

Reflections on Virtual Team Development:
The Symbiotic Relationship of Leadership and Social Dynamics over a Decade

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Abstract

This study is one of the first to examine a virtual team and its socio-behavioral influences over a ten-year period. The trend towards geographically dispersed teams necessitates a deeper understanding of the issues that positively and negatively affect team cohesion. As a result of common challenges like misperceptions of behavior, corporate layoffs, lack of training, and hiring practices, virtual teams appear to be more prone to uncommon behavior. Since the unique psychosocial needs of these dispersed teams are not evident in traditional management education, it is imperative that human resource departments invest in virtual team development through the use of established research and training. This study provides useful insights into the experiences, challenges, and social behavior of individuals that participated in a long-term virtual team.

Reflections on Virtual Team Development: The Symbiotic Relationship of Leadership and Social Dynamics over a Decade

The increased popularity of virtual teams has produced the need for understanding their complex social dynamics. Since the two most common challenges within virtual teams are isolation and confusion, managers are on the search for solutions that create cultures rich in community and clarity (Brake, 2006). Additionally, these virtual communities must be able to regulate their own functionality despite internal and external chaos. In this case study, the social dynamics of a virtual team are examined over its ten-year life span. Strained by issues that impeded its ability to communicate clearly and function effectively, this team and its management struggled to overcome a lack of training and education, frequent reductions in the workforce, misperceptions in peer behavior, and insufficient methods for indoctrinating new team members. These areas are analyzed to reveal their impact on the team's social dynamic structure.

The virtual team concept started in the early 1990's when the technological advancement of unified communication and collaborative tools was in its infancy. To some managers, the concept of a functional and successful geographically dispersed team was more a product of fiction than reality (Gignac, 2004). Similarly, during those early years, several studies indicated that communities of individuals working at a distance from each other would represent a new organizational challenge (Handy, 1995; Pellecchia, 1998). These initial concerns were a foreshadowing of the challenges virtual organizations would eventually face.

As a result of the early problems experienced by many immature virtual organizations, the corporate adoption of remote workforces was initially slow. Managers had little research to benchmark their activities, and executive leaders interpreted team inadequacies as failures of the virtual concept. The unique needs of the virtual team were unknown, and managers were confined in their ability to address new and unique environmental challenges (DeSanctis & Pool, 1997). At that time, traditional paradigms were not meshing with the new virtual team concept. Martz and Shepherd (2004) asserted that the reason for this misalignment was primarily due to social cue deprivation. The lack of physical interaction between coworkers deprived the entire team of collaborative benefits.

As leaders struggled to develop best practices, their teams struggled to avoid dysfunctional behavior. With empirical studies only on self-directed virtual teams, manager-directed virtual teams tried to reach the same success of their traditional counterparts (Powell, Piccoli, & Ives, 2004). Their teams, unable to form stable relational work models, floundered in meeting their goals. However, as the millennium passed, more research on virtual teams and distributed management tactics offered solutions for collaboration and better opportunities for group cohesion (Jarvenpaa & Leidner, 1999; Lee-Kelley, 2002). Rather than focusing entirely on how to bring the team to a functional status, leaders began focusing on greater margins of success.

The addition of more robust virtual team technologies boosted available options (Block, 2003). The late 1990's brought web-based call center platforms, workgroup instant messaging, and comprehensive document / session sharing tools. Additionally, Voice over IP (VoIP) became a central offering to major companies in the United States; a user's phone number was no longer limited to their corporate office desk (Beranek & Martz, 2005). Virtual team members could now work from home, other offices, and even other countries with little perceptual impact

to the customer. These vast improvements over simple email communication revolutionized the capabilities of the virtual team. Virtual team managers now had tools at their disposal to sell and support products that typically were only plausible through face-to-face (FTF) meetings. However, technology was not the only core requirement for enabling a successful virtual environment.

