that the team is aware of what is expected of them. Although 68% of participants expressed agreement with this statement, further questions revealed some contradiction in this regard, with 48% of participants being uncertain of how best to perform their job tasks/duties.

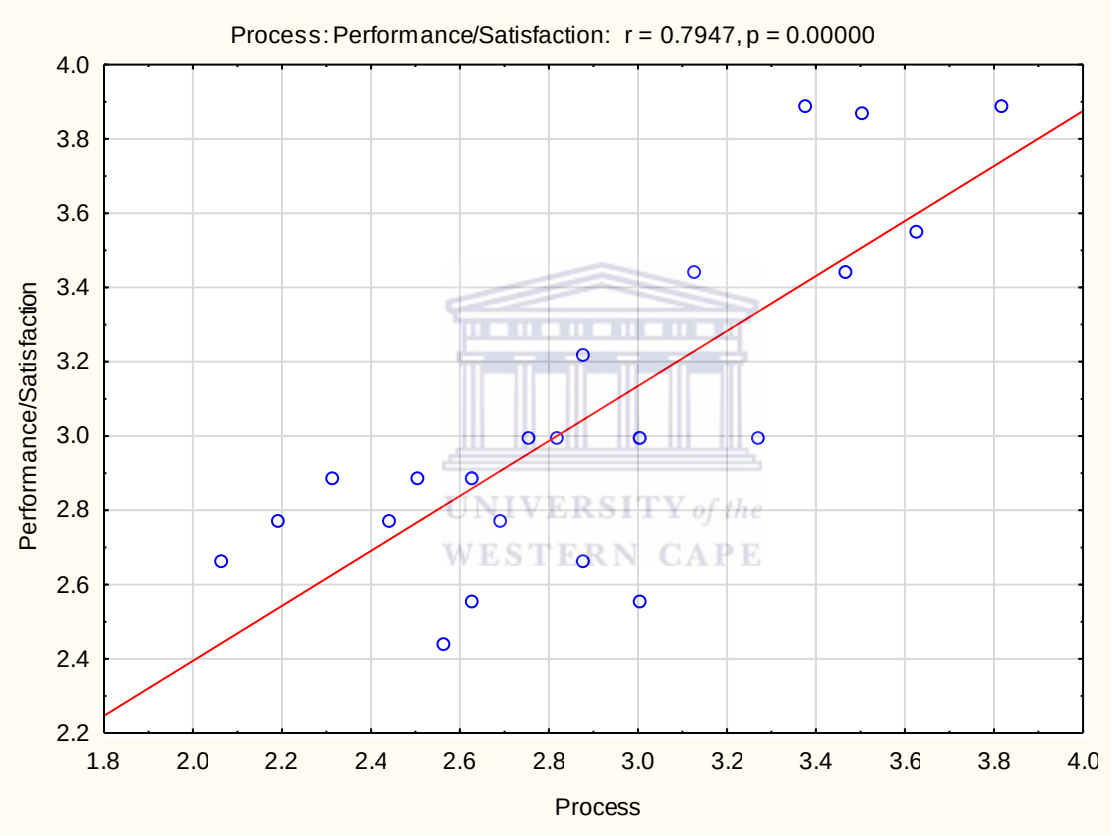
With respect to the decision-making process, the results pointed to some confusion, with 40% of participants being aware of an established decision-making process, and conversely 60% being unaware of such a process. With regard to problem solving, the results are clear, with an overwhelming 92% relying on their own judgement when having to solve problems.

Furthermore, 76% of participants agreed that team members are encouraged to assist in the process by suggesting ideas to improve efficiency. It was also confirmed that the process allows for and ensures that team leaders are able to set clear objectives and goals for the team, (64% of participants in agreement), and, most importantly, keep the team working together (68% in agreement).

With a Cronbach's alpha of 0,89, the overall results clearly suggest a direct correlation between process and performance (see Figure 5). Similar to "form", the respondents' results

show relative consensus. The responses are all relatively close to the line of best fit, thereby indicating that most are in agreement on the importance of ”process” and showing the direct correlation between performance and its dependence on ”process”.

Figure 5: Relationship between Process and Performance



8.1.1.4 Team Member Relations:

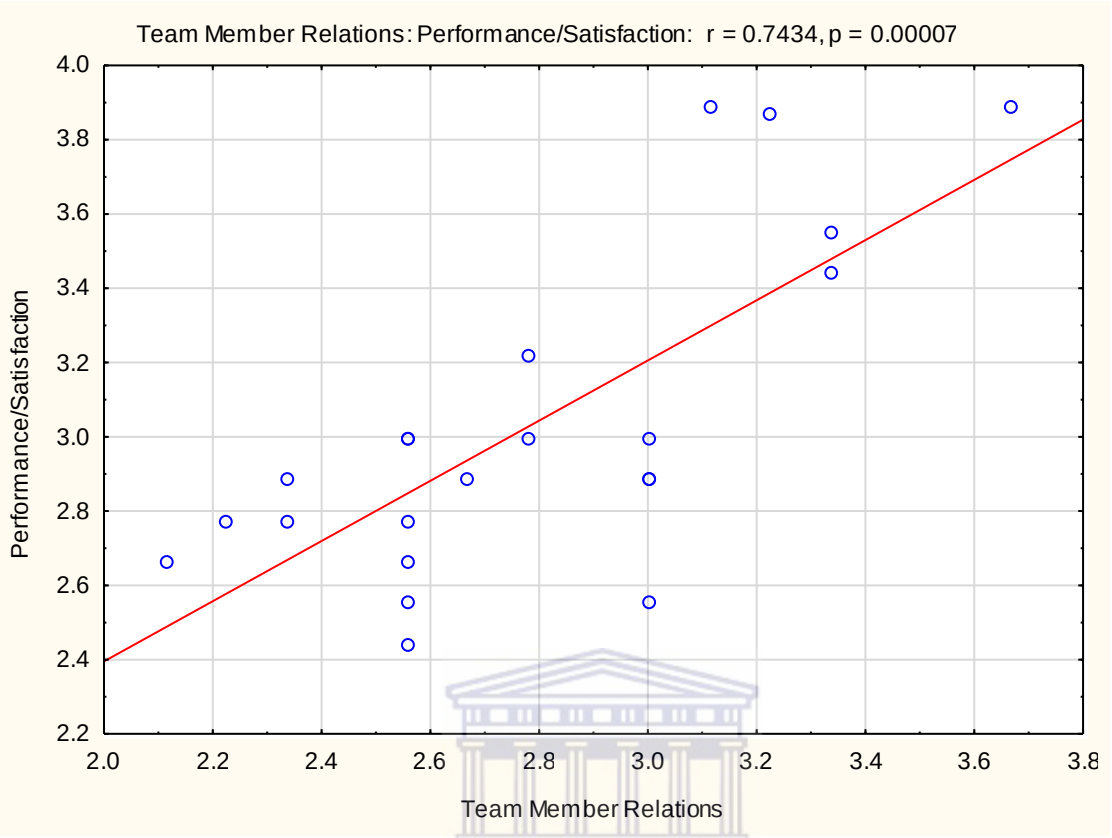
In terms of a virtual project team working between Cape Town and Johannesburg, the results concur that more time should be invested in the effort to improve relations between the different teams. A total of 64% of participants confirmed that the respective teams had been given opportunities to meet face to face (in person), yet 40% agreed that the time spent on

