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Effective Leadership to Manage Virtual Teams in Multinational Companies



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Abstract

Global competition and advances in technology are leading to the explosion of virtual teams in order to execute business strategies. Adoption of permanent virtual team structures enables companies access to best talent with rich cultural diversity as a form of competitive advantage. This new way of working brings forth challenges regarding leadership. The main purpose of this research was to identify perceptions on the leadership preferences and important factors enabling or inhibiting the effective leadership to manage virtual teams.

Two types of data collection methodologies were used, namely, qualitative and quantitative in two phases. The first phase was to gain in-depth knowledge on the themes and constructs to be used to develop the questionnaire. The survey for the second phase took the form of self-administered quantitative questionnaires. In total 59 responses were received; 13 virtual managers, 23 virtual subordinates and 23 respondents who were both virtual managers and virtual subordinates.

The outcome revealed that soft leadership skills are core to the success of virtual teams. There was a consistent view on findings between managers, subordinates and respondents who are both managers and subordinates. By understanding the relative importance of key skills, enablers and inhibitors, virtual managers will be able to demonstrate the different leadership qualities and practices required to effectively lead virtual teams. The key finding of the study was that at the crux of effective leadership in virtual teams is the ability for managers to display socio-emotional capabilities.

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Mmathi Elizabeth Mogale

11 November 2009

Dedication

This research is dedicated to my late father Albert Maropeng Mogale who always wanted me to become a medical doctor. If he was still around, I know he would have been proud of me achieving my MBA.

I wish he was still around to witness this.



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I would like to acknowledge the following people who either walked with me during the journey or have provided input invaluable to my research;

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Chapter 1 Introduction to the Research Problem

1.1 Introduction

The shift from production to service-oriented businesses has created a new generation of knowledge workers not bound to physical work locations, therefore suggesting that firms are faced with increased challenges to coordinate tasks across time zones, physical boundaries, and organisational contexts (Bal & Teo, 2000; Kayworth & Leidner, 2002). Global competition and advances in technology are leading to the explosion of virtual teams in order to execute business strategies. In today's competitive global economy, organisations can gain a competitive advantage through the capability of rapidly creating virtual teams of talented people to respond quickly to a changing business environment (Lee-Kelley, 2002 & Curseu, Schalk & Wessel, 2008).

Virtual teams are undoubtedly on the rise with almost a quarter of a billion people already working online globally (Bergiel, Bergiel & Balsmeier, 2008). A study conducted in the USA in 2001 indicated that 8.4 million employees were members of one or more virtual team or groups (Bergiel, *et al.*, 2008). The sudden increase of virtual teams is also supported by Hertela, Geisterb & Konradt (2005) in their survey of 376 business managers from different countries which revealed that approximately 40% of the managers worked at least temporarily in virtual teams, and approximately 20% worked predominantly as members of virtual teams. It is estimated that 41 million corporate employees globally will spend at least one day a week as a virtual worker and 100 million will work from home at least one day a month (Jury, 2008).

According to the article in IT Reseller Magazine (2009), dispersed teams are becoming the norm of doing business across the globe. This trend toward physically dispersed work groups has necessitated a fresh inquiry into the role and nature of team leadership in virtual settings (Kayworth, *et al.*, 2002). Connaughton and Daly (2004) highlights that 90% of the 500 virtual managers studied perceived managing from afar to be more challenging than managing

people on site. Table 1 below indicates the outcome of a global study conducted by the CIO Executive Council (2007) in which Chief Intelligence Officers (CIOs) identified their most common challenge as managing global virtual teams.

Table 1: CIOs rate of globalisation challenges in terms of their relative importance and scope

| Challenge | Very Important | Worldwide Scope |
|---|----------------|-----------------|
| 1. Managing virtual teams | 70% | 70% |
| 2. Consolidation | 61% | 70% |
| 3. Centralized/decentralized system decisions | 61% | 65% |
| 4. Organizational structure | 43% | 70% |
| 5. Leadership/ownership/ governance | 48% | 61% |
| 6. Global vendor partner selection | 35% | 65% |
| 10. Cultural issues and appropriate behaviour | 30% | 43% |

Source: CIO Executive Council poll, May 2007

Table 1 above indicates 70% score of CIOs rating of managing virtual teams as very important challenges of globalisation. The same principle applies for the use of diagrams or illustrations.

1.2 Problem Identification and Research Motivation

The main purpose of this research is to provide a fresh inquiry regarding the effective leadership required to manage the rapidly growing and challenging virtual teams. This study will seek to inquire on the important characteristics, behaviours and activities a virtual leader requires to ensure trust within the team; proper communication amongst team members; and overcoming feelings of isolation among virtual team members for effective management of virtual teams.

Kirkman, Rosen, Gibson, Tesluk, & McPherson (2002) identified five challenges that multinational companies should expect to encounter in establishing, maintaining and supporting virtual teams. They classified the challenges as building trust within the team; developing team cohesion and identity; overcoming feelings of isolations and detachment associated with virtual teams, assessment and recognition of performance amongst team members. These challenges were further refined by Bergiel, *et al.* (2008) in their study where they identified five factors vital to the formation of a successful virtual team as trust; communication; goal setting; technology and leadership.

Connaughton (unknown) suggests that leading from a distance is a hard skill of which people that have never done it before neither understand nor recognise as a separate skill. Kayworth, *et al.* (2002) further support Connaughton (unknown) by highlighting that virtual team leaders face a fundamentally different and more complex work environment than their traditional team counterparts. Their argument suggests that certain leadership roles may be particularly important in virtual teams' settings. For example, how does a leader build and maintain a social 'virtual' climate necessary for ensuring adequate levels of team unity and cohesiveness to overcome the challenge of isolation? A leader's social presence may be difficult to achieve in a virtual environment and therefore creating challenges of member identification with the team, organisation and the leader (Connaughton, *et al.*, 2004). This raises the question of whether there is a need for different skills to address the communication requirements and capabilities in leading virtual teams.

Crowley (2005) highlight that informal communication is one of the powerful tools in building an effective team and it is harder to achieve in virtual teams. This raises the importance of virtual presence and leadership qualities required to lead and manage virtual teams. Crowley's study highlighted several questions which this study seeks to unpack and provide additional knowledge on leadership requirements for managing virtual teams. For example, can the same leadership

theories that currently exist be employed in a virtual team's set-up? Is there a need for new theories of leadership to account for the emergence of virtual teams? Are there important differences in the way that leadership gets done in virtual teams versus face-to-face settings? These are some of the questions.

Pauleen (2003, p 161) mentions that "virtual team leaders are often the nexus of a virtual team and that effective leadership strategies can counter otherwise challenging aspects of virtual team work". Kayworth, *et al.* (2002) emphasise the need for fresh inquiry into the role and nature of team leadership in virtual settings.

The crucial differentiator between mediocre and high performing virtual teams is the development of virtual leaders who are able to develop and lead virtual teams (Piccoli, Powell & Ives, 2004) and Armstrong & Cole, 2002). Virtual team leadership is considered highly important to virtual team performance, (Piccoli, *et al.*, 2004; Armstrong, *et al.*, 2002; Hambley, O'Neill & Kline, 2007). Pauleen (2003); Kayworth, *et al.* (2002) and Yoshioka (2006) in their different studies discovered that different leadership qualities and practices are required to effectively lead virtual teams and proposed the importance of further research regarding the role and nature of virtual team leadership.

Although several books have been written about virtual teams and how to build an effective virtual team, and extensive research conducted on key aspects of establishing virtual teams addressing areas of trust, technological advancements enabling communication amongst virtual team members; there has been limited research on the required leadership to maintain and support effective operation of virtual teams (Lahenius & Jarvenpaa, 2004). The lack of conclusive research conducted on the effective management required for virtual teams is the main reason for this study. This study will seek to delve further into understanding the skills required to manage virtual teams and the characteristics deemed to be important enablers or inhibitors of effective management of virtual teams.

The outcome of this study will serve as a guide for managers on how to augment their leadership capabilities to address the challenges experienced with virtual teams.

1.3 Research relevance in the South African Context

The notion of understanding what is required to ensure effective management of virtual teams is becoming critical in South Africa due to high levels of skills shortage, partnerships created between international companies and SMME through BEE deals, acquisitions, mergers and downsizing (Bal, *et al.*, 2000). There is an increasing interest of South African companies to expand globally, especially to other African countries and there is also an increasing number of South African origin multinational companies like Anglo American, Standard Bank, MTN, Didata.

Due to advanced developments in electronic communication and information technology within the workplace, along with a need to compete globally and address competitive demands (Piccoli, *et al.*, 2004; Bal, *et al.*, 2000; Purvanova & Bono, 2009), South African companies have to embrace virtual team structures. The success of South African companies across all regions will depend upon the ability to display effective leadership to manage virtual teams.

The relevance and outcome of this study becomes more important to South African managers who need to understand what it takes to make a success out of managing virtual teams, in finding out what are the enablers and inhibitors of managing virtual teams. Bergiel, *et al.* (2008) highlights that a shortage of quality local talent drives companies to create virtual teams and therefore will require a better way of managing them.

Different studies by Arvidsson, Johansson & Akselsson (2007) and Silverthorne and Wang (2001) states that the most important predictors of organisational

achievement is effective leadership and that ineffective leadership often is a predictor of an organisational failure. Piccoli, *et al.* (2004) and Armstrong, *et al.* (2002) state that the crucial differentiator between mediocre and high performing virtual teams is the nurturing of virtual leaders who are able to develop and lead virtual teams. From the above statements, it can be argued that clear understanding of the effective leadership characteristics will lead to greater organisational achievement, therefore higher productivity for the organisation. Understanding the importance of effective management of virtual teams will assist South African companies to improve their ability to compete internationally as it will give them a competitive edge that will differentiate them amongst their competitors.

1.4 Scope of the research

The research was conducted in one large multinational company with operations in six countries across the world; South Africa, Australia, Brazil, Chile, Venezuela, United Kingdom, China and Namibia, with the head office in London. It is an organisation that in the past year and a half embarked on a global organisational re-structure that brought forth the emergence of virtual teams. The research surveyed three groups of respondents operating in a virtual team on a permanent basis: virtual managers; virtual subordinates and respondents who were both virtual managers and virtual subordinates.

The study will seek to assess whether there are different perspectives between the virtual managers, virtual subordinates and people who are both managers and subordinates on the important skills required to manage virtual teams, also on the important enablers and inhibitors of operating in a virtual team on a permanent basis.

Chapter 2 Literature Review

The research title consists of two concepts which are leadership and virtual teams. The literature review will critically evaluate relevant theories on these two concepts, consolidate and indicate how they are related to the research problem. The intent of this section is to examine the existing literature related to the problem this research seeks to address.

2.1 Virtual Teams

2.1.1 Definition of virtual teams

The advanced development in electronic communication and information technology within the workplace, along with a need to compete globally and address competitive demands with accessibility to skilled resources has forced organisations to embrace virtual team structures (Picolli, *et al.*, 2004 and Bal, *et al.*, 2000). The concept of virtual teams evolved from tele-workers and virtual groups. Tele-workers are characterised by working partially or completely outside of the main company workplace with the help of information and telecommunication services. As the technology continued to advance and companies needed to run projects across the globe, the concept of tele-workers then evolved to virtual groups which are characterised by several tele-workers reporting to the same manager. Virtual groups then evolved to virtual teams characterised by the members of virtual groups interacting with each other in order to accomplish common goals (Bal *et al.*, 2000, Zigurs, 2003).

There are several definitions of virtual teams that exist. For the purpose of this study, the following definition by Kirkman, *et al.* will be used to define virtual teams. Kirkman, *et al.* (2002, p 67) defines virtual team as;

“a group of people who work interdependently with shared purpose across space, time and organisation boundaries using technology to communicate and collaborate”.

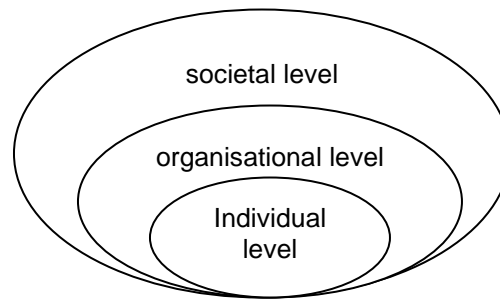
The concept of virtual teams originated within the context of focusing on project-based teams working on a specific project for a specified time-frame. Currently this concept of virtual teams has expanded to permanent teams embodied within the organisational structure with either direct reports or managers based in different countries across the globe. However, some researchers like Bal, *et al.* (2000) still defines a virtual team as not being a permanent team.

Hertela, *et al.* (2005) observed that the limitation of the above definition of virtual team is that it does not incorporate aspects or rather complications of virtuality. For example, the level of virtuality of a team can be complicated by the level of diversity amongst team members or presence of team members in countries with multiple time zones. Further research needs to be conducted to determine the complication of the different levels and classification of virtuality of a team, as this might have a significant impact on complexities and leadership requirements to manage such a team (Bal, *et al.*, 2000; Zigurs, 2003 and Hertela, *et al.*, 2005).

2.2 Advantages and limitations of virtual teams

The section below details some of the common advantages and disadvantages of virtual teams. The discussion on the advantages and disadvantages of virtual teams operation will be based on the different levels of virtual team impact (individual, organisational and societal level) as outlined in Figure 1 below (Hertela, *et al.*, 2005).

Figure 1: Different levels for virtual teams' impact



Source: Hertela, *et al.*, 2005

For example, at an individual level the advantages of operating in a virtual team can be independence and empowerment of the individual which may be negated by the ability to feel isolated and decreased interpersonal contact. At the organisational level, virtual teams offer the ability to attract skilful labour across the globe and reduced travelling costs, but there are requirements of complex technological applications and leadership together with team management challenges (Hertela, *et al.*, 2005 and Bergiel, *et al.*, 2008). At the societal level, advantages of virtual teams may be increasing levels of employment and infrastructure, especially in developing countries, and reducing carbon emission through reduced travelling, on the other hand, the disadvantages may be increasing levels of isolation amongst people or interrupting the social capital and thread of communities.

The focus of this research will be on two levels: the impact of virtual teams on the individual and organisational level.

2.3 Advantages of virtual teams

2.3.1 Reduced cost and time

Companies like Sabre Inc (Kirkman, *et al.*, 2002) and IBM (Bergiel, *et al.*, 2008) have indicated cost reduction due to adoption of virtual teams (Bal, *et al.*, 2000), though Crowley (2005) contradicts the assertion that virtual teams assist in

saving costs. She mentions an organisation that discovered that when measured based on productivity, virtual team's costs were 20% higher than for co-located teams. One of the key central concerns for virtual teams is the difficulty of assigning monetary values to costs that are not easily quantified (Kirkman, *et al.*, 2002).

But based on the discussions above, the issue of migrating to virtual teams is no longer an option but something that is driven by globalisation and the quest for companies to adhere to their sustainable development goals of reducing the carbon footprint through reducing travelling costs. The importance of virtual teams is also enhanced by the increasing green taxes and tariffs imposed on organisations, most organisations are in pursuit of reducing their travelling requirements and costs (Morris, 2008), to ensure they comply. Despite some of the potential challenges experienced in virtual teams, benefits of virtual teams outweigh the pitfalls (Hunsaker & Hunsaker, 2008). The ability to have virtual teams reduces the accommodation, travel, car hire, daily allowances, real estate costs etc.

2.3.2 Exposure to a pool of talented employees

Virtual teams provide the ability to tap selectively into centres of excellence, using the best talent regardless of location, and there is no limit to members from the same physical location or organisation (Hunsaker, *et al.*, 2008). As such, team members can be gathered according to the skills and backgrounds required, from anywhere in the world, enabling organisations to respond quickly to competition by becoming more flexible and resilient to compete globally.

Virtual teams offer flexibility from an individual level and have become a strong recruitment attraction and a retention strategy as more and more people prefer the flexible working opportunity offered by working in virtual teams (Powell *et al.*, 2004 and Hunsaker *et al.*, 2008). A study conducted by Ceridian Employer Services quoted in Hunsaker, *et al.* (2008) revealed that 50% of employees of

large and small organisations considered the opportunity to work in virtual teams as a very attractive incentive to join companies.

2.3.3 Stimulation of creativity and originality amongst team members

Due to the ability to attract a talented pool from anywhere across the globe, virtual teams tends to constitute high levels of cultural diversity. In virtual teams, this cultural diversity can be a competitive advantage due to leveraging the power of differences in teams for creativity and originality, which has the ability to increase performance of the team (Duarte & Snyder, 1999, quoted in Bal, *et al.*, 2001; Brake 2005 and Bergiel, *et al.*, 2008). The minimal social interaction reduces some of the team interaction challenges like office politics and gossiping (Kirkman, *et al.*, 2002).

Table 2 below provides a consolidated and high level overview of additional advantages of virtual teams aligned by different authors who have researched this topic as summarised by Ebrahim, Ahmed & Taha (2009).

Table 2: Some of the main advantages associated with virtual teams

| Advantages | References |
|---|--|
| Reducing relocation time and costs, reduced travel costs | (McDonough et al., 2001, Rice et al., 2007, Bergiel et al., 2008, Cascio, 2000, Fuller et al., 2006, Kankanhalli et al., 2006) |
| Reducing time-to-market [Time also has an almost 1:1 correlation with cost, so cost will likewise be reduced if the time-to market is quicker (Rabelo and Jr., 2005)] | (May and Carter, 2001, Sorli et al., 2006, Kankanhalli et al., 2006, Chen, 2008, Shachaf, 2008, Kusar et al., 2004, Ge and Hu, 2008, Mulebeke and Zheng, 2006) |
| More effective R&D continuation decisions | (Cummings and Teng, 2003) |
| Able to tap selectively into center of excellence, using the best talent regardless of location | (Criscuolo, 2005, Cascio, 2000, Samarah et al., 2007, Fuller et al., 2006) |
| Greater productivity, shorter development times | (McDonough et al., 2001, Mulebeke and Zheng, 2006) |
| Greater degree of freedom to individuals involved with the development project | (Ojasalo, 2008) |
| Higher degree of cohesion (Teams can be organised whether or not members are in proximity to one another) | (Kratzer et al., 2005, Cascio, 2000, Gaudes et al., 2007) |
| Producing better outcomes and attract better employees | (Martins et al., 2004, Rice et al., 2007) |
| Provide organizations with unprecedented level of flexibility and responsiveness | (Powell et al., 2004, Hunsaker and Hunsaker, 2008, Chen, 2008, Katzy et al., 2000) |



| | |
|---|--|
| Can manage the development and commercialization tasks quite well | (Chesbrough and Teece, 2002) |
| Organizations seeking to leverage scarce resources across geographic and other boundaries | (Munkvold and Zigurs, 2007) |
| Respond quickly to changing business environments | (Bergiel et al., 2008, Mulebeke and Zheng, 2006) |
| Sharing knowledge, experiences | (Rosen et al., 2007, Zakaria et al., 2004) |
| Enable organizations to respond faster to increased competition | (Hunsaker and Hunsaker, 2008, Pauleen, 2003) |
| Most effective in making decisions | (Hossain and Wigand, 2004) |
| Higher team effectiveness and efficiency | (May and Carter, 2001, Shachaf and Hara, 2005) |
| Self-assessed performance and high performance. | (Chudoba et al., 2005, Poehler and Schumacher, 2007) |
| Cultivating and managing creativity | (Leenders et al., 2003) |
| Improve the detail and precision of design activities | (Vaccaro et al., 2008) |
| Provide a vehicle for global collaboration and coordination of R&D-related activities | (Paul et al., 2005) |

Source: Ebrahim, Ahmed & Taha (2009)

2.4 Challenges encountered in virtual teams

2.4.1 Logistical problems, including coordinating work across different time zones and physical distances

Bergiel, *et al.* (2008) highlights that mundane tasks such as setting up a meeting becomes a challenge on virtual teams due to time zone differences. The leader needs to schedule meetings that try to accommodate the needs and timetables of all team members.

The other logistical challenge is management of task design, that is, which task types are suitable for the virtual environment and also the level of task interdependencies across team members. Where there is a high level of task interdependencies, where one person's output impacts the output of the other person, there is high impact of time delays on tasks like decision making, conflict resolution, and clarity provision, although task interdependencies have the ability to increase team coherence and trust (Bergiel, *et al.*, 2008 and Hunsaker, *et al.*, 2008).

2.4.2 Technological difficulties

The use of technological electronic communication has created complexity of communicating over time, distance and across the organisations, especially where different types of technologies are used (Bal, *et al.*, 2001; Kirkman, *et al.*, 2002 and Cursue, *et al.*, 2008). Relying on computer-mediated communication highlights the importance of understanding the relevant leadership processes within virtual teams including how leadership perceptions and influence are formed.

Hambley, *et al.* (2007) indicate the importance of identifying the relevant technology and media through which virtual teams can most effectively communicate and collaborate. Identifying the relevant technology and media will increase the constructive interactions and cohesion amongst team members, which in turn may eventually positively impact teams' performance (Bal, *et al.*, 2001). It is important to ensure teams are using technology with high social presence which may require complex technological applications. Some organisations encounter challenges where there is a lack of knowledge among some senior middle-aged managers concerning advanced technological applications. Virtual teams also create challenges for employees' psychological make-up like technophobia, employees who are uncomfortable with technological equipments (Bergiel, *et al.*, 2008 and Ebrahim, *et al.*, 2009).

One of the critical success factors identified by different authors (Haywood, 1998 quoted in Bal and Teo, 2001 and Duarte & Snyder, 1999 quoted in Bal, *et al.*, 2001) for the proper usage of technology is providing training, especially as part of employees on boarding induction.

2.4.3 Communication amongst team members

Virtual team set-up creates an environment where there is lack of non-verbal cues, insufficient attention to socio-emotional issues and inability to take

advantage of informal discussions in the mail room (Hunsaker, *et al.*, 2008). Usage of electronic media is considered to reduce the richness of information exchange as compared to face-to-face communication (Bal, *et al.*, 2000 and Kirkman, *et al.*, 2002). Crowley (2005) highlights that informal communication is one of the powerful tools in building an effective team and it is harder to achieve in virtual teams. Both team leaders and team members need to ensure that communication through mediums like email and teleconferences are polite, clear and inoffensive as the misunderstanding and miscommunications are extraordinary in virtual teams.

The other challenge of communication within virtual teams is the feeling of isolation (Kirkman, *et al.*, 2002 and Brake, 2005), and confusion amongst team members (Brake, 2005). In virtual teams it is important for managers to trust their teams to manage and complete task without controlling them.

Another challenge of communication in virtual teams is delayed responses. One of the employees in a virtual team remarked that “Its frustrating not being able to get a response from people as soon as you like.....You send out a question and in some cases an answer never comes back” (Hunsaker, *et al.*, 2008, p90). It is important for both the leader and team member to determine what to communicate, when to communicate and how to communicate to ensure communication is also used as a tool to build trust amongst team members (Bergiel, *et al.*, 2008 and Lahenius, *et al.*, 2004).

