

Managing virtual teams in multinational companies

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Abstract

Globalisation and advances in technology have led to the rapid increase in permanent virtual teams in multinational companies as a form of competitive advantage. The main purpose of this research was to identify perceptions on leadership preferences and factors enabling or inhibiting the effective leadership of virtual teams. The qualitative phase of this research generated in-depth knowledge on the constructs for phase 2, which consisted of a survey of 59 respondents from four continents. The outcome revealed that socio-emotional leadership capabilities are key to success in the leadership of multinational virtual teams. Specific recommendations are made to virtual team leaders on the basis of consistent views expressed by managers and subordinates on findings on the relative importance of key leadership skills, plus the enablers and inhibitors of managing virtual teams.

1 Introduction

The advanced development in electronic communication and information technology within the workplace, along with a need to compete globally and address competitive demands via accessibility to skilled resources, has forced organisations to embrace virtual team structures (Piccoli, Powell & Ives 2004; Bal & Teo 2000; Purvanova & Bono 2009). In the competitive global economy, multinational organisations can gain a competitive advantage through the ability to create virtual teams of talented people rapidly to respond to the changing business environment (Lee-Kelley 2002; Curseu, Schalk & Wessel 2008). Bergiel, Bergiel and Balsmeier (2008) emphasise that a shortage of local talent of a sufficient quality drives many companies to create virtual teams. The shift from production to service-related businesses has also created a new generation of knowledge worker not bound to physical work locations. These factors suggest that firms are faced with increased challenges to coordinate tasks in teams across time zones, physical boundaries, and organisational contexts (Bal & Teo 2000; Kayworth & Leidner 2002).

The outcome of all these factors is that virtual teams are on the rise, with almost a quarter of a billion people already working online globally (Bergiel et al 2008). Virtual teams are migrating from being simply project-based teams to being permanent structures consisting of several team members located across the globe with their

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direct line managers located in different countries (Picolli, Powel & Ives 2004; Bal & Teo 2000; Purvanova & Bono 2009). This trend toward physically dispersed work groups has necessitated a fresh inquiry into the role and nature of team leadership and employee relationships in virtual settings (Kayworth & Leidner 2002). Connaughton and Daly (2004) emphasise that 90% of the 500 virtual managers they studied perceived managing from afar to be more challenging than managing people on site. In a global study conducted by the CIO Executive Council (2007) in which Chief Intelligence Officers (CIOs) identified their most frequent globalisation challenges, they reported that managing virtual teams was the greatest challenge.

Connaughton and Daly (2004) suggest that leading from a distance is a skill which most virtual employees neither understand nor recognise. Kayworth and Leidner (2002) emphasise the fact that virtual team leaders face a fundamentally different (and more complex) work environment than their traditional team counterparts. They argue that certain leadership roles may be particularly important in the setting of virtual teams. For example, how does a leader build and maintain the social "virtual" climate necessary for ensuring adequate levels of team unity and cohesiveness to overcome the challenge of isolation? Crowley (2005) states that informal communication is a powerful tool in building an effective team and that it is harder to achieve in virtual teams. Pauleen (2003:161) 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". A number of authors state that the crucial differentiator between mediocre and high performing virtual teams is the development of virtual leaders who are able to create and lead their teams effectively (Piccoli et al 2004; Armstrong & Cole 2002; Hambley, O'Neill & Kline 2007).

2 Research objectives

Little empirical research has been done on the required leadership style needed to maintain and support the effective operation of multinational virtual teams (Lahenius & Jarvenpaa 2004). This study will seek to understand the factors deemed to be important enablers or inhibitors of effective management of permanent virtual teams and the skills required to manage virtual teams. The study will also test whether different perspectives on these three issues are held by virtual managers, virtual subordinates and people who are both managers and subordinates in virtual teams.

3 Literature review

3.1 Virtual teams

There are several definitions of virtual teams. For the purpose of this study, the definition by Kirkman, Rosen, Gibson, Tesluk and McPherson (2002:67) will be used: "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 project-based teams working on a specific project for a specified period. This concept has been expanded to refer to permanent teams within the organisational structure who report to managers based in different countries across the globe. These permanent teams are the focus of this study.

