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Managing Performance Barriers in Virtual Teams

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Abstract

Managing Performance Barriers in Virtual Teams

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Technological developments and the modern economy have changed the way teams operate. Most professionals today are mobile and equipped with everything they need to work from anywhere at any time, including blackberries, laptop computers, email, video conferencing and other personal productivity devices. Doing work this way, allows for a wide range of benefits such as flexibility, diversity and an increase in productivity. However, these virtual teams require specific conditions to help them reach their full potential. This paper will identify the four major characteristics of virtual teams (geographic dispersion, electronic dependence, dynamic structure and national diversity) and use a model of virtual team effectiveness to examine the three team processes (transactive memory, work engagement and collective efficacy) that are most strongly affected by these characteristics.   It will further suggest ways in which leadership can help to overcome these process losses through the establishment of trust, psychological safety and conflict management.

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Chapter 1: Introduction

The research surrounding team structures is vast, well documented and offers several theoretical foundations and methodologies for building and managing highly effective teams. However, this research bases its findings on the traditional or conventional team in which all members are collocated and communicate face-to-face. While this basis was accurate during the context of its time, technological developments and the modern economy has changed the way teams operate.

EMERGENCE OF VIRTUAL TEAMS

Today's work place has changed dramatically in a relatively short period of time. The reason for these changes originates with the idea of "core competencies" and the race to fix the "Y2K" problem (Lojeski and Reilly, 2008). C.K. Prahalad and Gary Hamel (1990) popularized the idea of core competencies[1], which companies then used to create a business model that focused on the company's core strength. At the same time, many organizations were scrambling to fix the Y2K bug issue. Unfortunately, there was a limited amount of programmers and systems engineers available to fix the software systems nationwide. As a result, corporations who normally relied on "in-house" talent to work on their computer systems, reached out globally to find a qualified workforce that could help. This effort began the idea of outsourcing, which became a mainstream strategy used by organizations to lower cost by hiring low-cost resources to do what management considers mundane work. These changes led the way for a new business model that centered internal resources on the company's core strength, while high volume, low value work was outsourced (Lojeski and Reilly, 2008).

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[1] Core competencies are organizational specific strengths defined as "an area of specialized expertise that is the result of harmonizing complex streams of technology and work activity" (Lojeski 2008).

In the last decade, technological advances have made global expansion of the marketplace and the businesses that it serves possible. Businesses quickly realized that they could leverage this new technology and corresponding high speed communications to increase organizational flexibility and responsiveness. This strategy would eventually drive the establishment of operations and strategic alliances across the globe. Companies could use the best individuals for the task regardless of their physical or organizational location, thus enhancing the quality of decisions (Martins, 2004). Employees were equipped with everything they needed to work from anywhere at any time, including blackberries, laptop computers, email, video conferencing and other personal productivity devices. Doing work this way, allowed for a range of business benefits, including flexible team structures that could quickly respond to a rapidly changing competitive environment and a significant reduction in cost associated with bringing people together for a common task.

The rush to expand globally and the wake of outsourcing created the rapid evolution of virtual teams. Corporations assumed that this new workforce would operate the same as traditional teams and therefore, expected them to be effective across distances and cultures never before mastered, while depending on new technology that would tie everyone together. Because of these assumptions, many corporations have and continue to experience significant financial and social costs. Research now shows that geographically distributed teams face a number of unique challenges (Hinds, 2003) that require significant effort and new work processes to make it successful.

DEFINING THE VIRTUAL TEAM

Early definitions and research on virtual teams focused on the attributes that separated it from traditional face-to-face teams. The common distinction was that virtual teams are temporally and spatially distributed, relying on technologically mediated forms

of communication (Cordery, 2008) to perform interdependent tasks. The virtual team members are not constrained to a physical location; their primary work sites are different and can be located throughout the world. In fact, such geographic reach has led several researchers to focus exclusively on "global virtual teams" (Martins, 2004). This narrow focus on virtual team distribution ignores the temporal boundaries that can occur simply due to differences in time zones and the use of asynchronous communication media, which limits the ability of team members to interact in "real time" (Martins, 2004). It also ignores the fact that geographical dispersion can include team members working across different organizations, buildings, cities and states. Because of all these mediating factors, research shows inconsistencies as to what level of dependency on technology and face-to-face interactions constitutes virtual.

In an attempt to move beyond what is and what is not virtual, recent definitions have focused on the degree or extent of virtualness (Cordery, 2008) and have even defined it as a potential characteristic of all teams (Martin, 2004). The fact that all types of teams today have some sort of reliance on electronic communication supports this definition. In fact, such dependence on electronic media has proposed Lojeski and Reilly (2008) to extend the meaning of distance to include not only space and time, but emotional separation as well. This emotional separation captures the sense one feels of being psychologically far away from others no matter where the electronic communication originates or ends. Research has shown that distance only matters for the first 30 meters, after that, the probability of face-to-face communication falls to almost zero (Allen, 1977). A study done by Bradner and Marks (2002) builds on this relationship by showing how the perception of distance influences interactions between two people. When subjects thought their partner was far away (3,000 miles), they were less likely to initially cooperate and more likely to deceive when using computer

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mediated technology. What the subjects did not know, was that their partner was in the next room. It was the perception of feeling far away that produced these results.