2.4.4 Difficulty to establish effective working relationships especially trust

Wayne Cascio quoted in Kirkman, *et al.*, 2002 (p 69) mentioned that “lack of trust can undermine every other precaution taken to ensure successful virtual work arrangements”. The communication challenges highlighted above have an impact on the ability to establish effective working relationships in the absence of frequent face-to-face communication. As mentioned above, the importance for

both the leader and team member to determine what to communicate, when to communicate and how to communicate to build trust amongst team members cannot be overemphasised (Bergiel, 2008 and Lahenius, *et al.*, 2004). This requires a different skill as opposed to face-to-face interactions.

Interpersonal skills for virtual teams are critical for effective communication (Connaughton, *et al.*, 2004). Physical disconnectedness in virtual teams can lead to various challenges of individual member's work motivation because of the difficulty to implement common goals, feelings of anonymity and low social control. It is also difficult to maintain self-efficacy due to reduced feedback, and trust is more difficult to build (Hertela, *et al.*, 2005 and Curseu, *et al.*, 2008). Virtual team's set-up will also be a challenge for individuals who are stimulated by interaction with other people.

The other challenge that virtual teams pose is how to create a 'virtual' social climate necessary for ensuring adequate levels of team unity and cohesiveness to overcome the challenge of confusion (Brake, 2005), isolation and detachment, which are part of the five challenges quoted by Kirkman, *et al.* (2002).

2.4.5 Cultural differences

Although cultural diversity can provide a competitive advantage for an organisation, unlike traditional teams that operate within a shared culture with deeply rooted assumptions about communication practices, virtual teams need to spend some time surfacing the deeply rooted assumptions during the formation phases to avoid miscommunication and misinterpretation (Bal, *et al.*, 2000; Zigurs, 2003 and Brake 2005). Quick understanding of cultural communication etiquette and cultural assumptions assists in successful virtual teams. Different cultural backgrounds seem to have an impact on the choice of technology to be used, for example, people from cultures with high uncertainty avoidance may be slow adaptors of technology as compared to people from cultures with low uncertainty avoidance (Duarte & Snyder, 1999 quoted in Bal, *et al.*, 2001).

Table 4 below provides a consolidated and high level overview of additional challenges experienced in virtual teams aligned by different authors who have researched this topic as summarised by Ebrahim, *et al.*, (2009).

Table 3: Some of the main disadvantages associated with virtual teams

| Disadvantages | References |
|--|--|
| lack of physical interaction. Everything to be reinforced in a much more structured, formal process | (Cascio, 2000, Hossain and Wigand, 2004, Kankanhalli <i>et al.</i> , 2006, Rice <i>et al.</i> , 2007) (Lurey and Raisinghani, 2001). |
| Challenges of project management are more related to the distance between team members than to their cultural or language differences | (Martinez-Sanchez <i>et al.</i> , 2006). |
| Challenges of determining the appropriate task technology fit | (Qureshi and Vogel, 2001, Ocker and Fjermestad, 2008) |
| Cultural and functional diversity in virtual teams lead to differences in the members' thought processes | (Paul <i>et al.</i> , 2005 , Poehler and Schumacher, 2007, Kankanhalli <i>et al.</i> , 2006) |
| Developing trust among the members is challenging | (Johnson <i>et al.</i> , 2001) |
| Will create challenges and obstacles like technophobia (employees who are uncomfortable with computer and other telecommunications technologies) | (Chudoba <i>et al.</i> , 2005) |
| Variety of practices (cultural and work process diversity) and employee mobility negatively impacted performance in virtual teams | Rice <i>et al.</i> , 2007) (Lurey and Raisinghani, 2001). |
| Team members need special training and encouragement | (Ryssen and Godar, 2000) |

Source: Ebrahim, Ahmed & Taha (2009)

2.5 Leadership

Leadership is an intricate construct that can be described and measured in multiple ways. There are several theoretical approaches to the study of leadership. Historically the evolution of leadership tended to focus on characteristics and personality traits like specific behavioural styles, types of power and influence of successful leaders, and later the focus shifted towards the role of followers and the contextual nature of leadership (Bolden, Gosling, Marturano & Dennison, 2003 and Purvanova, *et al.*, 2009). The current theories

of leadership are focusing more on the leader and their followers. For the purpose of this study, only three theories of leadership will be reviewed to understand their impact and applicability to virtual teams; Transformational leadership; Situational leadership and the Leadership orientation frames.

According to Kouzes, Posner & Peters (1990) quoted in Rossato (2008) “Leadership is not a place, it’s not a game, and it’s not a secret code that can’t be deciphered by ordinary people. The truth is that leadership is an observable set of skills and abilities that are useful”(p325). In order to understand and address the question this research seeks to answer regarding effective leadership to manage virtual teams, one needs to look at the required useful skills and abilities the virtual leader needs to display.

Antonakis, Cianciolo & Sternberg (2004) define leadership as “ the nature of the influencing process - and its resultant outcomes - that occurs between a leader and followers and how its influencing process is explained by the leader’s dispositional characteristics and behaviours, followed perceptions and attributions of the leader, and the context in which the influencing process occurs” p(5)

2.5.1 Virtual Leadership

The discovering of unique characteristics of virtual teams highlighted that they require different types of leadership as opposed to the traditional face to face teams. Limited research has been conducted on understanding the effective leadership required to manage virtual teams, though recently there is some research around the concept (Purvanova, *et al.*, 2009). Most of the work that has been conducted around leadership of virtual teams was based on self-managed teams focused on a project-basis rather than on permanent employment basis. It is not yet clearly known or understood how using technology to communicate

affects leadership, therefore necessitating the need for more research around this area of virtual leadership.

Hambley, *et al.*,(2007) defines virtual leadership as “a social influence process mediated by advanced information technologies to produce changes in attitudes, feelings, thinking, behaviour, and/or performance of individuals, groups, and/or organisations” (p1).

Attributes of the above definition of virtual leadership will be reviewed within the literature in the subsequent sections.

2.5.2 Transformational leadership

Transformational leadership has been chosen as an area of focus for this study because it's been referred to as a new leadership paradigm (Bryman, 1992 quoted Hambley, *et al.*, 2007) and it has been the focus of several studies conducted on teams communicating through technologies (Hambley, *et al.*, 2007). Transformational leadership theory is a concept that was introduced by Bass in 1985 quoted in Raffety & Griffin (2004). Transformational leaders demonstrate behaviours associated with five transformational styles; idealised influence (charisma), inspirational motivation, intellectual stimulation, individualised consideration and idealised attributes (Bolden, *et al.*, 2003; Raffety, *et al.*, 2004 and Balthazard, Waldman & Warren, 2009).

According to Balthazard, *et al.* (2009), transformational leaders have the ability to stimulate thinking that cultivates innovative solutions to problems, and to evoke high degrees of follower confidence, trust, and admiration. These attributes can be considered to be critical to address the virtual teams challenges identified in the above section of the literature review. Transformational leaders motivate followers to achieve performance beyond expectations by transforming their attitudes, beliefs, and values as opposed to simply gaining compliance (Hambley,

et al., 2007). Transformational leaders also augment follower's maturity level of needs from security needs to needs for achievement and self-actualisation beyond themselves to the well-being of others, the organisation and society - the three levels of virtual team impact, shown in Figure 1 above (Bolden, *et al.*, 2003; Rassoto, 2008).

2.5.3 Transformational leadership in virtual teams

In their study to assess the etiology of transformational leadership in virtual teams, Balthazard, Waldman & Warren (2009) discovered that the manifestation and meaning of personalities that characterises transformational leadership (e.g. interaction through extroversion and emotional stability) may differ in virtual teams as opposed to face-to face. For example, what does personal or behaviour constructs like being extroverted in virtual environment mean? In their study they concluded that there is still need for further research to understand the implication for relationships between personality measures and leadership within a virtual environment.

Purvanova, *et al.* (2009) from their study and literature review of several articles written on e-leadership in pursuit to understand how communication technologies may interact with team leaders and members to produce new team structures and cultures, concluded that transformational and participative leadership behaviours are very important in teams where communication is constrained by technology. Their study suggests that transformational leadership behaviours may be associated more strongly with team effectiveness in virtual than in face-to-face project teams.

The outcome of the studies by Purvanova, *et al.* (2009) and Balthazard, *et al.* (2009) can be summarised that leaders who augmented their transformational leadership behaviours with virtual teams achieved the highest level of overall team performance. Their outcomes can be summarised into three findings.

Effective virtual transformational leaders can:

- decrease followers' sense of feeling less known when interacting with others in the impersonal environment, through developing high quality relationships with virtual followers, thus helping them feel appreciated and important to address the notion of feeling isolated.
- increase the followers ability to bond together in the absence of direct, face-to-face interactions through identifying the team's task and goals; developing a sense of common mission, team cohesion and team identity.
- introduce a sense of purpose and certainty by setting specific goals and developing agendas for goal achievement to address the level of virtual team members being confused and overwhelmed by the electronic based communication environment.

2.5.4 Situational leadership theory

Situational leadership (SL) is one of the most widely used, known and liked leadership models by practitioners (Graeff, 1997), hence it's been chosen as part of the literature review for this study. Situational leadership was inspired by several leadership theories such as Ohio leadership, the Managerial Grid, and the theory of 3-D management style (Yoshioka, 2006; Graeff, 1997). In 1969, Hersey & Blanchard developed the Life Cycle of leadership model which claimed that effective leadership styles in organisations were similar to parents' child raising styles which change corresponding with their children's maturity (Yoshioka, 2006; Graeff, 1997).

The Situational Leadership (SL) model defines a leader's leadership style as the combination of strengths of a leader's relationship behavior and task behavior; and a follower's development level as the combination of degrees of commitment and competence to accomplish a certain task. People's needs and motivation change as the level of readiness changes, therefore leaders need to change their

style according to followers' readiness level for better outcomes (Yoshioka, 2006).

Cubero (2007, p352) states that "leadership style is not how leaders think they behave in a situation but how others (most importantly, their followers) perceive their behavior". The model highlights four leadership styles; directing, coaching, supporting and delegating depending on the follower's readiness and developmental stage.

2.5.5 Situational leader in virtual teams

Geister, Konradt & Hertel (2006) highlights that virtual team members have different needs and difficulties and therefore equal handling of members by leaders might not be adequate. The outcome of their study suggests that virtual team leaders should find an appropriate contact to members to become more effective. This is supported by Pauleen (2003, p157), in her study where the leader being studied mentioned that "I looked at my emails that I sent to the different people in that task and I adopted quite different styles for different people". Gabriel, *et al.* (2004) mentions the importance of task-orientation situational leadership in the statement "clear schedules must be established of when the team will provide reports, interim deliverables and final product" (p361).

Robbins & Judge (2007) argue that when team members have not met face-to-face, virtual teams tend to be more task-oriented and exchange less social-emotional information. The question posed is whether the task-orientation mode is influenced by the leadership style of the leader or by the lack of face-to-face interaction?

Virtual team leaders need to provide a clear and engaging direction along with specific individual goals, they need to be more proactive and structuring (Hunsaker, *et al.*, 2008). Virtual leaders need to ensure all team members understand each of the specific roles they are to fulfil to be successful, that is

providing clarity of functional roles. Kayworth, *et al.* (2002) suggest that effective team leaders in virtual teams demonstrate the capability to deal with paradox and contradiction by performing multiple leadership roles simultaneously and that highly effective virtual team leaders act in a mentoring role and exhibit a high degree of understanding (empathy) toward other team members. Their study also found that effective leaders are found to be extremely effective at providing regular, detailed, and prompt communication with their peers and in articulating role relationships (responsibilities) among the virtual team members.

2.5.6 Leadership Orientations Frames

The above analyses of transformational leadership and situational leadership have highlighted the importance and success factors of the respective leadership styles on virtual teams. This study seeks to expand on the assessment of transformational and situational leadership theories through reviewing the importance and applicability of leadership orientation frames. The four frames of leadership orientation which will be discussed below, incorporates all the aspects and attributes highlighted by the two theories. This model will also be relevant as input for data collection through utilising the existing questionnaire to assess whether there is a dominant leadership orientation frame.

The leadership orientation was discovered by Bolman and Deal and was classified as Bolman and Deal Leadership Model (Stadtländer, 2007). Bolman and Deal sifted through the intricate theories and literature, combined with their own analyses, theories and experience devised a four-frame model as a way of understanding organisations and leadership within organisations. They developed four frames of leadership orientation that represents the way leaders think about and respond to problems (Beaty, 2005). These four frames can be used to understand whether there is a dominating leadership orientation frame a leader should display when solving problems. For the purpose of this research, it will be aligned with solving challenges posed by virtual teams.

Bolman and Deal (quoted in Stadtländer 2007) advocate that organisations today requires more people in managerial roles who can deal with organisational confusion and chaos by establishing order and finding simplicity; managers who are concerned about and respect the people whose lives they affect. The quote aligns with the current challenges that virtual teams have brought forth, and highlights the importance of virtual leaders to have the ability to establish order and provide simplicity in effective leadership of virtual teams.

The basis of the model highlights the importance of balancing between an over led or under managed organisation depending on the dominant orientation displayed by the leader. For example, it is important for a virtual leader to ensure they neither over lead nor under manage virtual team members as this will have a huge impact on the effectiveness of the team.

This study sought to assess the leadership frames from which virtual managers, virtual subordinates and people that are both virtual managers and subordinates view as important for effective management of virtual teams. Will these three subgroups view this from the same frame? The answer to this question will highlight the important trait for the effective leader and to assess the outcome of the results with the already known suggested leadership effectiveness for managing virtual teams.

2.5.6.1 Structural frame leadership orientation

This frame is dominant when the leaders emphasise goals, specialised roles, formal relationships, rationality, analysis, logic, facts and data. In their recent study, Bolman & Deal (2006) categorised the structural orientation frame as analyst leadership trait. These leaders are likely to believe strongly in the importance of clear structure and well-developed management systems. They also believe strongly in obtaining the right information, analysing it and developing goals and strategies based on the facts whilst avoiding or controlling emotions when making decisions (Bolman & Deal, 1988, 2006; Beaty, 2005 and Stadtländer, 2007).

This orientation frame considers a good leader to be someone who thinks clearly, makes the right decisions, has good analytic skills, and can design structures and systems that get the job done. Structural frame can be used to organise and structure teams to obtain results and fit an organisation's environment and technology (Bolman, *et al.*, 1988, 2006; Beaty, 2005 and Stadtländer, 2007). This frame aligns with the task orientation element of situational leadership.

2.5.6.2 Human resource frame leadership orientation

This frame is dominant when the leaders emphasise the importance of people by endorsing the view that the central task of management is to develop a good fit between people and organisations. They believe in the importance of coaching, participation, motivation, teamwork and good interpersonal relations, linking with the relationship-based aspect of situational leadership. This orientation frame considers a good leader to be a facilitator and participative manager who supports and empowers others and displays servant or stewardship leadership attributes (Bolman, *et al.*, 1988, 2006; Beaty, 2005 and Stadtländer, 2007).

Leaders who use the human resource frame take into account the skills, needs, feelings, and limitations of the organisation's employees. This approach helps the organisation to achieve its goals while making its employees happy. The human resource-oriented leader emphasises change through training, rotation, and promotion. The goal of this frame is to align organisational and human needs to build positive interpersonal and group dynamics (Bolman, *et al.*, 1988, 2006; Beaty, 2005 and Stadtländer, 2007).

2.5.6.3 Networker or Influencer frame leadership orientation

This frame is dominant when leaders believe that managers and leaders live in a world of conflict and scarce resources. In their recent study, Bolman, *et al.*, (2006) categorised the structural orientation frame as warriors' leadership trait. The central task of management is to mobilise the resources needed to advocate and fight for the unit's or the organisation's goals and objectives. Networker or

Influencer leaders emphasise the importance of building networks and an influence base: allies, networks, coalitions. This orientation frame considers a good leader to be a negotiator who builds alliance and influences others and understands networking, politics and is comfortable with conflict (Bolman, *et al.*, 1988, 2006; Beaty, 2005 and Stadtländer, 2007).

2.5.6.4 Symbolic frame leadership orientation

This frame is dominant when leaders believe that the essential task of management is to provide vision and inspiration. They rely on personal charisma and a flair for drama to get people excited and committed to the organisational mission. This orientation frame considers a good leader to focus others on the future and is a visionary, who uses symbols, tells stories and frames experience in ways that give people hope and meaning. The goal of this frame is to shape a culture that gives purpose and meaning to workers, provides organisational excitement for internal and external audiences, and build team spirit through rituals and stories (Bolman, *et al.*, 1988, 2006; Beaty, 2005 and Stadtländer, 2007). This leadership frame can prove to be very useful in addressing the isolation and detachment challenges experienced in virtual teams.

2.5.6.5 Four frame models linked with leadership skills

In order to understand the dominating leadership frame, Bolman & Deal (1988) identified key skills linked with each of the four frames. Table 4 below highlights the leadership skills linked with each of the four frame model, which will be used as the questionnaire to assess the dominant frame.

Table 4: Leadership Orientation Inventory: Skills categories for the four frames

| 1 Structural frame | 2 Human Resource frame |
|--|---|
| Analytic skills Technical expert Make good decisions Attention to detail Clear, logical thinking An analyst | Interpersonal skills Good listener Coach and develop people Concern for people Caring and support for others A humanist |
| 3 Networker/ Influencer frame | 4 Symbolic frame |
| Networking skills Skilled negotiator Build strong alliances Ability to succeed, in the face of conflict and opposition Toughness and aggressiveness A networker | Ability to excite and motivate Inspirational leader Inspire and excite others Charismatic Imagination and creativity A visionary |

Source: Beaty (2005)

For the purpose of this study, the above frames of leadership orientation will be used to assess the preferred dominant orientation virtual managers, subordinates and both virtual managers and subordinates prefer for effective management of virtual teams. From the analysis of the three leadership theories, there appears to be alignment amongst the different leadership styles. Table 5 below indicates the mapped alignment between the three leadership models discussed.

Table 5: Mapping alignment between three leadership theories

| Frames orientation | Transformational styles | Situational leadership styles |
|------------------------|--|-------------------------------|
| Structural | Intellectual stimulation | Directing |
| Human resource | Individualised considerations | Coaching, Supporting |
| Networker / influencer | | |
| Symbolic | Idealised behaviours Inspirational motivation | Delegating |

Table 5 reveals that a leader who displays structural orientation style is aligned with the intellectual stimulation transformational style and the directing situational leadership style. It is quite interesting to notice that no other style aligns with the networker or influencer frame orientation. The outcome of the study will be used to validate the accuracy of the mapped alignment between the three theories and also in line with the research findings from both transformational and situational leadership applicability in virtual teams.

2.6 Leadership requirements for managing virtual teams

This section of the literature review will assess some of the ideas or suggestions from different authors regarding the leadership requirements for leading virtual teams. The outcome of this section of the review will assist to identify and develop key factors that enable or inhibit the effective virtual team management for the questionnaire.

2.6.1 Building trust

Trust is one of the cornerstone for successful operation of virtual teams, Cascio quoted in Kirkman, *et al.* (2002, p 69) says “lack of trust can undermine every other precaution taken to ensure successful virtual work arrangements.” Although trust building is an ongoing process, in their literature review of several authors, Bal, *et al.* (2001), Lahenius, *et al.* (2004), Brake (2005) Bergiel, *et al.* (2008) & Hunsaker, *et al.* (2008) highlight that the most advantageous time to build a trusting relationship is during the early stages of a team as the lack of trust

affects effective performance of the team. It is important to make sure members feel equally engaged and connected to the team.

The most recommended way of building trust, team cohesion and identity is to meet face-to-face during the forming stages (Lahenius, *et al.*, 2004, Crowley, 2005, Cursue, *et al.*, 2008) although other authors like Pauleen & Yoong (2001), Kirkman, *et al.* (2002) and Lin, Standing & Liu (2008) argue that trust can be built in a virtual environment without meeting face to face. The study by Pauleen, *et al.* (2001) concluded that when face-to-face meetings are not an option to a virtual manager, through a conscious and concerted effort, it is possible to develop a good working relationship through using electronic communication.

Linked to the situational leadership theory within virtual teams building trust is based on a task-based relationship, that is, trust is gained when people deliver what they promised- reliability, consistency and responsiveness (Kirkman, *et al.*, 2002). Bergiel, *et al.* (2008) and Hunsaker, *et al.* (2008) supports this by highlighting that trust is the result of team members knowing that everyone in the team can be counted on to complete their task, especially for tasks with high levels of interdependency. It therefore becomes important for virtual leaders to identify a proactive approach to create an environment that identifies and facilitates trust based on speed, consistency and responsiveness amongst team members (Kirkman, *et al.*, 2002). This will require a shift in the mindset that building trust is based on forming social bonds through informal chats or after work gatherings.

2.6.2 Providing goals and role clarity

Assessment of the literature by different authors, highlight clearly defined goals and objectives communicated and understood by all virtual team members to be one of the critical success factors for virtual teams (Bal, *et al.*, 2001, Brake, 2005, Bergiel, *et al.*, 2008, Hunsaker, *et al.*, 2008). In his article, Brake (2005) mentions that the strategy to ensure effective leadership of virtual teams is

“beating confusion through promoting clarity” (p 119), “be careful when working across cultural borders that there is a shared understanding of purpose, goals, priorities, methods, etc. local conditions can influence how these are understood” (p 120).

According to Arvidsson *et al.* (2007) in a study conducted by Gray-Toft and Anderson; assigning tasks, specifying procedures, and clarifying expectations have shown to result in reduced role ambiguity and increased job satisfaction among employees. Whilst on the other hand, the leader who constantly gives subordinates demanding instructions generates detectable physiological symptoms of stress among the staff. These leaders require structural frame orientation which can be linked with intellectual stimulation transformational leadership and task-orientation element of situational leadership.

The high levels of task interdependency can be used to develop member salience, team cohesion, trust and opportunity to publicise expertise and contributions by each member especially in environments where personal contribution is highly valued (Zigurs, 2003; Martins, Gilson & Maynard, 2004; Hertela, *et al.*, 2005; Hambley, *et al.*, 2007; Hunsaker, *et al.*, 2008). Task interdependency will also assist in the development of self-managed team that are able to monitor own performance (Hunsaker, *et al.*, 2008).

2.6.3 Communications

To create good working relationship and develop rapport amongst team members, a virtual team leader needs to maintain a balance between formal and informal interactions. Crowley (2005) suggests that a good balance of 20% relationship time versus 80% task time is required for managing virtual teams. Managing virtual teams requires innovative management methods and it is very challenging (Lahenius, *et al.*, 2004).

Cross cultural communication and problem team members require a leadership style that can deal effectively with ambiguity magnified by the virtual nature of the interaction (Pauleen, 2003, Bergiel, *et al.*, 2008). The two authors highlights structural orientation frame by emphasising the importance of using different communication modes to create a virtual presence -that is- engaging all members of the team and creating team process feedback to ensure team members know what the other members are doing. When team process feedback is not provided to virtual team members, members feel insecure whether other team members are satisfied with their collaboration or not (Geister, *et al.*, 2006). This notion also emphasised by Purvanova, *et al.* (2009) and Balthazard, *et al.* (2009) highlights idealised attribute transformational style as critical in ensuing team identity and cohesion. This can also be linked with the symbolic frame orientation, inspiring and exciting members to feel like part of a team.