team-building exercises was not adequate. More time was apparently being spent on goals and objectives, however, with 72% expressing agreement.

The results suggest that irrespective of the process and focus on work, the team has a sense of unity and trust, with 84% of participants confirming that they would consult the other team members if in need of support. Moreover, 64% claimed to experience a sense of sharing the same goals and direction.

In terms of establishing correlation, the results confirm a direct correlation between team member relations and performance (see Figure 6 below). The diagram shows that some respondents' answers were relatively skewed or showed disparity as they were distant from the line of best fit. However, the overall result shows the direct correlation despite these outliers. The graph therefore supports the analysis of the results explained in the aforementioned paragraphs.

Figure 6: Relationship between Team Member Relations and Performance



8.1.2 Organisational Support Systems:

The results to follow focus on the organisational support systems, namely, organisational environment, tools and leadership.

8.1.2.1 Organisational Environment:

The results seem to suggest that few participants (team members) feel adequately supported by the systems in place around them. In terms of acknowledging the organisation as having a strong educational system in place, only 56% of participants expressed agreement, leaving 44% disagreeing with this statement. The subsequent question added support to this finding, with 54% of participants confirming a lack of sufficient training from the company/organisation towards the development of core skills. Further questions revealed

that according to 82% of participants, they had not received any training to improve their effectiveness in the virtual team setting. In terms of communication as a support system, 64% of participants stated that they had not attended any training seminars specifically aimed at improving communication with other team members working in dispersed locations, leaving 36% agreeing that such seminars had taken place. This effectively means that at present, the majority (64%) of team members are unaware of the methods and processes best suited to yielding successful results within the virtual team. Such a situation ultimately renders the team ineffective and unbalanced, with some members being able but others unable to perform a particular task. The team requires certain standards and a level of uniformity to ensure that all members are suitably equipped and able to deliver and perform as expected.

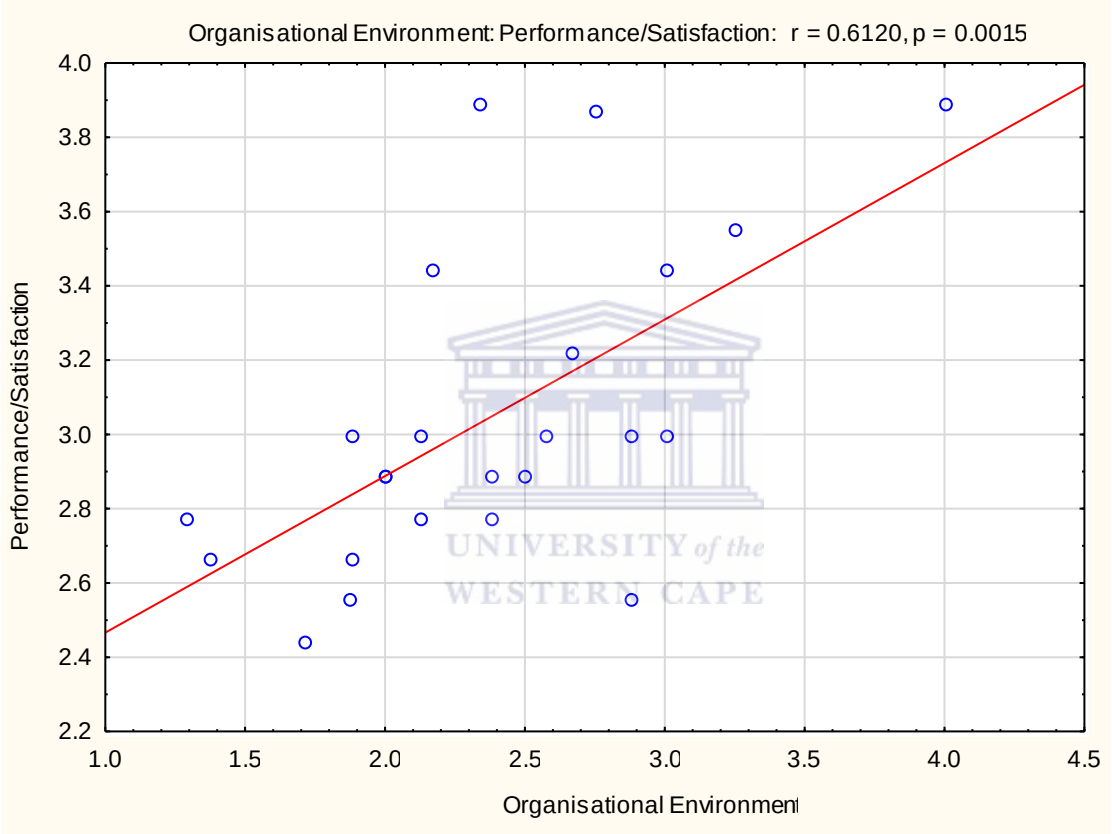
Furthermore, with reference to reward systems being used as a means to support or encourage positive performance, the results again pointed to conflicting answers, with only 36% in agreement and 64% in total disagreement. Subsequent questions lent further support to the results in relation to an individual reward system, with the collective reward system being no different. The results in respect of whether all team members are rewarded when goals or objectives are achieved, only 36% were in agreement, with the balance in total disagreement.