Virtual teams have a range of advantages and disadvantages on three levels: individual, organisational and societal (Hertela, Geisterb & Konradt 2005). Ebrahim,

Ahmed and Taha (2009) in their seminal literature review highlighted the main advantages and disadvantages of virtual teams (summarised in Table 1 below).

Table 1
The main advantages and disadvantages of virtual teams

Advantages	Disadvantages
Reducing relocation time and costs, reduced travel costs	Lack of physical interaction
Reducing development times and time-to-market	Challenges are more related to the distance between team members than to their cultural or language differences
Provide a vehicle for global collaboration and coordination of R&D-related activities	Challenges of determining the appropriate task technology fit
Able to tap selectively into centres of excellence, using the best talent regardless of location	Cultural and functional diversity in virtual teams lead to differences in the members' thought processes
Teams can be organised (whether or not members are in proximity to one another)	Developing trust among the members is challenging
Greater degree of freedom to individuals	Challenges and obstacles like technophobia
Provide organizations with unprecedented level of flexibility and responsiveness	Variety of practices (e.g. cultural and work process diversity) and employee mobility can negatively impact performance
Organizations seeking to leverage scarce resources across geographic and other boundaries	Team members need special training and encouragement
Sharing knowledge, experiences	Everything to be reinforced in a much more structured, formal process

Source: Ebrahim, Ahmed & Taha (2009)

All the above provide challenges and opportunities for the virtual manager.

3.2 Leadership

Leadership is an intricate construct that can be described and measured in multiple ways. Historically the evolution of leadership tended to focus on characteristics and personality traits but later the focus shifted towards the perceptions of followers and the contextual nature of leadership (Bolden, Gosling, Marturano & Dennison 2003; Purvanova & Bon 2009). Kouzes, Posner and Peters (1990) say that leadership is an observable set of skills and abilities. Limited research has been conducted on understanding what these skills are for virtual managers, although recently there has been some research around the concept (Purvanova & Bono 2009). Hambley et al (2007:1) define 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". For the purposes of this study, three theories of leadership were selected in order to understand their applicability to virtual teams.

3.2.1 Transformational leadership

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). Purvanova and Bono (2009) suggest that transformational leadership behaviours may be associated more strongly with team effectiveness in virtual than in face-to-face project teams. Balthazard, Waldman and

Warren (2009) found that leaders who used transformational leadership behaviours achieved the highest level of overall virtual team performance. They found that effective virtual transformational leaders can: decrease their followers' sense of isolation by developing high-quality relationships with them, thus helping them feel appreciated; increase their followers' ability to bond with each other in the absence of face-to-face interactions by identifying and developing the team's tasks, goals, sense of common mission, team cohesion and identity, introduce a sense of purpose and certainty by setting specific goals and developing agendas for goal achievement and to prevent the members from being overwhelmed by the electronic-based communication environment.

3.2.2 *Situational leadership theory*

Situational leadership (SL) is one of the most widely used leadership models (Graeff, 1997) and highlights the fact that leaders need to display differing leadership behaviours, depending on a range of factors such as the followers' readiness and developmental stage, and the combination of the degree of commitment and competence needed to accomplish a task. It emphasises the differences between a leader's relationship-orientation versus task-orientation and highlights four leadership styles; directing, coaching, supporting and delegating. Geister, Konradt and Hertel (2006) state that virtual team leaders should find appropriate methods of contact with members to become more effective. Picolli et al (2004:361) touch on the importance of task-orientation situational leadership for virtual leaders in their statement that "clear schedules must be established of when the team will provide reports, interim deliverables and final products". Robbins and 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. Hunsaker and Hunsaker (2008) found that virtual leaders need to provide clarity on functional roles. In contrast, Kayworth and Leidner (2002) suggest that effective virtual team leaders need to demonstrate the ability 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 empathy toward team members by providing regular, detailed and prompt communication with their peers. The literature in this field is contradictory and more empirical evidence is therefore needed.