Chapter 2: Barriers to Virtual Team Effectiveness

Research shows that virtual teams can either be dramatic successes, dismal failures or anywhere in between (Gibson and Cohen, 2003). Part of the challenge of virtual teams is that they evolved so quickly with a poor understanding of how they operate. They have unique characteristics that differ from the traditional teams that existed prior to computer mediated technology. These characteristics require a certain level of awareness, understanding and a significant amount of leadership to create specific conditions that will help them reach their full potential.

Studies on the effects of virtual teams have produced mixed findings (Martins, 2004), partly explained by the varying degrees of virtualness. Technological dependence, proximity, temporal and relational boundaries can all influence a team's extent of virtualness.

Most recently, Gibson and Gibbs (2006) have characterized virtual teams as typically varying along four dimensions, including geographic dispersion, electronic dependence, dynamic structure and national diversity. They argue that these four dimensions of virtual teams tend to act as an impediment to effective team processes. While previous research has tended to lump together various features of virtuality, Gibson and Gibbs (2006) stress the importance of examining the effects of each characteristic (i.e. dimension) independently to obtain a better understanding of the complexity and reality of virtual teamwork.

GEOGRAPHICAL DISPERSION

Geographical dispersion refers to the distance that separates team members. This distance can vary considerably in terms of how close team members are physically located to one another. A team can span multiple continents and time zones or even

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different cities, buildings and organizations. This geographical reach allows corporations to harness the best talent regardless of location. It brings together different perspectives and knowledge bases, which fosters high-quality, innovative business solutions (Gibson and Cohen 2003). This diversity is central to innovation, which has become a critical means of competitive advantage for corporations. At the same time, geographical dispersion also creates unique challenges that make it difficult for team members to reach their full potential.

Geographically distributed teams have a high level of uncertainty about others' behavior (Weisband, 2002), because our innate social skills are unavailable. We typically rely on visual cues like facial expressions and body language to decipher someone's intentions or sincerity (Lojeski and Reilly 2008). Without it, important information is lost and it can create a suspicion that others' are hiding something. This struggle to understand each other can reduce coordination, trust, and commitment to group goals (Weisband, 2002).

High degrees of distance also limit the opportunities to engage in casual conversations.   These unplanned encounters allow team members to share information about themselves (i.e. family life, experience, skills), the project or task they are working on.   This knowledge about one another facilitates a shared identity[2], increases rapport and helps keep others informed about work progress (Hinds and Weisband, 2002). Unfortunately, these interactions occur less frequently with geographically distributed teams. In fact, distributed teams can go for an extended length of time without any information about the status of their teammates' activities. This lack of awareness[3]

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[2] Shared team identity is individual members feeling as if they are part of a larger entity. Creating a team identify is similar to the "in groups" and "out groups" of sociology (Arnaud, 2004).
[3] There are four types of awareness: activity, availability, process and social (Weisband, 2002).

increases the uncertainty about future events and decreases the performance of the team (Weisband, 2002).

Along with physical distance, often come differences in our surrounding conditions, including the culture, technologies, geographical environment and work settings in which we exist (Hinds and Weisband, 2002). These contextual differences are associated with the way people act and the expectations they have of others (Kieler and Cummings, 2002). For example, collectivistic cultures (such as Japan) emphasize harmony and interdependence of team members. Their priority is to avoid conflict and maintain the relationship of the group. However, in the United Stations, the expectation is for the individual to be interdependent, assertive and expressive of personal views. Teams that operate in this individualistic culture will find it difficult to develop a shared understanding[4] with a team member from a collectivistic culture because communication misunderstandings are more likely (Hinds and Weisband, 2002). The reason is because each culture will interpret messages from within their own sets of assumptions and expectations (Armstrong and Cole, 2002) based on what they feel are appropriate behaviors (Hinds and Bailey, 2003).

Geographical distance also makes learning by observation difficult. In traditional teams, team members are able to observe the work of others casually, thus informally and inadvertently sharing contextual information (Hinds and Weisband, 2002). It is also physically easier to share information face-to-face than through the telephone, e-mail, instant messaging and videoconferencing. In addition, these communication technologies can hide contextual differences, making distributed team members unaware of their existence. Therefore, members often neglect to share information that would help their teammates to understand the context of their work environment.

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[4] Shared understanding is a collective way of organizing and communicating relevant knowledge (Hinds and Weisband, 2002)

ELECTRONIC DEPENDENCE

Electronic dependence refers to the degree in which the team depends on computer-mediated communication to stay in touch and share information. Virtual teams have limited opportunities for face-to-face interaction; therefore, frequently rely on the telephone, e-mail, videoconferencing and instant messaging to hold conversations and team meetings. Unable to hand someone a document physically, virtual teams also depend on shared electronic workspaces to mediate collaborative work. While these technologies have helped to create the virtual team, they have also hindered them from being functional and effective.

The key to an effective team is communication. It provides the basic building blocks on which people collaborate, make decisions, and act to achieve goals and objectives (Gibson and Manuel, 2002). Traditional teams benefit from the face-to-face interactions that are rich in social information and visual cues. This personal communication among team members contributes to cooperation, effective coordination, shared identity (Kiesler and Cummings, 2002), insightful information about the personalities of team members and lays a basis for developing common values (Gibson and Manuel, 2002). In distributed teams, members who interact via technology can often struggle to develop effective group communications and relationships. One reason is because of a lack of social presence that causes team members to become less aware of the real and perceived presence of others. Hinds and Bailey (2003) describe social presence as a sense of "being there" with their communication partners and being fully engaged in the interaction taking place. A good example of a technology that reduces social presence is the telephone. While it allows distributed team members to connect, it is not able to reproduce visual social cues (such as gestures). When an individual's senses are limited in this way, it's difficult to keep them fully engaged in the

conversation. The Media Richness Theory further explains this concept by examining the impact that different communication media types have on social presence.