Despite the conflicting results found for this particular variable, the virtual team acknowledges and understands what is being fundamentally represented here. With a Cronbach's alpha of 0,88, the results show a clear and direct correlation between organisational environment and performance (see Figure 7 below).

Although the diagram shows a few outliers, the Cronbach's alpha of 0,88 and the overall results that portray the answers relatively close to the line of best fit both point to a clear

result. The outliers as explained above are typically a result of participants not being informed or aware of various methods and processes. The diagram shows a strong correlation and thus confirms the importance of the impact that the organisational environment has on performance.

Figure 7: Relationship between Organisational Environment and Performance



8.1.2.2 Leadership

This attribute is widely considered an integral component in any management function and general working environment. Inn this study of virtual project teams, however, it will become evident that leadership is overshadowed by the other variables. The questions put forward in respect of leadership are focused on the vision of the organisation/department, and whether this vision has filtered down to the team members. In this regard, the results show that the

vision has indeed been effectively communicated to the team members, with 68% of participants concurring with this statement.

Furthermore, the management approach encourages team members to show initiative in terms of the work, as well as decision-making. Team members are thus encouraged to be self-reliant and are required to lead themselves rather than be led; this, within the context of a virtual project team, supports the notion of how leadership in a traditional sense becomes obsolete in this particular setting. In terms of quantitative analysis, the results revealed 56% of participants to be in agreement with the approach whereby team members are encouraged to show initiative. With respect to showing initiative in a decision-making capacity, 60% expressed agreement.

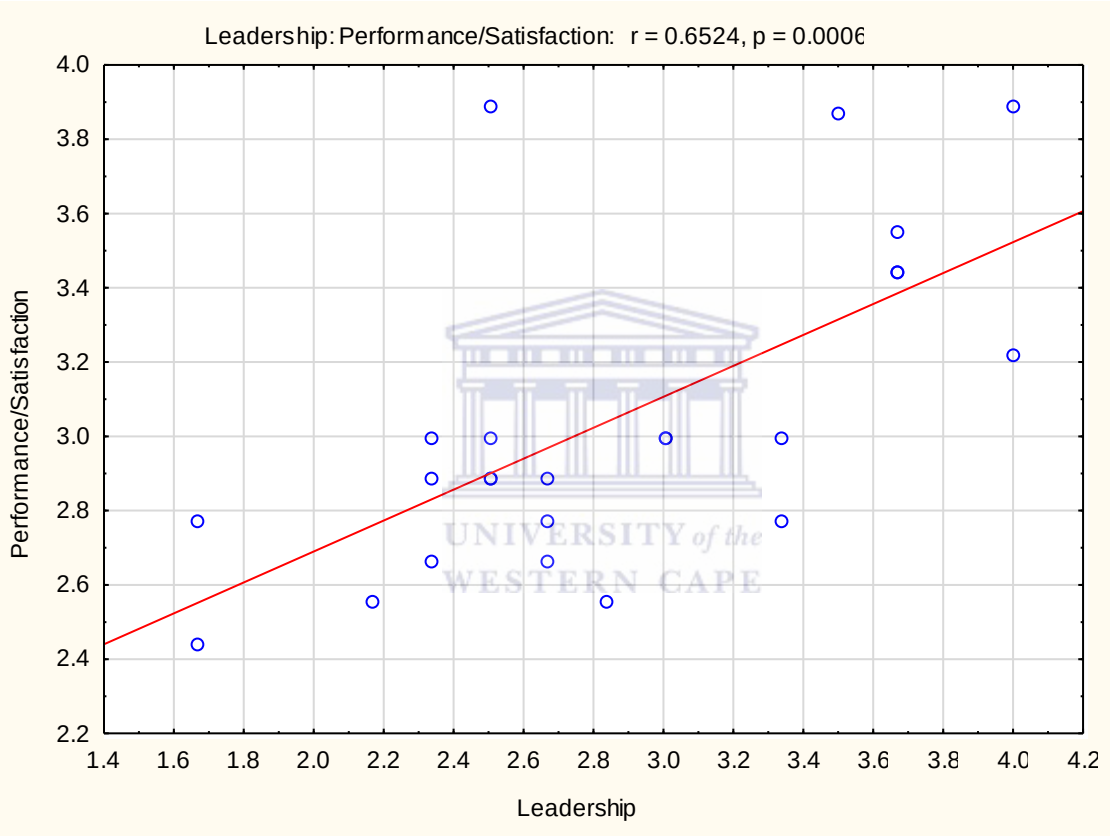
Leadership is vital in respect of processes and decision-making in view of the best possible use of technology to effectively communicate across boundaries. The results show that leadership has indeed taken this into account, advocating for the use of electronic communication and information systems to improve the effectiveness and efficiency of the team's functions (72% of participants being in agreement).

