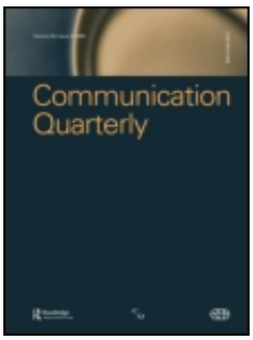

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''Communicate Through the Roof'': A Case Study Analysis of the Communicative Rules and Resources of an Effective Global Virtual Team

Muriel E. Scott

Challenges to effective collaboration are magnified when work teams are composed of geographically distributed members. Team members separated by time, distance, and culture often struggle with issues of trust, conflict, and potentially divisive subgroups. With global virtual teams becoming increasingly common in organizations, it is important to understand how to minimize such interactional difficulties. This study examines rules and resources that members of a corporate global team draw on to structure their interactions. In this case study, team members draw on highly ritualized actions prescribed by their software development process and their enacted values to mitigate their communication challenges.

Keywords: Organizational Communication; Small Group; Structuration Theory; Teamwork

Global virtual teams (GVTs) have become commonplace within corporations (Connaughton & Shuffler, 2007; Dekker, Rutte, & Van Den Berg, 2008), with an accompanied increase in the complexities and challenges of work team interactions. When team members are separated by distance, time, and culture, they often experience difficulties in developing trusting relationships and negotiating conflict (English-Lueck, Darrah, & Saveri, 2002; Hinds & Mortensen, 2005). Formation of divisive subgroups based on geography is likely (Cramton & Hinds, 2005). Most

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research into GVT interaction has looked at identifying and understanding communicative problems that occur within GVTs (Cramton, 2001; English-Lueck et al., 2002; Hinds & Mortensen, 2005; Newell, David, & Chand, 2007). Also, the preponderance of existing research about globally distributed teams has involved teams constituted especially for the purpose of conducting research and that are temporary in nature (Connaughton & Shuffler, 2007). The scarcity of real-world GVTs in previous studies and the focus on problems leave a gap of knowledge about how some GVTs succeed, despite the challenges they face. The purpose of this study is to understand how members of an existing, corporate GVT structure their interactions in such a way as to enhance their effectiveness together.

Characteristics of Effective Teams and GVTs

The word *team* is often used imprecisely in organizations, referring to everything from a department to top management. For this study, a team is defined as "a small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach, for which they hold themselves accountable" (Dubrin, 1998, p. 218). Interdependence and shared goals are needed for co-workers to function as a team. Team members work on common tasks, with joint accountabilities and a common goal. They must coordinate their activities, share knowledge and participate in joint decision making.

Not all teams function effectively—with high levels of productivity and low levels of disruptive conflict—but the ones that do tend to share three characteristics: a clear goal, competent team members, and established standards of excellence (Larson & LaFasto, 1989). On the other hand, ineffective teams have been found to lack unified commitment to the team and mission, external support and recognition, and good collaboration.

A GVT has distinctive characteristics when compared with a co-located team. Team members work interdependently, but are located far from each other, not just across the country, but around the world. That means different languages and cultures play a role in team processes. Distance makes face-to-face communication rare among such team members, so team members rely on communication technologies, such as e-mail, telephone, instant messaging, wikis, and videoconferencing for interaction (Dekker et al., 2008; Kiesler & Cummings, 2002).

Advantages of GVTs

Geographically dispersed teams are so common in organizations that some scholars refer to them as "the norm for businesses and governments around the world" (Connaughton & Shuffler, 2007, p. 388). Such teams are able to exist because technological advances enable team members to communicate and collaborate. The benefits of GVTs include being able to put the right people on the team no matter where they are located in the world. This can provide financial benefits to the U.S.-based

organization because some resources, such as software engineers, are currently available at less cost in countries other than the United States. Another advantage of having team members located around the world is that it gives companies the ability to be closer to local markets, and to be better able to understand and respond locally within an overall global market (Zakaria, Amelinckx, & Wilemon, 2004). The diversity offered by GVTs can also be an advantage. Varied backgrounds within a team allow multiple perspectives to be brought to bear on problem solving, often leading to greater innovation and creativity (Zakaria et al., 2004).

Challenges of GVTs

The characteristics that define GVTs—separation by distance, time, and culture—are the same characteristics that complicate working together. Research has shown that these challenges can lead to mistrust and conflict within a team (Cramton, 2001; English-Lueck et al., 2002; Newell et al., 2007).