Media richness describes communication technology that groups can use to clarify ambiguous issues and promote understanding in a timely. It allows for a high level of verbal and visual cues, such as tone of voice and facial expressions. The presence of these cues creates an environment that promotes maximum engagement of tasks and information sharing. In addition, it promotes the presence of emotional sensitivity, which strengthens ties and commitment within the group. Figure 1: Communication Technology, Media Richness and Social Presence, places various modes of communication on a continuum of social presence and media richness (Lojeski and Reilly, 2008).

The Media Richness Theory explains that complex and ambiguous tasks are best suited with a richer format of media (such as video conferencing). Technology such as e-mail and instant messaging can easily lead to frustrations, misunderstandings and misinterpretations due to the lack of social and nonverbal cues, delays in transmission, and faulty perceptions. For example, email is a widely used medium of communication technology that allows team members to share an extensive amount of information with a multitude of people. However, team members can inadvertently leave important information out of the message and without the observation of the receiver's reaction, can miss opportunities to identify points of misunderstanding. Adding complexity and ambiguity to the task will cause this same issue to grow exponentially, leaving team members frustrated with the gaps and confusion in the communication process. It's reasons like these that cause virtual teams to take longer than co-located teams when making decisions (Martins, Gilson and Maynard, 2004).
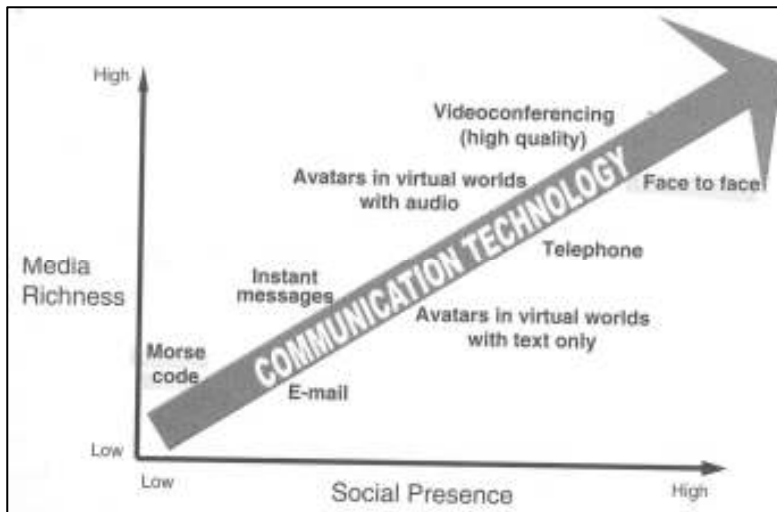
Figure 1: Communication Technology, Media Richness and Social Presence
     (Lojeski and Reilly, 2008)

STRUCTURAL DYNAMISM

Virtual teams in organizations today can work on a broad spectrum of stability. On one end, virtual teams may be relatively permanent with a static membership of participants that operate with a set of standardized routines. On the other end, a virtual team can experience frequent changes to participants, their roles, and their relationships to each other. The latter end of the spectrum is growing in prevalence due to competitive business strategies that call for unstructured temporary arrangements, such as outsourcing or contracting for specific knowledge tasks. In addition, technology allows team members to participate in multiple projects in addition to their day-to-day tasks, which leads to excessive multitasking and a limited focus on the project or task at hand. This lack of attention deters the team members from gaining a sense of stability.

A highly dynamic team structure hinders the development of trust within the group (Gibson and Gibbs, 2006). Scholars in this domain maintain that trust reflects the security one feels about a situation because of guarantees, safety nets, or other

organizational control structures (Gibson and Manuel, 2003). In distributed teams, trust takes time to develop due to the uncertainty that exists within team members. This uncertainty evolves though a lack of familiarity with members of the group. In co-located teams, people depend on continuous personal interactions to learn about the personalities, concerns and work processes of others. Virtual team members have fewer opportunities to participate in these types of encounters, therefore; it takes longer for them to develop trust. Once the foundations of trust is built, it is costly and time consuming to replace or add team members, because they have none of the shared experience built up by the team (Hinds and Weisband, 2003).

NATIONAL DIVERSITY

Virtual team members often cross geographical, organizational and functional boundaries, resulting in high levels of cultural diversity. This diversity fosters different perspectives on behavioral norms, expectations and work processes. While there are various levels of culture (e.g. organizational and functional), the most difficult to manage is nationality. The reason is because nationality is a superordinate determinant of identity that is engrained from birth (Gibson and Gibbs, 2006). Therefore, teams with a high level of national diversity, will often start out with a narrower base of shared understanding (Hinds and Weisband, 2003) and often have trouble communicating due to different expectations about the communication process (Gibson and Gibbs, 2006).