As a manager leading virtual teams it is important to ensure the four types of awareness: activity awareness; availability awareness; process awareness and social awareness (Weisband (1992) quoted in Hunsaker, *et al.*, 2008) are addressed within the team for increased levels of team synergy.

A virtual leader needs to use the vividness and interactivity of media to make their presence felt in a positive way. Telepresence is defined by the experience and sense of being present in a place different from one's physical location (Zigurs, 2003). Although physical capabilities of technology can produce rich environments by having a range of sensory input like voice, video and touch screen, it's not the only key determinant of telepresence. For example, bombarding subordinates with emails is not an effective way of creating a positive telepresence.

2.6.4 Ability to motivate and inspire

When leading virtual teams, managers need to be aware of the limitation of motivation abilities due to limited channels for establishing personal relationships (Pauleen, 2003 and Maholta, Majchrzak & Rosen, 2007)). Effective leaders demonstrate mentoring qualities characterised by understanding, empathy and concern for members, that is, these leaders despite the distance, find ways to be accessible to their distanced team members, Connaughton, *et al.* (2004).

A virtual leader needs to ensure information equity amongst team members, that is, the importance of ensuring that all team members distant or local, receive the same message at the same time to alleviate the creation of leader-member exchange of “in-group” and “out-group” amongst team members. It is important for a leader to review how their actions are building a strong sense of team identity (Connaughton, *et al.*, 2004; Brake, 2005). The nature of the leader’s communication with virtual team members will affect their identification with the leader, mainly because identification is a communicative process.

In their study Hunsaker, *et al.* (2008) concluded that the success of a virtual manager is through the ability to choose team members with the relevant technical skills and knowledge, abilities and other relevant attributes to be able to contribute to team effectiveness and operate effectively in virtual team. By choosing people with the right skills, it will enable self management and the ability of leaders to delegate team performance management to the team. This can be achieved by deploying standard operating procedure at the initial stages of team formation to regulate team performance.

2.6.5 Ability to provide constant feedback

In their study Geister, *et al.* (2006) brings forth the element of virtual team members feeling insecure due to the lack of process feedback or understating whether their team members are satisfied with their collaboration. This is mainly

driven by the fact that electronic communication shows more task-oriented contents rather than team-related content, which is the characteristic of process feedback. Process feedback is defined as “information concerning how one performs a job” (Geister, *et al.*, 2006, p 462) whilst outcome feedback is defined as “information concerning performance outcomes (Geister, *et al.*, 2006, p 462).

The ability of a virtual leader to provide feedback is important because there is support for a relationship between feedback and performance, that is, providing thorough feedback is important to develop and maintain trust and a high performing team (Jarvenpaa & Leidner, 1999 quoted in Geister, *et al.*, 2006).

Providing feedback is important for reaching common understanding and mutual agreement amongst team members (Dennis & Valacich, 1999, Olson & Olson, 2001 quoted in Geister, *et al.*, 2006). Outcome feedback is important for team performance coming from manager to subordinates (Duarte & Snyder, 2001 quoted in Geister, *et al.*, 2006). Feedback and information about the team is crucial for improving the motivation, satisfaction and performance of members in virtual teams (Geister, *et al.*, 2006). This section emphasises the importance of a virtual leader to identify the relevant technology and context to provide constant feedback to the team members.

2.7 Literature review conclusion

The literature review highlighted some of the key advantages that organisations can benefit through adoption of virtual teams like reduced cost and time, exposure to a pool of talented employees and the ability to stimulate creativity and originality amongst team members. Despite these advantages there are several challenges that this new way of working introduces like complexities in technology, complications of simple tasks like setting up a meeting, and difficulty in establishing effective working relationships. The current literature highlights that success within virtual teams seems to be based on task-orientation leadership style that focuses on task delivery which is considered important for

building trust rather than on development of relationship oriented leadership style.

One of the key challenges that the literature review revealed is the insufficient attention to socio-emotional aspects within virtual teams and the type of leadership required to enhance these socio-emotional aspects. Questions around how leaders can display their emotional intelligence whilst managing through technological electronic media, and key skills required to provide coaching, mentoring and performance discussion within the environment have been strongly emerging through the literature review of several authors.

The literature review highlighted that virtual teams do not only affect individuals, but also affect the organisation and the society at large. Transformational leadership has proved to be more efficient in virtual teams mainly because its leadership attributes encourage team members to achieve performance that extends to all three levels. Situational leadership theories also highlighted the importance of balancing between the task-orientation and relationship orientation in virtual teams depending on the level of readiness and development of each individual in a virtual team. The question that remains unanswered is whether a virtual manager can identify situations that require task-orientation leadership style and situations that require relationship- related leadership style within the virtual environment.

A review of these challenges brought forth by virtual teams has highlighted the need for virtual leaders to develop new skills to enable them to function properly within the virtual environment. The leadership orientation model will serve as a good tool to assess whether there are any dominating frames which virtual managers, virtual subordinates and both virtual managers and subordinates view as important for effective management of virtual teams. As Cubero (2007) puts it, “leadership style is not how leaders think they behave in a situation but how others (most importantly, their followers) perceive their behavior” (p352). This

emphasises the importance of assessing any difference between the three subgroups in determining the appropriate leadership style required. The leadership skills aligned with each model will form part of the question to assist in identifying the dominant frame.

To further augment the need for this study the current literature on some of the identified successful interventions for managing virtual teams like the ability to build trust, providing clear goals and role clarity, ability to motivate, inspire and provide feedback, presents attributes that can be used to develop characteristics deemed important enablers or inhibitors of successful virtual teams. The study will seek to assess whether these attributes are as important as the different authors proclaim them to be.

Chapter 3 Research Questions

This chapter details the questions that this study will seek to answer. The questions are based on two concepts, forces driving or inhibiting success of virtual teams and the most preferred leadership orientation for managing virtual teams. The questions emanate from the literature review conducted in Chapter 2 and align with the research problem highlighted in Chapter 1.

3.1 Research question 1

What is the preferred leadership orientation for virtual managers?

This question sought to understand the preferred leadership orientation frame amongst virtual managers, virtual subordinates and both virtual manager and subordinate based on the model by Bolman and Deal (1988). The outcome of this question will be used to contrast the outcome of the preferred leadership styles considered effective for managing virtual teams on transformational and situational leadership styles.

3.2 Research question 2

Is the preferred leadership orientation for virtual managers viewed differently by the manager and subordinate?

This question sought to understand whether there are any significant differences regarding the preferred leadership orientation frame between the virtual managers, virtual subordinates and both virtual manager and subordinate. The outcome of this question will assist in understanding whether there is any difference regarding the orientation frames within which managers and subordinates view the required skills.

3.3 Research question 3

What is the relative value of forces driving success (enablers) for managing virtual teams?

This question sought to understand what is considered to be the key enablers for effective management of virtual teams by virtual manager, subordinates and both virtual manager and subordinate. The enablers were derived from the literature review on the advantages of virtual teams, outcome of the existing studies from different authors on key success factors for managing virtual teams and the outcome of qualitative interviews conducted as phase 1 of this research. The outcome of this question will assist to highlight the important enablers (forces driving success) as ranked by the respondents.

3.4 Research Question 4

What is the relative value of forces inhibiting success for managing virtual teams?

This question sought to understand what is considered to be the key inhibitors for effective management of virtual teams by both virtual manager, subordinates and both virtual manager and subordinate. The inhibitors were derived from the literature review on the challenges of virtual teams, the outcome of the existing studies from different authors on key challenges for managing virtual managers, and the outcome of qualitative interviews conducted as phase 1 of this research. The outcome of this question will assist to highlight the common inhibitors (forces driving failure) as ranked by the respondents.

3.5 Research Question 5

Are these forces viewed differently by managers and subordinates?

This question sought to understand whether there are any significant differences in the key enablers and inhibitors between the virtual managers, virtual subordinates and both virtual manager and subordinate. The outcome of this question will assist in understanding whether there is any difference regarding the ranking of important enablers and inhibitors amongst managers and subordinates.

Chapter 4 Research Methodology

According to Penman (2005, p12) “research design is a plan for selecting the sources and types of information used to answer research questions, and the results of which provide a framework for assessing results”. This study is descriptive in nature as it is important to understand the preferred leadership orientation for virtual managers (Zikmund, 2003). This study took the form of diagnostic analysis (Zikmund, 2003) as it delved into understanding the driving forces that enables success or inhibits effective operation of virtual teams. Two types of data collection methodologies will be used; both qualitative and quantitative in two phases.

4.1 First Phase

To answer the questions to the research problem the first phase was a qualitative method in the form of personal (face-to-face) interviews. The main aim for conducting qualitative interviews was to obtain more in-depth information and to obtain greater understanding of the concepts (virtual teams and leadership) to enable development of a relevant measuring instrument to conduct the survey. Given that this method is a two way conversation, it provided the opportunity for feedback (Zikmund, 2003) to clarify any questions that the interviewee had regarding the instructions and questions. It also enabled the researcher to delve deeper and follow-up on response that still needed further clarity given the limited research that had been published on effective virtual team leadership.

4.1.1 Population and unit of analysis

The population of relevance for this phase of the study was any manager and employee working for multinational companies who are currently engaging in permanent virtual team structures and based anywhere across the globe. The unit of analysis under study was the perceptions and experience of subordinates and managers working in multinational companies involved in virtual teams. This

was based on their exposure, familiarity and interactions within a virtual working environment.

4.1.2 Sampling method and size

A convenience method of non-probability sampling was used to choose six individuals to be interviewed for this phase based on availability and accessibility. The interviews were conducted with three managers and three subordinates who were available to spend an hour for the interview. Each interview took about an hour to be conducted.

4.1.3 Data collection process

The respondents were contacted via both email and telephone to set-up the time for the interviews. All interviews were conducted in person by the researcher. The measuring instrument used to collect raw data for this phase was the interview guide developed based on the insights gained from the literature review as basic foundation. The interview guide is attached as Appendix 1. The guide was developed with open ended questions with key themes derived from the literature review. These themes were used to probe further on the aspects identified during the literature review with the objective of obtaining more insights for developing the questionnaire for Phase 2.

4.1.4 Data analysis approach

According to Zikmund (2003) data analysis 'is the application of reasoning to understand and interpret the data that has been collected'. The outcome of the interviews were consolidated in a tabular form and content analysis was used where the responses to the questions were categorised into segments of meaning, and then reworded in more general terms (Zikmund, 2003). These segments were then incorporated into the questionnaire for the second phase. The outcome of Phase 1 discussions is discussed in detail in Chapter 5.

4.1.5 Research limitations for Phase 1

Interviewer and respondent bias may impact the results. The researcher was not a qualified qualitative interviews administrator so the lack of skill might impact on the outcome of the results. However, the researcher's awareness of this limitation was moderated through focusing on remaining objective during interviews based on the guidance provided by the supervisor.

4.2 Second Phase

The second phase was quantitative in nature and primary data was collected. The study took the form of a self-administered survey that was distributed through two methods; handed out hard copies and soft copies circulated via email. The two methods were used to mainly accommodate respondents located within the vicinity of the researcher through hard copies who attend training in South Africa. The second method was used to ensure that other respondents who were not able to attend the training in South Africa could also participate on the study from their respective countries.

According to Zikmund (2003) the advantage of using the combined two methods is the speed of distribution, faster turnaround times, more flexibility, reduced handling of paper questionnaires and the ability to reach out to global dispersed respondents. The challenge with administering the survey through the two methods is the auspices bias due to the perceived lack of anonymity of the responses. This implies that there may be bias in responses of respondents caused by respondents being influenced by the organisation used as a tool for conducting the study (Zikmund, 2003). To address this challenge, it was emphasised to respondents that their responses will be treated anonymously.

The other challenge mentioned by Zikmund (2003) for electronic surveys is the possibility of the survey to be considered as spam email. Although this cannot be avoided completely, the mitigating action was through sending the survey from

an internal email address and support was solicited from top leadership to encourage employees to respond to the survey and to provide honest responses.

As already mentioned above, the administered questionnaire was developed from the outcome of the literature review and the outcome of the qualitative interviews conducted in Phase 1.

4.2.1 Population and unit of analysis

The population answers the question “to whom do we want to talk to?” (Zikmund, 2003). The population of relevance for this phase of the study was any manager and employee working for multinational companies who are currently engaging in permanent virtual teams’ structures and based anywhere across the globe. The unit of analysis under study was the perceptions and experience of subordinates and managers working in multinational companies involved in virtual teams. This was based on their exposure, familiarity and interactions within a virtual working environment.

4.2.2 Sampling method and size

A nonprobability, quota sample was used (Zikmund, 2003). This sampling method was chosen to ensure that various subgroups (managers and subordinates) are represented in the sample. The subgroups were selected on their availability, accessibility and willingness to participate in the survey. Accessibility to the sample was enhanced by the support received from the organisation’s Head of People Management and the top leadership of the programme as the outcome of the study will assist the organisation in improving effective management of virtual teams.

The sample was collected from one of the large multinational companies within the mining industry with operations in six countries across the world - South Africa, Australia, Brazil, Chile, Venezuela, United Kingdom (London), China and Namibia- with the head office in London. The organisation has a total of 105 000

employees distributed across the six regions. It is an organisation that in the past year and a half embarked on global organisational re-structure that brought forth the emergence of virtual teams.

The selected quota sampling methodology ensured an equal distribution of employees within each of the three subgroups; virtual managers, virtual subordinates and both a virtual manager and subordinate. The sampling frame was a list of all employees currently involved in a transformation change project that was initiated within the organisation. The reason for choosing this specific sampling frame was because of the convenience and accessibility of the respondents to the researcher and secondly because of the diversity of respondents. It comprised of people who have been with the organisation in wide ranges of between three months and 30 years.

From the 75 questionnaires distributed, responses were received from 62 respondents, equating to an 83% response rate. Three of the questionnaires were not fully completed and have therefore been removed. The total responses used for analysis was 59 with 13 respondents being managers, 23 respondents being subordinates and 23 respondents being both managers and subordinates. The advantages of using this sampling method were the speed of collection of data, lower costs and convenience as work email addresses were used to send the survey. One of the disadvantages of using quota sampling is the biasness and that it cannot be generalised to the total population.

4.2.3 Data collection process

As already discussed, from the outcome of the face-to-face interviews from Phase 1 a questionnaire was developed consisting of four parts. The first part of the questionnaire collected information on the demographics of the respondents. The demographics were used to assess any differences or similarities amongst the three groups.

The second part of the questionnaire addressed the leadership frame orientation skills. The questionnaire used for part one, is an already existing questionnaire developed by Bolman and Deal and customised by Beaty (2005). Both managers and subordinates had to rank the identified leadership orientation attributes to determine the current perceptions regarding leadership orientation and the preferred leadership orientation.

In part three, both the managers and subordinates had to identify statements they agreed with and ranked their importance for effective management of virtual teams. The statements were based on constructs from the literature reviews and the qualitative interviews which delved into understanding the forces that either drive success or inhibits success of virtual team. These forces were also compared with the key forces identified during the literature review to check if there was some consistency. Ranking the importance of statements was based on a four point likert scale.

All the questions were linked to the research questions outlined in Chapter 3 as follows;

- Research question 1 was linked to Part B of the questionnaire adopted from the leadership orientation model by Bolman and Deal and later customised by Beaty.
- Research question 2 was linked to the outcome analysis of the Kruskal-Wallis statistical test to determine whether there were any significant differences in responses between the three sub-groups regarding preferred leadership orientation.
- Research question 3 was linked with Part C of the questionnaire seeking to understand the relative value of forces driving success (enablers) for managing virtual teams.

- Research question 4 was linked with Part D of the questionnaire seeking to understand the relative value of forces driving failure (inhibitors) for managing virtual teams.
- Research question 5 was linked with the outcome analysis of the Kruskal-Wallis statistical test to determine whether there were any significant differences in responses between the three sub-groups.

The developed questionnaire was also pre-tested with four people to ensure it was properly understood and was easy to administer and the proposed changes by the respondents were incorporate into the question. For example, one of the respondents from Brazil used to test the questionnaire could not understand the meaning of the word 'inhibiting' and the term was changed to 'preventing' which was well understood.

4.2.4 Data analysis approach

According to Zikmund (2003) data analysis 'is the application of reasoning to understand and interpret the data that has been collected'. The type of statistical tests to be used depend on three elements; how the sample was collected (random vs. non-random selection); the type of data collected by the tool (nominal, ordinal, interval, or ratio) and normality of data (can you use central limit theorem to assume normality). Based on the measurement instruments explained above, below is the outline of the statistical tests used for this phase.

Force field analysis was also used to determine the relative strength of forces enhancing or inhibiting success of managing virtual teams. The force field analysis was conducted by weighting each attribute, that is, adding the outcomes of each attribute and ranking in descending order to determine attributes highly ranked. The outcome of this analysis was useful in highlighting positive forces that virtual leaders require to focus on and negative forces they need to avoid in ensuring they manage virtual teams effectively.

The Kruskal-Wallis (K-W) test was also used to compare the data between the three sub-groups; managers, subordinates and both manager and subordinate as the data was ranked on the four-point Likert scale. K-W test was used because the data was ordinal and normality could not be assumed between the three groups. It was used to test the null hypothesis (H_0) that three samples come from the same population (i.e. they have the same median) or, alternatively, whether observations in one sample tend to be significantly larger than observations in the others (Zikmund, 2003).

The K-W test analysis was conducted at the α of 0.05. This meant that the probability level of significance for conducting Type I error is 0.05. The study indicates the confidence level that the probability of rejecting the null hypothesis (H_0) when we should not have (Type I error) is 95%.

- The Null Hypothesis (H_0)= All median are equal
- The alternate Hypothesis (H_a)= At least two medians are different

For areas where the H_0 was rejected, the box plots analysis was conducted to identify subgroups that were significantly different from each other. At 95% level of confidence (α of 0.05), if the z-value was greater than 1.96, then the null Hypothesis was rejected. Box plots provided a visual comparison of the medians between the three subgroups

4.2.5 Research limitations of Phase 2

The selected sampling methodology could introduce bias in researcher's classification of subjects and also projecting data beyond the sample may be inappropriate (Zikmund, 2003).

The other limitation of the methodology chosen is the inability to confidently generalise the outcome of the study to other organisation given that a non

probability sample was chosen which is not representative of the entire population and the survey was conducted in one organisation.

Using two different methods of distributing the questionnaire could impact the results. There could be response bias; both auspices bias where respondents could provide positive response given the usage of internal email addresses to distribute the questionnaire

Chapter 5 Presentation of the results

5.1 Phase 1: Qualitative Research

5.1.1 Introduction

In order to answer the research questions, a first phase of qualitative in-depth face-to face interviews were conducted. The interviews were an hour each with six respondents interviewed. A discussion guide (Appendix 1) was developed based on some of the key themes drawn out of the literature review. The interview guide consisted of one question on demographics and four content related questions. All content questions were open-ended to obtain more in-depth information regarding the themes. All the questions in the discussion guide were linked to the research questions outlined in Chapter 3.

Content analysis and frequency analysis were conducted on data obtained from the discussions (raw data attached as Appendix 3). For some of the questions, the number of times a theme was mentioned was tracked and populated into a table to identify the common themes cited by different respondents. The outcome of the discussions was also used to identify any new themes emerging which were not covered by the literature review. A second level of consolidation was conducted on the themes to narrow them down to a few which could be incorporated into a questionnaire. The outcome of the analyses will be discussed in the following sections.

5.1.2 Demographics

Interviews were conducted face-to-face with six respondents who are currently operating in virtual teams on a permanent basis. The respondents were chosen based on their availability. Table 6 below indicates that of the six respondents, two were managers, two subordinates and two respondents who were both

managers and subordinates. The respondents have been operating in virtual teams with time frames ranging from six months to two years. The number of years of operating in virtual teams were not limited to the organisation of focus, but rather based on the respondents' career. Overall, all the respondents interviewed represented thirteen and a half years of experience of working within virtual teams. Respondents also represented three of the six regions within which the organisation of focus is operating; Brazil, South Africa and Australia.

Table 6: Demographics: In-depth interviews respondents

| Role | Count | # years in virtual team | Country-based |
|---------------------------|--------------|--------------------------------|----------------------|
| Manager | 1 | 1.5 | South Africa |
| | 1 | 8 | South Africa |
| Total Managers | 2 | 9.5 | 1 |
| Subordinate | 1 | 0.6 | South Africa |
| | 1 | 0.9 | Brazil |
| Total Subordinates | 2 | 1.5 | 2 |
| Both | 1 | 0.6 | Australia |
| | 1 | 2 | South Africa |
| Total Both | 2 | 2.6 | 2 |
| Overall total | 6 | 13.6 | 3 |

5.1.3 Analysis of qualitative discussions outcomes

Question 1: Are there any differences in management between the face-to-face and virtual teams from managers' perspectives?

Respondents were asked an open ended question to determine whether they thought there were any differences between managing a virtual team and face to face , and if so, what were the differences. It was important to ask this question because perceptions of whether there is a difference or not, would have impacted the subsequent questions.

Table 7: Responses of identified differences between managing face-to-face teams and virtual teams from qualitative discussions

| Themes | M 1 | M 2 | S 1 | S 2 | B 1 | B 2 | Total |
|--|-----|-----|-----|-----|-----|-----|-------|
| Lack of daily contact | | | √ | | √ | | 1 |
| Cultural difference and diversity | | √ | | √ | | | 2 |
| Feedback: delayed & electronic | √ | | √ | | | | 2 |
| Different recruiting process | | | | | √ | | 1 |
| Lack of informal chats (social interaction) | √ | | √ | | | √ | 3 |
| Difficult to know personalities (lack of verbal cues) | √ | | | | | | 1 |
| Rely on compiled reports for performance management | √ | | | | | | 1 |
| Gap for visible role-modelling | √ | | | | | | 1 |
| Ability to work independently | | | | | √ | | 1 |
| Comfortable with technology | | | | | √ | | 1 |
| Limited opportunity for team cohesion | | | | | | √ | 1 |
| Time zone differences | √ | | | | √ | | 2 |

Table 7 above highlights some of the differences emerging from the discussions, with the most mentioned differences by respondents being

- Lack of informal chats (social interaction)
- Communication challenges
- Time zone differences
- Cultural difference and diversity
- Conducting performance discussions

Question 2: What are the challenges you have experienced with managing or leading virtual teams?