This study is focused on the establishment of relationships and a demonstration of how the variables impact on one another and, more importantly, on the virtual project team. With respect to leadership, a direct correlation is again found between leadership and performance (see Figure 8).

The diagram shows certain outliers in relation to the line of best fit. The outliers result from certain participants who feel the need to lead themselves and make decisions on their own without much support from the rest of the team. Although this is true to some extent, the

overall results indicate that the consensus is that the team acknowledges the respective leadership styles and the way in which the leadership approach is executed. Furthermore, the results show that despite the importance of other variables in the study, leadership is a key component to ensure good performance.

Figure 8: Relationship between Leadership and Performance



8.1.2.3 Tools:

Based on the results, this variable is rather contentious in terms of understanding the conflicting and contradicting answers given to previous questions in the survey. It was previously noted that new team members do not have access to pertinent information to function effectively, and that there is no storage of documentation for use by new members. On the other hand, however, when it comes to tools, 76% of participants agreed that they

have access to all the information they need to perform their work duties. Furthermore, upon further questioning, the results complement the 76% but contradict the findings noted in relation to form (refer to 8.1.1.1, p. 29), with 64% claiming to be equipped with adequate tools and technologies to perform their tasks.

In terms of the effectiveness of tools, 76% of participants were found to concur that the electronic methods used to communicate with one another are effective and efficient. Although the results show a distinct contradiction, it must be noted that Cronbach's alpha is below 0,7, rendering this portion rather low on the scale of reliability. Furthermore, two participants failed to answer the question correctly, thus compounding the problem of reliability in respect of these findings (see Figure 9 below).

The table in Figure 9 reflects the participants' average response to each tool presented in the survey. However, a graph would not accurately represent these results since two respondents did not provide answers here and the manner in which the answers for each tool are tabulated would not be suitable. Although there seems to be contradiction surrounding some of the questions, the table shows that there are few outliers and that responses are relatively close to the median. This therefore suggests consensus and agreement.

Figure 9: Information Pertaining to the "Tools" Portion of the Survey

variable	Summary for scale: Mean=45.5200 Std.Dv.=5.87452 Valid N:25 (N?A remove Cronbach alpha: .436623 Standardized alpha: .589406 Average inter-item corr.: .095018					
	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Totl Correl.	Squared Multp. R	Alpha if deleted
Tools 1	42.6000	32.7200	5.72014	-0.01691	0.66881	0.44909
Tools 2	42.8000	33.1200	5.75499	-0.07071	0.88894	0.46084
Tools 3	42.4400	32.2464	5.67859	0.08955	0.69528	0.43185
Tools 4	43.0400	29.1584	5.39985	0.35140	0.75708	0.37890
Tools 5	42.6400	30.7104	5.54169	0.24281	0.90771	0.40632
Tools 6	41.6800	31.1776	5.58369	-0.05815	0.60432	0.50579
Tools 7	40.4800	28.6496	5.35253	0.30598	0.67064	0.37962
Tools 8	43.8400	30.6944	5.54025	0.07713	0.47036	0.43797
Tools 9	44.4000	31.5200	5.61426	0.41218	0.67343	0.40988
Tools 10	39.6000	31.7600	5.63560	0.42383	0.49225	0.41384
Tools 11	41.4400	29.4464	5.42645	0.11787	0.71931	0.42903
Tools 12	42.0000	27.2800	5.22302	0.27014	0.73559	0.37821
Tools 13	42.2400	25.0624	5.00623	0.20601	0.65909	0.40370
Tools 14	43.9200	25.5936	5.05901	0.43030	0.59040	0.32504
Tools 15	44.1600	31.1744	5.58340	0.03241	0.70059	0.45102

8.2 Qualitative Results:

The open-ended questions in the survey, together with the participant observation notes kept by the researcher, culminate in the qualitative data and results that follow.

The qualitative findings seem to contradict the quantitative results in certain areas, most notably with regard to the team member relations and process. The findings suggest a lack of trust amongst the team members. Trust is a critical attribute in any relationship, and it is often cited as cause for concern in traditional teams/structures. That being said, in a virtual team or virtual project team, this attribute (amongst others) is amplified in comparison to traditional structures.

This lack of trust seems to be the reason for the finding that the views and opinions of certain team members are apparently more highly valued than those of other team members, which contradicts the quantitative findings (refer to 8.1.1.4, p. 33). Although there are some experienced individuals on the team, who have been with the company for more than five years, and whose knowledge may in fact carry more weight, there is indeed the perception of a hierarchy within the team. The lack of trust that prevails is compounded by this perception of hierarchy and of some members being more highly valued than others. This finding is contradicted by the quantitative results, however (refer to 8.1.1.2, p. 30, and 8.1.1.4, p. 33).

Furthermore, it has been documented that certain individuals feel that they are not valued within the team, or that their work is of no value. This has an impact on both a personal and a professional level, resulting from an obvious lack of job satisfaction. According to the observational notes, this situation is primarily caused by the lack of trust within the team. As previously mentioned (refer to 8.2, par. 2), issues of minor significance and little effect in a

traditional structure can be amplified into serious problems in a virtual team/virtual project team. As such, it is apparent that the Cape Town team does not always trust the work done by the Johannesburg team, with evidence of a clear misalignment in terms of the quality of work being done by the Johannesburg team, compared to what is expected by the Cape Town office. There are certain historical issues that may justify this perception; however, since the conception of the virtual project team, this perception is slowly being rectified.

The development team based in Johannesburg is known for working tirelessly; however, there is recent evidence of projects having been delivered in phases, contrary to the business needs and requirements of the organisation. Once projects are broken up into different phases, experience has shown that the subsequent phases are unlikely to take place due to new projects and other priorities coming to the forefront. The result is that despite the hard work of both the Johannesburg and Cape Town teams, the perception is that they are unappreciated and undervalued, in the midst of overall dissatisfaction with their performance in terms of project delivery. This in turn places extra pressure on clear process in terms of delivery and project governance.