3.2.3 *Leadership Orientation Frames*

Leadership Orientation Frames were established by the Bolman and Deal Leadership Model (Stadtländer 2007). Bolman and Deal (1988) sifted through the intricate theories of leadership and devised a four-frame model as a means of understanding leadership within organisations. This model represents a classification of the way leaders think about and respond to problems (Beaty 2005). In order to identify an individual's dominating leadership frame, Bolman and Deal (1988) identified six key skills, linked with each of the four frames which are shown in Table 5 below. The four leadership orientations are:

Structural leaders believe strongly in obtaining the right information, analysing it and developing goals and strategies based on the facts while avoiding or controlling emotions when making decisions. This frame is aligned to the task orientation and directing elements of situational leadership. Human resource leaders are seen to be facilitators and participative managers who support and empower others and take into account the skills, needs, feelings and limitations of the organisation's employees. The goal of this frame is to align organisational and human needs to build positive

interpersonal and group dynamics. This relates to relationship orientation and the coaching and supporting aspects of situational leadership. Networkers and/or influencers see as the central task of management to mobilise the resources needed to advocate and fight for the goals of the unit or organisation. These leaders tend to be negotiators who build alliances and influence others, understand networking and politics and are comfortable with conflict. This orientation does not correlate closely with either the situational or the transformational leadership approaches. The goal of symbolic leaders is to shape a culture that gives purpose and meaning to workers, provide organisational excitement and hope, for internal and external audiences, and build team spirit through visualisation, rituals and stories. This style of leadership is aligned to transformational leadership (Bolman & Deal 1988; Beaty 2005; Stadtländer 2007).

This study aims to discover which of these leadership orientations is to be preferred in the virtual team environment.

3.3 Virtual team leadership factors

Managing virtual teams is very challenging and requires innovative management methods (Lahenius & Jarvenpaa 2004). The literature on the leadership of virtual teams indicates that the following factors are important facilitators and inhibitors of virtual team performance.

Building trust. Cisco quoted in Kirkman et al (2002:69) says that “lack of trust can undermine every other precaution taken to ensure successful virtual work arrangements”. The literature highlights the need to build a relationship of trust by building team cohesion and identity through face-to-face meetings during the formation stages (Lahenius & Jarvenpaa 2004; Crowley 2005; Curseu et al 2008), although authors like Pauleen and Yoong (2001), Kirkman et al (2002) and Lin, Standing and Liu (2008) argue that trust can be built in a virtual environment without meeting face to face. Kirkman et al (2002) state that trust is based on a task-based relationship, that is trust is gained when people deliver what they promise, reliably, consistently and responsively.

Providing clarity around goals and roles via communication that ensures understanding is seen as a critical success factor for virtual teams (Bal & Teo 2001; Bergiel et al 2008; Hunsaker & Hunsaker 2008). Brake (2005:119) urges leaders to “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”. The high levels of task interdependency can develop member salience, team cohesion and trust, and publicise expertise (Zigurs 2003; Martins, Gilson & Maynard 2004; Hertela et al 2005; Hambley et al 2007; Hunsaker & Hunsaker 2008). Clarity around task interdependency also helps develop self-managed teams that are able to monitor their own performance (Hunsaker & Hunsaker 2008).

Communication. 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. Cross-cultural communication requires a leadership style that can deal effectively with the ambiguity magnified by the virtual nature of the interaction (Pauleen 2003; Bergiel et al 2008). Telepresence is defined by the experience and sense of being present in a place that is different from one’s physical location (Zigurs 2003). Virtual leaders need to use the vividness and interactivity of the media to make their presence felt in a positive way.

The ability to motivate and inspire virtual teams may be curtailed due to limited channels for establishing personal relationships (Pauleen 2003; Maholta, Majchrzak & Rosen 2007). Effective leaders demonstrate mentoring qualities characterised by understanding, empathy and concern for members. In other words, despite the distance, these leaders find ways to be accessible to and to motivate their distanced team members (Connaughton & Daly 2004).

Information equity. A virtual leader needs to ensure information equity among team members. This refers to the importance of ensuring that all team members receive the same message at the same time to obviate the creation of leader-member “in-groups” and “out-groups” among team members (Connaughton & Daly 2004; Brake 2005). Kirkman et al (2002) emphasise the need to help subordinates to overcome feelings of isolation and detachment.