All six respondents were asked to elaborate on the challenges they have experienced with managing or leading virtual teams, since they all agreed there were differences in management between virtual teams and face-to-face teams. Respondents were probed to obtain more in-depth knowledge regarding some of the themes identified during the literature review like leadership characteristics that have made virtual teams ineffective, impact of culture, processes, feedback,



performance management, coaching, and conflict management, etc. The outcome of the results are summarised in Table 8 below

Table 8: Responses of identified differences between managing face-to-face teams and virtual teams from qualitative discussions

| Themes | Manager 1 | Manager 2 | Subordinate 1 | Subordinate 2 | Both 1 | Both 2 | Total |
|--|-----------|-----------|---------------|---------------|--------|--------|-------|
| Lack of informal chats (social interaction) | √ | √ | √ | √ | √ | √ | 6 |
| Communications Challenges | √ | √ | √ | √ | √ | √ | 6 |
| Time zone differences | √ | √ | √ | √ | √ | √ | 6 |
| Cultural difference and diversity | √ | √ | | √ | √ | √ | 5 |
| Conducting performance management | √ | √ | √ | | √ | √ | 5 |
| Challenges with team interactions | √ | √ | √ | | | √ | 4 |
| Lack of trust | √ | | √ | √ | | √ | 4 |
| Feedback: delayed & electronic | √ | | √ | √ | | | 3 |
| Ability to work independently | | | √ | √ | √ | | 3 |
| Inability to delegate | | | √ | √ | √ | | 3 |
| Making decisions in absence of manager | √ | | √ | | √ | | 3 |
| Difficult to know personalities (lack of verbal cues) | √ | | | | √ | | 2 |
| Gap for visible role-modelling | √ | | | | | √ | 2 |
| Comfortable with technology | | | √ | | √ | | 2 |

Question 3: What are the three things that you think a virtual team manager or leader needs to do more of when managing virtual teams?

All respondents were asked to identify the three things they thought a virtual manager needed to perform more of when managing virtual teams. This question was meant to understand the three critical areas each respondent considered important for managing virtual teams.

Activities considered important for managers to enhance performance for effective management were as follows:

- Provide role clarity
- Communicate expectations and priorities to subordinates
- Provide clear and precise instructions
- Creating and building team image and identity

- Ability to manage meeting and conflicts electronically
- Adequate structured meetings with clear agenda
- Provide regular constructive feedback
- Build mutual relationship with subordinates
- Clear understanding of subordinates operating environment
- Create an environment to grow and learn together as a team
- Ability to celebrate success
- Resource team with people who can work independently
- Using right technology to communicate and enhance team cohesion

The above activities are not listed in order of importance as respondents were not asked to rank them. These activities served as good input into the questionnaire developed in Phase 2, where quantitative research assisted in understanding the rankings of the relative importance of these activities. These activities were input to Question 3 of the questionnaire (Appendix 2).

Question 4: What are the three things that you think a virtual team manager/ leader needs to do less of when managing virtual teams?

All respondents were asked to identify the three things they thought a virtual manager needed to perform less of when managing virtual teams. This question was meant to understand the three critical areas each respondent considered to be inhibitors for managing virtual teams.

Activities considered a hindrance, which managers need to eliminate to ensure effective virtual teams for managing virtual teams are as follows

- Engaging the closer proximity team without including other virtual team members (lack of information equity)
- Replacing communicating over the phone with emails
- Lack of confidence to delegate or empower remote team members

- Requesting deliverables by saying by end of business without considering time differences
- Not soliciting feedback from teams on what's working and what's not working (reflections)
- Coming late for meetings or cancelling scheduled meetings
- Being time monitoring rather than output focused
- Short circuiting reporting lines by engaging subordinate within the same proximity whilst ignoring virtual line managers
- Assuming team members have the tools to perform certain functions

The above activities are not listed in order of importance. These activities served as good input for the questionnaire developed in Phase 2, where quantitative research assisted in understanding the rankings of the relative importance of these activities. These activities were input to Question 4 of the questionnaire (Appendix 2). It was interesting to notice the internal reflection that each respondent went through before answering this particular question, especially managers. One of the managers mentioned.

“As I am talking to you I am wondering if this is what I do to my subordinates or not. I never took time to reflect and determine whether the virtual relationship is working or not”.

5.1.4 Conclusion

The outcome of the qualitative in-depth discussion laid a good foundation and served as good input for drafting the questionnaire to be used for Phase 2. There were new activities and themes that emerged from the discussions which were incorporated into the questionnaire. More detailed discussion of the results will be conducted in Chapter 6. The main purpose for this chapter was just to present the outcome of the analysis.

5.2 Phase 2 Quantitative Research

5.2.1 Introduction

In order to answer the research questions, a questionnaire (Appendix 2) was designed based on the literature review and the outcome of Phase 1 qualitative in-depth interviews discussed above. The questionnaire consisted of four sections of questions, with the first section collecting data on the demographics of the respondents and the last three being content related sections. All questions were close ended allowing respondents to rank the importance of skills, enablers and inhibitors on a 4 point Likert scale ranging from not at all important (or prevent) to critically important (or extensively prevent). The sections below will present the results.

5.2.2 Demographics

All respondents completed self-administered questionnaires which were either distributed as hard copies or through email. Respondents were asked four questions to enable proper categorisation based on their role in current virtual teams, the length of time they have been operating in virtual teams and the country where both the respondent and their managers were based.

Table 9 below presents the percentage split of the respondents based on the three subgroups (roles). An equal number of 23 respondents were subordinates and both virtual managers and virtual subordinates. Only 13 managers responded to the questionnaire with an overall total of 59 responses received. An 83% response rate was obtained from 75 questionnaires which were distributed.

Table 9: Roles split of respondents (variables)

| Role | Number | % split |
|--------------|-----------|-------------|
| Manager | 13 | 22% |
| Subordinates | 23 | 39% |
| Both | 23 | 39% |
| Total | 59 | 100% |

Table 10 below indicates that more than half of the respondents (51%) had only been part of virtual teams for less than a year. Of the 59 respondents at least 22% had been part of virtual teams for more than three years. The length of time operating in virtual team was not limited to the time within the organisation of focus, but rather based on the respondents' career.

Table 10: Length in virtual teams

| Length in Virtual Teams | Number | % split |
|--------------------------------|---------------|----------------|
| Less than a year | 30 | 51% |
| between 1 and 3 years | 16 | 27% |
| More than 3 years | 13 | 22% |
| Total | 59 | 100% |

Table 11 below indicates that a good spread of responses from across all the regions was obtained with the exception of China. There were no responses received from China mainly because it is a new office with only 8 people and one person forming part of a virtual team. The good spread of respondents will assist in providing a broader view on the insights based on the different levels of virtuality. For example, the level of virtuality of a team can be complicated by the presence of team members in countries with multiple time zones like South Africa or UK, Australia, Brazil and Chile. This will be discussed further in Chapter 6.

Table 11: Country respondent categorised by role

| Country -based | Managers | Subordinates | Both | Total |
|-----------------------|-----------------|---------------------|-------------|--------------|
| Australia | 2 | 3 | 3 | 8 |
| Chile | 2 | 6 | 3 | 11 |
| Brazil | 0 | 2 | 1 | 3 |
| UK(London) | 2 | 0 | 1 | 3 |
| South Africa | 7 | 12 | 15 | 34 |
| Total | 13 | 23 | 23 | 59 |

5.2.3 How important are the following skills to you for effective virtual managers?

A Bolman and Deal Leadership Model questionnaire customised by Beaty (2005) was used to collect data with 24 skills listed. Respondents had to rank the importance of the skills based on the four point Likert scale.

Table 12: Frequency analysis of ranked skills according to importance for managing virtual teams based on critical importance

| Rank-ing | Category | Skills | Not at all important | Somewhat important | Very Important | Critically important |
|----------|------------|---|----------------------|--------------------|----------------|----------------------|
| | | | 1 | 2 | 3 | 4 |
| 1 | HR | Interpersonal skills | 0 | 3 | 18 | 38 |
| 2 | Symbolic | Ability to energise and inspire others | 0 | 3 | 24 | 32 |
| 3 | Symbolic | Ability to excite and motivate | 0 | 5 | 22 | 31 |
| 4 | HR | Ability to coach and develop people | 0 | 6 | 23 | 30 |
| 5 | Networker | Networking skills | 0 | 5 | 24 | 30 |
| 6 | HR | Good listener | 0 | 2 | 27 | 30 |
| 7 | Symbolic | Inspirational leader | 0 | 8 | 22 | 29 |
| 8 | Networker | Ability to build strong alliances | 0 | 5 | 26 | 28 |
| 9 | Structural | Ability to make good decisions | 0 | 5 | 29 | 24 |
| 10 | Networker | Being a networker | 1 | 9 | 26 | 23 |
| 11 | HR | Concern for people | 0 | 10 | 30 | 19 |
| 12 | Networker | Ability to succeed in the face of conflict and opposition | 0 | 7 | 34 | 18 |
| 13 | Symbolic | Being a visionary | 1 | 9 | 33 | 16 |
| 14 | Structural | Clear, logical thinking | 0 | 10 | 34 | 15 |
| 15 | HR | Being a humanist | 4 | 20 | 23 | 12 |
| 16 | Networker | Skilled negotiator | 6 | 13 | 28 | 12 |
| 17 | HR | Caring and support for others | 0 | 16 | 32 | 11 |
| 18 | Symbolic | Being charismatic | 4 | 27 | 19 | 9 |
| 19 | Symbolic | Imagination and creativity | 6 | 16 | 29 | 8 |
| 20 | Structural | Technical expert | 9 | 31 | 13 | 6 |
| 21 | Structural | Attention to detail | 5 | 27 | 21 | 5 |
| 22 | Structural | Analytical skills | 5 | 28 | 23 | 2 |
| 23 | Structural | Being an analyst | 12 | 29 | 17 | 1 |
| 24 | Networker | Toughness and aggressiveness | 12 | 37 | 10 | 0 |

A frequency analysis of the ranked numbers for each skill was conducted and Table 12 above indicates the outcome of the results ranked in descending order by skills considered to be critically important to managing virtual teams. The category column of the leadership frames is predetermined from the questionnaire, where each skill is mapped to a leadership frame as explained in Table 5 within section 2.5.6.5.

Table 13 below is the weighted ranking summarising scores in Table 12. Weighted ranking is adding the outcomes of each skill from all respondents and ranking the totals in descending order to determine highly ranked skills.

Table 13: Ranked skills considered important for managing virtual teams

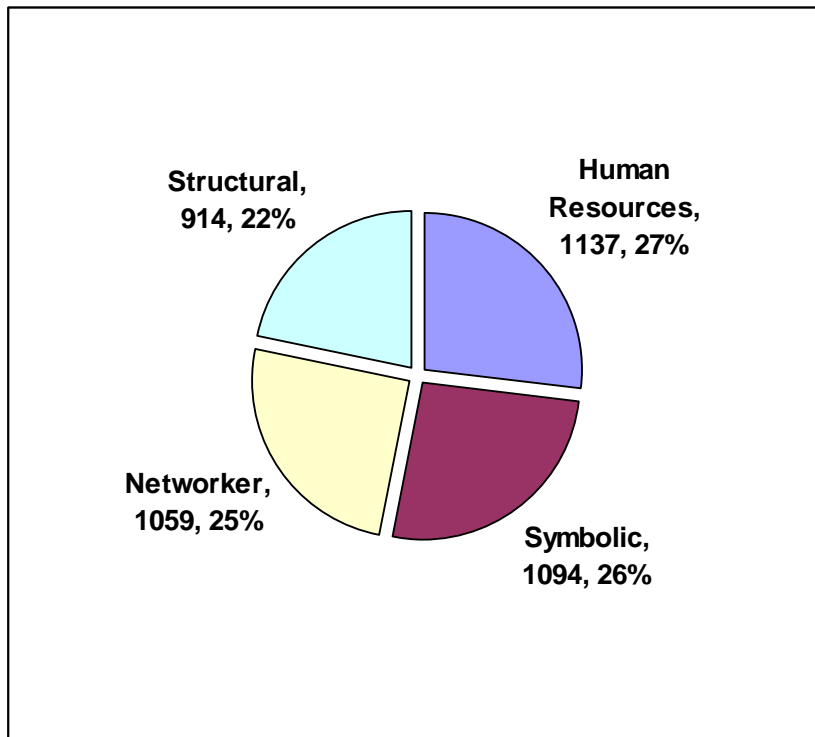
| Ranking | Frames | Skills | Weighted ranking |
|---------|------------|---|------------------|
| 1 | HR | Interpersonal skills | 212 |
| 2 | Symbolic | Ability to energise and inspire others | 206 |
| 3 | HR | Good listener | 205 |
| 4 | Networker | Networking skills | 202 |
| 5 | HR | Ability to coach and develop people | 201 |
| 6 | Networker | Ability to build strong alliances | 200 |
| 7 | Symbolic | Ability to excite and motivate | 200 |
| 8 | Symbolic | Inspirational leader | 198 |
| 9 | Structural | Ability to make good decisions | 193 |
| 10 | Networker | Being a networker | 189 |
| 11 | Networker | Ability to succeed in the face of conflict and opposition | 188 |
| 12 | HR | Concern for people | 186 |
| 13 | Symbolic | Being a visionary | 182 |
| 14 | Structural | Clear, logical thinking | 182 |
| 15 | HR | Caring and support for others | 172 |
| 16 | Networker | Skilled negotiator | 164 |
| 17 | HR | Being a humanist | 161 |
| 18 | Symbolic | Imagination and creativity | 157 |
| 19 | Symbolic | Being charismatic | 151 |
| 20 | Structural | Attention to detail | 142 |
| 21 | Structural | Analytical skills | 138 |
| 22 | Structural | Technical expert | 134 |
| 23 | Structural | Being an analyst | 125 |
| 24 | Networker | Toughness and aggressiveness | 116 |

The highest possible score for each skill could have been 236, that is, if every respondent scored a 4 on each skill. Both Table 12 and 13 are useful in highlighting skills deemed important for managing virtual teams effectively. Both tables indicate that the highest ranked skills considered important are the softer skills, more relational based.

A consolidated analysis of all 24 skills mapped to the relevant four leadership frames was conducted to determine whether there was any dominating frame. The tallied weighted ranking for each of the frames was calculated with the percentage split of responses as shown in Figure 2 below.

Figure 2 indicates that there is a close ranking in terms of percentage split between the leadership frames regarded important for managing virtual teams. There is no specific dominant leadership frame highly ranked by the respondents.

Figure 2: Leadership orientation frames analysis



5.2.4 Are there any differences between the three subgroups skills considered important for an effective virtual managers?

A Kruskal-Wallis (K-W) test was conducted to determine if there were any differences between the three sub-groups; managers, subordinates and respondents as both managers and subordinates. The K-W test analysis was conducted at the α of 0.05. This meant that the probability of rejecting the null hypothesis of equal medians when it is actually true (Type I error) is 0.05.

- The Null Hypothesis (H_0) = All median are equal, that is, there is no significant difference between the median of the three subgroups (managers, subordinates and respondents who are both managers and subordinates).
- The Alternate Hypothesis (H_a) = At least two medians are different, that is, there is significant difference ($z\text{-value} > 1.96$) between the medians of two or more subgroups.

Table 15 below indicates a summary of K-W analysis where ‘y’ indicates that the Null hypothesis was accepted and ‘n’ indicates that the null hypothesis was rejected.

Table 14: Outcome of K-W test for skills considered important for an effective virtual manager

| Skills | Not Corrected for ties | Corrected for ties | Median | | |
|--------------------------------|------------------------|--------------------|----------|-----|---|
| | | | Both M&S | M | S |
| Analytical skills | y | y | 2 | 3 | 2 |
| Interpersonal skills | y | y | 4 | 4 | 4 |
| Networking skills | y | y | 4 | 3 | 3 |
| Ability to excite and motivate | y | y | 3 | 3.5 | 4 |
| Technical expert | y | n | 2 | 2 | 2 |
| Good listener | y | y | 3 | 3 | 4 |
| Skilled negotiator | y | y | 3 | 3 | 3 |
| Inspirational leader | y | y | 4 | 3 | 4 |
| Ability to make good decisions | y | y | 3.5 | 3 | 3 |
| Ability to coach and develop | y | y | 4 | 3 | 4 |

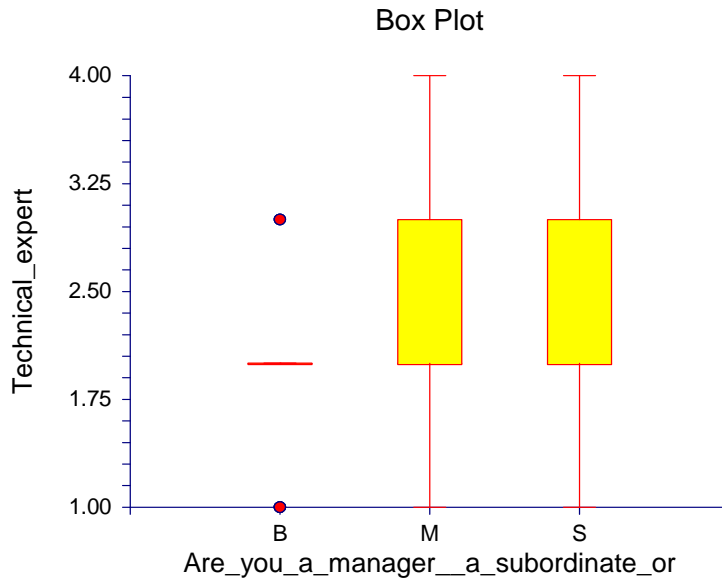


| | | | | | |
|---|---|---|---|---|---|
| people | | | | | |
| Ability to build strong alliances | y | y | 4 | 3 | 3 |
| Ability to energise and inspire others | y | y | 4 | 3 | 4 |
| Attention to detail | y | y | 2 | 3 | 2 |
| Concern for people | y | y | 3 | 3 | 3 |
| Ability to succeed in the face of conflict and opposition | y | y | 3 | 3 | 3 |
| Being charismatic | y | y | 2 | 2 | 3 |
| Clear, logical thinking | y | y | 3 | 3 | 3 |
| Caring and support for others | y | y | 3 | 3 | 3 |
| Toughness and aggressiveness | y | y | 2 | 2 | 2 |
| Imagination and creativity | y | y | 3 | 3 | 3 |
| Being an analyst | y | y | 2 | 2 | 2 |
| Being a humanist | y | y | 3 | 2 | 3 |
| Being a networker | y | y | 4 | 3 | 3 |
| Being a visionary | y | y | 3 | 3 | 3 |

Table 15 points out that there were no significant differences in the median for the three subgroups on all skills except for Technical expert. Technical expert as skill was rejected because the z-value was greater than 1.96 indicating a significant difference between the median for subordinates and both subordinate and manager for corrected ties.

For areas where the Ho was rejected, the box plots analysis was conducted to identify subgroups that were significantly different from each other. At 95% confidence level ($\alpha = 0.05$), if the z-value was greater than 1.96, then the null hypothesis was rejected. Box plots provide a visual comparison of the medians between the three subgroups. The box plot for technical expert skill is presented below in Figure 3.

Figure 3: Box plot for Technical expert skill



The results indicate that there were significant differences between two groups,

- The Z-value for both manager and subordinate and subordinates was 2.3792, meaning there is a significant differences between the medians of the two subgroups

5.2.4.6 Additional K-W test: Length of time and Country- based

Further K-W tests were conducted to determine whether there were any differences in responses based on the length of time of respondents for operating within virtual teams. Only two skills out of 24 indicated that there were significant differences and the null hypothesis was rejected, as highlighted in Table 15 below (Box plots in Appendix 4).

Table 15: Outcome of K-W test for skills considered important for an effective virtual manager categorised by length in virtual team

| Skills | Not Corrected for ties | Corrected for ties | Median | | |
|---|------------------------|--------------------|--------|------------|-------|
| | | | <1 yr | >1yr <3 yr | >3yrs |
| Analytical skills | n | n | 3 | 2 | 2 |
| Ability to succeed in the face of conflict and opposition | y | n | 4 | 3 | 3 |

For 'analytical skills' there is a significant difference between respondents who have been in a virtual team for less than a year (< 1yr) with both respondents who have been in virtual teams for more than a year but less than three years (>1yr<3yrs, $Z=2.2648$) and respondents who have been in virtual teams for more than three years (> 3yrs, $Z=2.4032$).

For 'ability to succeed in the face of conflict and opposition', there is a significant difference between respondents who have been in a virtual team for >1yr<3yrs and both respondents who have been in virtual teams for < 1yr ($Z=2.1725$) and respondents who have been in virtual teams for >3yrs ($Z=2.1335$).

Further K-W tests were conducted to determine if there were any differences amongst respondents in different countries, that is, could geographical location and cultural diversity have any impact on the ranked importance of skills. For analysis purposes, the results for Chile were added together with Brazil and categorised as South America. The results for London were omitted as the sample size was less than 5 (3), which is the minimum requirement per subgroup for running K-W tests. The results indicate that there were no significant differences between the medians of respondents from Australia, South America and South Africa.

5.2.5 Relative value of forces driving success (enablers) for managing virtual teams

Table 16 below indicates a list of consolidated factors obtained from the literature review and the outcome of Phase 1 analysis. These factors were merged to create a list of 21 factors which respondents ranked in importance for enhancing success of virtual teams on a four point Likert scale. A frequency analysis of counting the numbers of each response was conducted ranked by critically important with results reflected in Table 16 below.

Table 16: Ranking of factors enabling success in managing virtual teams

| Ranking | Factors enabling success | Not at all important | Somewhat important | Very Important | Critically important |
|---------|--|----------------------|--------------------|----------------|----------------------|
| | | 1 | 2 | 3 | 4 |
| 1 | Embedding a common vision within the team | 0 | 0 | 24 | 35 |
| 2 | Clearly defined roles and responsibilities | 0 | 3 | 22 | 34 |
| 3 | Knowing how to build a good relationship with a person without meeting them face-to-face | 0 | 2 | 25 | 32 |
| 4 | Team members being able to work independently | 0 | 5 | 23 | 31 |
| 5 | Data systems accessible to everyone | 2 | 8 | 25 | 24 |
| 6 | Using the right technology to communicate | 2 | 4 | 29 | 24 |
| 7 | Manager understanding different working environments | 0 | 5 | 31 | 23 |
| 8 | Meeting face-to-face as a team at least once every 2 months | 0 | 17 | 20 | 22 |
| 9 | Celebrating successes | 0 | 10 | 32 | 16 |
| 10 | Continuous coaching on how to perform work better | 0 | 16 | 27 | 16 |
| 11 | Building strong team identity | 0 | 14 | 30 | 15 |
| 12 | A manager being a good role model | 1 | 10 | 35 | 13 |
| 13 | Ensuring that all team members receive the same message at the same time (information equity) | 1 | 10 | 36 | 12 |
| 14 | Properly structured communication forums | 2 | 12 | 34 | 11 |
| 15 | Providing technology to enable social interaction amongst team members | 3 | 11 | 35 | 10 |
| 16 | Training on how to use the available communication technology e.g. video conferencing live meeting, etc. | 5 | 19 | 25 | 10 |
| 17 | Identifying and engaging quiet people during conference calls | 0 | 15 | 35 | 9 |
| 18 | Feeling cared for by the manager | 1 | 20 | 29 | 8 |
| 19 | Team meetings enabling enough time to have informal discussions | 1 | 19 | 32 | 7 |
| 20 | Using photographs to visualise a person (e.g. on organogram) | 3 | 26 | 23 | 7 |
| 21 | Conducting daily check-ins | 21 | 30 | 7 | 1 |

Table 17 below is the weighted ranking summarising scores in Table 16. Weighted ranking is adding the outcomes of each skill from all respondents and

ranking the totals in descending order to determine highly ranked enabling factors.