The quantitative results show a direct correlation between process and performance (effectiveness) (refer to 8.1.1.3, p. 31), yet 44% of the participants admitted to not having a clear understanding of how best to perform their duties/work. This is further supported by the qualitative results, with strong evidence of there being no clearly defined process in place. As a result, the business is not entirely sure of the process in place, or whether there has been any change in process, which ultimately leads to dissatisfaction with respect to project delivery.

It should be noted that all process changes were communicated accordingly at executive level and to the impacted areas at the time of change. However, project management is still a relatively new concept within the firm, and the business may lack the maturity to accept such changes. As such, change management is an area that requires more attention.

In addition to the lack of clearly defined processes, there is general confusion within the team when having to make critical decisions. Most significantly, when dealing with matters that need to be escalated, there is apparent confusion in terms of how and to whom the matter should be escalated, which results in a longer lead-time. Nevertheless, it is noteworthy that individuals are encouraged to take the initiative and make decisions (supported by quantitative data – refer to 8.1.2.2, p. 36), although the perceived hierarchy within the team may have an impact on this particular process, in the event of decisions or suggestions being vetoed.

Moreover, communication in terms of change management is clearly an area that requires improvement, and doing so may help to alleviate the sense of frustration and the perception of unsatisfactory project delivery. With regard to communication between the different locations (Johannesburg and Cape Town), this is also a topic to be reviewed on the basis of results. Work-related discussions are apparently taking place via different types of electronic media, although there is a need to improve the effectiveness and quality of said media. This can be achieved through the use of the most suitable medium in each case, depending on the size of the audience, amongst other things. However, despite the work being done, there seems to be a disconnect on an interpersonal level.

In addition to the lack of trust and the perceived hierarchy within the team, the lack of effective communication on an interpersonal level leads to individuals in the team feeling

misunderstood and even disrespected, as evidenced through the observations and themes of the data.

A direct correlation was found between team member relations and performance (effectiveness) (refer to 8.1.1.4, p. 33), although the findings also pointed to low morale on an individual level within the team.

Further analysis of the findings revealed social factors and culture to be contributing factors to be taken into account when addressing issues of effective communication, lack of trust, and perceived hierarchy within the team (higher value being given to the opinions/suggestions of a select few). This particular area is rather significant, as international research in terms of team culture is different to that in a South African context, where there is a unique understanding and mandate in this regard. South Africa has various laws and legislation in place to govern issues of culture and background (previously disadvantaged individuals) in the workplace. Black Economic Empowerment is one example of such legislation in effect in South Africa. It should be noted that this study focuses on the topic of effectiveness, and for this reason there was no need to identify the ethnic group of each participant. Nonetheless, the participant observation process, particularly within the Cape Town team, found there to be a perception of double standards and favouritism with respect to race.

Although all the team members possess the necessary skills and abilities to do the work as required (supported by the quantitative data) (refer to 8.1.1.2, p. 30), the existence of certain cultural differences have given rise to scenarios in which staff have had the experience of being spoken to in a condescending manner. This in turn links back to the perception of

hierarchy, and more importantly trust. Due to the lack of trust within the team, the attributes mentioned above are significantly compounded.

9 Recommendations

The findings discussed above do not portray an environment conducive to optimal productivity. However, despite this, the key area in which all the challenges are based is trust. It is clear that the team is aware of this, which in itself is a positive step for change.

Based on the findings, together with the team interaction and the literature review, the following steps should be considered when setting up a virtual team/virtual project team.

- Understanding of purpose:

Knowing why the team is needed is integral to the successful development of that team. Knowing the team's purpose will aid in securing "buy-in" from those wanting to be a part of that purpose. Having team members wanting to be a part of something bigger than themselves will go a long way towards uniting the team, while allowing the members to align their own personal growth with that of the team.

The team's purpose should encompass the objectives and vision going forward. Despite the fact that projects are defined by having a start and end date, within a project office there should always be an overall strategy/vision for the team. This once again contributes to the unification of the team, and in so doing will indirectly build the foundation for trust.

- Understanding of skills required:

Knowing and understanding the purpose of the team is important; however, knowing what is required to achieve those tasks identified as part of the purpose, and how to go about doing so, is an entirely different matter. Identifying specific requirements in terms of skills will aid in finding the correct candidate for the position, thus giving each member of the team a clear

focus in knowing exactly what he or she is required to do. Moreover, a document clarifying the roles and responsibilities of all team members should be drawn up and provided to the team, ensuring that the members are all clearly aware of what is expected of them. Such a document is common practice in most organisations, but is usually only provided to new members upon joining the company. It is recommended that this document be reviewed bi-annually and made available to all members, as a means of being proactive in terms of potential changes in the workplace.

Understanding the respective roles and responsibilities will give an indication of what is required in other disciplines within the team, thus aiding in the drafting of career growth/development plans. Such plans provide an incentive to staff, and for the manager it is critical that this matter is taken seriously and that all development plans are honoured, as this also serves as a means to maintain trust.

Despite the teams being dispersed, the training that is provided must be the same in all regions.

- Standardised processes and documentation

With teams being dispersed across borders, states and countries, matters can easily wander off course. The mentality of “doing things my way” is normal, where there are no managers looking over the workers’ shoulders. It is therefore vital that clear operating standards are set, thus ensuring that staff members clearly understand what is expected of them, and allowing for those expectations to be managed properly.

The use of templates or standard documentation can help to improve work efficiency, but this too will require training to ensure the accuracy of the relevant documents.

The entire value chain, including all work done and processes followed, must be documented and stored in a manner that is accessible to everyone and available for review at any time, especially when a new employee has joined the team. A sense of uniformity in terms of administration serves to indirectly build the team ethos.