Management and leadership research also expanded during this time to analyze organizational behavior and human behavior within virtual teams. Social dynamics research such as Douglas Stone's (1999) model, which discussed how individuals interpret intentions and actions, provided managers with perceptive approaches to compensate for the lack of visual cues experienced in virtual teams. In the relational and collaboration research area, Kayworth and Leidner (2001) produced a study that indicated the importance of mentoring and clear written communication skills as the signs of a successful virtual team leader. Other studies related to internal team behavior observed that interpersonal dynamics and support mechanisms within the virtual team were equally if not more important than the most advanced information technologies used for communication (Lurey & Raisinighani, 2001). Now that leaders had more focused resources to harness, virtual teams were no longer limited to traditional, centralized team research. The challenge was no longer a lack of data. Instead, the challenge was to create a level of collaboration and productivity that rivaled the experience of collocated teams amid a backdrop of rapid changes (Kerber & Buono, 2004).

Although research on virtual teamwork increased substantially during the late 1990's, theoretical development to guide this research was still lacking (DeRosa, Hantula, Kock, & D'Arcy, 2004). As a result, many leaders had enough research material to train their teams in proper collaborative behavior but not enough to explain all of the mysteries associated with managing virtual teams. Peter Vaill (1996) suggested that the complex and churning conditions in organizations "are taking us all out of our comfort zones and asking things of us that we never imagined would be required." By early 2000 the virtual team model, still outside the traditional management comfort zone, appeared to evolve from a radical and unsolvable enigma to a progressive and more-sustainable theoretical solution thanks to research of contemporary virtual team models. However, within operational virtual teams like the one evaluated in this study, the transformation from theory to practice exposed unforeseen challenges not addressed in contemporary research.

Methodology

Interview Narratives

The virtual team in this study was interviewed at yearly intervals from 1998 to 2009. Additional interviews were conducted during key events such as layoffs, team expansion, corporate restructuring, and external environmental incidents. Each interview collected a qualitative narrative from available team members and management. The primary method of inquiry was based on Argyris (1983) research of reasoning principles and action. This method was selected because it offered more participant reflection not only on the events that occurred but the reasoning and intent behind each individual's actions. It also revealed individual learning experiences as participants reflected on past events.

Over the lifetime of the study, there were a total of 14 virtual team members that participated. Individual workload, scheduled and unscheduled customer conference calls, technical training, and other administrative activities determined the availability of participants

for interviews. Over the course of this study, there were 43 narratives produced. Each narrative varied in length dependent upon the content, experiences, and events that occurred. The methods used to conduct the interview were phone calls, conference calls with up to two team members, email, and other online collaboration tools such as instant messaging.

The format of the narratives changed depending on whether or not the interview was a yearly recurring or a key event session. Yearly sessions often contained reflective narratives as individuals reviewed the previous year's events. In contrast, key event interviews resulted in more action-oriented narratives that often lacked introspective reflection. For example, an interview conducted immediately following a layoff produced more action-oriented detail as opposed to the same interview six or eight months later. Action-oriented narratives included more detail on the actions the individual observed and the actions they took, whereas the reflective narratives included more detail on the personal and professional meaning of the event to past, present, or future experiences. Interview questions were dependent on the type of interview session. However, the ideology of questioning was based on each individual describing events, reflecting on their perceptions to those events, and offering reasoning and insight into the meaning of these events to their personal and professional function within the team.

In each interview, the participants were asked to provide a reflective summary, in verbal or written form, of the events that most impacted their work environment. The participants were informed that opinions, overt reasoning, self-analysis, and critique were welcomed summary components. As a result, the participants' narratives took on a more personalized response to the inquiry.

Narratives were evaluated based on principles from Reason and Bradbury's (2001) dimensions of a participatory worldview. The use of this paradigm provided a context to not only evaluate participant's stories but also connect their statements to fundamental truisms about the environment they perceived. As each narrative produced more details about the virtual team's ecological form, its practical being and acting function, its meaning and purpose, and its extended epistemology, a clearer explanation of the team's participatory evolutionary reality in terms of its challenges became visible.