Technology. Bergiel et al (2008) emphasise the need for the selection and widespread understanding of appropriate technologies in order for teams to operate effectively.

Selection. Hunsaker and Hunsaker (2008) conclude that the success of a virtual manager lies in the ability to choose team members with the relevant technical skills, knowledge and other relevant attributes. Choosing people with the right skills enables self management and fosters the ability of leaders to delegate.

Constant feedback within the team is important because of the relationship between feedback, performance and trust (Jarvenpaa & Leidner 1999 in Geister et al 2006). Providing feedback is important for reaching common understanding and mutual agreement among team members, as well as for assessing and recognising individual performance (Kirkman et al 2002; Dennis & Valacich 1999 in Geister et al 2006). Pauleen (2003) and Bergiel et al (2008) emphasise the importance of creating a virtual presence that provides team process feedback to ensure that team members know what the other members are doing. Geister et al (2006) find that feedback via electronic communication tends to show more task-oriented content than team-related content. Virtual managers need to ensure four types of awareness: activity awareness; availability awareness; process awareness and social awareness in order to increase levels of team synergy (Weisband 1992 in Hunsaker & Hunsaker 2008).

3.4 Literature review conclusion

The literature shows that there are many possible leadership styles as well as enablers and inhibitors of successful leadership of virtual teams and that there is a current need for empirical research to establish the preferences of virtual managers and subordinates as to these factors. The following research questions were developed in order to do this.

Research Question 1: What is the relative value of forces enabling and inhibiting the management of multinational virtual teams? Are these forces viewed differently by managers, subordinates and those who are both managers and subordinates?

Research Question 2: What is the relative importance of the various leadership skills when managing multinational virtual teams and is there a preferred leadership orientation for virtual managers?

4 Research methodology

This study is descriptive in nature (Zikmund 2003) as it sets out to understand the preferred leadership methodologies for virtual managers. The study took place in two phases.

4.1 Phase 1

The first phase was qualitative and took the form of in-depth face-to-face interviews, the aim of which was to obtain a deep understanding of the concepts and constructs of leading virtual teams to enable the development of a valid measuring instrument for the survey. The population for this phase of the study consisted of managers and employees working for multinational companies who were in permanent virtual team structures based across the globe. A quota method of non-probability sampling (Zikmund 2003) was used to choose three managers and three subordinates who were available to be interviewed. Each interview took about an hour. The interview guide consisted of four open-ended questions with key themes derived from the literature review. The themes covered were: the perceived differences in managing face-to-face and virtual teams; the challenges of virtual management; the three things virtual team managers need to do more of; and the three things virtual team managers need to do less of when managing virtual teams. Content analysis of the data led to the responses being categorised into segments of meaning, and then reworded into constructs (Zikmund 2003). These constructs, shown in Tables 3 and 4 below, were then incorporated into the questionnaire for phase 2.

4.2 Phase 2

The second phase was quantitative in nature, with primary data being collected via a self-administered survey. The population of relevance for this phase of the study consisted of managers and employees working for multinational companies in permanent virtual teams based across the globe. A nonprobability, quota sample was used (Zikmund 2003). The subgroups were selected on their availability, accessibility and willingness to participate in the survey. The sample was collected from one large multinational company within the mining industry with operations in six regions across the world - South Africa, Australia, Brazil, Chile, Venezuela, the United Kingdom, China and Namibia - with the head office in London. This company employs a total of 105 000 people. It is an organisation that has embarked on a global organisational restructuring in the past few years that has led to the emergence of many virtual international teams. The selected quota sampling methodology ensured a distribution of employees within each of the three subgroups, namely virtual managers, virtual subordinates and those who are both virtual managers and virtual subordinates. The sampling frame was a list of all virtual team employees currently involved in a global transformation change project.

The questionnaire consisted of four parts. Part 1 collected the demographics of the respondents. Part 2 used the Leadership Frame Orientation Skills questionnaire developed by Bolman and Deal and customised by Beaty (2005), where respondents had to rank the importance of 24 leadership skills (six for each of the four leadership orientation categories) for virtual managers. In Parts 3 and 4, the respondents had to rate the importance of the 17 inhibitors and 21 drivers/enablers of leading virtual teams that had been derived from the literature and the interviews in Phase 1. The statements were each ranked in importance on the basis of a four-point ordinal scale. The

questionnaire was pretested with four people to ensure that it could be easily understood and administered. The changes proposed by the respondents were incorporated. As this is an exploratory study, the reliability and validity of the questionnaire could not be established.