Table 17: Weighted ranking of factors enabling success in managing virtual teams

| Actual Rankings | Enabling characteristics | Weighted ranking |
|-----------------|--|------------------|
| 1 | Embedding a common vision within the team | 212 |
| 2 | Clearly defined roles and responsibilities | 208 |
| 3 | Knowing how to build a good relationship with a person without meeting them face-to-face | 207 |
| 4 | Team members being able to work independently | 203 |
| 5 | Manager understanding different working environments | 195 |
| 6 | Using the right technology to communicate | 193 |
| 7 | Data systems accessible to everyone | 189 |
| 8 | Meeting face-to- face as a team at least once very 2 month | 182 |
| 9 | Celebrating successes | 180 |
| 10 | Building strong team identity | 178 |
| 11 | A manager being a good role model | 178 |
| 12 | Continuous coaching on how to perform work better | 177 |
| 13 | Ensuring that all team members receive the same message at the same time (information equity) | 177 |
| 14 | Properly structured communication forums | 172 |
| 15 | Identifying and engaging quiet people during conference calls | 171 |
| 16 | Providing technology to enable social interaction amongst team members | 170 |
| 17 | Team meetings enabling enough time to have informal discussions | 163 |
| 18 | Feeling cared for by the manager | 160 |
| 19 | Training on how to use the available communication technology e.g. video conferencing live meeting, etc. | 158 |
| 20 | Using photographs to visualise a person (e.g. on organogram) | 152 |
| 21 | Conducting daily check-ins | 106 |

5.2.6 Differences between the three variables (K-W test) for enabling success factors

A Kruskal-Wallis (K-W) test was conducted to determine if there were any differences between the three sub-groups; managers, subordinates and both manager and subordinate. Table 18 indicates that there are no significant

differences between the ranked medians of the three subgroups regarding enabling factors considered important for the success of virtual teams. No box plot analysis was conducted as there are no significant differences between the three subgroups.

Table 18: Outcome of K-W test for enabling factors considered important for an effective virtual manager

| Rank | Skills | Not Corrected for ties | Corrected for ties | B | M | S |
|------|--|------------------------|--------------------|---|---|---|
| 1 | Embedding a common vision within the team | y | y | 4 | 4 | 4 |
| 2 | Clearly defined roles and responsibilities | y | y | 4 | 3 | 4 |
| 3 | Knowing how to build a good relationship with a person without meeting them face-to-face | y | y | 4 | 4 | 3 |
| 4 | Team members being able to work independently | y | y | 4 | 4 | 4 |
| 5 | Manager understanding different working environments | y | y | 3 | 3 | 3 |
| 6 | Using the right technology to communicate | y | y | 4 | 3 | 3 |
| 7 | Data systems accessible to everyone | y | y | 3 | 3 | 3 |
| 8 | Meeting face-to-face as a team at least once every 2 month | y | y | 3 | 3 | 3 |
| 9 | Celebrating successes | y | y | 3 | 3 | 3 |
| 10 | Building strong team identity | y | y | 3 | 3 | 3 |
| 11 | A manager being a good role model | y | y | 3 | 3 | 3 |
| 12 | Continuous coaching on how to perform work better | y | y | 3 | 3 | 3 |
| 13 | Ensuring that all team members receive the same message at the same time (information equity) | y | y | 3 | 3 | 3 |
| 14 | Properly structured communication forums | y | y | 3 | 3 | 3 |
| 15 | Identifying and engaging quiet people during conference calls | y | y | 3 | 3 | 3 |
| 16 | Providing technology to enable social interaction amongst team members | y | y | 3 | 3 | 3 |



| | | | | | | |
|----|--|---|---|---|---|---|
| 17 | Team meetings enabling enough time to have informal discussions | y | y | 3 | 3 | 3 |
| 18 | Feeling cared for by the manager | y | y | 3 | 3 | 3 |
| 19 | Training on how to use the available communication technology e.g. video conferencing live meeting, etc... | y | y | 3 | 3 | 3 |
| 20 | Using photographs to visualise a person (e.g. on organogram) | y | y | 3 | 2 | 3 |
| 21 | Conducting daily check-ins | y | y | 2 | 2 | 2 |

Additional K-W tests were conducted to determine if there were any differences amongst respondents in different countries, that is, could geographical location and cultural diversity have any impact on the ranked importance of enablers. For analysis purposes, the results for Chile were added together with Brazil and categorised as South America. The results for London were omitted as the sample size was less than 5 (3), which is the minimum requirement per subgroup for running K-W tests.

The results of K-W test where the null hypothesis that was rejected for location of respondents are summarised below in Table 19 below (Box plots in Appendix 4).

Table 19: Outcome of K-W test for enabling factors considered important for an effective virtual manager categorised by location of respondent

| Skills | Not Corrected for ties | Corrected for ties | Australia | South Africa | South America |
|--|------------------------|--------------------|-----------|--------------|---------------|
| A manager being a good role model | y | n | 3.5 | 3 | 3 |
| Celebrating successes | n | n | 4 | 3 | 3 |
| Using photographs to visualise a person (e.g. on organogram) | n | n | 2 | 2 | 3 |

The results indicate that for the following enabling factors;

- ‘A manager being a good role model’, there was a significant difference between the median of respondents in South America and Australia. The Z-value is 2.5416, hence the null hypothesis was rejected.
- ‘Celebrating successes’, there was a significant difference between the median of respondents in South America and Australia. The Z-value is 2.7985, hence the null hypothesis was rejected by both methods of non-corrected ties and corrected ties.
- ‘Using photographs to visualise a person (e.g. on organogram)’ there was a significant difference between the median of respondents in South America and Australia. The Z-value is 2.6804, hence the null hypothesis was rejected by both methods of non-corrected ties and corrected ties.

The above results indicate that there is a significant difference between how Australians and South Americans view importance of three enabling factors. K-W tests conducted on length within virtual teams showed no significant difference between the different lengths of time being in virtual teams.

5.2.7 Relative value of forces driving failure (inhibitors) for managing virtual teams

Table 20: Ranking of factors inhibiting success in managing virtual teams

| Actual ranking | Factors inhibiting success | Don't inhibit at all | Somewhat inhibit | Definitely inhibit | Extensively inhibit |
|----------------|--|----------------------|------------------|--------------------|---------------------|
| | | 1 | 2 | 3 | 4 |
| 1 | Lack of trust | 0 | 7 | 18 | 34 |
| 2 | Not considering different time zones when setting up meetings or deadlines | 0 | 5 | 26 | 28 |
| 3 | Difficulty in communicating with people from other cultures | 1 | 12 | 25 | 21 |
| 4 | Lack of proper tools to communicate | 3 | 9 | 31 | 16 |
| 5 | Lack of sharing knowledge and cross team learning | 1 | 14 | 29 | 15 |
| 6 | Misunderstanding instructions given | 1 | 12 | 31 | 15 |
| 7 | Lack of feedback and coaching | 0 | 8 | 36 | 15 |

| | | | | | |
|----|---|----|----|----|----|
| 8 | Delays in resolving conflicts | 0 | 7 | 38 | 14 |
| 9 | Inability to make decisions in the absence of manager | 3 | 14 | 29 | 13 |
| 10 | Lack of knowledge about virtual team environment | 1 | 16 | 32 | 10 |
| 11 | Replacing communicating over the phone with emails | 4 | 26 | 20 | 9 |
| 12 | Performance management discussions conducted over the phone | 4 | 26 | 20 | 9 |
| 13 | Offensive jokes | 4 | 25 | 21 | 9 |
| 14 | Providing negative feedback over the phone | 8 | 22 | 22 | 7 |
| 15 | Performance management discussions conducted via video conferencing | 12 | 31 | 10 | 6 |
| 16 | Providing feedback electronically | 12 | 27 | 14 | 6 |
| 17 | Being task driven rather than building relationships | 5 | 30 | 20 | 4 |

Table 20 above indicates a list of consolidated factors obtained from the literature review and the outcome of Phase 1 analysis. These factors were merged to create a list 17 factors which respondents ranked their level of inhibiting success of virtual teams on a four point Likert scale. A frequency analysis of counting of the numbers of each response was conducted ranked by extensively inhibit with results reflected in Table 20 above.

Table 21: Weighted ranking of factors inhibiting success in managing virtual teams

| Ranking | Inhibiting characteristics | Weighted rankings |
|---------|--|-------------------|
| 1 | Lack of trust | 204 |
| 2 | Not considering different time zones when setting up meetings or deadlines | 200 |
| 3 | Difficulty in communicating with people from other cultures | 184 |
| 4 | Lack of feedback and coaching | 184 |
| 5 | Delays in resolving conflicts | 184 |
| 6 | Lack of proper tools to communicate | 178 |
| 7 | Misunderstanding instructions given | 178 |
| 8 | Lack of sharing knowledge and cross team learning | 176 |
| 9 | Inability to make decisions in the absence of manager | 170 |

| | | |
|----|---|-----|
| 10 | Lack of knowledge about virtual team environment | 169 |
| 11 | Offensive jokes | 153 |
| 12 | Replacing communicating over the phone with emails | 152 |
| 13 | Performance management discussions conducted over the phone | 152 |
| 14 | Providing negative feedback over the phone | 146 |
| 15 | Being task driven rather than building relationships | 141 |
| 16 | Providing feedback electronically | 132 |
| 17 | Performance management discussions conducted via video conferencing | 128 |

Table 21 above indicates the weighted ranking summarising scores in Table 20. Weighted ranking is adding the outcomes of each skill from all respondents and ranking the totals in descending order to determine highly ranked inhibiting factors.

5.2.8 Differences between the three subgroups (K-W) test on inhibitors

A Kruskal-Wallis (K-W) test was conducted to determine if there were any differences between the three sub-groups; managers, subordinates and both manager and subordinate. Table 22 below indicates the outcome of the analysis.

Table 22: Outcome of K-W test for factors considered to inhibit effective virtual teams

| Factors | Not Corrected for ties | Corrected for ties | Median B | Median M | Median S |
|--|------------------------|--------------------|----------|----------|----------|
| Lack of knowledge about virtual team environment | y | y | 3 | 3 | 3 |
| Not considering different time zones when setting up meetings or deadlines | y | y | 4 | 3 | 3 |
| Being task driven rather than building relationships | n | n | 2 | 2 | 3 |
| Inability to make decisions in the absence of manager | n | n | 3 | 2 | 3 |
| Difficulty in communicating with people from other cultures | y | y | 3 | 3 | 3 |
| Lack of proper tools to communicate | y | y | 3 | 3 | 3 |
| Replacing communicating over the phone with emails | y | y | 2 | 2 | 3 |
| Misunderstanding instructions given | y | n | 3 | 3 | 3 |
| Offensive jokes | y | y | 2 | 2 | 3 |
| Lack of feedback and coaching | y | y | 3 | 3 | 3 |

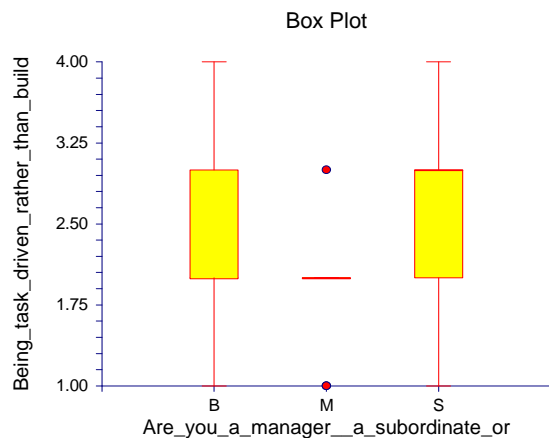
| | | | | | |
|---|---|---|---|---|---|
| Providing feedback electronically | y | y | 2 | 2 | 2 |
| Providing negative feedback over the phone | y | y | 3 | 2 | 2 |
| Performance management discussions conducted over the phone | y | y | 2 | 2 | 3 |
| Performance management discussions conducted via video conferencing | y | y | 2 | 2 | 2 |
| Lack of trust | y | y | 4 | 3 | 4 |
| Delays in resolving conflicts | y | y | 3 | 3 | 3 |
| Lack of sharing knowledge and cross team learning | y | y | 3 | 3 | 3 |

Table 22 above indicates a summary of K-W analysis were 'y' indicates that the Null hypothesis was accepted and 'n' indicates that the null hypothesis was rejected. The table indicates that there were no significant differences in the median for the three subgroups on all skills except for:

- Being task driven rather than building relationships
- Inability to make decisions in the absence of a manager
- Misunderstanding instructions given

The null hypothesis for the above three factors were rejected because the z-value was greater than 1.96 indicating a significant difference between the median for subordinates and both subordinate and manager for corrected ties.

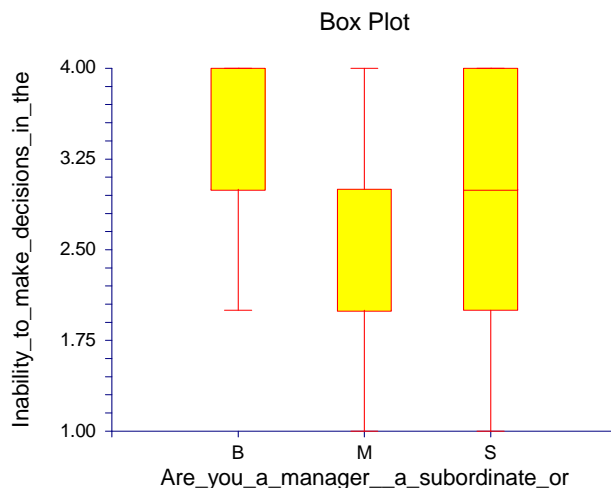
Figure 4: Box plot for factor 'Being task driven rather than building relationships'



The null hypothesis was rejected for not corrected for ties and corrected for ties. The results for being task driven rather than building relationships denoted in Figure 4 above indicate that there were significant differences between two groups;

- The Z-value for both manager and subordinate and manager was 2.1009, meaning that there were statistically significant differences between the responses provided by both managers & subordinates and managers
- The Z-value for subordinates and managers was 2.7540, meaning that there were statistically significant differences between the responses provided by subordinates and managers

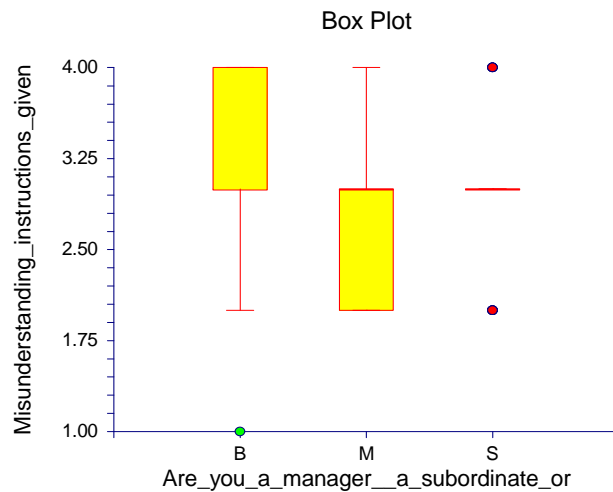
Figure 5: Box plot for factor ‘Inability to make decisions in the absence of manager’



The null hypothesis was rejected for not corrected for ties and corrected for ties. The results for ‘inability to make decisions in the absence of a manager’ denoted in Figure 5 above indicate that there were significant differences between two sub groups;

- The Z-value for both managers and subordinates and managers was 2.6962, meaning that there were statistically significant differences between the responses provided by both managers & subordinates and managers.

Figure 6: Misunderstanding instructions given



The above box plot in Figure 6 indicates that there were significant differences between managers and both subordinates & managers as the Z value was 2.4366.

5.2.8.1 Additional K-W test: Length of time and Country- based

Additional K-W tests were conducted to determine if there were any differences amongst respondents in different countries, that is, could geographical location and cultural diversity have any impact on the ranked importance of inhibiting factors. For analysis purposes, the results for Chile were added together with Brazil and categorised as South America. The results for London were omitted as the sample size was less than 5 (3), which is the minimum requirement per subgroup for running K-W tests.

Table 23: Outcome of K-W test for factors considered to inhibit effective virtual teams categorised by length in virtual teams

| Factors | Not Corrected for ties | Corrected for ties | Median <1yr | Median >1yr<3yrs | Median >3 yrs |
|--|------------------------|--------------------|-------------|------------------|---------------|
| Being task driven rather than building relationships | n | n | 3 | 2 | 2 |
| Lack of proper tools to communicate | n | n | 3 | 3.5 | 3 |
| Lack of sharing knowledge and cross team learning | n | n | 3 | 3 | 2 |

The results of K-W test were the null hypothesis was rejected for length spend in virtual teams of respondents are summarised below in Table 23 above (Box plots in Appendix 4). Results indicate that,

- For ‘being task driven rather than building relationships’ as an inhibitor, there is a significant difference between respondents who have been in virtual teams for less than a year (<1yr) and both respondents who have been in virtual teams for more than a year but less than three years (>1yr<3yrs, $Z= 2.0180$) and respondents who have been in virtual teams for more than three years (> 3yrs, $Z=3.1911$) hence the null hypothesis was rejected.
- For ‘Lack of proper tools to communicate’ as an inhibitor, there is a significant difference between respondents who have been in virtual teams for more than 3yrs and both respondents who have been in virtual teams for less than a year ($Z=1.9652$) and more than a year but less than 3 years ($Z= 3.1255$) hence the null hypothesis was rejected.
- For ‘lack of sharing knowledge and cross team learning’ as an inhibitor, there is a significant difference between respondents who have been in virtual teams for more than 3yrs and both respondents who have been in virtual teams for less than a year ($Z=2.7001$) and more than a year but less than 3 years ($Z= 2.0157$) hence the null hypothesis was rejected.

Further K-W tests were conducted to determine if there were any differences amongst respondents in different countries, that is, could geographical location

and cultural diversity have any impact on the ranked importance of inhibiting factors. For analysis purposes, the results for Chile were added together with Brazil and categorised as South America. The results for London were omitted as the sample size was less than 5 (3), which is the minimum requirement per subgroup for running K-W tests.

There were no significant differences between the extensiveness of inhibitors across respondents from different countries.

Chapter 6 Discussion of the results

6.1 Introduction

This chapter will answer the questions as posed in Chapter 3. Chapter 5 above presented the outcome of the results from the research. Chapter 6 will analyse and interpret these results based on two inputs, the results produced in Chapter 5 and the literature review conducted in Chapter 2. This chapter will provide more insights into the research problem with the evidence that the research problem was answered.

6.2 Discussion of the results for Question 1

What is the preferred leadership orientation for virtual managers?

The research outcomes pertinent to this question are shown in Tables 12, 13 and Figure 4 in Chapter 5. In Figure 4, the outcome of the research results indicated that there is no dominant leadership frame for managing virtual teams as there was a close ranking in terms of percentage split amongst all four frames. This means that all aspects of the leadership frame should be addressed and adhered to when leading virtual teams. In order for a manager to become effective in managing virtual teams, they need to have an understanding and to an extent display a balanced set of skills listed within in the four frames (Bolman, *et al.*, 2008). The results support the suggestion by Stadtlander (2008) that in order for a virtual manager to have the ability to establish order and provide simplicity, a displayed balance of the four frames of leadership is important.

6.2.1 Top five ranked skills

Results from both Table 12 and 13 in chapter 5 indicate that the highest ranked skills considered to be important for managing virtual teams are the softer skills, more relational based skills. The top five ranked skills are discussed below.

6.2.1.1 Interpersonal skills

Although there was no dominating frame, interpersonal skills were ranked as the highest important skill required for managing virtual teams.

| Ranking | Frames | Skills | Weighted ranking |
|---------|--------|----------------------|------------------|
| 1 | HR | Interpersonal skills | 212 |

Connaughton, *et al.* (2004) also highlighted that interpersonal skills are critical for effective communication in virtual teams. This aligns with the challenges highlighted in both the literature review and qualitative interviews regarding the socio-emotional challenges of managing virtual teams (Hunsaker, *et al.*, 2008). For example, from the in-depth qualitative research conducted, the top ranked challenge that virtual teams presents (Table 8) is the limited opportunities for social interactions within virtual teams. This lack of social interactions creates a gap for the need of virtual managers to display high levels of interpersonal skills.

The next level of understanding would be to determine what is considered to be a cluster of interpersonal skills for virtual teams and the current study did not get into the required depth of understanding.

6.2.1.2 Ability to energise and inspire others

Ability to energise and inspire others was the second highest rated important skill for managing virtual teams. This skill is one of the transformational leadership behaviours that a virtual manager should display inspirational motivation.

| Ranking | Frames | Skills | Weighted ranking |
|---------|----------|--|------------------|
| 2 | Symbolic | Ability to energise and inspire others | 206 |

In Chapter 2, virtual leadership was defined as “a social influence process mediated by advanced information technologies to produce changes in attitudes, feelings, thinking, behaviour, and/or performance of individuals, groups, and/or

organisations” (Hambley, *et al.*, 2007, p1). In order for a virtual leader to be able to have the social influence that changes attitudes, feelings, thinking and behaviour, it is important to display high interpersonal skills, together with the ability to energise and inspire others. This skill can be clustered with one other skill, an inspirational leader, which was ranked the eighth most important skill.

Below is a list of leading behaviours for inspirational motivation transformational leadership style that virtual leaders should display (Bolden, *et al.*, 2003);

- Talk optimistically about the future
- Talk enthusiastically about what needs to be accomplished
- Articulate a compelling vision of the future
- Express confidence that goals will be reached
- Provide an exciting image of what is essential to consider

6.2.1.3 Good listener

Being a good listener complements the two skills above. For example, in order for a virtual leader to be able to energise and inspire others and to have good interpersonal skills, they have to be a good listener

| Ranking | Frames | Skills | Weighted ranking |
|---------|--------|---------------|------------------|
| 3 | HR | Good listener | 205 |

Within the context of virtual teams, being a good listener should entail things like using the intuition to hear beyond what another person is saying through electronic communication media. Within the virtual environment, there is no luxury of certain non –verbal cues to determine if someone is hiding facts or they are being dishonest. Virtual leaders therefore have to develop new skills of becoming active listeners through intuition. During the qualitative discussion one of the managers mentioned that at times during teleconferences, people pretend that they understand what is being discussed whilst most of the time they don’t. It is important for a virtual leader to develop discerning listening skills to identify when this occurs to be able to intervene and ensure everyone is aligned.

Virtual managers also require active listening skills to be able to detect some of the introverts on the call and be able to bring them into the conversation so that they are engaged and they also engage with the team. One of the big questions that arise is what is the best way to deal with and manage introverts during conference calls without cold calling and putting them on the spot?

6.2.1.4 Networking skills

Networking skills were ranked as the fourth highest important skill for managing virtual teams.

| Ranking | Frames | Skills | Weighted ranking |
|---------|-----------|-------------------|------------------|
| 4 | Networker | Networking skills | 202 |

From the in-depth interviews conducted, networking skills are considered important mainly because for managers to conduct performance assessment on their subordinates, they have to rely on other managers or direct reports within same area with the subordinate to provide input into performance discussions. One of the respondents commented that as a manager you are not able to see the day to day activities of your subordinates and it is important to know someone who can see them and provide feedback.