Limitations

The primary limitation to this methodology was the role of subjective bias. Due to the complex daily schedules of team members, and their inability to be offline at once, large group interviews were not possible. Consequently, many opportunities for collective negotiation and discourse were not able to be included in this study. Essentially, the dynamics of a collective assessment, which may have retraced an event more thoroughly, were unavailable. Instead, each narrative focused on the raw context of the individual. While there were benefits to this untainted stream of consciousness untouched by peer opinion, individual behavior traits were unavoidably transferred in with the interview content. These traits may have been less impacting on the individual's story if they were disseminated through the observational filters of peers. For example, an individual who believes that they should have been promoted to a higher position in the team may shape their narrative in the context that their peers were not qualified to adequately address a certain event. If the same individual voices their impressions of that event in front of their peers, the narrative may take a different tone. Since storytelling does not always occur in a vacuum, peers may validate, reject, or require us to accommodate our stories to theirs (Clandinin & Connelly, 2000; Rosenwald & Ochberg, 1992; Taylor, 2001). The lack of consistent peer input

resulted in narratives with a subjective context. This subjective context translated to a subjective narrative in the interview. As a result, multiple angles of narrative inquiry had to be reviewed on a single event to isolate common behavioral characteristics conducive for this study.

Virtual Team Historical Context

In contrast to ad hoc teams that form and disband dynamically, this team was built in 1998 with the long-term intention to harness geographically dispersed technical specialists into a single resource for corporate sales teams (virtual team manager, interview communication, August 13, 1998). For example, an account team in the field called a single toll-free number and was routed to an available technical resource. The underlying system behind this centralized call-center illusion was a web-based platform that monitored the availability of every technical agent. As account teams called the virtual team's phone number, the platform evaluated the number of calls an agent accepted since they logged on, their current status, and the amount of time they spent on the phone. The result was a real-time, sorted queue of the most available agents. The uniqueness of this system offered agents the ability to be located anywhere that the system could terminate a call.

Not only was the technology a breakthrough in gathering technical experts that were around the country, but it also meant that managers could report on the success of their workers quantitatively. Suddenly, executive leaders were receiving data on the productivity and success-rates of teams without having to filter through countless written reports looking for valuable information (virtual team manager, interview communication, January 15, 2003). Charts and graphs showed trending activity and were used to help scale the organization as more sales teams found the resource valuable.

The leaders of this virtual team realized a few years into a seemingly successful paradigm that the team was more than just a collection of resources. Without being able to visit them face-to-face frequently, managers had to develop new ways to handle conflict, troubleshoot process problems, establish effective disciplinary tactics, and motivate their employees (virtual team manager, interview communication, January 15, 2003). Suddenly, the vacuum of managing people came back into play, and its problems were unlike other traditional teams. These managers quickly became familiar with DeSanctis and Pool's (1997) observations that organizations that do not anticipate and address the unique challenges of the virtual team environment will quickly realize that these teams will fail to meet expectations.

Symbiotic and Social Behavior in Virtual Teams

Introduction

The core facility of a virtual team is its ability to negotiate and stabilize long and short-term functional abilities among geographically dispersed members for a common purpose. This ability is enabled through communication methods that bring contributors together that otherwise would not work together due to time, travel, and other restrictions (Kerber & Buono, 2004). However, as the management of the team in this study asserted in an early interview, there is much more to bringing individuals together for a common purpose than merely using a communication technology:

There is a sort of subliminal connection between everyone beyond the instant messenger status and conference calls that makes this [virtual team] work. It is built on assumptions

that we all want to do a good job, meet our objectives, and enjoy the benefits of working remote. I probably go overboard drilling this into the team, but the only way we can maintain this happy situation is to continually make executive management convinced that we are indispensable (virtual team manager, interview communication, January 14, 2003).