Virtual teams with a high level of national diversity are likely to comprise of individuals with different contexts. As such, team members will have different perceptions about what behaviors are appropriate, consequently holding one another to different standards (Hinds and Bailey, 2003). For example, some cultures are "high context" and others are "low context", referring to the way information is exchanged. High context cultures (such as China) emphasize the importance of non verbal and

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contextual cues.   Interpersonal relationships and trust characterize the way they communicate. Low context cultures (such as North America or Germany), are more task driven and decisions are based on fact rather than feelings and intuition. When team members from high and low context cultures collaborate, the differences in the way they exchange information can cause communication breakdowns.

High levels of national diversity have the potential to reduce shared identity within the group. The reason is due to an effect called social categorization. Gibson and Gibbs (2006) define this effect as a process in which individuals from different groups (e.g. nations) make "in-group/out-group" distinctions purely on the basis of nationality. This response is a bias tendency to like and trust others who we perceive to be similar to ourselves, particularly in situations where there is a high level of uncertainty and trust. As a result, developing a shared identity is difficult in nationally diverse teams because of strong identification with subgroups (Gibson and Gibbs, 2006).

Chapter 3: Model of Virtual Team Effectiveness

It has been estimated that more than 60% of professional employees work in teams characterized by virtuality (Gibson and Gibbs, 2006). Their growing prevalence has started to raise concerns as evidence of job dissatisfaction and declines of effectiveness have emerged (Lojeski and Reilly, 2008; The Conference Board, 2010). Research indicates that this poor performance points to a lack of understanding on how to create the specific conditions that virtual teams require to be successful.

TEAM MEDIATING PROCESSES

In an effort to develop a better understanding of virtual teams, Cordery and Soo (2008) have developed a model of virtual team effectives that identifies three key processes that mediate between the design characteristics of virtual teams and effectiveness indicators. This model builds on the four characteristics of virtual teams that Gibson and Gibbs (2006) have identified as barriers to effective virtual team performance: geographic dispersion, electronic dependence, dynamic structure and national diversity. Figure 2 presents the conceptual model, in which the three team mediating processes are transactive memory, work engagement and collective efficacy.
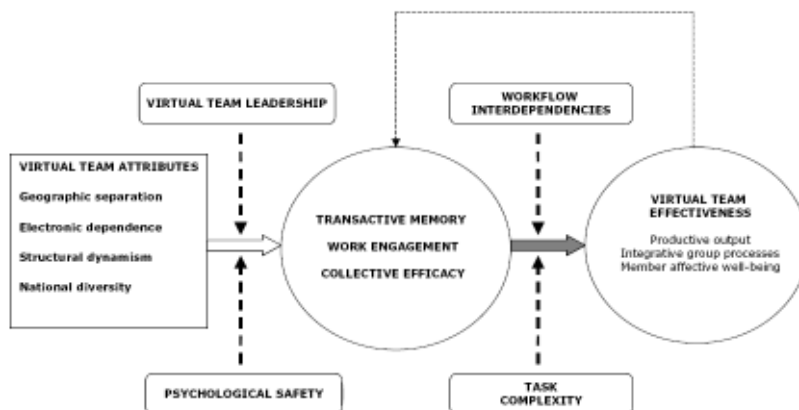

Figure 2: Model of Virtual Team Effectiveness (Cordery and Soo, 2008)

Transactive Memory

Transactive memory (TM) is a systematic way for managing knowledge within relationships, groups and organizations. Transactive memory systems comprise two major components: individually held knowledge and an awareness of the location of that knowledge (Mortensen and Hinds, 2002). Individually held knowledge comes from the expertise a person has for a specific knowledge area. The TM system then allows the team to make use of this knowledge by identifying who the experts are, informally through communication or formally, through documents, manuals or other reference materials. With the existence of a strong TM system, team members are able to identify who is more likely to understand certain types of information as it enters the team. This coordination and sharing of information allows the team to solve problems quickly and easily.

The difficulty distributing teams have in establishing transactive memory stems from a lack of shared understandings[5]. To the extent that team members do not agree who is on the team, do not share experiences together and have uneven communication, their development of shared understanding may be impaired (Mortensen and Hinds, 2002). Therefore, it's easy to see why virtual teams struggle to develop an effective TM system. The boundaries created by distance, the lack of richness in many electronically mediated forms of communication, and the fluctuating membership of virtual team structures pose particular challenges to team knowledge development and information sharing (Cordery and Soo, 2008).

Research has shown that ongoing interaction opportunities are likely to facilitate the development and maintenance of group TMS (Cordery and Soo, 2008). It takes time

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[5] Shared understanding is to know the norms, expectations, objectives, work processes and vision of the team's interdependent tasks.

and repeated task-related interactions among team members to develop an effective TM system. Therefore, a stable group membership and composition within the team is necessary (Cordery and Soo, 2008). Any changes can result in a loss of shared understanding, cohesion and team identity.

Work Engagement

Work engagement is defined as a positive fulfilling, work-related state of mind that is characterized by passion, commitment and involvement in one's work. Khan (1990) builds on this definition by suggesting that three critical psychological states influence a person's motivation to engage with their work:

1. Meaningfulness – associated with work elements that create incentives or disincentives to engage personally.

2. Psychological Safety – the ability to show and employ one's self without fear of negative consequences to self-image, status or career.

3. Availability – people can use various degrees of their selves to be psychologically present (physical, emotional, cognitive) during particular moments of role performances.

If these conditions are met to some acceptable degree, people can personally engage in moments of task behaviors (Khan 1990).