- Support systems

The importance of unity has already been highlighted in respect of personnel – and it is no less important when it comes to systems. However, it is crucial for the system to be aligned with the personnel requirements, thus creating an effective support system.

With technology being the major enabler for virtual project teams, it is important to clarify exactly which media will be used to communicate with other members of the team. This could be via telephone, teleconference, videoconference, Skype and/or Lync. The medium used must be appropriate for the audience and the size of the meeting. The relevant specifications, requirements, general procedures and purposes relating to the use of the respective media must be documented for training purposes.

To ensure the effectiveness of the particular media being used, there must be proper compliance with the relevant specifications and requirements in that regard. For example, where there is no bandwidth available, a company would not have the option of using Skype or Lync.

With reference to managers as support systems (leaders), it is suggested that their personal management style be reviewed and that they partake in managerial workshops for continuous development. Furthermore, it is proposed that they engage in one-on-one

discussions on a fortnightly basis, even via Skype if necessary. This is key in ensuring that team members feel needed and important.

- Team building

Although this is a general practice in traditional team structures, this is even more important for virtual teams, but also more difficult to co-ordinate. It is suggested that the new budget makes provision for a team-building workshop to be held twice per year, with all members participating in their personal capacity. Staff can be incentivised in this regard – for example, as a reward for achieving their targets, more team-building sessions could be arranged, with the ultimate purpose being team unification.

The interpersonal attributes are the most important factors to review in setting up a virtual team/project team. Once the foundation of trust has been laid, the way forward will be more manageable.

10 Conclusion

The initial understanding at the onset of this study was that it stands to reason that virtual teams would unavoidably encounter certain obstacles and challenges. It is apparent that certain minor challenges, which would not have any impact in a traditional structure, would be amplified and/or compounded within a virtual team/project structure. The findings of this particular study certainly prove this to be true.

The problem statement addressed by this study outlines the difficulty involved in delivering projects on time, as well as the problem of having to redo much of the work because of a lack of understanding of the relevant requirements, and most notably the financial impact of all this on the firm. The study thus reviewed and amended the work previously done by Lurey and Raisinghani (2001), reworking it into the context of a South African firm, including an investigation of organisational support systems and groups dynamics.

The results reveal that in terms of organisational support systems, there is a strong correlation between the organisational systems in place and the overall effectiveness/performance. This suggest that the participants/team understand that in order to function optimally, the team requires effective support systems, and the participants did acknowledge that there are such processes in place. However, although the team may understand the fundamentals of the situation, as well as the need for certain processes, common objectives and a broad vision, the breakdown occurs in the transition phase, while making the vision/objective process integral to the team through common teamwork. The team members agreed that they have the necessary skills to succeed; they believe that they have been positioned in ways best suited to ensuring their optimal performance – yet despite this, teamwork is non-existent.

The team members were found to function as “islands” – the individuals work well on their own, performing their separate functions effectively, but when it comes to working as a team, the “team” becomes non-existent. Ultimately, the focus on work and project delivery places enormous pressure on the team as a whole, creating an environment of tension and conflict. The perception is that whatever work is done, it is never good enough.

Both the Cape Town and Johannesburg teams expressed similar viewpoints. The teams were unanimous in their opinion that the working environment is not what it should be and that this is having a definite negative impact on the effectiveness of the team. In terms of organisational support systems, there is an impact on the effectiveness of the virtual team/project team. The findings suggest a negative impact based on the manner in which work is being done –thereby impacting the team environment.

Similarly, with regard to group dynamics, there is a strong correlation between all the variables and performance/effectiveness. The greatest cause for concern, however, is team member relations, with the findings concurring with those in relation to organisational support systems. The themes derived from the participant observations and the answers to the open-ended questions distinctly point to staff/team members feeling unhappy and misunderstood. Findings and themes derived from participant responses point to certain interactions being seen as disrespectful. Ultimately, the single most important concept/theme/ variable that binds any team together is the same one that seems to pose the greatest overall challenge – TRUST.

The qualitative findings point to a breakdown in trust between the team members, contributing greatly towards the feeling of unhappiness that prevails, and the difficult environment in which the team members find themselves. As such, in answer to the second

research question in relation to this particular organisation, the effectiveness of the virtual project team is being negatively affected by the prevailing group dynamics. With improved morale and interaction amongst members, it is entirely possible that the group dynamics could instead have a positive impact on the virtual project team.

The challenges for a virtual team or virtual project team are on-going. Staff will change and move, crossing boundaries and timelines. Both the Johannesburg team and the Cape Town team must foster a cohesive team culture – each with its own identity as a specific team (this is reality), but nonetheless dependent on one another for success, and working together to foster a culture and attitude conducive to teamwork and ultimate success for all.

The aim of the proposed case study was furthermore to advance the level of knowledge in the area of virtual project team dynamics, while providing managers with a benchmark against which to design and support the formation and activities of virtual project teams in the South African financial services sector.

The topic/subject of virtual project teams has evolved over the past decade, and indications are that organisations are increasingly investigating ways in which to adopt this method of work. Future studies should primarily focus on team member relations and skills, particularly within a South African context where there is a multitude of backgrounds and cultures, which – if managed correctly – can be of significant value to the firm and society as a whole.

Gibson and Manuel (2003) suggested that the criteria of what constitutes an effective project team differ from organisation to organisation. An understanding of exactly which dynamics and support systems enable a virtual project team to succeed will ensure that organisations make provision for this. Reflecting back on the problem statement (refer to 1.2, p. 4), there

are clear reasons for the challenges being experienced by the organisation in terms of timelines and quality requirements. It is the lack of uniformity, trust and effective communication between the dispersed teams that has led to the current state of affairs. Although this situation can be turned around, it will require a great deal more intervention on an interpersonal level in order to gain the trust of the team and secure their “buy-in” going forward. This will provide a platform from which the goals and objectives of the individuals within the team can be aligned with the goals and objectives of the collective team/organisation.