This manager's response is consistent with research of Bell and Koslowski (2002) where virtual team leaders must be more aggressive in creating structures that substitute traditional performance management and team performance functions, and they must be able to effectively distribute these functions to the team. Similar to Holten's (2001) conclusions that virtual environments should create avenues and opportunities for team members to have the level and depth of dialogue to create a shared future, the management of this team offered a consistent mantra about the communication and functions that kept the team successful:

He [manager] constantly reiterated to us that we must be a team that is honest, interacts professionally with others, reports performance accurately, and shows our clients that we can be counted on for the job we do. He used to say that if we keep this [performance] up, then he would continually be our advocate to upper management. We don't exist without each other. He needs us, and we need him (virtual team member, interview communication, November 6, 2006).

While the concept of symbiotic, or mutually beneficial, relationships is not unique to virtual teams, the manner in which the team depended on management and vice versa is worth noting. Additionally, the development of this symbiotic relationship and its affect on the team shows both benefits and challenges. In this study, the interview narratives were evaluated for the challenges that this relationship experienced from both internal and external forces. They were determined by their prominent appearance in interview narratives and their unique application to virtual teams. The areas that challenged social cohesion within this team were: (a) behavioral misperceptions, (b) layoffs and restructuring, (c) training, and (d) integration of new team members.

Misperceptions of Behavior

Many of the problems in the social dynamics of this team were evident when members discussed how they perceived their own contributions. Their perceptions were often based on interpretations of team performance statistics:

We have a system that allows us to see how many opportunities each of us is running at a given moment. I know the others won't admit it, but we all check each other's numbers to make sure we are similar. The guy with the fewest opportunities is always worried (virtual team member, interview communication, March 3, 2005).

Multiple team members admitted to this comparison behavior. The tracking system that was designed to inform management of individual activities was actually being used to gauge the perceived performance of others on the team. This comparative behavior among those in the team was a frequent problem despite attempts by management to quell concerns that one person was not working as hard as another. "We had some folks that may only work four or five intense accounts at a time whereas someone else may work thirty small accounts. My concern is not

quantity but quality” (virtual team manager, interview communication, March 10, 2005). Even though frequent messages from management reiterated this perspective, there appeared to be a deeper social element that drove this behavior. Since any team member could view the opportunity records of another team member, but had no way to determine the amount of effort required for that opportunity, an assumption was made that quantity represented quality by comparison. Each team member’s self-perception of effort was always reflected against their perception of the effort of others. Therefore, despite management’s consistent communication to the contrary, the team’s internally generated competitive dynamic was the primary driver for work effort.

This internal competitive behavior is represented in classical Social Impact Theory (SIT). SIT asserts that individuals perceive everyone as participants of social sourcing or social targeting, and their level of engagement is determined by these perceptions of the social climate (Latané, 1981):

We would watch each other pretty closely as others received accolades from management for a project they were working on or someone that would get a new certification. There is no doubt there was competition for attention. The frustrating thing was that no one knew about the upcoming accolade until it was announced. Then there would be frantic instant messages going out while the team call was going on asking, “Do you have that certification? Did you know he was working on that project? Why did he get assigned to that customer instead of me?” etc., etc. It was either that or just silence between us. Either way, everyone was still thinking it. (virtual team member, interview communication, September 20, 2007).

The managers of this team received no formal training on the role that psychological and psychosocial impacts can have on individual inner dialogues. Additionally, since this organization saw nearly an exponential increase in activity each year, management was mainly concerned about the team’s objectives relative to their business model. Since management’s attention was often diverted to problem resolution and strategy development, there was little time to maintain an acute awareness of individual needs:

Our managers always made it clear that their door was virtually open, and I think that most of us felt the ability to send an instant message or place a quick call if we needed anything. But we usually only pulled them in if there was a problem with a specific customer. I can’t recall asking for help with team issue. To my knowledge there were none (virtual team member, interview communication, November 15, 2004).

Management conveyed in their narratives that during this time they responded only to the squeaky wheel. If a worker was not communicating a problem or becoming a problem him or herself, then they would not have a proactive reason to reach out to them.