Cordery and Soo (2008) argue that motivating virtual team members to become engaged in their work is a major challenge. Reason being, the distance and limited social interaction virtual teams experience can limit the amount and quality of performance feedback, training opportunities, supervisory coaching and social support[6] (Cordery and Soo, 2008). These job resources are a key contributor to creating conditions that allow

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[6] Social support is the physical and emotional comfort given to us by family, friends, coworkers, etc. It's being a part of a community of people that care about our well being.

for employee engagement. When they are lacking, an individual can withdrawal and defend the preferred self as they become physically uninvolved in tasks, cognitively unvigilant, and emotionally disconnected from others in ways that hide what they think and feel, their creativity, their beliefs and values and their personal connections to others (Khan 1990).

Virtual team members also struggle with cultural values arising out of diversity. Cultural differences can create different perspectives on what is important and considered of greater value and therefore, higher priority. This diversity can affect an employee's involvement in work and dedication to the task. Often, diversity can bring temporal differences that require team members to work in real time across time zones. Working this way makes it difficult for teams to coordinate work and develop a steady rhythm of performance (Lojeski and Riley, 2008). If not managed properly, it can reduce levels of energy to perform and member satisfaction.

Collective Efficacy

Collective efficacy refers to the strength of a group's belief that it has the capability to do a task well. It affects what choices the group makes, the effort put forth, persistence in the face of setbacks, and how we feel (e.g. confidence and self-worth).

The Goal Setting Theory suggests that efficacy beliefs initially form through specific, measurable and attainable goals that leaders support with the appropriate feedback and coaching (Locke and Latham, 2002).   This relationship is strongest when the goal is moderately challenging, commitment is present and the group possesses the knowledge and skills necessary to achieve the goal.   Once the goal is achieved, leaders can continue to raise collective efficacy through increasingly difficult goals, adequate training, encouragement of group interaction and a group reward structure.

Virtual teams face many challenges that can impede the development of collective efficacy. First, it has already been established how distance can affect team performance (e.g. geographical distance, computer-mediated technology, national diversity, structural dynamism). When performance is negatively affected, it is difficult to establish collective efficacy. Research has consistently found a strong positive relationship between team-level efficacy beliefs and subsequent team performances (Cordery and Soo, 2008). Second, collective efficacy forms through the process of collective cognition, which arises in parallel with the formation of a transactive memory system. This relationship indicates that similar impediments exist between the two processes (see earlier discussion on transactive memory).
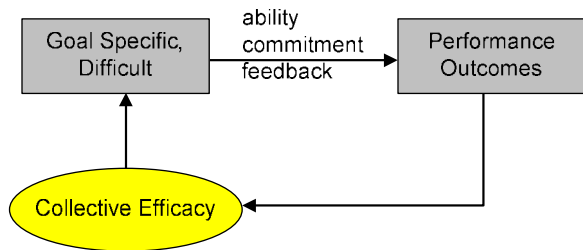

Figure 3: Goal Setting Theory (Lewis, 2009)

WORKFLOW AND TASK COMPLEXITY

Research has pointed to a number of factors that moderate virtual team effectiveness (Martins, Gilson and Maynard, 2004). These moderators often explain the inconsistencies reported in virtual team performance. Cordery and Soo (2008) identify task design, in regards to complexity and workflow interdependencies, as the major moderator to virtual team effectiveness. Reason being, the extent of task complexity and interdependencies may increase the length of time needed to reach a shared goal, make decisions and resolve issues (Martins, Gilson and Maynard, 2004).

On the other hand, a high level of interdependence is a source of motivation for virtual teams because it creates the anticipation of future interactions. This type of task increases a number of interpersonal behaviors and feelings, including the amount of personal information exchanged, disclosure, feelings of similarity, positive and friendly self-presentations and cooperation in negotiations (Walther, 2002); all of which, have an enormous effect on the workers enthusiasm and dedication for the task.

Ambiguous and complex tasks require a significant amount of effort from virtual teams. As complexity increases, it becomes inherently more difficult for the virtual team to have effective team performance (Cordery and Soo, 2008). Reason being, increased complexity requires coordination, which can be impaired by technology mediation. Technology mediation also may induce time lags and sequencing problems that further hamper coordination, resulting in high levels of conflict (Hinds and Bailey, 2003). For example, these time-related issues can create disparities in when messages were sent, received and responded to by team members; creating a situation where individuals are working with different information at different times.

Martins, Gilson and Maynard (2004) have identified other types of moderators to virtual team effectiveness, which include group size, composition and time. The effect of these moderators strongly depend on the nature of the task and technology used (Martins, Gilson and Maynard, 2004). Obviously, the larger the team, the more difficult it becomes for members to interact effectively using technology. However, the number of ideas generated in virtual teams has been found to increase with group size (Martins, Gilson and Maynard, 2004). Time refers to the fact that groups evolve over time and therefore, member satisfaction and outcomes can improve. Composition refers to the status, gender and culture differences that make up the virtual team.

Chapter 4: Offsetting Performance Losses Through Leadership

Team leaders are a critical component in overcoming the potential process losses associated with virtual teamwork. The challenge is developing a set of tactics and strategies that target the uniqueness of a virtual team. Geographical distance, computer-mediated technology, national diversity, and structural dynamism can all hinder the development of knowledge structures, motivation, and performance beliefs that are necessary for virtual team effectiveness. These barriers create unique circumstances for virtual leaders and they often struggle to span the boundaries created by geographic, temporal and organizational separation.