Being in the same room as another person enhances cooperation, collaboration and teamwork because face-to-face communication is the richest and best form of communication for establishing relationships and trust (Kiesler & Cummings, 2002). When team members are in close proximity, they cooperate better, conform to group norms better, have greater concern for what others think, have greater trust in each other, and have greater group identity and commitment (Connaughton & Daly, 2004; Newell et al., 2007; Kiesler & Cummings, 2002). English-Lueck et al. (2002) noted that "interdependent high-tech work, often using technologically-mediated communication, requires a high degree of trust" (p. 90), which facilitates knowledge sharing among team members. Conflicts between members of a GVT tend to be more severe, lasting longer and being harder to resolve than conflict between members of a co-located team (Hinds & Mortensen, 2005). Research suggests that geographic distribution can lead to greater conflict, due to less sharing of information and less development of interpersonal relationships. Distance adds time to decision making, and "when miscommunication and misunderstandings occur, stress and conflicts among team members are heightened and less easily dispelled" (Zakaria et al., 2004, p. 25). Research suggests that distributed team members who share a strong identity and context, and who participate in spontaneous communication will have less conflict and will cooperate more with each other (Hinds & Mortensen, 2005). Geographic distribution can split a team into competitive subgroups, fostering an "us versus them" mind-set, and leading to a lack of sharing of information and conflict (Cramton & Hinds, 2005). Several effects can moderate the problems caused by geographic distribution of team members, including ensuring equal status between the groups and leveling the playing field by providing equal access to knowledge and equal opportunities to contribute (Cramton & Hinds, 2005). Although this point sounds simple, when co-located team members interact spontaneously and informally, it can be difficult to remember to share all such exchanges of information with distant members.

Because GVT members live and work in different time zones, time can become a source of problems. It becomes difficult to plan meetings, coordinate activities or even just pick up the phone and talk when team members work in different time zones (O'Leary & Cummings, 2007). Time can be a visible power issue that is played out when deciding on whose time schedule meetings are held, and whose workday hours are shifted to enable a temporal overlap for team members. How those issues are negotiated within a distributed team can play a role in member status and empowerment of team members to participate fully and equally.

Team members from different cultural backgrounds may come to the team with differing assumptions of how to approach relationships, leadership, and decision making, which can lead to conflict (Janssens & Brett, 2006). Variations in language and how language is used can also be a factor in equality, in feeling comfortable expressing ideas, and in levels of trust (Zaidman, 2001). Also, in multicultural teams, there can be a tendency for one culture to dominate, with the result being that members have unequal power status, feel uncomfortable fully participating and have stronger feelings of "them" and "us" (Cramton & Hinds, 2005).

Structuration Theory as a Framework for Studying GVTs

Structuration theory, as developed by Anthony Giddens (1984), offers a useful theoretical framework for gaining a deeper understanding of how GVT members interact and work together effectively. The theory describes how actors create and recreate social systems by drawing on rules and resources. Rules are routines that guide people's actions, such as meetings or processes, whereas resources are things that people use in interactions, such as technology, their knowledge, or their values (Poole & McPhee, 2005). Although structure is created through member interaction, it also influences future patterns of communication. The theory has been used by many organizational communication scholars who endeavor to understand group interactions by analyzing the structure of those interactions (e.g., Kirby & Krone, 2002; Scott, Corman, & Cheney, 1998; Walsham, 2002). When studying structuration, researchers may look for instances such as social routines, traditions, norms of social conduct, shared meanings, consensus, procedures and habitual activities (Giddens, 1984; Browning, Beyer, & Shetler, 1995; Hardcastle, Usher, & Holmes, 2005; Kirby & Krone, 2002; Riley, 1983).

Structuration theory also proposes that members of a group possess agency (Poole & McPhee, 2005). This refers to the ability that individuals have to be self-reflexive or aware of decisions that they are making and to the freedom that they have to act in ways that may be contrary to the group's rules. Through agency, individuals are able to adapt structure to meet their needs (DeSanctis & Poole, 1994). Structuration theory also acknowledges that individuals are knowledgeable, and are able to talk about what they do and why they do it (Giddens, 1984).

In this study, aspects of structuration theory will be used as a framework to understand how members of a GVT interact in ways that enable them to work together

effectively, although they are far apart. Specifically, this study draws on the aspect of structuration theory that describes the use of rules and resources to create structure. Through interviews with team members, this study focuses mainly on the discursive level of consciousness, which Giddens (1984) described as those actions for which team members can provide accounts.