Debrand & Johnson (2008) asserted that while the use of on-line communications mediums provide a positive social impact, the lack of media richness and non-verbal cues often leads to miscommunication and the faulty establishment of trust relationships. Although there were no individual team member narratives that revealed distrust with management, there were elements of distrust between team members. “If you can’t see someone’s face, it is hard to read their intentions. For a while, we would follow-up emails with phone calls just to get that extra verbal

feedback, but it never replaced looking someone in the eye” (virtual team member, interview communication, November 15, 2004).

Other misperceptions in this team resulted from over-achievers. These individuals were evident by their abilities to exceed management expectations for typical team responsibilities and still show willingness and aptitude to take on other projects. The management challenge for these high performance workers was that while virtual work gave them freedom from a corporate office, it also naturally caused a level of invisibility:

I worked on just as many projects as the others and also took on outside support tasks that were beyond the expertise of anyone else on the team. Since there was no report for these special projects to executive management, only my local manager knew what I was doing. Sometimes he would remember how much I was doing, and sometimes he forgot. During the times he forgot, I got a little disheartened with the whole idea. (virtual team member, interview communication, January 18, 2002).

Since managers could not see all that the high-achievers were accomplishing, these workers often become disinterested with maintaining their levels of performance. They wouldn't take on new projects. Their social impact had been marginalized with the routine activity of the team. Consequently, there was often no equal compensation for the level of extra effort that fell outside normal team objectives (virtual team member, interview communication, January 18, 2002).

From a team interaction perspective, the ability to communicate and understand how to best work with the others on the team was a negotiated initiative. Over the course of ten years, the team did not receive any training, either corporate or management sponsored, on how to best work together in a virtual environment:

We work well together, and we communicate well. In comparison to many other traditional teams I have managed in the past, this group of technical people is the best I have ever had. As long as they are happy and doing their jobs at the level I need, then we are ten times more functional than similar non-virtual teams (virtual team manager, interview communication, January 22, 2004).

Virtual team managers provided no explanation as to why current research, education, or workshops were not included in the team's development.

Layoffs and Restructuring

The most distressing of all social issues impacting the team were corporate layoffs. “If the team were location-based, then we could all go out that evening for dinner as a way to grieve and rebuild. Virtual teams don't have that luxury. Everyone is frustrated and just hurts alone.” (virtual team manager, interview communication, January 11, 2005). Over the course of ten years, the team estimated that their parent department had been impacted by no less than nine layoffs (senior virtual team member, interview communication, February 1, 2008). On two occasions, the team lost four individuals. Managers reported that their virtual team experienced a significant reduction in morale for several weeks following each layoff. This survivor guilt behavior is not a new concept to organizations. However, from the narratives analyzed in this study, there appears to be distinct differences between the survivor guilt of a traditional team versus a virtual team. Although further research on this topic is required, the contrast appears to

exist in the way that virtual team members view their psychological contract with the organization.

Both Schein (1978) and Rousseau (1989) suggested via different methods that the psychological contract is a form of accepting that a promise has been made, a contribution has been offered, and therefore an obligation is generated. Since the brick and mortar of a corporate building do not often anchor the psychological contract of a virtual team member, they rely on communication and interaction to ensure that both sides of the contract are being satisfied. During a layoff, there is little communication or interaction until it is all over (senior virtual team member, interview communication, April 11, 2003). As a result, for those that remain employed in the virtual team, they go through a period of questioning the strength and validity of that contract. While other centralized organizations have team outings to rebuild cohesion, the virtual teams experience not only a form of grief but also isolation and despair. “With each layoff, I felt like we were all in a dark room, and then one or two of us would just disappear. There was not an abundance of hope around” (virtual team member, interview communication, January 14, 2004).