Research suggests several virtual leadership practices that have proven to produce positive results (Lojeski and Reilly, 2008; Cordery and Soo, 2008; DeRosa, 2009). For the purpose of this paper, the discussion will focus on how virtual team leaders can neutralize process losses through the establishment of trust, psychological safety and conflict management.

FOSTERING PSYCHOLOGICAL SAFETY

The unique challenges of virtual teams can create negative effects (e.g. such as lack of commitment, uncertainty about others' behavior and difficulty sharing information) that fuel teamwork related problems. Often, these problems go unresolved because physical distance and cultural diversity make it difficult for team members to speak up about problems or concerns. This is actually an issue that extends into the nature of a person's being and their desire to avoid controversial, frightening and uncomfortable moments. This fear can stem from past experiences, where speaking up resulted in negative consequences. It can also come about simply because one does not have the ability to communicate sensitive issues candidly and directly to the team. As a

result, crucial conversations do not take place and the team resorts to silent[7] and passive[8] coping strategies that can create feelings of contempt and verbal violence (Joseph Grenny, 2010). In the case of virtual teams, communication technology has exasperated the issue by limiting the opportunities for face-to-face interactions; therefore, hindering the development of social skills and language needed to communicate fearlessly and effectively.

Virtual Team leaders can encourage individuals to express their concerns, opinions and insight by fostering a psychologically safe communication climate. Research defines psychological safety as being able to employ one's self without fear of negative consequences to self-image, status or career (Cordery and Soo, 2008). It arises as team leaders show respect and appreciation for team member contributions, while actively listening to and suspending judgment on their ideas and perspectives. Psychological safety also requires that team leaders respond to errors and mistakes in a nonpunitive manner in order to promote risk taking and a learning atmosphere. Team leaders can also help promote psychological safety by ensuring that norms and expectations regarding communication and information sharing are clear and supportive of openness, respect and participation (Cordery and Soo, 2008). For example, team leaders should invest time upfront talking to the team about the process that they should use to address group and individual concerns. Team leaders can also create rules in regards to active listening and not being a deterrent when team members share their opinions and ideas with the group. Publicly praising those that follow the agreed upon norms and expectations will help facilitate the building of a psychologically safe

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[7] Silent behavior strategies include screening phone calls from remote colleagues, not returning calls or emails, leaving teams mates out of the loop on key decision or avoiding them all together (Joseph Grenny, 2010).

[8] Passive coping strategies include sacrificing precious time and resources to avoid uncomfortable moments and living with the consequences of poor productivity, morale and work environment (Joseph Grenny, 2010).

environment. In doing so, mitigate many of the potential process losses associated with virtual team working (Gibson and Gibbs, 2006).

ESTABLISHING RELATIONSHIPS AND TRUST

Trust is a critical factor in the development of knowledge sharing and motivation in virtual teams. Trust means placing yourself in a position of risk with the expectation that others will honor their commitments (Naish, 2004). Therefore, it develops in parallel with the formation of a psychologically safe communication climate. Without trust, individuals are less likely to share information and help each other, which can eventually reduce the team's productivity and performance. The problem that virtual teams have in developing trust is that they have limited opportunities for social contact. Research shows that team members rely on face-to-face interactions to make inferences about one another's knowledge (Gibson and Cohen, 2003). Face-to-face interactions also allow relationships to form naturally as individuals discuss common interests in the hallway, near the coffee machine or when they share meals together. Interaction and therefore interdependence is critical to the development of trust because it allows individuals to collect information about each other's benevolence, ability and integrity. All three of these factors play an important role in developing trusting relationships (Lojeski and Reilly, 2008). Virtual teams also face the challenge of cultural diversity (national, organizational or functional), which can create feelings of distrust and suspicion purely based on the basis of group membership (Gibson and Cohen, 2003). Therefore, virtual team leaders should strive to develop a common vision[9] of the team's mission and strategy, a team awareness of the cultural differences that exist, and develop norms and expectations regarding communication and information sharing.

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[9] Common vision means that the project team understands the goals of the project, what needs to be done, how it should be done and who needs to do it (Lojeski and Reilly, 2008).

Virtual team leaders can bridge distance and develop relations by designing activities that cause people to get to know each other. Kick off meetings provide this opportunity and preferably should be done face-to-face. There are varieties of activities that can take place during a kick-off meeting, but for virtual teams, four are of major importance (Nunamker, Reinig and Briggs, 2009). First, leaders should ensure that all team members understand what technology the team will use to communicate and that they can make it work successfully. Second, team leaders should encourage communication and agreement on the work processes, norms and expectations for the project. Third, team members should be aware of the roles and responsibilities of different group members. Team leaders should also establish specific action items for each team member and hold them accountable during the next scheduled meeting. This accountability helps to establish commitment to the team. The fourth goal is team building. This requires that team leaders create a comfortable environment where individuals can freely introduce and share something about themselves to team. Ice-breakers are great activities for achieving this goal. As the project kicks-off and progresses into the future, team leaders should continue to identify tasks or situations that require additional face-to-face meetings. This type of periodic interaction will help to sustain trust and solidify relationships (Nunamker, Reinig and Briggs, 2009).