Given the previously identified challenges of GVT collaboration, such as mistrust and conflict, a structurational perspective suggests that members of an effective team enact rules and resources in their interactions that enable them to overcome these challenges. Thus, using structuration theory to examine the interactions of GVT members allows us to more deeply understand how members interact and what values shape those interactions. Structuration theory provides a framework to analyze data collected during observations of a GVT during a planning meeting and post-meeting interviews in which members talked about the meeting and how they work together more generally.

The preponderance of previous research has relied on academic geographically dispersed teams or temporarily organized GVTs to gather data (Connaughton & Shuffler, 2007). However, the dynamics of a team that is more permanent and would suffer more negative consequences for ineffective interactions and negative conflict makes this study an important source of data. Also, previous research has relied heavily on survey and self-reporting measures. By combining observation with semi-structured interviews, this study asks members of an existing, corporate GVT to provide accounts of their social experiences and perspectives. Having the opportunity to observe a corporate team in action provides valuable, real-world data to increase our understanding. Therefore, this study focused on a single organization, a single GVT, asking two research questions:

RQ1: What communicative rules do GVT members draw on to be effective as a team?
RQ2: What communicative resources do GVT members draw on to be effective as a team?

Method

Research Setting, Participants, and Data Collection

This study is an in-depth look at one particular GVT to gain an understanding of how these members interact effectively. This team is of interest because it has been identified by managers within the company and by the team members themselves as a global virtual team that is productive and effective in its interactions. Specifically, the team meets its software development deadlines, has a high level of productivity, and its team members interact without negative conflict. The value of this case study is in exploring how this team has learned to work together well, despite the challenges they face in working together while situated so far from each other and while having never met face to face. Such a case study offers not only the added knowledge from studying this noteworthy individual case, but also the additional value of "suggesting complexities for further investigation" (Stake, 2005, p. 460).

Research Setting

Software Tech is the pseudonym of a software development company headquartered in a small city in the Northeastern United States. Software Tech employs several hundred people located around the world. The company has a highly educated, strongly self-motivated workforce that sets high work standards for themselves. The company was selected for this study because it has multiple GVTs, with a growing center of developers in its India office. The developers in India are not outsourced contractors, but are full employees of the company. Access was gained by approaching a senior vice president, who granted approval for the research.

Participants

The team that I observed is named after its India-based project manager, and for the purposes of this study is referred to as Team Amit. Team members were all located in India when it was formed in 2007, but a reorganization about six months later placed two employees located in the United States on Team Amit. At the time of the observation, six members of Team Amit were co-located in India, whereas the other two were co-located in the company's U.S. headquarters. None of the team members had ever met the members at the other location face to face. The team works under self-management, using an adaptation of a software project management process called Scrum. Team Amit is one of two teams that work on the same software product and that both report to a common team manager in headquarters. The other team is referred to here as Team Jared, named after its U.S.-based project manager, and all of its members are located at the company's headquarters.

Data Collection

To gain an understanding about how members of an effective GVT structure their interactions, this study combines observation with interviews, followed by a thematic analysis process. Observation is a good way to understand a phenomenon by "providing direct access to what people do as well as what they say they do" (Green & Thorogood, 2009, p. 148). By combining observation with interviews, the researcher is able to verify and validate data that has been collected through observation (Lindlof & Taylor, 2002). In this study, I first talked with the team manager to identify a meeting that would provide observational opportunities of team interactions. I observed the selected team meeting and then interviewed members of the team to hear them describe in their own words the specific observed interactions, and the rules and resources that they draw on in their interactions.

Observation. The meeting that I observed was a 3-hr planning meeting. Such meetings normally occur monthly to plan the work that will take place over the next four weeks. The meeting took place by videoconference, using computer-mediated

conferencing technology with video cameras, telephone and shared computer applications. Team members in India gathered in a conference room at their office location in India, and the U.S.-based members gathered in a conference room at the company's headquarters facility. I joined the meeting at the U.S. location, along with several other stakeholders. These stakeholders included the product owner who is responsible for establishing direction and needs for the product, the project manager of Team Jared, a technical writer who works for both teams, and the overall manager of both teams. Observing the team meeting allowed me to directly see how team members interacted and how they drew on rules and resources for those interactions. I took field notes during the observation, which was audiotaped and transcribed in its entirety.

Interviews. Following the team observation and an initial analysis of the data gathered during the observation, I interviewed five team members, three located in India and two located in the United States. The team manager was also interviewed. Interviews involved semi-structured, open-ended questions. Data from the planning meeting observation were preliminarily analyzed to develop questions for the interviews. Team members were asked to describe and explain in their own words interactions of the team, particularly practices that I observed. Interviews allow people to talk about their experiences in their own words and are "well suited to understand the social actor's experience and perspective" (Lindlof & Taylor, 2002, p. 173). Questions included gathering specifics about the purpose and structure of meetings, as well as organizational rituals and other behaviors that were observed during the team meeting. The interviews in the United States took place face to face, whereas the interviews with the India team members took place using video cameras and telephones. All interviews were audiotaped and transcribed in their entirety.