This skill can be linked with two other skills within the top 10 ranked skills; ability to build strong alliances (ranked number six) and being a networker (ranked number 10). In order for the managers to ensure they obtain objective feedback regarding their subordinates, it important to sharpen their networking skills by forging relationships with other managers and colleagues in different countries or regions.

One of the managers mentioned that it is important to form good working relationships with other managers within the same location as your subordinate

to leverage their support when providing negative feedback to a subordinate. She mentioned that;

“I prefer to have another manager sitting with my subordinate within the same place to be present with them in the room when I provide negative feedback so that they are able to read the non-verbal cues and act accordingly”

6.2.1.5 Ability to coach and develop people

The fourth ranked skill with narrow ranking totals considered to be important for managing virtual teams is the ability to coach and develop people.

| Ranking | Frames | Skills | Weighted ranking |
|----------------|---------------|-------------------------------------|-------------------------|
| 4 | HR | Ability to coach and develop people | 145 |

According to Connaughton and Daly (2004)., effective leaders demonstrate mentoring qualities characterised by understanding, empathy and concern for members, that is, these leaders despite the distance find ways to be accessible to their distanced team members. Providing thorough feedback is important to develop and maintain trust and a high performing team (Jarvenpaa & Leidner, 1999 quoted in Geister, et al., 2006). The ability of a virtual leader to provide feedback will enhance performance of the team. Providing feedback is also important for reaching common understanding and mutual agreement amongst team members (Dennis & Valacich, 1999, Olson & Olson, 2001 quoted in Geister, et al., 2006).

One of the challenges revealed during interviews were the intricacies of conducting electronic feedback and the relevant communication media to use. Given the importance and the impact of providing feedback and the ability to coach; virtual leaders’ ability to identify the relevant technology and context to provide constant feedback to the team members is very important. One of the subordinates mentioned that managers are not soliciting feedback from their teams to determine what is working and what is not working, it is mostly one way session with only the manager providing feedback. The suggestion that came

forth was that managers should schedule constant one-on-one feedback and coaching sessions with each member of their team depending on the need and level of readiness of the subordinate. Where possible, feedback should be conducted via video conferencing or facilities with webcam to increase the engagement levels.

The outcome of analysis also indicated that due to the manager's inability to observe the actions of subordinates, coaching will mostly be based on a pull-rather than a push-effect. That is, coaching will be based on subordinates' ability to highlight a problem and request for support from the managers.

6.2.2 Least ranked skills

The bottom five skills that were considered to be least important for managing virtual teams are

- Attention to detail
- Analytical skills
- Technical expert
- Being an analyst
- Toughness and aggressiveness

Overall the hard skills which are more task-related have been ranked very low by respondents. Toughness and aggressiveness skill is the least ranked skill therefore virtual managers should avoid applying this skill unless it is deemed necessary.

6.3 Discussion of the results for Question 2

Is the preferred leadership orientation for virtual managers viewed differently by the three subgroups?

Cubero (2007) suggests that "leadership style is not how leaders think they behave in a situation but how others (most importantly, their followers) perceive

their behavior” (p352). It was important for the study to seek to understand whether there were any significant differences between the three subgroups; managers, subordinates and both subordinate and manager. Table 14 presents the outcome of testing any significant differences in response between the three subgroups. It was surprising to discover that there were no significant differences in the medians of the three subgroups regarding the ranking of all skills except for ‘technical expert’ skills, which was also ranked as one of the bottom skills considered not to be important. There were significant differences between the medians of subordinates and both managers and subordinates. The lack of evidence for the differences is good because it implies that the perceptions and expectation between managers, subordinates and both managers and subordinates are aligned and consistent.

Further analysis was undertaken to determine whether there were any significant differences in the skills considered important depending on the length of being in virtual teams. According to Situational leadership model, a leader’s leadership style is the combination of strengths of a leader’s relationship behavior and task behavior; and a follower’s development level as the combination of degrees of commitment and competence to accomplish a certain task (Yoshioka, 2006; Hersey, Blanchard & Johnson, 2001). The length of time can be viewed as representing the level of readiness of subordinates within the environment.

Table 15 indicates that there were no significant differences in ranking the importance of skills between the medians of people who have been in virtual teams for a short or longer period except for two skills analytic skills and ability to succeed in the face of conflict and opposition.

For ‘analytical skills’, respondents who have operated in virtual teams for less than a year ranked the importance of analytical skills relatively higher than respondents who have been longer in virtual teams. This can be interpreted using Situational leadership model that the leadership style required by people

who have been in leadership roles for less than a year requires support through the analytical skills capability of their leaders. Another test of significant differences was conducted to assess the impact of virtuality on perceived important skills. Virtuality is referred to as the level of diversity amongst team members or presence of team members in countries with multiple time zones (Hertela, *et al.*, 2005). The results indicated that there were no significant difference between the medians of respondents from Australia, South America and South Africa. The outcome of the study does not support the impact of virtuality on assessment of important skills. Although this could also mean the level of virtuality amongst the sample group was very minimal.

6.4 Conclusion for Questions 1 and 2

The leadership orientation frame model assisted in determining the important and least important skills for virtual managers to display. However, given that there was no preferred leadership frame, it can be concluded that the categorisation of the questionnaire into the four frames is not relevant for virtual teams. The notion that a balance requires to be maintained between the four frames can be interpreted that different leadership frames will be dominant across different levels of maturity of virtual teams. For example structural leadership frame could be important during the formation of virtual teams with symbolic and Human Resources dominating during the maturing phase of virtual teams. There seem to be preference for leadership skills that encourages autonomy, authority and empowerment of subordinates.

6.5 Discussion of the results for Question 3

What is the relative value of forces driving success (enablers) for managing virtual teams?

The research outcomes pertinent to this question are shown in Table 17. This question sought to understand key enabling factors for success of virtual teams as ranked by respondents.

6.5.1 Top five highly ranked success factors

Table 17 reveals that the top five highly ranked success factors are discussed below.

6.5.1.1 Embedding a common vision within the team

It is no surprise to see embedding a common vision within the team being ranked as the top enabling factor for success in virtual teams.

| Actual Rankings | Enabling characteristics | Weighted ranking |
|-----------------|---|------------------|
| 1 | Embedding a common vision within the team | 212 |

This outcome supports the argument that several authors have pushed forth, regarding the importance and ability of a virtual leader to embed a common vision within the team. Virtual team leaders need to provide a clear and engaging direction along with specific individual goals, they need to be more proactive and structuring (Hunsaker, et al., 2008). Embedding a common vision is not new to virtual teams and it's a concept that several leadership theories have emphasised. In addressing one of the challenges of supporting subordinates to overcome feelings of isolations and detachment associated with virtual teams Kirkman, et al. (2002) argues that virtual managers have to clearly communicate and continuously remind all team members about the common vision shared by the team.

This means that as a virtual manager it is important to have a clear vision regarding the purpose and role that your team is expected to play within the overall vision of the organisation. Having a common vision embedded amongst team members will also enhance other enabling factors like creating and building a strong team identity and image and assist in creating a culture that gives

purpose and meaning to team members (Bolman, *et al.*, 1988, 2006; Beaty, 2005 and Stadtländer, 2007).

6.5.1.2 Clearly defined roles & responsibilities

The second highly rated important enabler for managing virtual teams is the ability of a manager to clearly define roles and responsibilities for each team member.

| Actual Rankings | Enabling characteristics | Weighted ranking |
|-----------------|--|------------------|
| 2 | Clearly defined roles and responsibilities | 208 |

Virtual leaders need to ensure all team members understand each of the specific roles they are to fulfil to be successful, that is providing clarity of functional roles. The outcome of the study supports assessment of the literature by different authors, highlighting clearly defined goals and objectives communicated and understood by all virtual team members to be one of the critical success factors for virtual teams (Bal, *et al.*, 2001, Brake, 2005, Bergiel, *et al.*, 2008, Hunsaker, *et al.*, 2008). Virtual leaders can provide clarity through assigning tasks, specifying procedures, and clarifying expectations as it has been shown to result in reduced role ambiguity and increased job satisfaction among employees (Arvidsson *et al.*, 2007)

6.5.1.3 Knowing how to build a good relationship with a person without meeting them face-to-face

The third highly ranked important enabler is the importance of both virtual manager and virtual subordinates to know to build a good relationship with a person without meeting them face to face.

| Actual Rankings | Enabling characteristics | Weighted ranking |
|-----------------|--|------------------|
| 3 | Knowing how to build a good relationship with a person without meeting them face-to-face | 207 |

This is a very contentious enabler as different authors argue that the way of building trust, team cohesion and identity is to meet face-to-face during the forming stages (Lahenius, *et al.*, 2004, Crowley, 2005, Cursue, *et al.*, 2008) whilst other authors like Pauleen & Yoong (2001) and Kirkman, *et al.* (2002) argue that trust can be built in a virtual environment without meeting face to face.

One of the respondents during the in-depth interviews mentioned that

“people from other regions, especially South America, deletes emails if they have not met the sender face-to-face”

This enabler highlights that although there are benefits of virtual teams meeting face to face for at least every 2 months (ranked enabler no 8 on Table 17), this comes at a cost and most companies are trying to cut down on costs. The best alternative to drive the success of virtual teams further is the ability of both the manager and subordinate to know how to build good relationship without having met face to face. This enabler can be developed and nurtured through the manager’s ability to display the top five skills mentioned in section 6.2.1

6.5.1.4 Team members being able to work independently

The four ranked most important enabler is the ability of team members within virtual teams to work independently.

| Actual Rankings | Enabling characteristics | Weighted ranking |
|------------------------|---|-------------------------|
| 4 | Team members being able to work independently | 203 |

This enabler was also emphasised by several respondents during the in-depth discussions citing that given the challenges of turnaround time in receiving responses from the manager, a virtual team member should have the ability to

work independently and the confidence to make decisions. One of the respondents was quoted saying

“Virtual teams requires mature and independent individuals who can work autonomously”

If a virtual manager provides a common vision and clarifies the roles and responsibilities, it will be easier for team members to work independently. This could imply that people, who draw their energy from working with other people, might have challenges with working in virtual teams as they would be expected to work independently. Further research should be conducted to understand what constitutes ability to work independently in virtual teams without diluting the socio-emotional aspects of team work. Most of the top ranked skills advocates for leadership style to enable authority, autonomy and empowerment of subordinates. Managers can create an enabling environment through delegating work to subordinates, therefore empowering them and allowing them to work independently. Manager can also empower subordinates by delegating authority so that they can make decisions in the absence of managers.

6.5.1.5 Manager understanding different working environments

The fifth highly ranked enabler for successful virtual teams is the ability of the manager to understand the different working environments for each team member.

| Actual Rankings | Enabling characteristics | Weighted ranking |
|------------------------|--|-------------------------|
| 5 | Manager understanding different working environments | 195 |

This is a new emerging theme that has not been addressed by several authors. It supports a quote from Brake (2005)

“be careful when working across cultural borders that there is a shared understanding of purpose, goals, priorities, methods, etc.... local conditions can influence how these are understood” (p 120)

The quote highlights the importance of understanding different environments within which subordinates operates as it may have an impact on the ability of subordinates in understanding the purpose, goals, priorities and methods. One of the respondents’ from the in-depth interviews indicated that local managers sometimes bully virtual subordinates by side-tracking and reprioritising their allocated tasks conflicting what the virtual manager has proposed. A virtual subordinate who was interviewed also emphasised that their managers’ lack of understanding of situation, structure and politics ongoing within the subordinate’s environment has an impact on her ability to deliver and meet the manager’s expectations.

The other challenge that other respondents mentioned were the different policies within different offices. For example, other offices allowed having champagne during working hours acceptable when celebrating success whilst other offices were against it. Other challenges which came forth during in-depth discussions were issues around business unit operating procedures which differed from one business unit to the next. In on

6.5.2 Least ranked factors for success

Table 17 also indicates the least ranked factors for successful management of virtual teams

- Team meetings enabling enough time to have informal discussions
- Feeling cared for by the manager

- Training on how to use the available communication technology e.g. video conferencing live meeting, etc.
- Using photographs to visualise a person (e.g. on organogram)
- Conducting daily check-ins

Crowley (2005) highlights that to create good working relationship and develop rapport amongst team members; a virtual team leader needs to maintain a balance between formal and informal interactions. The outcome of the results seem to suggest that the team meetings may not be a good platform to engage on the informal discussion as the ability for team meetings to enable enough time to have informal discussion was ranked low. The results also indicate the low ranking of availability of having the technology to enable social interactions amongst team members. A virtual manager needs to identify other alternatives to have these informal interactions although other authors believes that the first few minuets of a team meeting should incorporate an informal discussion, just like a few minutes before a meeting within face-to face meetings. A virtual manager has further challenges on how to become telepresent in an informal way amongst team members.

The results also indicated that using photographs to visualise a person is not an important enabler of success in virtual teams. The least ranked enabler was the manager conducting daily checks-ins. This is an activity that all virtual managers should avoid.

6.6 Discussion of the results for Question 4

Are these forces viewed differently by managers and subordinates?

Table 18 indicates that there are no significant differences between the ranked medians of the three subgroups; managers, subordinates and both virtual managers and subordinates regarding enabling factors considered important for the success of virtual teams. It is interesting to discover that everyone's

expectation and assessment is aligned regarding important enablers for virtual teams. The lack of significant differences between the three subgroups serves an advantage for ease of implementation of any of the recommendations to enhance the enablers. There will not be any need to customise or twig the implementation plan to address any differences due to the alignment between the three groups.

Further K-W tests were conducted to determine if there were any differences amongst respondents in different countries, that is, could geographical location and cultural diversity (level of virtuality) have any impact on the ranked importance of enablers. The results depicted in Table 19 indicated significant difference between the median of respondents in South America and Australia.

The results indicate that there is a significant difference between how Australians and South Americans view importance of enabling factors. Australians ranked the first two enablers; a manager being a good role model and celebrating success a bit higher than South Americans, whilst South Americans rated using photographs to visualise a person higher than the Australians. This means that to implement the enablers, it is important for virtual leaders to apply situational leadership style with the need to customise the enablers according to the regions where it matters the most. A one size fits all approach will not produce effective results.

Further significant differences tests were conducted to determine whether there were any difference between members who have been in virtual teams for shorter or longer time. The outcome of the results showed no significant difference between the rankings of important enablers due to different lengths of time being in a virtual team. This means despite the length of time operating in virtual teams the important enabling factors for operating in a virtual team are viewed the same.

6.7 Discussion of the results for Question 5

What is the relative value of forces inhibiting success for managing virtual teams?

The research outcomes pertinent to this question are shown in Table 21. This question sought to understand key inhibiting factors for success of virtual teams as ranked by respondents.

6.7.1 The top five highly ranked inhibiting factors

All the 17 factors listed in Table 21 have been identified as inhibitors for managers to be cautious of; however the top five highly ranked inhibiting factors are discussed further in the subsequent sections.

6.7.1.1 Lack of trust

Lack of trust has been ranked as the number one inhibiting factor for successful management of virtual teams. This is not a surprise as several authors have highlighted the difficulty to establish trust as one of the biggest challenges for virtual teams.

| Ranking | Inhibiting characteristics | Weighted rankings |
|---------|----------------------------|-------------------|
| 1 | Lack of trust | 204 |

From the qualitative research conducted, some of the symptoms indicating lack of trust cited by respondents were,

- excessive monitoring ‘policing’ by managers
- managers conducting daily check-in with team members
- inability to delegate work to subordinates
- lack of authority given to subordinates to make decisions in the absence of managers

Wayne Cascio quoted in Kirkman, *et al.* (2002, p 69) mentioned that “lack of trust can undermine every other precaution taken to ensure successful virtual work

arrangements”. From the statement and the outcome of results, the ability to develop and build trust in virtual teams is of outmost importance for virtual managers.

Kirkman, *et al.* (2002) states that to be able to develop trust in virtual teams requires a shift in the mindset that building trust is based on forming social bonds through informal chats or after work gatherings to knowing that building trust is based on consistently delivering on promises and communicating frequently. He argues that trust is gained when people deliver what they promised, that is, their reliability, consistency and responsiveness to delivering promises. From the outcome of the study, there is evidence to suggest that the ability to develop trust is mostly based on the ability of the leader to display softer skills, being relational based as opposed to being task driven, which will create a culture for developing trust. In their literature review Bal, *et al.* (2001), Lahenius, *et al.* (2004), Brake (2005) Bergiel, *et al.* (2008) & Hunsaker, *et al.* (2008) highlight that the most advantageous time to build a trusting relationship is during the early stages of team formation as the lack of trust affects effective performance of the team.

To develop trust, it is important that the virtual manager together with the team, and individually with each team member determine what to communicate, when to communicate and how to communicate with each other. As Bergiel, *et al.* (2008) and Hunsaker, *et al.* (2008) mention, trust is the result of team members knowing that everyone in the team can be relied on to complete their task, especially for tasks with high levels of interdependency. The level of tasks interdependency could be a make or break of the team’s trust.

However the outcome of the study support Kirkman, *et al.* (2002) argument that trust is gained when people deliver what they promised, that is, their reliability, consistency and responsiveness to delivering promises. This was supported by the outcome of qualitative interviews were some respondents emphasised that it is important to gain trust through delivery and communication. In addition,

Bergiel, *et al.* (2008) and Hunsaker, *et al.* (2008) highlights that trust is the result of team members knowing that everyone in the team can be counted on to complete their task, especially for tasks with high levels of interdependency.

It can therefore be concluded that developing trust is relational-based whilst gaining trust is task-based. This emphasise the aspect of situational leadership that to develop trust, it is important that the virtual manager together with the team, and individually with each team member determine what to communicate, when to communicate and how to communicate with each other. However to gain the trust it is important that everyone with the team deliver on expectation.

The ability to develop trust in virtual teams is still an area that requires further research given that it is considered to be the most important inhibitor of success in virtual teams

6.7.1.2 Not considering different time zones when setting up meetings or deadlines

| Ranking | Inhibiting characteristics | Weighted rankings |
|----------------|--|--------------------------|
| 2 | Not considering different time zones when setting up meetings or deadlines | 200 |

One of the challenges of being part of virtual teams especially where the level of virtuality is high is that one cannot expect to work only core hours, some level of flexibility beyond working hours is expected. However one of the respondents from Australia mentioned that this has an impact on team motivation when only a few people are the ones always staying late to have meetings. This also has an impact on work-life balance and creates stress with family when people have to work (conference calls) in the evening. He mentioned that

“When my colleagues in South Africa starts work, in Australia we will be knocking off. To accommodate colleagues in South America, my manager who is based in South Africa schedules meeting at 12 in the afternoon South African time. This will mean I have to be on the call at 10pm, my colleagues in South America have to be on the call at 6am whilst my colleagues in South Africa have the call during their normal working hours”

The above mentioned set-up results in result in dissonance if the employee feels unfairly treated. It can also de-motivate colleagues from Australia and South America as they may feel there is leader-member exchange between the manager and the South African team excluding other regions. Time zone differences gets complicated during change of seasons when clocks have to be revised o other countries, for example in America where they rewind the clock by an hour in winter and United Kingdom where they rewind clocks by two hours. This inhibitor is an easy one to address as the leader needs to schedule meetings that try to accommodate the needs and timetables of all team members (Bergiel, *et al.*, 2008).

This inhibitor is also apparent when managers request deliverables to be ready by end of business (EOB) without clarifying which regions’ EOB the deadline applies as it creates confusions and leads to subordinates missing deadlines, therefore impacting the trust levels. To address this, virtual managers should ensure they communicate clearly with detailed specificity to ensure team member are clear on the instructions. This action will also address inhibitor factor ranked number eight, misunderstanding instructions given.

6.7.1.3 Difficulty in communicating with people from other cultures

The third most highly ranked inhibiting factor is the difficulty experienced in communicating with people from other cultures

| Ranking | Inhibiting characteristics | Weighted rankings |
|---------|---|-------------------|
| 3 | Difficulty in communicating with people from other cultures | 184 |

Cultural intelligence is not a new phenomenon to virtual teams. According to Bal, *et al.* (2000); Zigurs (2003) and Brake (2005) although cultural diversity can provide a competitive advantage for an organisation, virtual teams need to spend some time surfacing the deeply rooted assumptions during the formation phases to avoid miscommunication and misinterpretation. The types of cultural differences emerging from qualitative interviews were categorised around organisational business operations difference, language differences and power distance differences. The outcome of qualitative discussions, indicated that the level of cultural diversity amongst teams lead to managers lack of understanding of some situations within the subordinate environment, the structural differences amongst regions and the political situation ongoing within subordinate's environment. These cultural diversity situations have impact on delivery of the subordinate and expectations of managers.

Qualitative interviews indicated that to address cultural diversity, virtual managers should develop structured communication forums and processes like sending an agenda before meetings, recapping on conversations after conference calls to ensure everyone understands and sending emails to summarise decisions made during conferences calls.

Virtual managers should also ensure the team agrees on conference calls etiquette like always mentioning their name before speaking on a call with more than five people for identification purposes, avoid using informal language and or making local jokes that could be offending or misinterpreted and cause tension.

Quick understanding of cultural communication etiquette and cultural assumptions assists in successful virtual teams. At the organisational level, there

is a need to provide supporting structures that creates awareness and educates virtual team member on cultural communication etiquette and cultural assumptions. It is important to create forums that promote understanding of norms, practices, and customs of different cultures which are at times acquired through education and personal experiences. Further research should be conducted to determine how to develop cultural intelligence within virtual teams where there are no non-verbal cues.

6.7.1.4 Lack of feedback and coaching

| Ranking | Inhibiting characteristics | Weighted rankings |
|----------------|-----------------------------------|--------------------------|
| 4 | Lack of feedback and coaching | 184 |

Lack of feedback and coaching is another pain point in managing virtual teams. The challenges of providing feedback and coaching were discussed in section 6.2.1. During in-depth discussions, virtual managers highlighted that the biggest challenge they are faced with during performance discussions is how to measure performance. Performance is mostly based on outcomes like compiled reports, more task-related measurement than relational or softer issues. Concerns from subordinates were that manager solely looked at outputs without considering the journey and effort taken to finish a task, that there is limited room for a manager to observe whilst in action. Managers also felt that there was no room to role-model some of the softer issues to subordinates. This poses questions and challenges about how managers and role model some of the softer skills to their virtual teams.

6.7.1.5 Delays in resolving conflicts

The number five top ranked inhibitor of success for virtual teams is delays experienced in resolving conflicts.

| Ranking | Inhibiting characteristics | Weighted rankings |
|---------|-------------------------------|-------------------|
| 5 | Delays in resolving conflicts | 184 |

Resolving conflicts has been found to be an important factor for leadership effectiveness (Spendlove, 2007). The outcome of in-depth discussions highlighted that time zone differences challenges are at the core of delays in resolving conflicts. In order to resolve conflicts, you require both parties available at the same time either over the phone or video-conference so time zone differences makes it difficult. Managers are struggling with understanding the types of skills required to manage conflict electronically. The question this inhibitor raises is whether virtual teams required different conflict resolution strategies?