CONFLICT MANAGEMENT

The distance that separates distributed teams and the technology mediation used to keep them connected can provoke high levels of conflict. Most types of conflict are disruptive to the performance of teams. However, research argues that task conflict is necessary for the successful functioning of teams (Hinds and Bailey, 2003; Gibson and Cohen, 2003). Reason being, it allows the team to consider different opinions, perspectives and alternatives with regards to the task. This diversity improves decision

quality and therefore, team performance (Gibson and Cohen, 2003). Gibson and Cohen argue that this positive relationship between task conflict and performance is not consistent for distribute teams. Geographical distance and their dependence on technology to communicate make it difficult to create the openness and collaboration needed to share complex information and build a shared understanding. In addition, research shows that task conflict can lead to affective conflict in distributed teams without trust (Gibson and Cohen, 2003). Affective conflict is characterized by anger, annoyance, or hostility that arises out of emotional disagreements (Hinds and Bailey, 2003). This lack of trust can cause team members to question other's intentions, work less cooperatively and make faulty attributions regarding the source of the disagreement. The reliance that distributed team members have on technology can cause affective conflict to go unrecognized for days or weeks because team members do not encounter each other regularly. This avoidance can cause affective conflict to manifest itself into process conflict as team members purposely exclude others from communications or refuse to reveal information that they uniquely hold (Hinds and Bailey, 2003). Process conflict includes disagreements over the tasks approach and resources. This uneven distribution of information can lead members to call into question the decisions and methods used by the team, which can create frustration and misplaced blame.

Conflict cannot be managed until it is noticed (Hinds and Bailey, 2003). Team leaders need to develop a sense of awareness in regards to distributed team conflict. Only then, can they can take the necessary preventative measures to mitigate the detrimental effects of distance and technology mediation. Gibson and Cohen recommend five preventative measures that team leaders should be aware of.

First, scheduling periodic face-to-face meeting can help to build interpersonal relationships within the team. This exposure to others allows team members to interact

and become familiar with individual personalities, concerns and work habits. In addition, research suggests that the mere presence of others increases attention and social impact, which can increase cooperation and individual involvement in group tasks (Kiesler and Cummings, 2002). Lojeski and Reilly (2008) argue that face-to-face meetings are most important when: the project first gets off the ground, there are major problems that need to be discussed openly, presenting major project deliverables, problems need to be brought to the customer and giving performance reviews and/or other career-related assessments.

Second, team leaders should encourage individuals to share contextual information. Different contexts may derive from and be revealed in different work and geographic environments, different technologies and different cultures (Hinds and Bailey, 2003). These differences can affect team member's behaviors and expectations of one another, which can create misunderstandings and conflict.   Therefore, team members should make a point to share information such as work environments, the weather, office politics and resources to help their teammates understand their context.

Third, team leaders can also create similar contexts at different sites through standardized work processes, procedures, tools and technologies.   This type of standardization can help align the different perspectives, expectations and norms that arise from contextual differences. For example, team leaders can create an e-mail etiquette guide so that members are aware of the dos and don'ts. They can also get agreement on when to use real-time versus asynchronous communications and what is considered a fair turnaround time for all types of communications.

Fourth, team leaders play an important role when selecting the technology infrastructure. They should ensure that it is sufficient to enable rich, reliable and rapid information sharing among team members. In addition, member's should be trained and

feel confident using the technology; otherwise, people may avoid using it, which can severely limit the flow of information among distance sites (Hinds and Bailey, 2003).

Lastly, Hinds and Bailey (2003) argue that distributed teams evolve over time and can adapt to technology or alter it to meet their needs. This dynamic process requires that team leaders coach and support team members so that they can develop high levels of knowledge regarding properties and functionalities of the technology. It is also important that members are aware of the limitations of technology. Only then, can they recognize the effects that technology has on relational outcomes. This recognition will allow team members to give each other the benefit of the doubt and avoid misattributions that can lead to conflict.

Chapter 5: Future of Virtual Teams

As discussed previously, technological advances have paved the way for the emergence of virtual teams. They have given companies a competitive advantage by allowing individuals to work together regardless of their physical or organizational location. Doing work this way, allows for a range of business benefits, including:

1. Worker talent not limited to one location

2. Increase in productivity

3. Global expansion of the marketplace

4. Reduction cost

It is also argued that working in a virtual teams increases job satisfaction (Marotta, 2006). One reason is because workers are have more control over their hours and are not forced into a 9-5 work day schedule. In addition, working virtually allows many workers to avoid the long commute associated with driving to and from work. This flexibility is thought to give workers more control over their tasks and projects. However, this 24/7 "always-on" culture has a human cost associated with it that companies did not anticipate. Always being accessible has caused the personal lives of many virtual workers to suffer because technology does not allow them to step away from their work lives. Workers are becoming overloaded as they can only integrate so much work activity into their everyday lives. Virtuality has also created an emotional detachment among virtual workers due to the decreasing levels of physical closeness. This lack of emotional connection has proven to prevent the formation of trust, cohesiveness and cooperation among team members (Lojeski and Reilly, 2008; Kiesler and Cummings, 2002). In addition, lack of knowledge on how to use and select the right technology to send the right message has frustrated and strained the virtual workforce. As a result,

people are starting to become increasingly less happy at work. A recent report released by the Conference Board in 2010 shows that on average, job dissatisfaction has been on the rise for more than two decades. There are many economic reasons that can be attributed to these results but one cannot ignore the rapid emergence of computers, the internet and technology since the 1900s and the impact it has had on our ability to adapt as a workforce.
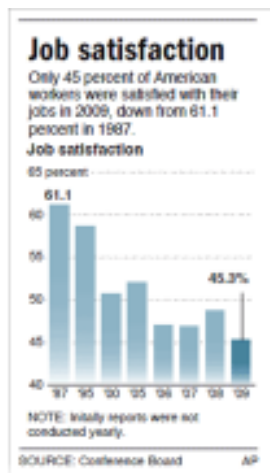
Job satisfaction

Only 45 percent of American workers were satisfied with their jobs in 2009, down from 61.1 percent in 1987.