Data Analysis

To analyze the data that were collected through observation and interviews, I turned to thematic analysis, which involves analyzing the data to identify recurring or common themes (Green & Thorogood, 2009; Lindlof & Taylor, 2002). The process began with open coding of both interview and observation transcripts and field notes. Through further analysis of the codes and comparisons of the interviews with each other and with observation data, broad themes emerged, which were identified and coded. These themes were then refined and organized into patterns that merged into overarching themes. The raw data, themes, patterns, and overarching themes were reviewed and discussed in depth with a second researcher to provide triangulation of the findings and enhance the accuracy of the findings (Lindlof & Taylor, 2002). Also, an early draft of the research report was shared with a key informant from Software Tech, who reviewed the findings and confirmed their accuracy (Creswell, 2009). The study methods and interview guides were reviewed and approved by the University at Albany's institutional review board.

Findings and Interpretations

RQ1 asked what communicative rules the GVT members were drawing on that enabled them to work together effectively. The observed planning meeting abounded with structural rules, including routinized behaviors and formalized guidelines for action. In discussing the meeting and other team interactions, team members explained what I observed and provided context for the observations. The main rule that team members were observed drawing on to facilitate their interactions was their software development process, called Scrum, which is composed of many shared organizational rituals. *RQ2* asked what communicative resources the GVT members were drawing on that enabled them to work together effectively. Both the observation and interviews indicated that GVT members enacted shared principles or values that contributed to team effectiveness. These shared values—"communicate through the roof," "we are one team," and "meeting them halfway"—were articulated by team members as discursive resources that they draw on to direct their behavior and to make sense of their interactions. Scrum supports enactment of these values by providing a framework within which the members can enact them.

The Rules: Scrum and Other Shared Rituals

The key rule that team members drew on to structure their interaction was the software development process called Scrum, and the routinized activities or rituals that are part of Scrum. Composed of a routinized series of meetings and other interactions, Scrum is an iterative type of software development process termed "agile" because it allows a team to quickly make adjustments as needed in the work plan (Paasivaara, Durasiewicz, & Lassenius, 2008). Team Amit members explained that work is divided up into "sprints," usually a four-week period of time during which they tackle a specific set of work tasks that they have all agreed on. At the end of each sprint, team members demonstrate their work to the product owner, reflect on what worked and what did not work during the sprint, and plan for the next sprint. This process encourages and supports frequent communication and collaboration while allowing for frequent adjustments in the work plan. One member of the sprint team is called the Scrum Master and has the responsibility to act as project manager, leading the planning and development work. Several members of the team have been formally trained in Scrum processes.

Agile processes such as Scrum have not traditionally been thought of as an optimal approach for GVTs (Paasivaara et al., 2008). Because Scrum requires frequent feedback and communication, the process has typically been considered better for team members who work in close proximity (Berczuk, 2007). The intense collaboration and frequent iterations of Scrum processes tend to have greater success with face-to-face interaction and frequent communication. When team members are separated by distance, communication feedback loops are longer, increasing the risk that problems will develop (Berczuk, 2007). However, Team Amit members adapted the traditional format of Scrum to meet their long-distance needs. For example, Team Amit

combines the retrospective meeting with the sprint planning meeting—meetings that are normally held separately—to accommodate time differences between the two sites and to take advantage of a small window of overlap during the sites' normal workdays.

Shared organizational rituals serve an important function in turning far-flung workers into an effective team. Ritual is thought of in an organizational setting as "a rule-governed activity of a symbolic character which draws the attention of participants to objects of thought and feeling which they hold to be of special significance" (Lukes, 1975, p. 291). Kunda (1992) described rituals as collective behaviors that function to integrate team members "by reaffirming those understandings and intensifying those emotions that create group solidarity" (p. 257). Such rituals enable team members to participate together in expected behaviors and interaction, mitigating conflict and trust challenges. Organizational rituals provide structure that informs members' behavior, telling them what to do and why they should do it.