The questionnaire was distributed by means of two methods: hard copies were handed out to virtual team members from around the world who attended a training course in South Africa and copies were emailed to respondents who were not able to attend the course to ensure that they could participate in the study from their respective countries. The auspices bias (Zikmund 2003) presents a challenge owing to the perceived lack of anonymity of the responses. To counter this, respondents were assured that their responses would be treated confidentially.

From the 75 questionnaires distributed, responses were received from 62 respondents, equating to an 83% response rate. Three of the questionnaires were incomplete. In all, 59 responses were used for analysis. The sample comprised people who have been with the organisation for between three months and 30 years. Table 2 below shows the distribution of the respondents.

Table 2
Respondents in the survey

Country	Managers	Subordinates	Both managers and subordinates	Total
Australia	2	3	3	8
Chile and Brazil	2	8	4	14
United Kingdom	2	0	1	3
South Africa	7	12	15	34
Total	13	23	23	59

Weighted total scores were calculated for each variable to determine the relative strength of forces enhancing or inhibiting the success of managing virtual teams as well as the skills associated with the four leadership orientations. These were calculated by summing the multiplied ordinal value by the frequency of responses. The Kruskal-Wallis test for examining differences between three or more groups using ordinal data (Zikmund 2003) was used to compare the data between the three subgroups, namely managers, subordinates and respondents who were both managers and subordinates, as the data was ordinal and normality could not be assumed between the three groups. This test 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, to determine whether observations in one sample tend to be significantly larger than observations in the others. A Chi-square goodness of fit test for nominal data (Zikmund 2003) was used to see whether there were significant differences between the preferences for the four leadership orientations. All analyses were conducted at an α of 0.05.

4.3 Research limitations

There could be bias in the researcher's classification of constructs. There is also the inability to confidently generalise the outcome of the study to other organisations given that a nonprobability sample was chosen and the survey was conducted at one large global organisation. There could be response bias and auspices bias, given the use of internal email addresses to distribute the questionnaire.

5 Results

The results from phase 2 of the research are given below.

5.1 Research question 1. What is the relative value of forces enabling and inhibiting managing multinational virtual teams? Are these forces viewed differently by managers, subordinates and those who are both managers and subordinates?

Table 3 below shows the relative importance of the 21 factors which enable the successful leadership of virtual teams. The maximum possible score on any item in Tables 3 to 5 is 236.

Table 3
Ranking of factors enabling success in managing multinational virtual teams

Ranking	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 every 2 months	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 among team members	170
17	Team meetings allowing 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 an organogram)	152
21	Conducting daily check-ins	106

The table shows that there is a big difference in the relative rankings of the enablers, with the top-ranked item being seen to be twice as important as the last one. The top thirteen items (chosen because of the weighted rankings) reveal three important enabling themes. The first is the ability to build a strong team vision and identity, with everyone understanding their role in the team (items ranked 1, 2, 9 and 10). This reflects the thinking on symbolic leaders (Stadtländer 2007) and transformational leadership behaviours (Hambey et al 2007) and Brake's (2005) thinking around role clarity. The second theme concerns having the correct technology and data systems in place; these need to be understood by everyone and which lead to information equity

(items ranked 6, 7 and 13) (Connaughton & Daly 2004; Bergiel et al 2008). The third theme focuses on the nature of the team relationships: striking a balance between people working independently in different environments while maintaining good relationships, using coaching and having the manager function as a role model (items ranked 3, 4, 8, 11 and 12). The third theme represents the socio-emotional factors and relates to relational and situational management and the human resource leadership framework (Bolman & Deal 1988). It also speaks to the ability to deal with paradox, as discussed by Kayworth and Leidner (2002). The six lowest ranked items in Table 3 show a low need for purely social engagement among virtual team members.