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APPENDIX A

Virtual Teams Survey

PURPOSE

The purpose of this survey is to gather information regarding the virtual team of which you are a member. It is important for us to understand how virtual team members think and feel as your company continues to grow and change. Only with this awareness will it be possible to address any areas of concern or those that need improvement.

More specifically, we have three primary goals with this survey. First, we hope to learn what methods were used to design your virtual team. Second, we would like to review what systems your organization established to better support your team. Third, we expect to determine how these factors have, or have not, helped your team succeed in achieving its business objectives.

YOUR PARTICIPATION

In order to accomplish these goals, we need your complete and honest participation. For this reason, we ensure complete confidentiality for everyone who completes this survey. Responses from all of the completed surveys will be pooled together so that no one individual can be identified. We ask for your name at the conclusion of the survey merely to allow us to conduct follow-up research – Providing your name, however, is completely optional.

SURVEY RESULTS

Finally, in an effort to keep everybody informed and create a stronger team environment, the results of this survey, as well as those completed by members of other virtual teams, will be summarized in a final report upon completion of this research project. This report will then be shared with all teams who participate in this process. Thank you, in advance, for your honest responses.

DIRECTIONS

The virtual teams survey will take approximately 20 – 30 minutes to complete. Please follow the instructions on the survey itself and indicate your responses accordingly.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
Example:					
I was invited to participate in the formation of this team.	( )	**(X)**	( )	( )	( )

SECTION I. The first section of this survey asks you questions specifically about the design of your virtual team. Please keep in mind the manner in which your team was designed as you respond to questions 1 – 41.

Questions 1 - 9 ask you for specific information about your virtual team and how it was formed.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
1. I was invited to participate in the formation of this team.	( )	( )	( )	( )	( )
2. Team members were asked for their suggestions when the team was originally formed.	( )	( )	( )	( )	( )
3. Careful consideration was given to the team's objectives during the design of this team.	( )	( )	( )	( )	( )
4. Those who designed the team considered the larger organization as well as the team itself.	( )	( )	( )	( )	( )
5. I received sufficient information to understand the team's purpose when I was notified about being a member of this team.	( )	( )	( )	( )	( )
6. My role on the team was clearly explained to me during this notification.	( )	( )	( )	( )	( )
7. New team members are quickly brought up to speed when they join the team.	( )	( )	( )	( )	( )
8. New team members can access critical information to learn about the team's history and earlier work.	( )	( )	( )	( )	( )

9. I was notified that I would be a member of this team through the following means. *Please mark all that apply.*
___ Peer/Co-worker ___ My Supervisor ___ Other Supervisor ___ Volunteered
___ Paper Memo ___ Fax ___ Email ___ Phone ___ Other _____(please specify)

Questions 10 - 16 ask about the characteristics of your job and how people were selected to be members of the team.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
10. I gain intrinsic reward and satisfaction from my job.	( )	( )	( )	( )	( )
11. I find that I am challenged by my work.	( )	( )	( )	( )	( )
12. My job gives me the opportunity to develop my knowledge and skills.	( )	( )	( )	( )	( )
13. I am able to add value to the team's work.	( )	( )	( )	( )	( )
14. Team members were selected based on their individual talents and abilities to contribute to the team.	( )	( )	( )	( )	( )

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
15. When selected, team members were technically competent with the tools we use to perform our work and interact with one another.	( )	( )	( )	( )	( )
16. Team members were selected simply because they were not otherwise committed and were available to work on this assignment.	( )	( )	( )	( )	( )

Questions 17 - 25 ask about the team member relations within your team.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
17. Team members were given the opportunity to meet each other in person early on in the team's development.	( )	( )	( )	( )	( )
18. During the team's first meeting, some time was dedicated to **discussing the team's purpose and goals**.	( )	( )	( )	( )	( )
19. During the team's first meeting, some time was dedicated to **team building exercises** such as meeting individual team members, creating effective team communication, and/or discussing conflict resolution.	( )	( )	( )	( )	( )
20. I rely upon other team members to complete my assigned work.	( )	( )	( )	( )	( )
21. Team members trust one another and will consult each other if they need support.	( )	( )	( )	( )	( )
22. Team members experience a sense of shared goals and objectives.	( )	( )	( )	( )	( )
23. Knowledge and information sharing is understood to be a group norm within my team.	( )	( )	( )	( )	( )
24. Our team is a very cohesive unit.	( )	( )	( )	( )	( )
25. When disagreements occur, they are usually addressed promptly in order to solve them.	( )	( )	( )	( )	( )

Questions 26 - 41 ask about the team's process.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
26. Face-to-face team meetings are held whenever possible so people can discuss things together.	( )	( )	( )	( )	( )
27. Time is dedicated to developing social relations as					

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
well as addressing business issues during these face-to-face meetings.	( )	( )	( )	( )	( )
28. Team members regularly use phone and/or on-line computer conferences to share ideas.	( )	( )	( )	( )	( )
29. Time is dedicated to developing social relations as well as addressing business issues during these electronic conferences.	( )	( )	( )	( )	( )
30. The team established a trend of success early on.	( )	( )	( )	( )	( )
31. The team celebrates its successes.	( )	( )	( )	( )	( )
32. Team members were able to recognize our collective talents and utilize them from the beginning.	( )	( )	( )	( )	( )
33. Team members have a shared understanding of what the team is supposed to do.	( )	( )	( )	( )	( )
34. We are clear on how best to perform our work tasks.	( )	( )	( )	( )	( )
35. Our team has an established process for making decisions.	( )	( )	( )	( )	( )
36. Team members use their own judgment in solving problems.	( )	( )	( )	( )	( )
37. The team's leaders offer new ideas or approaches to do our jobs better.	( )	( )	( )	( )	( )
38. The team's leaders are friendly and can be easily approached.	( )	( )	( )	( )	( )
39. Team members feel that the team's leaders are helpful and supportive.	( )	( )	( )	( )	( )
40. The team's leaders make sure team members have clear goals to achieve.	( )	( )	( )	( )	( )
41. The team's leaders keep individuals working together as a team.	( )	( )	( )	( )	( )

SECTION II. The second section of this survey asks you questions specifically about the systems your organization uses to support your virtual team. Please keep these organizational support systems in mind as you respond to questions 42 – 61.