Managers of this virtual team had difficulty reunifying the team immediately following layoffs. Any emotional support they provided could only occur virtually via conference calls. The lack of physical support and validation caused brief discontinuity between management and the team:

The team was usually silent on these post mortem calls. Some may ask questions if another RIF [reduction in force] was planned. Others may ask if those that remained were working hard enough and meeting their numbers. Usually, I would give them the rest of the day off because we were all essentially mentally and emotionally useless to the company (virtual team manager, interview communication, April 1, 2009).

Because of the structural detachment fundamental to the virtual environment, the team was deprived from the social nourishment necessary to affirm self worth and team value:

I would like to say that a layoff eventually helped the team refocus and work much harder. However, it would take a month for us to regain our momentum. You know, we lost good friends and brilliant resources. Sometimes you might lose a guy that you think is even smarter than you are. It made you wonder how the choices were made (virtual team member, interview communication, January 23, 2009).

The social dynamic of this virtual team following a layoff revealed that survivors appear to follow, as defined in this study, a lowest common denominator (LCD) form of validation. This form of validation refers to an isolated individual experiencing a crisis that seeks out resources within the organization, no matter how remote or insignificant, for validation and satisfaction. One individual commented that he reached out to a peer that he never talked to for comfort following a layoff:

I had a few close friends that were laid off our team one year. I had to talk to someone about it and just didn't feel good about confiding in my manager. I dropped an instant message to one of my colleagues that I never really talk to. We chatted for an hour going over how bad the day was. I didn't know him well, but we were there for each other.

(virtual team interview, April 1, 2005).

Bozionelos (2001) contends that managers must ensure there is a coherent training strategy when preparing teams for downsizing as well as clear communication paths to improve morale of survivors. Management in this organization was often aware the day before layoffs occurred. However, no preparation training was conducted due to the corporate culture and organizational policies in place. It is unknown how downsize preparation training might have helped minimize discontinuity in this team. As a result, management and the team went through a time of grieving followed by a slow reengagement into the business model of the organization. “It always feels like a firing squad. Everyone knows that today is the day, and we all line up against the wall. It takes a few weeks to get over that” (virtual team member, interview communication, April 13, 2004).

Training Challenges

Training represented one of the greatest on-going concerns of individuals in this virtual team. The team’s focus on products within the corporate portfolio naturally required a vast expertise in technology to support customer applications. The greatest amount of funding available to any manager in their department was dedicated to training, technical certifications, and ongoing university education. However, there were no virtual team effectiveness training courses available within the corporate training catalog. Powell (et. al, 2004) assert that nearly any type of virtual teamwork training benefits a team. Whether the training is built around team building exercises (Kaiser, Tullar, & McKowen, 2000), using well-established communication methods (Jarvenpaa & Leidner, 1999), or collectively building technical resources (Sarker, Lau, & Sahay, 2001), all provide an opportunity for growing team connectedness.

Over ten years, the team received funding on three occasions to physically gather at a location for team-building activities. Due to limited travel budgets assigned to virtual teams in this organization, the funding that would have provided additional group meetings had been canceled at least two times. No explanation was provided as to why these team-building opportunities were denied. Some team members had been working together for over four years before meeting each other face-to-face, and some individuals joined and left the company before meeting any fellow team member (virtual team manager, interview communication, October 15, 2007).

Despite the lack of physical opportunities to connect face-to-face over the life of this team, there are other methods for individuals to grow in their awareness of effective virtual team behavior. For example, Chen, Sager, Corbitt, and Gardiner (2008) proposed in their virtual teamwork-training model that individuals could learn effective and ineffective practices within the context of Kolb’s (1984) learning cycle. Since teamwork can be experienced and summarized by others, instructors within the organization can give well-organized lectures, prescribe informative reading materials, and encourage students to engage in team discussion about the topic (Chen et. al, 2008). In response to inquiries about why this team never received materials, training, guidelines, or lectures on virtual team best practices, several team members summarized this apparent lack of informative resources by stating, “We never asked for any guidelines, and we never got them. We think we just adapted to the virtual world. We had a much harder time ramping up on technologies and products than we did on teamwork” (virtual team members, interview communication, August 14, 2007).