Job satisfaction

65 percent

61.1

NOTE: Initially reports were not conducted yearly.

SOURCE: Conference Board   AP

Figure 4: US Job Satisfaction (Conference Board, 2010)

In 1965, Gordon Moore (Intel's cofounder) published a paper where he predicted that the number of transistors on a chip would double about every two years. This trend has proven accurate and is now used to guide long term planning and set targets for research and development in the semiconductor industry. Lojeski and Reilly (2008) argue that a similar trend can be observed in the advancements of technology mapped against time. Their theory builds off the book entitled "Five Epochs of Civilization" by William McGaughey, where he describes the five communication technologies that have profoundly changed society. These include:

- Writing in symbols (3000 B.C. to 500 B.C.)

- Alphabetic writing (500 B.C. to 1450 A.D.)

- Printing (1450 A.D. to 1920 A.D.)

- Electronic communication such as the radio, telephone, television (1920 A.D. to 1990 A.D.)

- Computers – (1990 A.D.)

It is obvious that technology is changing more rapidly with time. Lojeski and Reilly (2008) propose that in 1995, the sixth communication technology emerged as the internet become available to millions of people. Their point is that the speed of change is increasing so rapidly, that society's ability to adapt cannot keep up.

Gordon Moore also tied his predication to a cost curve. Figure 5: Costs and Curves, shows that the cost of developing a highly dense chip would eventually become too expensive due to rising defects and other quality issues. This would require the abandonment of the latest technology for a new and improved one. Lojeski and Reilly (2008) argue that Moore's cost curve chart can be used to understand virtual distance. They present Figure 6 as an analogous curve that shows the cost associated with maintaining human health and well being set against the ability of society to integrate technology and information into the workforce. Figure 6 shows the cost direction of human health and well being begins to dip downward as new technology is introduced and the ability to integrate it into the workforce increases. Examples of improved health and well being include: 1) scientific breakthroughs (e.g. drugs and environmental solutions) that would have been impossible to find without the use of technology and ideas from a distributed workforce, 2) reduction in cost associated with bringing people together for a common task, 3) flexible team structures that quickly respond to a rapidly changing competitive environment, and 4) the ability to harness the best talent regardless of location. However, at some point the effects of virtual distance kicks in and our ability

to deal with and manage the challenges it creates is not sufficient to maintain job satisfaction and performance. This lack of ability begins to drive the cost of human health and well being right back up.

Lojeski and Reilly (2008) argue that our society has already reached the lowest point on the virtual distance curve shown in Figure 6 with regards to several recent technologies. Reason being, the majority of companies are not prepared to manage a distributed workforce. They do not understand how distance and technology can affect human behavior and performance. Unfortunately, this lack of awareness will be costly now and into the future as technology continues to advance.

The model of virtual team effectives developed by Cordery and Soo (2008) is a road map for companies to begin to understand the complexities and challenges associated with virtual teams. This awareness is the first step to establishing the conditions that virtual teams need to be successful. The model also suggests several leadership practices that team leaders can use to mitigate the processes losses associated with virtual teams.
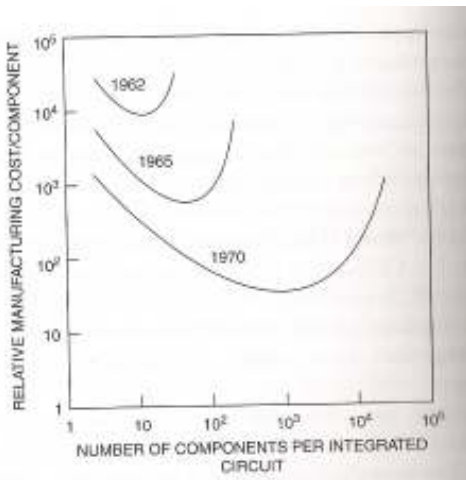

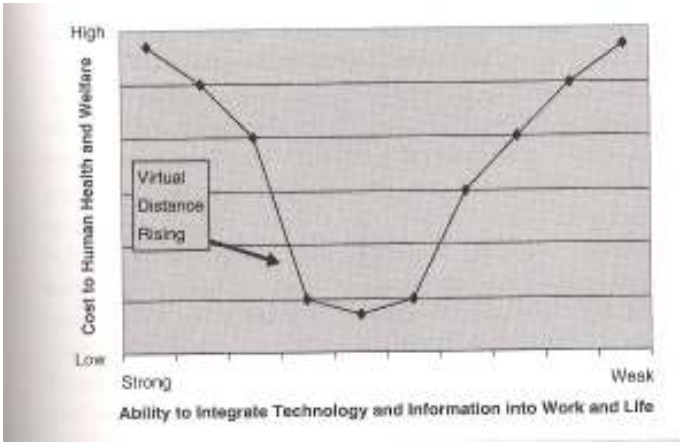Figure 5: Cost and Curves (Stokes, 2003)

Figure 6: Virtual Distance Rising (Lojeski and Reilly, 2008)

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