6.7.2 Bottom five least ranked inhibitors

Below is a list of factors considered to be least inhibitors of success

- Performance management discussions conducted over the phone
- Providing negative feedback over the phone
- Being task driven rather than building relationships
- Providing feedback electronically
- Performance management discussions conducted via video conferencing

The above factors indicate that although conducting performance discussions in virtual teams is a challenge, respondents prefer performance management discussions to be conducted via video conferencing as opposed to over the phone. This concept is clarified further from the qualitative phase where one of the respondents who is both a manager and a subordinate indicated that using video conference assists in engaging a person and offers the next best alternate to face-to-face as compared to over the phone. She mentioned that due to her experience of being through performance management discussions as an assessor and also being assessed over eight years, it has been difficult to obtain

full engagement and buy-in to the performance discussion over the phone. It is therefore advisable for virtual managers to conduct performance discussions via video conferences or other facilities like webcam, etc. rather than over the phone.

6.8 Discussion of the results for Question 4

Are these forces viewed differently by managers and subordinates?

Overall, there were no significant differences between the three subgroups regarding ranking of inhibitors except for a few factors (3 out of 21). The interesting difference was 'being task driven rather than building relationships', where respondents who have been in virtual teams for less than a year ranked this factor as a higher inhibitor. Respondents who have also been in virtual teams for less than three years ranked the lack of sharing knowledge as and cross team learning higher than those who have been in virtual teams for longer. The length of time spent in virtual teams seems to have some impact on the perceptions about inhibitors for virtual teams. There were no significant differences between the importance of inhibitors across respondents from different countries.

6.9 Proposed model for re-categorisation of skills

Due to the findings that the leadership orientation model was not appropriate for virtual teams, this section presents an adapted model. The model was developed through taking the weighted ranked skills in Table 13 and identifying common themes to replace current frames assigned. Through reviewing the ranked skills three categories emerged as motivational, connections and decisive leadership styles. These categories were termed leadership style caps, basically reflecting caps that people wear to prevent sun burn. The identified leadership style caps reflect caps that virtual managers need to wear when managing virtual teams to prevent failure and ensure success. Figure 9 below indicates the three leadership caps mapped to specific leadership skills.

6.9.1.6 Leadership style caps

Motivational leadership style cap

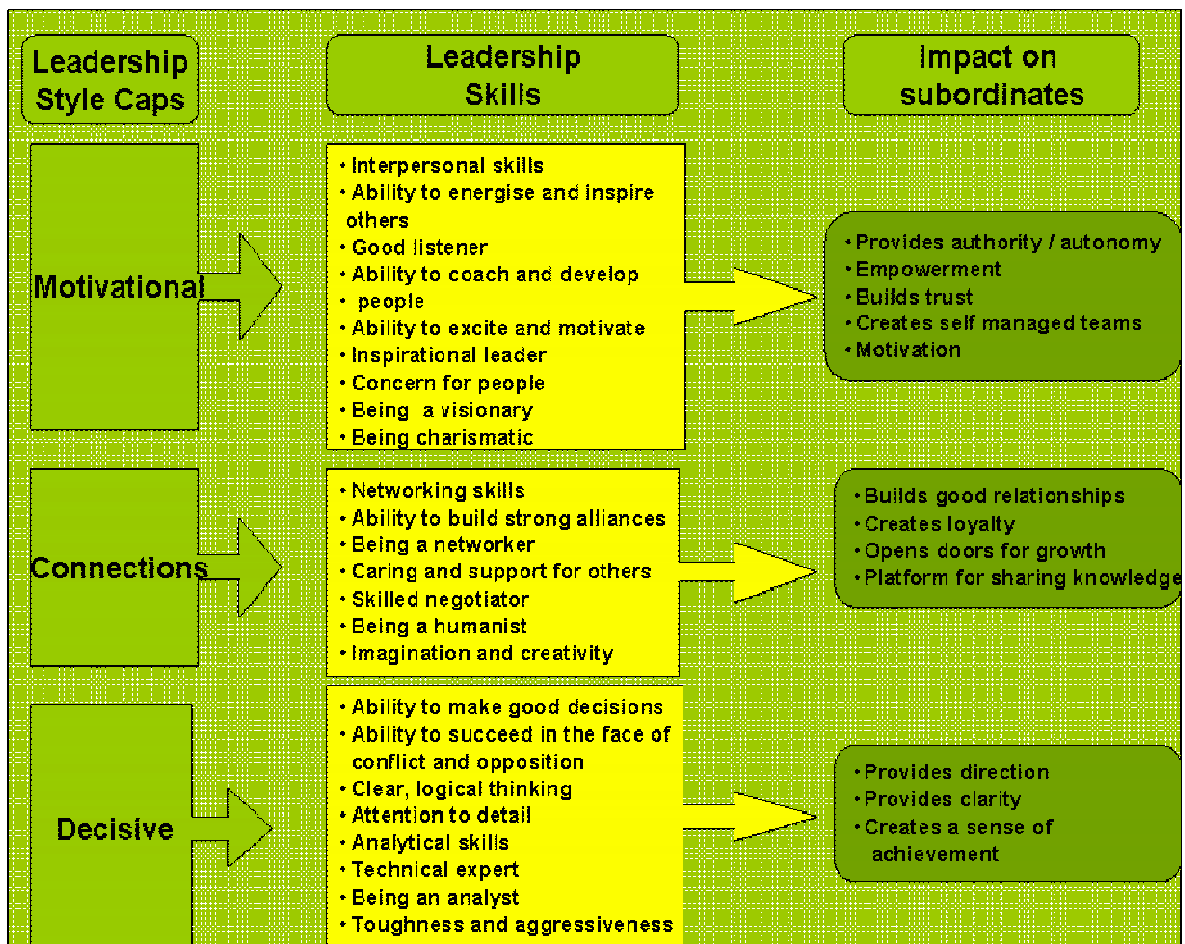
Motivational leadership style cap is all about the ability of the manager to motivate and inspire the team through showing a concern for team members. This means a manager wearing the motivational cap will display skills like interpersonal skills, ability to motivate and inspire, ability to excite and motivate and all the other skills listed in the model, with the same concept applying for connections and decisive leadership caps. Motivational leadership caps reflect the softer skills respondents deemed more important for successful management of virtual teams. The motivational leadership cap style supports and aligns with two transformational leadership styles; inspirational motivation and individualised consideration.

Connections leadership style cap

The second leadership style cap is Connections which is closely linked with the networker / influencer leadership frame. Connections leadership cap reflects the ability of a manager to build good networks and leverages on these networks to further expand their influential abilities. A manager wearing the connections cap will display skills like the ability to build strong alliances, skilled negotiator, caring and support for others and other skills listed in the model. These managers believe in building good relationships to ensure success of virtual teams.

Connections leadership style cap is emerging as an important style for managing virtual teams which has not been addressed by the both transformational and situational leadership styles as indicated in Chapter 2 Table 6. The emergence of connections highlights the gap from researchers conducted on transformational and situational leadership in virtual teams.

Figure 9: Adapted leadership style caps for managing virtual teams



Source: Adapted by Mogale L (2009) from Bolman and Deal (2001)

Decisive leadership style cap

The third leadership cap is Decisive which is about the ability of a manager to be a clear logical thinker who makes decisions based on facts, very determined and focuses his attention to details. A manager wearing decisive cap is fact-based and displays skills like technical expertise, analytical skills, ability to make good decisions and many other skills listed in the model.

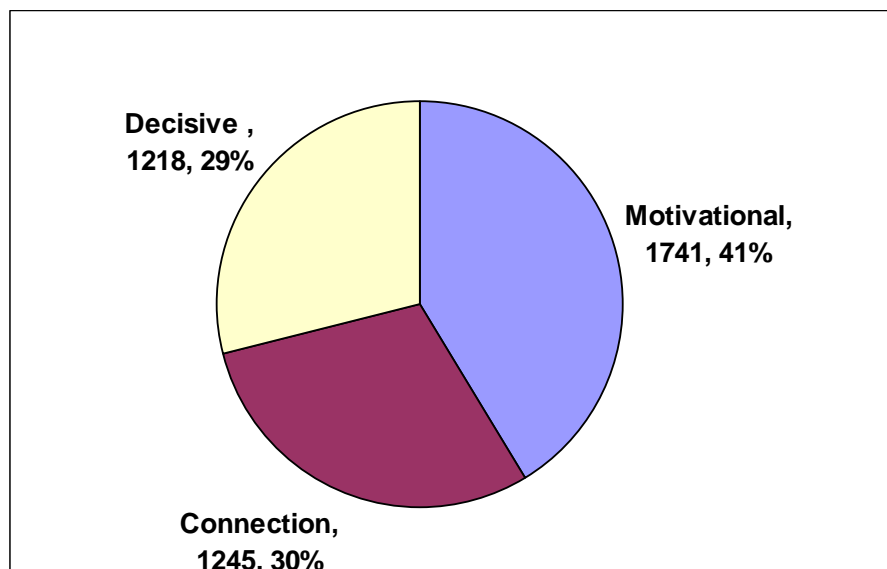
6.9.1.7 Impact on subordinates

An extrapolation of the impact of each leadership style cap on subordinates was derived from the key themes emerging around enablers and inhibitors. These impacts are last on the right hand side of the model. For example, the model suggests that when a manager displays the motivational leadership style cap, skills like ability to coach and develop people empowers subordinates to increase their level of motivation and therefore enhances trust within the team. These by no means indicate causal relationship between the leadership caps and impacts. Further research should be conducted to test whether there is causal relationship between the leadership caps and the impact on subordinates.

6.9.1.8 Dominant leadership style cap

All 24 skills were categorised into the three identified leadership style caps and a consolidated tallied weighted ranking was analysed to determine the dominating cap style. The percentage split of responses is shown in Figure 7 below,

Figure 7: Re-categorised leadership skills caps



Source: Adapted by Mogale L (2009) from Bolman and Deal (2001)

For managers to be successful in virtual teams, the dominant leadership cap and skills to display are motivational with a display of good balance between connections and decisive caps. The extent of the balance will depend on the level of maturity of virtual teams and each member of the team.

Chapter 7 Recommendation and Conclusion

The purpose of this chapter is to consolidate the outcomes of the study in line with its main objective and lead to recommendations for implementation and ideas for future research.

7.1 Background of research

The literature review highlighted that due to advanced developments in electronic communication and information technology within the workplace, along with a need to compete globally and address competitive demands, a different new way of working is emerging (Powell, Piccoli, & Ives, 2004; Bal, *et al.*, 2000; Purvanova & Bono, 2009). Virtual teams are migrating from just being project-based teams but rather to permanent structures of several team members located across the globe with their direct line managers located in different countries (Powell, Piccoli, & Ives, 2004; Bal, *et al.*, 2000; Purvanova & Bono, 2009).

This trend towards permanent virtual team structures introduces a new way of working that comes forth with advantages and poses some challenges. The changes within the working environment have necessitated a fresh inquiry into the role and nature of team leadership in virtual settings. Virtual team leaders face a fundamentally different (and more complex) work environment than their traditional team counterparts (Kayworth, *et al.*, 2002).

The current literature highlights that success within virtual teams seems to be based on task-oriented leadership style that focuses on task delivery which is deemed important for building trust rather than on development of relationship oriented leadership style. One of the key challenges that the literature review revealed is the insufficient attention to socio-emotional aspects within virtual teams and the type of leadership required to enhance these socio-emotional aspects. Questions around how leaders can display their emotional intelligence whilst managing through technological electronic media, key skills required to

provide coaching, mentoring and performance discussion within the environment have recently been strongly emerging through the literature review of several authors.

A review of the challenges brought forth by virtual teams has highlighted the need for virtual leaders to develop new skills to enable them to function properly within the virtual environment. This research sought to understand key skills considered important for management of virtual teams and to determine factors considered important for enabling or inhibiting successful leadership. This chapter concludes the outcome of this inquiry and will provide recommendations to virtual leaders on effective management.

7.2 Research findings

The research results highlight two major findings around leadership skills and a general approach to virtual teams which will be discussed in detail below.

7.2.1 Leadership skills

The leadership orientation model was used to determine the important frame considered important for effective virtual leadership and the key skills for virtual managers to display in ensuring successful virtual teams. From the four frames defined by the model; Structural, Human Resources, Networker or Influencer and Symbolic, the outcome of the results indicated that there was no dominating preferred leadership as the four frames were ranked within close range. It was concluded that the leadership orientation model categorisation of skills is not relevant for virtual teams. A new model of re-categorisation of skills was presented in Chapter 6. This model will assist managers in identifying the key skills to display and the relevant leadership style 'caps' to mostly wear when managing virtual teams.

Several studies indicated that success within virtual teams seemed to be based on task-orientation leadership style that focused on task delivery. The outcome of the study indicated that contrary to this belief, the highest ranked skills considered to be important for managing virtual teams are softer skills, more relational based skills with the top five important skills ranked as interpersonal skills, networking or influential skills, ability to energise and inspire others, ability to coach and develop people and being a good listener.

The dominant leadership style cap appears to be motivational which aligns with the outcome of the transformational leadership styles being more effective in virtual team than face-to-face as the leaders styles are dominated by inspirational motivation and individualised consideration.

The outcome of the study also supports aspects of situational leadership that the level of balance between the three leadership caps is dependant on several situations and levels of maturity of virtual teams. Hard skills which are more task-related were ranked to be the least important skills.

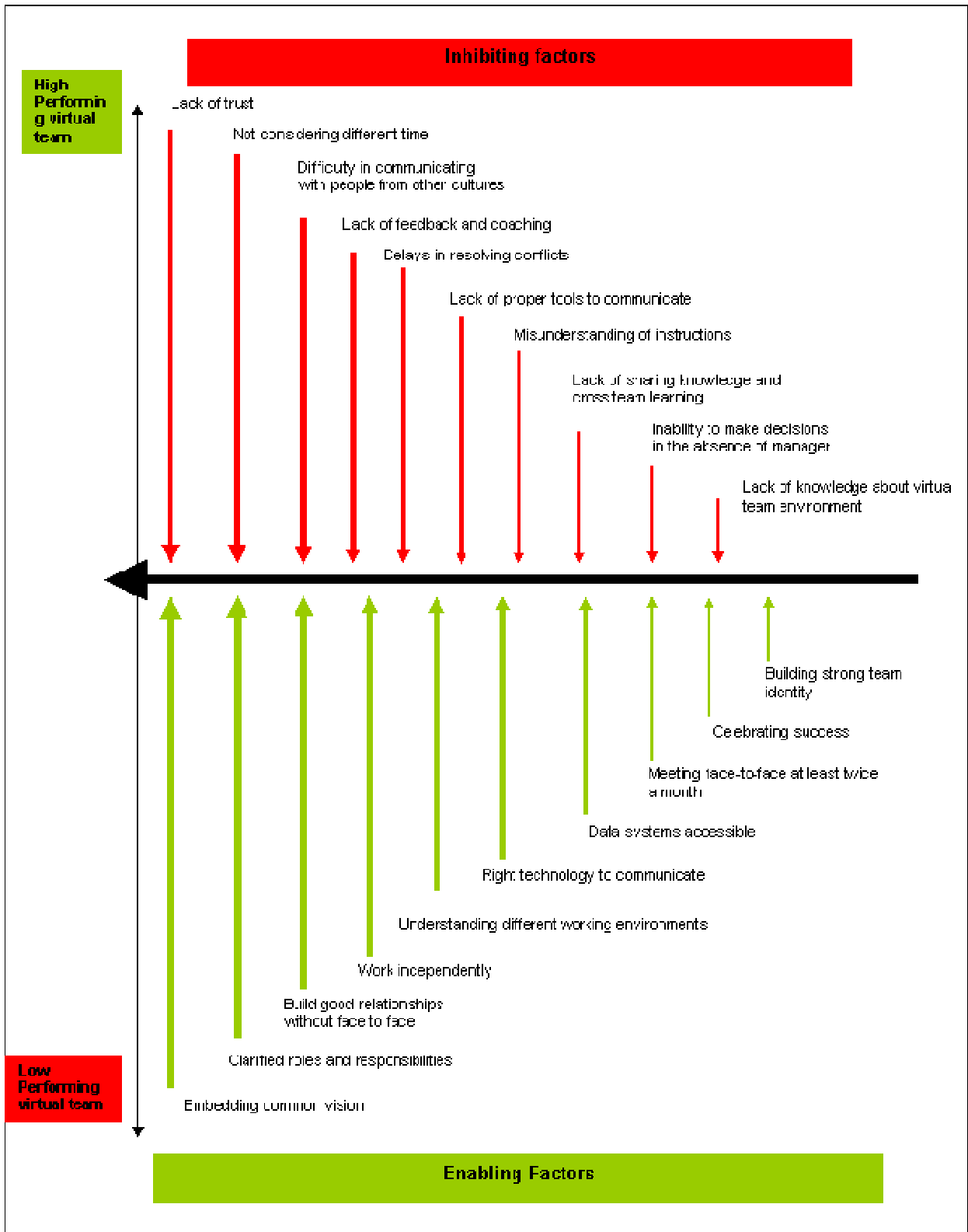
7.2.2 General approach to managing virtual teams

The second aspect of the research was to determine key enabling or inhibiting factors for effective management of virtual teams. A list of 21 enabling factors and 17 inhibiting factors were determined from the literature review and qualitative discussions as highlighted in Table 17 and Table 21 (Chapter 5). Although, all the identified factors seemed relevant, respondents were requested to rank the importance of each factor, and a force field analysis was conducted.

Force field analysis is a technique used for evaluating forces that impact change. Using force field analysis is a simple yet powerful tool to assist in understanding the biggest driving forces for enabling or inhibiting management of virtual teams. The force field diagram (Figure 8 below) indicates the vertical axis ranging from high performing virtual teams at the top and low performing virtual teams at the

bottom. The indicator arrow indicates performance of virtual teams, with the intention of pushing the arrow upwards towards the high performing virtual teams. The relative strength of each change force is represented by the length of its respective arrow. The thickness of the line also indicates the strength of the force.

Figure 8: Force Field analysis: Outcome results of enabling and inhibiting factors from the study



For example, in Figure 8 on inhibiting factors, lack of trust is a stronger inhibiting factor than not considering time zone differences for setting up meetings and deadlines. It is interesting to notice that the outcome of the force field analysis also indicates a strong inclination towards factors linked with softer skills. This outcome is augmenting the argument presented earlier that the crux of virtual teams' success is embedded within relational-based leadership aspects.

The research also indicated that overall there is no significant difference between the perception of manager, subordinates and respondents playing the role of both managers and subordinates regarding assessment of important skills and relative value of enabling or inhibiting factors except for a few factors. The lack of significant differences implies that implementation on the interventions will be easier as everybody wants similar things. There will be minimal customisation required to the implementation strategy for different subgroups.

For successful management of virtual teams, balancing the scale is not the ultimate goal, but rather ensuring that the enabling factors continuously overpower the inhibiting factors. The next section will provide recommendations on how virtual leaders can display behaviours that enhance the enabling factors whilst avoiding or managing situations that could lead to inhibiting factors.

7.3 Recommendations to managers of virtual teams

Figure 8 presents key insights for virtual managers to knowing the key strategic enablers for success of virtual teams and therefore provides the basis for recommendations. The ultimate objective of the recommendation is the skills required to enhance the enabling factors that will counteract the inhibiting factors. This basically means the things that managers require to implement to push the balancing point towards high performing virtual teams.

To become successful in managing virtual teams, the socio-emotional skills are very important especially during the formation stages of virtual teams. The most

important skills for virtual managers to display are associated with the motivation leadership style cap model through displaying skills like interpersonal skills, ability to motivate and inspire, ability to excite and motivate which will empower, motivate and provide subordinates with the required autonomy. The success of virtual teams does not only depend on the skills of the managers, but also the skills required from team members. Virtual managers should acknowledge that virtual teams' members require specific skills like ability to work independently, comfortability with technology, and therefore should consider this aspect during recruitment.

The formation phase of virtual teams is critical for success as it is at this phase that virtual managers can establish good working relationships with the teams, develop and establish processes that not only focus on task-based interactions but rather relational based interactions. It is at this phase that virtual managers should explain the requirements of operating in a virtual team and embed a common vision within the team and provide clearly defined roles and responsibilities for each team members. By doing so during this phase, managers are able to create a culture that gives purpose and meaning to team members and therefore creating a good platform for building trust within the team.

As virtual teams continue to grow through the maturity phase, it is important for managers to continuously review and monitor their management styles to ensure they are aligned with the level of development and readiness of team members. Managers should identify creative ways to empower team members through constantly providing constructive feedback, delegating a certain level of authority for team members to make well informed decisions on their own. It is important for virtual managers to coach and give feedback as a platform to develop self-managed teams.

Quick understanding of cultural communication etiquette and cultural assumptions assists in successful virtual teams. At the organisational level, there is a need to provide supporting structures that create awareness and educate virtual team members on cultural communication etiquette and cultural assumptions. It is important to create forums that promote understanding of norms, practices, and customs of different cultures which are at times acquired through education, awareness and personal experiences.

Figure 8 indicates that to move towards high performing virtual teams, managers should focus on more important enablers like embedding a common vision within the team, clarifying roles and responsibilities, building good working relationships with subordinates and supporting them to work independently. To address the inhibitors, managers should also avoid inhibitors by considering different time zones when setting up meetings or deadlines, providing constant feedback to their teams, increasing the turn around time for resolving conflicts and ensuring team members have proper tools to operate in the virtual environment. By implementing these recommendations are practical and easier to implement, managers will realise high impact of moving towards high performing virtual teams.

Lastly, virtual managers should acknowledge that effective leadership is a continuous process, and it is therefore important to ensure the above recommendations are embedded for sustainability through continuous and consistent display of the important skills and enablers identified.

7.4 Further research

There has been limited research on the required leadership to maintain and support effective operation of virtual teams. To further expand on understanding the different leadership roles required to manage virtual teams, further research should be conducted to address the following:

- What are the specific skills required from virtual team members to operate effectively in virtual teams?
- Further studies should be conducted to understand how to develop and enhance softer skills for managing virtual teams. This study was only able to identify some of the softer skills required, but not how the skill can be developed. This should be done through in-depth qualitative interviews to be able to delve deeper into the 'how' part rather than the 'what' which this research has identified.
- More research needs to be conducted to understand the mindset shift requirements for building trust in virtual teams. Lack of trust is an important inhibitor of virtual teams but there is lack of solid understanding of how to develop trust within virtual teams.
- Further research should also be conducted to understand the impact of virtual team recruiting to HR processes and skills matrix. This new way of doing things will require new and revised HR processes for support.
- Further research should be conducted to understand what constitutes ability to work independently in virtual teams without diluting the socio-emotional aspects of team work.
- Additional research should be conducted to validate whether the lack of significant differences amongst managers and subordinates is valid, as this could have been influenced by sampling employees from within the same organisation in this study.
- Further research should be conducted to test the validity of the adapted leadership style caps the model presented and probably further refinement of the skills identified to determine further ways to develop the model.
- Further research should be conducted to determine the causal effect between the leadership style caps and the extrapolated impact on subordinates.