Integration of New Team Members

Similar to centralized or collocated teams, the interview process for this virtual team often included areas of evaluation such as aptitude, experience, education, and job-specific abilities. However, as late as 2008 when this team was disbanded, no formal questions highlighting the nuances of the virtual environment had been added to the interview process for this team. For ten years, over 40 people were interviewed and 17 people were hired (virtual team manager, interview communication, December 12, 2008). No one that was hired via this process was asked about previous virtual team experience or any issues they might have with seemingly isolative work environments:

Our management sent us ten people to interview for two virtual team slots. None of them had been on a virtual team before. We only asked them technical questions about the products and technology we support. We evaluated their fit for the technical part of the job - not for working on a team (senior virtual team member, interview communication, October 22, 2005).

Another nuance of virtual team hiring experience was the difference in observed behavior between new-hires from an internal sales branch versus outside the company. While resources hired from within the company provided more experience in company products, policies, and culture, these individuals tended to bring a branch-based, geographically centric mentality (virtual team manager, interview communication, January 21, 2009). The primary concern of these individuals entering the team was that they were often loyal to their locality. "Additions to the team from a branch often revealed their source of ego. Often these technical resources were swooned as well as hoarded by local account teams" (virtual team manager, interview communication, October 10, 2005). Once these individuals moved from their public office cubes to the privacy of their homes, they often went through a period of time of disillusionment because the business model of their new team disconnected them from local contact and local validation. A new-hire to the virtual team commented, "It took me about a six months to feel completely at home in the virtual job. It got better once my old branch stopped calling me direct" (virtual team new-hire, interview communication, April 14, 2004). By 2008, over 70% of the team had at one time been based in the branch, and over 90% of the individuals worked from home permanently (virtual team manager, interview communication, January 12, 2009).

Alternatively, individuals hired from outside the company knew that their learning effort was not just about the virtual team but also about the company in general. This learning mode seemed to offer a greater willingness for learning and a higher dedication to optimum performance. Rather than having a struggle with previous account teams, these individuals felt overwhelmed with product vernacular, corporate policies and procedures, and identifying with a new corporate brand (virtual team member, interview communication, January 17, 2006).

Another issue that was observed in this team was the struggle of new-hires to avoid isolationism. Since other teammates and their mentors were often busy on their own projects, these new members remained un-socialized in the team for months. From a social dynamic standpoint, these individuals quickly became myopic in their perspective of the team concept. Essentially, each new-hire suffered from a near-sighted vision of their role in the organization and what they were to contribute to the team as a whole (virtual team member, interview communication, August 16, 2007). Since others on the team were deeply entrenched in their own projects, new-hires from outside the company received little direct feedback in these early

weeks of employment. Later in the team's existence, this policy was changed; new-hires traveled to a mentor's physical location to receive on the job training.

Conclusion

The aim of this review was to gain a better understanding of the internal and external catalysts that shaped a virtual team's work environment and subsequently their social behavior over a ten-year period. The analysis of individual narratives obtained from 43 interviews throughout the existence of the team revealed that misperceptions of behavior, layoffs, lack of proper training resources, and integration of new members were key areas that negatively impacted social cohesion. Although the findings in this study reveal only a portion of the complex issues that impacted this virtual team, there are three meaningful conclusions that can be made.

The first conclusion from this study is that team cohesion benefitted from, but was not entirely dependent on, opportunities for face-to-face meetings. Over the lifetime of this team, corporate resources provided only three opportunities for face-to-face meetings. The lack of team building opportunities forced the team to adapt their relationships to more personal levels using whatever virtual methods were available:

In simple terms, they take care of each other as much as they compete against each other. They group together and buy gifts and flowers for big events in their lives: new births, deaths, marriages, etc. They congratulate each other on big sales wins and other company accomplishments. They actually care for each other (virtual team manager, interview communication, January 23, 2007).