Kruskal-Wallis tests were conducted to determine if there were any differences between the three subgroups – managers, subordinates and respondents who are both managers and subordinates – on all of the items. The analyses showed that at a significance level of 0.05 there are no significant differences between the ranked medians of the three subgroups on any of the 21 enabling factors. This indicates that there is unanimity in the identification of the relative importance of all the enablers and adds weight to the relevance of the findings.

Table 4 below shows the relative importance of the 17 factors that inhibit the successful leadership of virtual teams.

Table 4
Ranking of factors inhibiting success in managing multinational 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 for communication	178
7	Misunderstanding instructions given	178
8	Lack of shared knowledge and cross-team learning	176
9	Inability to make decisions in the absence of the 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

The table shows a wide range in the relative importance of the rankings of the 17 inhibitors. The top ten items reveal two themes. Firstly, lack of trust is preeminent and is probably based on other inhibitors such as lack of feedback, delays in resolving conflicts, misunderstanding instructions and lack of knowledge sharing (items ranked 1, 3, 4, 5, 7 and 8). Cisco (in Kirkman et al 2002) emphasises trust as potentially significantly undermining virtual team performance. All of these factors can be grouped as socio-emotional factors. Secondly there are the “hard” factors that are inherent in multinational virtual teams: if one operates globally there is never a time when

everyone is “in the office”; multicultural workplaces demand a high level of understanding of the intricacies inherent in optimising the opportunities presented by diversity while reducing the problems of cross-cultural understanding; the technology has to be in place, understood and maximised; and different decision making processes have to be understood (items 2, 3, 6, 9 and 10). Zigur’s (2003) work on telepresence and Pauleen’s work (2003) bear out the importance of these factors. Virtual team leadership is “not business as usual” - a unique set of leadership behaviours need to be adopted.

The Kruskal-Wallis analyses, at a significance level of 0.05, found that there were significant differences between the three groups in only three of the 17 constructs:

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

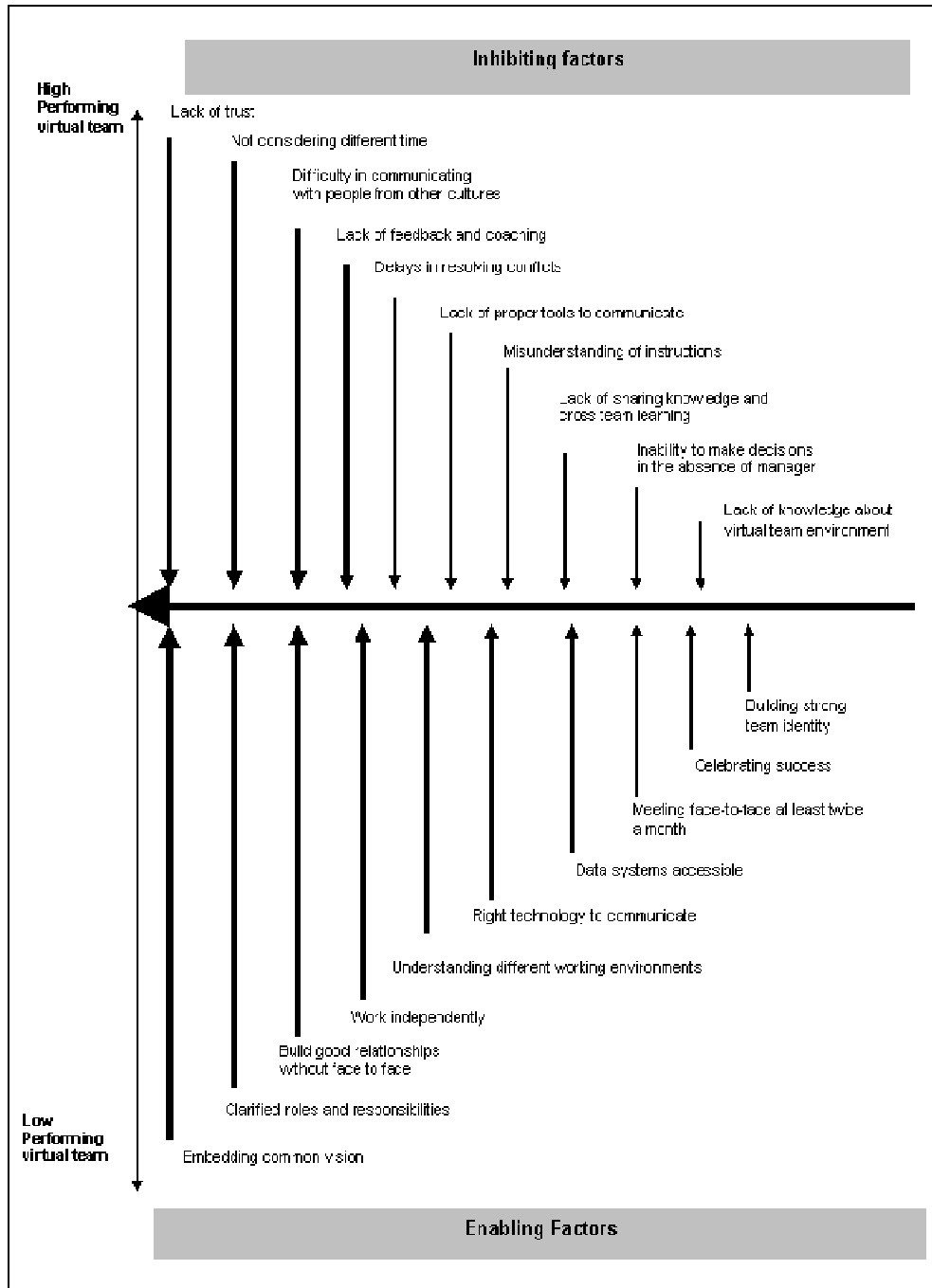
For the first item, the subordinates rated the item as more of an inhibitor than did the managers, but the managers scored the other two constructs as being less important than did both other groups. However, there was unanimity between the three groups on fourteen of the factors, which allows for a singular set of recommendations to be made.