Questions 42 - 49 ask about the organizational environment in which your team operates.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
42. The organization has a strong educational system.	( )	( )	( )	( )	( )
43. I receive sufficient training from the organization to develop my core skills.	( )	( )	( )	( )	( )
44. Since the team's formation, team members have received training focused on becoming more effective in the virtual team setting.	( )	( )	( )	( )	( )
45. Training is based on only technical skills such as using specific software applications or issues like product knowledge.	( )	( )	( )	( )	( )
46. Training seminars were developed specifically to help us communicate effectively with our fellow team members who work in dispersed locations.	( )	( )	( )	( )	( )
47. I am rewarded individually for my work efforts.	( )	( )	( )	( )	( )
48. All team members are rewarded when the team reaches its goals.	( )	( )	( )	( )	( )
49. Our team is well supported by the organization.	( )	( )	( )	( )	( )

Questions 50 - 55 ask about the leadership of your organization.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
50. The organization's leaders have created a vision for the company.	( )	( )	( )	( )	( )
51. This vision is articulated to all members of the organization.	( )	( )	( )	( )	( )
52. The management approach in our organization promotes initiative in team members.	( )	( )	( )	( )	( )
53. Individuals are encouraged to take initiative and participate in important decisions.	( )	( )	( )	( )	( )
54. The organization's leaders are competent with and serve as positive role models in the use of our communication technologies.	( )	( )	( )	( )	( )
55. Management encourages the use of electronic communication and information systems.	( )	( )	( )	( )	( )

Questions 56 - 61 ask about the tools and technology your team uses and its methods of communication.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
56. I have access to all of the information I need to perform my work.	( )	( )	( )	( )	( )
57. The team is equipped with adequate tools and technologies to perform our tasks.	( )	( )	( )	( )	( )
58. Team members are in contact with one another on a regular basis in order to conduct routine business.	( )	( )	( )	( )	( )
59. Team members are in contact with one another on a regular basis for social, or non-business, purposes.	( )	( )	( )	( )	( )
60. The electronic methods we use to communicate with one another are effective.	( )	( )	( )	( )	( )

61. Please indicate the frequency with which you use the following tools for exchanging routine business information with fellow team members.

0 = Never / Not applicable
1 = Less than once a month
2 = Once a month
3 = Once a week
4 = A few times a week
5 = Daily

___ Face-to-face interaction
___ Personal Telephone Call
___ Voice Mail
___ Fax
___ E-mail
___ Group Telephone Conference
___ Video Conference
___ Shared Databases / Groupware (i.e. LotusNotes®)
___ Standard / Express Mail Delivery
___ Other _____(please specify)

SECTION III. The third section of this survey asks you general questions about your virtual team. Please keep your virtual team in mind as you respond to questions 62 – 84.

Questions 62 - 70 ask you for information about the overall performance of your team and the level of satisfaction of the team members.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
62. In the past, the team has been effective in reaching its goals.	( )	( )	( )	( )	( )
63. The team is currently meeting its business objectives.	( )	( )	( )	( )	( )
64. When the team completes its work, it is generally **on time**.	( )	( )	( )	( )	( )
65. When the team completes its work, it is generally **within the budget**.	( )	( )	( )	( )	( )
66. There is respect for individuals in the team.	( )	( )	( )	( )	( )
67. I feel my input is valued by the members of the team.	( )	( )	( )	( )	( )

68. Team member morale is high in the team. ( ) ( ) ( ) ( ) ( )

69. I enjoy being a member of this team. ( ) ( ) ( ) ( ) ( )

70. In the future, I would be interested in participating in another virtual team. ( ) ( ) ( ) ( ) ( )

Questions 71 - 82 ask you for general information about you, your team, and your organization. Please respond to each question as indicated.

71. Name of the organization. _____

72. Your position in the organization. *Please mark only one choice.*
___ Administrative Support ___ Individual Contributor (i.e. Consultant, Sales Rep.)
___ Manager / Supervisor ___ Director
___ Vice President ___ Senior Executive
___ Other _____

73. In the last year, how many teams have you participated in where **all** team members were based **in the same location**? _____

74. In the last year, how many teams have you participated in where some of the team members were dispersed **across different locations**? _____

75. Name of the virtual team you referred to in this survey. _____

76. Total number of team members on this team. _____

77. Your position in relationship to this team. *Please mark only one choice.*
___ Team Member ___ Team Leader
___ External Team Supporter ___ Other _____

78. How long has this team been in existence? ___ years ___ months

79. How long have you been a member of this team? ___ years ___ months

80. Have you been a member of this team since its inception? ___ Yes ___ No

81. How would you describe this team? *Please mark all that apply.*
___ R&D, Sales (i.e. Functional) ___ Executive, Product line (i.e. Cross-functional)
___ Under 1 year (i.e. Short-term) ___ Over 1 year (i.e. Long-term)
___ Other _____

82. Your name. *Optional.* _____

Questions 83 - 84 are short answer questions. Please respond to the following questions by providing a short answer response in the space provided.

83. Based on your experiences, what is the greatest challenge for a virtual team?

84. Based on your experiences, what is the greatest challenge for effective communication between team members of a virtual team?