The most compelling argument against the necessity for frequent face-to-face meetings came from management interviews where individuals stated that over time a virtual team could actually achieve deeper connectedness between team members than a traditional team (multiple virtual team managers, interview communications, August 14, 2008). Their reasoning for this assertion was that individuals that are geographically dispersed, having only a few methods to establish working relationships, seem to work harder at those relationships. The metaphor they used was based on the premise that a person with very poor vision had heightened ability in the other senses (virtual team manager, interview communication, August 14, 2008). Similarly, their argument was that a virtual worker that has no ability for visual cues would work harder to hone and develop tools of interaction available to him or her.

Additionally, the lack of visual cues creates a localized perception for the remote worker. Since the individual receives feedback via limited sources, which would otherwise exist in a collocated team, they often have a limited perception as to the performance level of others. This may create discontinuity within the team. However, this team's management asserts that this disconnection may actually foster a stronger dedication to quality work efforts and stronger attempts to develop relationships (virtual team manager, interview communication, August 14, 2008). While the argument for a lack of face-to-face time is valid, further research is required to determine if virtual teams develop deeper relationships than traditional counterparts because of a lack of visual cues.

The second conclusion from this study is that virtual teams can have a symbiotic relationship between its management and team members. For the team in this study, this

relationship was based on expectation more than interaction. Aside from occasional individual contact for specific projects, the only routine group-wide virtual meetings were carried out by weekly conference calls. During these calls, individuals had the opportunity to share concerns about sales opportunities, technical questions, and other administrative concerns (virtual team manager, interview communication, January 5, 2009). According to team member interviews, it was not the ability of the team to adapt to their environment that made them able to perform their duties. Instead, the driving force behind their stability in the organization was derived from the high standards of excellence imposed on the team by management (virtual team manager, interview communication, January 5, 2009). The tracking system that provided management with the ability to report on team performance was also used as the core component in worker evaluations. The use of this tool not only had the passive benefit of causing internal competition, but it also had the active benefit of motivating each worker to meet performance and quality objectives in their annual assessment. This self-perpetuating performance ability caused the team to always meet their yearly business objectives and ultimately sustain their existence over a decade (virtual team manager, interview communication, January 5, 2009).

The connectedness between manager and team member revealed a form of symbiotic social behavior at work. Team members knew that by showing good performance numbers, they would make their management satisfied. Management knew that by ensuring the continuation the virtual home office with limited after-hours work, the team would be satisfied. We maintained a stable equilibrium in this team by working hard for the same goals (virtual team manager, interview communication, January 5, 2009).

The final conclusion of this study is that virtual team education is not just for managers. At the time that the team was disbanded in 2008, the human resources department had not published internal training for virtual team members (virtual team manager, interview communication, December 17, 2008). The only training offered through the corporate training system was made up of two courses specific to management audiences only. Despite multiple inquiries, no explanation was provided as to why team member facing materials were not produced or offered by the organization. A possible explanation could be deduced that the management of the team was responsible for the role of educating the team and keeping them current on contemporary best practices. However, since there was no evidence of this type of behavior in team member interviews, the likelihood of that educational role is questionable. Alternatively, the team's management may have perceived the educational benefit of such training insignificant in comparison to the intense technology training that was required for each individual. The only response received from management on this issue was that the team was excelling at their maximum workload capacity. "Based on the metrics we were measuring, there appeared to be no higher step we needed to take" (management interview, interview communication, January 5, 2009).

Although a clear indicator of teamwork failure is the failure to meet performance objectives, there is the possibility of subtle failures that business metrics cannot capture. These failures might manifest themselves in misperceptions of peer behavior, the resiliency of socially weathering a layoff, or the social dynamics that contribute to the inclusion of new individuals joining the team. The role of social dynamics in virtual teams is a topic that needs further study. Specifically, management researchers and behaviorists should evaluate the impact that virtual team training has on new workers in a virtual environment. Organizations need to see a qualitative and quantitative benefit to training and educating not only managers but also those engulfed in symbiotic relationships that make up the virtual team.

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