Recommendations based on research question 1

Force field analysis (Brager & Holloway 1992) is a technique, based on the seminal work of Kurt Lewin, for evaluating forces that could impact on a situation. Figure 1 is a force field analysis drawn up from the data above. It shows the vertical axis as the scale which measures the level of efficacy of virtual team performance, ranging from high performing virtual teams at the top and low performing virtual teams at the bottom, with the horizontal line indicating the current level of team performance. The ten most important enablers that increase the efficacy of the virtual team and the ten most important inhibitors of virtual team performance from Tables 3 and 4 are added. The relative strength of each factor is represented by the length of its respective arrow.

The usefulness of the figure is that it shows managers of multinational virtual teams how to “push” the indicator arrow upwards towards increasing the performance of virtual teams. In order to do this, managers need to place more emphasis on the specific enablers identified in this research and gradually reduce the influence of each of the identified inhibitors.

Figure 1
Force Field analysis: The enabling and inhibiting factors for leading multinational virtual teams



5.2 Research Question 2: What is the relative importance of the various leadership skills and is there a preferred leadership orientation for managers of virtual multinational teams?

Table 5 shows the four leadership classification frames in the second column. Their associated diagnostic skills, which the respondents had to rate in terms of importance in virtual teams, are given in the third column. Table 5 shows the relative importance of the 24 leadership skills in the first and fourth columns.

Table 5
The relative importance of the leadership inventory items

Ranking	Frames	Skills which were ranked	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