7.5 Recommendation and Conclusion

Global competition and advances in technology are leading to the explosion of virtual teams in order to execute business strategies. The discovering of unique characteristics of virtual teams highlighted that they require different types of leadership as opposed to the traditional face to face teams. The research was able to add to the body of knowledge by further exploring and enhancing key skills, enablers and inhibitors of success for managing virtual teams. Some of these factors have been known, but their relative importance was not clearly understood. By understanding the relative importance of key skills, enablers and inhibitors, virtual managers will be able to demonstrate the different leadership qualities and practices required to effectively lead virtual teams. The study concludes that at the core of effective leadership of virtual teams is the ability for a manager to display socio-emotional capabilities.

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Appendices

Appendix 1: Interview Guide for Phase I:

Section A : Managers

1. Background and introduction to the study

2. Definitions of virtual teams

For the purpose of this interview, the following definition of virtual teams will be used;

- Kirkman, *et al.* (1995) defines virtual teams as “groups of people who work interdependently with shared purpose across space, time and organisational boundaries using technology to communicate and collaborate”

3. Themes for questions

- Do you think are the differences in management between the face-to-face and virtual teams from managers’ perspectives? If so, why?
- What are challenges you have experienced with managing / leading virtual teams? (probing more and following up on points highlighted)
 - Probe on leadership characteristics that have made VT ineffective?
 - Impact of culture, process, feedback, performance management, coaching, conflict management , etc..
- What are the three things that you think a virtual team manager/ leader need to do more of when managing virtual teams
- What are the three things as that you think a virtual team manager/ leader need to do less of when managing virtual teams
- Is there any other thing you would like to discuss further regarding management/ leading virtual teams?

Section B: Subordinates

1. Background and introduction to the study

2. Definitions of virtual teams

For the purpose of this interview, the following definition of virtual teams will be used;

- Kirkman, *et al.* (1995) defines virtual teams as “groups of people who work interdependently with shared purpose across space, time and organisational boundaries using technology to communicate and collaborate”

3. Themes for questions

- Do you think are the differences in management / leadership between the face-to-face and virtual teams from a subordinate' perspectives? If so, why?
- What are challenges you have experienced being managed / lead by a virtual manager? (probing more and following up on points highlighted)
 - Probe on leadership characteristics that have made being a VT member ineffective?
 - Impact of culture, process, feedback, performance management, coaching, conflict management , etc..
- What are the three things that you think a virtual team manager/ leader need to do more of when managing virtual teams
- What are the three things as that you think a virtual team manager/ leader need to do less of when managing virtual teams
- Is there any other thing you would like to discuss further regarding management/ leading virtual teams?

Appendix 2: Phase 2 Questionnaire



The Effective Management Of Virtual Teams In Multinational Companies



Lizzy Mogale

A research project submitted to the Gordon Institute of Business Science,
University of Pretoria, in partial fulfilment of the requirement for the degree of

MASTER OF BUSINESS ADMINISTRATION

11 November 2009

EFFECTIVE MANAGEMENT OF VIRTUAL TEAMS SURVEY

1. Introduction

I am conducting research on identifying the preferred leadership style to ensure effective management of virtual teams. Most of us within OASC are part of virtual teams and it is important to understand what leadership style is required to function effectively.

I would appreciate if you can take time to complete the questionnaire below honestly. It will be anonymous and all data will be kept confidential. By completing the survey, you indicate that you voluntarily participate in this research and you may withdraw at any time without penalty. If you have any concerns, please contact me or my supervisor. Our details are provided below

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2. Definition of virtual team

For the purpose of this survey, the following definition of virtual teams will be used; Kirkman, *et al.* (1995) defines virtual teams as “groups of people who work interdependently with shared purpose across space, time and organisational boundaries using technology to communicate and collaborate”

Part A: General questions

Please indicate answers by ticking the appropriate boxes

1. Are you a manager, a subordinate or both within a virtual team environment?

- Manager
 Subordinate
 Both (you have a virtual subordinate and a virtual manager)

2. In which country are you based?

- Australia
 Chile
 Brazil
 London
 South Africa
 China

3. In which country is your manager based?

- Australia
 Chile
 Brazil
 London
 South Africa
 China

4. How long have you worked in a virtual team?

- Less than 1 year
 Between 1 and 3 years
 3 years or more



Part B: How important are the following skills to you for effective virtual managers?

NB: Do note that this question relates to virtual managers only, not managers within the same proximity

Please rank your responses on the 4 point scale in the table below by ticking the relevant box of importance for every item. Please spread out your responses along the 4 point scale as far as possible as some of the items will be far more important to you than others

| | 1 | 2 | 3 | 4 |
|---|----------------------|--------------------|----------------|----------------------|
| Effective virtual manager characteristics | Not at all important | Somewhat important | Very Important | Critically important |
| Analytical skills | | | | |
| Interpersonal skills | | | | |
| Networking skills | | | | |
| Ability to excite and motivate | | | | |
| Technical expert | | | | |
| Good listener | | | | |
| Skilled negotiator | | | | |
| Inspirational leader | | | | |
| Ability to make good decisions | | | | |
| Ability to coach and develop people | | | | |
| Ability to build strong alliances | | | | |
| Ability to energise and inspire others | | | | |
| Attention to detail | | | | |
| Concern for people | | | | |
| Ability to succeed in the face of conflict and opposition | | | | |
| Being charismatic | | | | |
| Clear, logical thinking | | | | |
| Caring and support for others | | | | |
| Toughness and aggressiveness | | | | |
| Imagination and creativity | | | | |
| Being an analyst | | | | |
| Being a humanist | | | | |
| Being a networker | | | | |
| Being a visionary | | | | |

Part C: How important are the issues below in enabling virtual teams to function effectively?

NB: Do note that this question relates to virtual managers only, not managers within the same proximity

Please rank your responses on the 4 point scale in the table below by ticking the relevant box of importance for every item. Please spread out your responses along the 4 point scale as far as possible as some of the items will be far more important to you than others.

| Enablers of virtual team performance | 1 Not at all important | 2 Somewhat important | 3 Very Important | 4 Critically important |
|---|------------------------------|----------------------------|------------------------|------------------------------|
| Embedding a common vision within the team | | | | |
| Clearly defined roles and responsibilities | | | | |
| Manager understanding different working environments | | | | |
| Conducting daily check-ins | | | | |
| Building strong team identity | | | | |
| A manager being a good role model | | | | |
| Knowing how to build a good relationship with a person without meeting them face-to-face | | | | |
| Continuous coaching on how to perform work better | | | | |
| Identifying and engaging quiet people during conference calls | | | | |
| Feeling cared for by the manager | | | | |
| Ensuring that all team members receive the same message at the same time (information equity) | | | | |
| Celebrating successes | | | | |
| Team meetings enabling enough time to have informal discussions | | | | |
| Properly structured communication forums | | | | |
| Meeting face-to- face as a team at least once very 2 month | | | | |
| Data systems accessible to everyone | | | | |
| Using the right technology to communicate | | | | |
| Providing technology to enable social interaction amongst team members | | | | |
| Training on how to use the available communication technology e.g. video conferencing live meeting, etc.. | | | | |
| Team members being able to work independently | | | | |
| Using photographs to visualise a person | | | | |



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(e.g. on organogram)



Part D: How critical are the issues below in inhibiting or preventing virtual teams to function effectively?

NB: Do note that this question relates to virtual managers only, not managers within the same proximity

Some factors have been found to inhibit or prevent virtual team performance. Please rate the issues below on the extent you feel they inhibit or prevent performance by ticking the relevant box. Please spread out your responses along the 4 point scale as far as possible as some of the items will be far more hindrances to you than others.

| Preventors of Virtual team performance | 1 | 2 | 3 | 4 |
|--|----------------------|------------------|--------------------|---------------------|
| | Don't prevent at all | Somewhat prevent | Definitely Prevent | Extensively Prevent |
| Lack of knowledge about virtual team environment | | | | |
| Not considering different time zones when setting up meetings or deadlines | | | | |
| Being task driven rather than building relationships | | | | |
| Inability to make decisions in the absence of manager | | | | |
| Difficulty in communicating with people from other cultures | | | | |
| Lack of proper tools to communicate | | | | |
| Replacing communicating over the phone with emails | | | | |
| Misunderstanding instructions given | | | | |
| Offensive jokes | | | | |
| Lack of feedback and coaching | | | | |
| Providing feedback electronically | | | | |
| Providing negative feedback over the phone | | | | |
| Performance management discussions conducted over the phone | | | | |
| Performance management discussions conducted via video conferencing | | | | |
| Lack of trust | | | | |
| Delays in resolving conflicts | | | | |
| Lack of sharing knowledge and cross team learning | | | | |

Thank you for completing the questionnaire.

Appendix 3

Appendix 3: Outcome of Qualitative discussions before consolidation and classifications

Raw data: Outcome of Qualitative discussions before consolidation and classifications

| Questions | Manager 1 | Both Manager & Subordinate | Manager 3 |
|--|--|--|---|
| Background | Working with virtual teams for 14 mnths | Working with virtual teams for 6 mnths Also virtually managed | Working with virtual teams for 8 yrs |
| Differences in management between the face-to-face and virtual teams from managers' perspectives | <ul style="list-style-type: none"> • Leadership-gap for visible role-modelling and dealing with softer issues • Relies on electronic feedback • Time zone differences • Can't just walk into the room for a quick discussion • • Control- challenges in measuring success- rely a lot on compiled reports | <ul style="list-style-type: none"> • Recruitment process should be different • VT need mature and independent individuals who can work autonomously • VT need people who are comfortable with using technology. E.g. live meetings, video conferencing • Time zone differences has an impact on team motivation- having one team always staying late to have meetings • | <ul style="list-style-type: none"> • Miss body language in VT, difficult to know the personality of a person • |
| Challenges you have experienced with managing / leading virtual teams | <ul style="list-style-type: none"> • Trust issues due to cross culture (SA vs. Aus vs. Brazil & Chile • Communication only based on email • Emails deleted if people have not met you face-2-face • Managing performance- have to rely on Host Manager or direct reports in same area to give input into | <ul style="list-style-type: none"> • Challenges with cultural differences when communicating. E.g. sensitivities around swear words, etc.. • Minimised impact on face-to-face • Delays in obtaining feedback and clarity on request • Impacts on life balance and creates stress with | <ul style="list-style-type: none"> • Challenges of identifying quite people in the call and bring them in the conversation • Multi cultural differences- need to be careful when communicating on email • Teams rely hugely on |



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| | <p>performance</p> <ul style="list-style-type: none">• | <p>family when you have to work (conference calls) in the evening</p> <ul style="list-style-type: none">• Constantly conducting corrective coaching driven mainly by frustration• As a manager you can't see day-to-day internal interactions of your team• Host manager bullying team- side tracking and re-prioritising requirements• Team members making decisions without leader's input | <p>email- need a conscious effort to ensure if a person understood the problem, its difficult to pick up questions on email</p> <ul style="list-style-type: none">• Be careful not to joke on email or on the call as it might be misinterpreted• Need to agree on time availability for discussion with team members• You can't work core hours- you need flexibility for working at odd hours• Criticality and challenges of building a good working relationship so that your tem members don't feel neglected. Make time to make sure people feel cared for• Little time to have casual chats• Difficult to have corridor chats to keep your manager informed• Bandwidth challenges• Performance review |
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| | | | <p>conducted via video conferencing- you need to ensure people are engaged on the discussion</p> <ul style="list-style-type: none">• You can't get full engagement or buy-in of conducting PM through the phone• No training provided to individuals for using technology- video conferencing live meeting, etc..• People require confidence to speak up in teleconference s• It's a challenges to hold a teleconferencing when one group is in one place and other members dial in individual ling- you have 2 meeting happening• People pretend they understand during teleconference s whilst they don't• Difficult to give |
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| | | | <p>negative feedback- always better to have someone else in the room with them you give negative feedback</p> <ul style="list-style-type: none"> • |
| <p>three things that you think a virtual team manager/ leader need to do more of when managing virtual teams</p> | <ul style="list-style-type: none"> • Agree on accountability upfront • Frequent two way feedback • Creating and building team image and identity | <ul style="list-style-type: none"> • Give clear and concise instructions • Resource team with people who can work autonomously • Use right technology to communicate the brings the team closer to each other • | <ul style="list-style-type: none"> • Meet face-2-face or video conferencing often • Agreement on how to communicate, trial it out and improve or change • Active listening open to be engaged • How to celebrate success with VT- send chocolates, thank you emails from Andrew, etc... |
| <p>three things as that you think a virtual team manager/ leader need to do less of when managing virtual teams</p> | <ul style="list-style-type: none"> • Global meeting at convenient times • Organisation structure- short circuiting reporting lines • Being copied on non-essential- balance between being informed and clouding with emails | <ul style="list-style-type: none"> • Requesting deliverables saying by EOB without considering time differences | <ul style="list-style-type: none"> • Engaging face-2-face team without including your virtual team member • Not regularly meeting with team members- not scheduling the time • Not soliciting feedback from teams on what's working and what's not working- not |



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| Criteria for success | <ul style="list-style-type: none"> • Common Vision should be embedded amongst the teams • Team members should have common objective and timelines • Clear priorities of who must do what by when • Standard systems to allow everyone in the team to see the same information • Frequent team meeting to review performance • Meeting to take place at regular times and must be structured- clear agenda items • Formal KPIs to measure performance • Accessibility to proper technology • Importance to establish rapport through face-2-face interaction • Use of photographs to visual a person • Importance of sharing the same value systems- what is important to each of you • One-on-one meeting per week for health check and feedback • Difficult to build team identity • Difficult to celebrate success together as a team- how to include remote | <ul style="list-style-type: none"> • Leaders require patience especially when you are output driven • Leader ability to give clear and concise directions- being very prescriptive about directions, avoid vagueness • • | <ul style="list-style-type: none"> • Need to develop communication principles with your manager. E.g. Guidelines for email communication - put "action on emails" • Need to have face-to-face meeting with all team members at least at the beginning • You need to make time to have casual chat. For example have 20 minute discussion to make the person at ease • Managers to do more and subordinates to expect less • Respond promptly to emails and provide feedback and comments into the documents • Write emails and notes to recap decisions made during the meeting • Team members need to be self starter, requires a |



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| | <p>members when celebrating success-time zone challenge</p> <ul style="list-style-type: none">• Difficulty in discussing detailed data, e.g. spreadsheet analysis• Takes longer to resolve issues• Difficult in conflict resolution- need to have 2 people on the phone at the same time• Success depends on the level of maturity of the organisation | | <p>certain level of experience, junior members can't be remote</p> <ul style="list-style-type: none">• Assertive- know how to be heard when in meetings• Ability to ask for help – know when to reach out for help-upward management• Don't be over sensitive- communicate your expectation and agree on it• How to create an open door on VT |
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| Questions | Sub-ordinate 1 | Both Manager & Subordinate 2 | Sub-ordinate 3 |
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| Background | Working with virtual teams for 6 mnths | Working with virtual teams for 2 years Have managed a virtual team before Also managing a team | Working with virtual teams for 9 mnths |
| Differences in management between the face-to-face and virtual teams from managers' perspectives | <ul style="list-style-type: none"> • Lack of daily contact with team members • Time delays in obtaining feedback (e.g. SA vs. Aus) • Cultural and diversity divides- managers lack of understanding of situation, structure and politics ongoing within subordinate's environment- has impact on delivery and expectations • | <ul style="list-style-type: none"> • Limited opportunity for team cohesion- ability to form n-bonds is limited and team work is about relationships • | <ul style="list-style-type: none"> • Work hard to build good working relationship • Difficult to have social interaction • Cultural difference- language, accents, usage of words |
| Challenges you have experienced with managing / leading virtual teams | <ul style="list-style-type: none"> • Misaligned values and instructions • Subordinate forced to be more independent and decisive • Need someone to refer or bounce ideas with at a leadership level • Communication based on wrong things done as opposed to good work done • Lack of understand from the manager on the journey travelled to finish a task- no observing work in action | <ul style="list-style-type: none"> • Team meeting with strict agenda to ensure enough time for formal discussion. No time for informal discussion to build a bond • Need for a sound board- someone to bounce ideas on, suggestions may differ with that of manager • Feedback not filtered down for the LT to everyone in the team • Need to act independently lack of ability to clarify | <ul style="list-style-type: none"> • Avoid using informal language and or making local jokes that could be offending • How to balance between constant updates vs. overloading communication • Differences in policies across countries that could impede delivery • Inability to make decisions without |



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| | <ul style="list-style-type: none"> • Creates silo mentality and lack of sharing knowledge amongst team members • Time scheduled for meetings is too short to discuss key and important issues • Inability of manager not identify an I during the call to bring them into the discussion | <p>requests or instructions</p> <ul style="list-style-type: none"> • Developed informal authority to make decisions • Use sounding boards, e.g. Technical sponsor and other managers to bounce off ideas • Cross-team learning suffering due to minimal amount of time allocated to status update • | <p>involving manager</p> |
| <p>three things that you think a virtual team manager/ leader need to do more of when managing virtual teams</p> | <ul style="list-style-type: none"> • Communicate expectations and priorities to subordinates • Open and clear communication or instructions • Create an environment to grow and learn together as a team- know how to celebrate success together • Online facilitation skills- how to manage meetings or conflict on line | <ul style="list-style-type: none"> • Adequate structured meetings according to a schedule • Clear understanding of objectives and targets • Provide regular objective feedback • Be a good listener | <ul style="list-style-type: none"> • A 2 way clear and effective communication – always make sure the person understand what you require • Have a clear understanding of the environment where their subordinates are operating • Build mutual relationship with subordinate • |
| <p>three things as that you think a virtual team manager/ leader need to do less of when</p> | <ul style="list-style-type: none"> • Lack of confidence to delegate or empower remote team members- discrediting one in front of colleagues | <ul style="list-style-type: none"> • Send less emails- replacing communicating over the phone with emails • Don't make | <ul style="list-style-type: none"> • Too much monitoring (policing) makes one feel there is lack of trust |



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| <p>managing virtual teams</p> | <ul style="list-style-type: none"> • Policing employees-being time monitoring rather than output focused • Not communicating openly with the team • | <p>assumptions that people understand-language barriers. Ask clarifying and challenging questions</p> <ul style="list-style-type: none"> • Come late for meetings or cancel scheduled meetings. Lack of time management and have negative impact on the team | <ul style="list-style-type: none"> • Not recapping on conversation to make sure everyone understand • Do not assume the teams have the tools to do certain functions |
| <p>any other thing you would like to discuss further regarding management/ leading virtual teams</p> | | | <p>How to share written communication-have a central storage system</p> |
| <p>Criteria for success</p> | <ul style="list-style-type: none"> • Frequent one-on-one communication. Should be more than once a week • Sticking to planned meetings as there are challenges with rescheduling meetings • Ensure career mentoring and learning happens. Manager to develop a plan for mentoring the team • Constant performance reviews to identify areas of improvement • Stricter control on time management during meetings • Provide clarity on the scale for Performance Measurement. E.g. | <ul style="list-style-type: none"> • Need for structured communication forums/ processes-proper structure on what to discuss during meetings • Proper feedback process to filter down the information to everyone within the team • Need to meet face-2 face as a team at least once every 2 months • Holding constant one-on-one feedback and coaching sessions • Regular performance review sessions • | <ul style="list-style-type: none"> • Talk 2 or 3 times a week to review progress and task allocation • Its important to develop trust through delivery and constant communication • • |

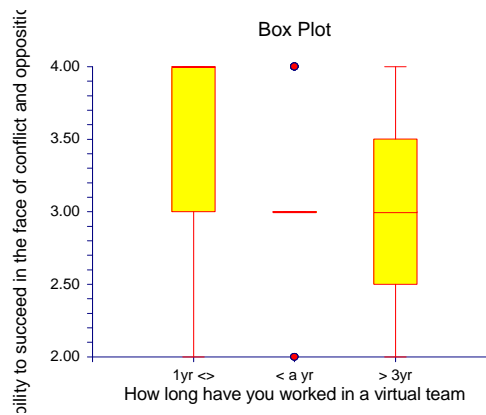
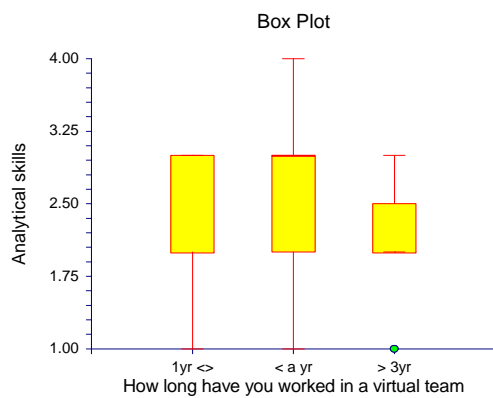


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| | <p>ologically savvy what does good look like, what will be used to measure performance?</p> <ul style="list-style-type: none">• Non standardisation of technology tools- other areas using 2007 whilst you use 2003• Not being inducted on how to use technology. Gets frustrating when you are not techn | | |
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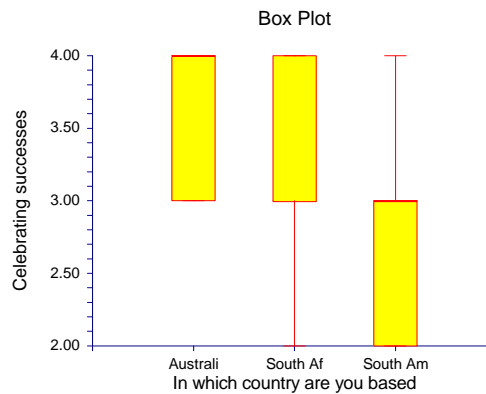
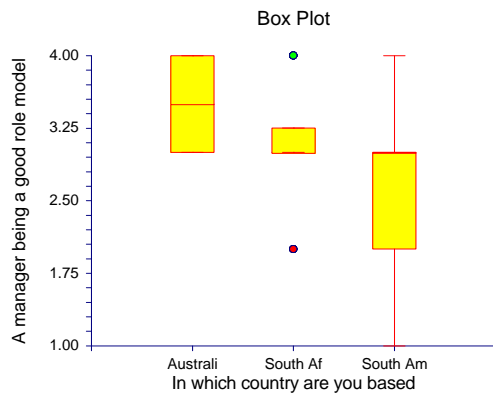
Question 1 Phase 1

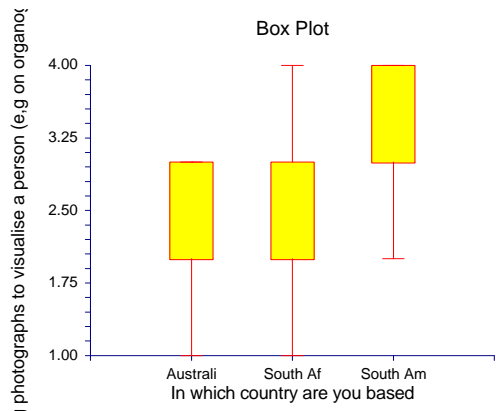
Appendix 4: Additional Box Plots

Additional K-W test: Length of time and Country- based for skills (Section 5.2.5.1, Table 15)



Outcome of K-W test for enabling factors considered important for an effective virtual manager categorised by location of respondent (Section 5.2.7.1, Table 19)





Outcome of K-W test for factors considered to inhibit effective virtual teams categorised by length in virtual teams

(Section 5.2.8.1, Table 23)