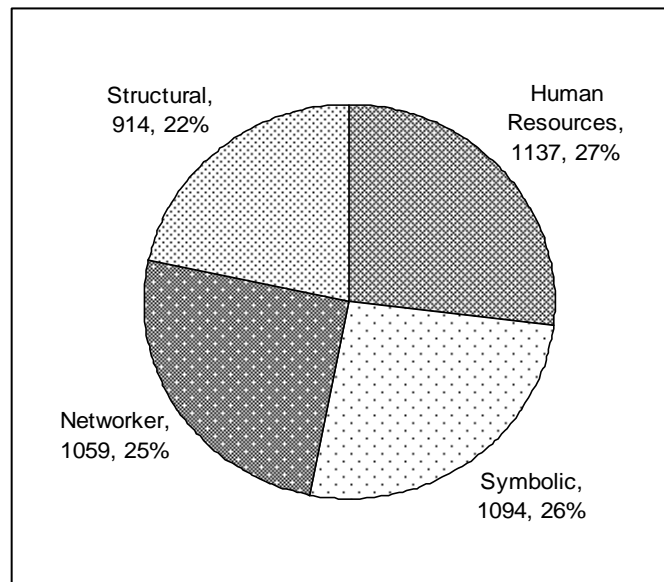
Some previous studies have indicated that success within virtual teams seemed to be based on a task-orientation leadership style that focused on delivery (Kirkman et al 2002; Robbins & Judge 2007). The outcome of this study indicated that, contrary to this belief, the skills ranked highest in importance for managing virtual teams are softer, more relationship-based skills. These are the socio-emotional skills that are emphasised in the writings of Connaughton and Daly (2004) and Jarvenpaa & Leidner 1999 in Geister et al 2006. The challenge is for virtual managers to develop the most highly ranked skills via their telepresence (Zigurs 2003).

Interestingly, the five lowest ranked skills were the harder, more technical skills. This is a valuable finding as many people in the information age need to migrate from depending on their technical skills, which are often the starting point for their career, to managing on a relationship-building basis as they climb the managerial ladder (Lamb & Sutherland 2010).

Kruskal-Wallis tests were conducted to determine whether there were any differences between the three subgroups; managers, subordinates and respondents who are both managers and subordinates, on all 24 of the items. The analyses, at the 0.05 level of significance, showed that there was only one significant difference (technical skills) between the medians of the three subgroups on any of the 24 skills. This indicates that there is unanimity in the identification of the relative importance of all the skills.

The sum of the scores for the Leadership Frames (six per frame) were calculated to determine whether there was any dominating preferred frame. Figure 2 below shows the proportional split between the four frames. The numerals in the figure give the total weighted rankings and the percentage split between the four frames. Although visual inspection seems to indicate no marked differences, a Chi-square goodness of fit test at a 0.05 level of significance showed that the scores do not come from the same population and that there is a significant difference, showing a marked rejection of the Structural Leadership orientation. This is also evident from the results in Table 5 above.

Figure 2
Leadership orientation preferences for managers of virtual multinational teams



Development of findings from research question 2

The above data indicate that there is a need for a new classification of leadership behaviours for virtual leaders. An inspection of Table 5 in terms of the literature reviewed above indicates that it is appropriate to cluster the top twelve items in Table 5 into four distinct categories or leadership caps for virtual managers; these are illustrated in Figure 3. The term leadership cap indicates that there are many caps the virtual manager needs to wear to enable high performance by and satisfaction among the team members.

Figure 3
Leadership caps for managing virtual teams



The energiser role overlaps with both the transformational leadership approach and the symbolic leadership frame discussed above. The interpersonal skills cap relates to the relationship building aspect of situational management as well as the human resource leadership frame. The network and alliance builder role is softer than Beaty's (2005) networker frame and attests more to information equity. The decisive cap relates to the structural leader and the toughness of the networker frame.

The finding recorded above of only four differences in the sixty-two Kruskal-Wallis tests (which is below the number that could be expected to be produced by chance) indicates that there is unanimity in these findings between managers and subordinates. This adds weight to the findings.

6 Further research

Further research should be conducted on understanding how to develop and display the softer socio-emotional skills and how to build trust when managing virtual teams. Research could examine the paradox of the independent versus the dependent nature of working in virtual teams. Further research should be conducted to determine the causal effect between multinational virtual leadership styles and their impact on subordinates' performance, job satisfaction and feelings of attachment to the team and organisation.

7 Conclusion

Global competition and advances in technology are leading to the rapid growth of multinational virtual teams in order to execute business strategies. The research added to the body of knowledge on the relative importance of the key virtual leadership skills, as well as the enablers and inhibitors of managing virtual teams successfully. The study concludes that at the core of effective leadership of virtual teams is the manager's

ability to display socio-emotional capabilities. The recommendations suggest a set of specific skills, practices and behaviours that virtual managers need to adopt in order to ensure their effectiveness. Virtual managers should acknowledge that effective leadership is a continuous process and that it is important to ensure that the above recommendations are embedded in order to increase their own success and that of their team.

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