Within the Scrum process, multiple rituals structure team interactions. As mentioned previously, Scrum calls for frequent, repeated meetings and frequent communication. Through the repeated ritual of meetings, members know their roles and what is expected of them. The regularity of the meetings and repeated rituals within the meetings provide familiarity to team members. As previous scholars have suggested, communicative challenges created by distance, time, and culture can threaten the development of trust within a GVT and increase the risk of conflict and unhealthy subgroup dynamics. However, members of the studied GVT drew on numerous rituals in the Scrum process, which provide a solid foundation to anchor effective interactions. The process provides team members with clearly stated and communicated team goals—one of the key characteristics of effective teams (Larson & LaFasto, 1989). It also provides a structure for close collaboration through frequent communication and an iterative approach that calls for tight integration of work tasks. The unfamiliarity and awkwardness of working with people one has never met can be significantly mitigated when familiar expectations are repeatedly enacted in the same way.

Sprint Planning Meeting

Within the Scrum process, meetings happen at regular times and for specific reasons. Members of Team Amit know that every day there will be a stand-up meeting, which is a brief opportunity for team members to interact each day via video conferencing. Every four weeks, there will be a sprint planning meeting that begins with a retrospective look at the previous sprint, then turns to planning the work for the next four-week sprint. The Scrum process provides members of the Team Amit GVT with a structure that enables them, as strangers, to work together effectively, despite being separated by distance, time, and culture.

As is typical for this team, the observed sprint planning meeting took place with all team members meeting by videoconference to discuss and plan the work for the next four weeks. The six team members located in India gathered at 3:30 p.m. local time in a conference room there. The other two team members were joined by other

stakeholders (previously described) at 6 a.m. local time in a conference room at the company's headquarters in the United States. The team spent about 3 hr negotiating work tasks for the next four weeks, discussing who will handle what tasks and what problems they anticipate. Amit, the Scrum Master, who is located in India, called the sprint planning meeting to review the previous sprint and to plan for the next sprint:

> Amit: "We'll be starting with a retrospective of the ninth sprint. So we all have to say something about the last sprint, what went good and what went wrong, so we can improve all upcoming sprints."

As part of the ritual for starting the sprint planning meeting, Amit reminded the team—perhaps unnecessarily because this is the ninth time they have done this—that all members will participate. Each team member then provided his or her thoughts about the past sprint.

The regularity and repetitiousness of the planning meeting begins with the fact that the meeting was expected. In describing the Scrum process in a later interview, Team Manager Ron commented, "That meeting is going to happen at the beginning of every sprint. You can say that he [Amit] called that meeting, but everyone knew that it was going to happen." Ron shed light on a tension that exists within the Scrum process—team members are both enabled by the process and at the same time restricted by the process. Scrum Master Amit is charged with calling and running meetings. However, his role is somewhat constrained by the fact that the Scrum process is highly structured. The timing of meetings and even the agendas are routinized. In the observed meeting, team members followed the same agenda that they have used for every previous sprint planning meeting, and will use for subsequent planning meetings. The agenda was displayed on the video screen for all members to view, and the team followed it precisely.

Such regularity and predictability enable these strangers to better know what is expected of them. By operating within this structure, the team members engage in activities that make them a team—coordinating their activities, working on tasks in common, and working toward a common goal (Dubrin, 1998). For example, the team negotiated the amount of work (or points) that the team will take on for the next sprint:

> James (U.S.-based team member): "My thought was to still take a run at the 12 [points] . . . . I thought it was worth trying. But that's just my thought."
>
> Amit: "We want to give it a try. Now we are more in numbers, so yeah, let's give it a try."

In this excerpt, the team is discussing how much work to take on for the next four-week period. The work is measured in points. One team member, based in the United States, suggests that the team take on 12 points worth of work. Amit, the Scrum Master in India, agrees, adding that because the team has recently added a new member ("Now we are more in numbers . . . "), the more ambitious workload would be possible. The members all engaged in discussion and planning activities. Tasks are discussed and work plans are negotiated with little apparent tension or

conflict. The meeting was conducted in English, which is spoken as the second language of the Indian team members. Despite this, conversation flowed easily between team members in both India and the United States as they discussed, weighed, and agreed on the amount of work to take on. Consistency in meeting content and known expectations would benefit individuals working in their second language.

Fist of Five Ritual

The observed sprint planning meeting ended with another ritual, the Fist of Five, which is intended to elicit communication from all members:

> Amit: "OK, the most important part. Can we commit to this work as a team? Now we have only one minute left and everyone has to show their five fingers." (All members laughed, and obviously knew what was going to happen next. Then, the U.S.-based members and stakeholders raised a number of fingers on one hand . . . 4, 3, 3, 5. At nearly the same time, the members in India showed their fingers, each raising four fingers. Everyone looks around the room and at the video monitors to see how many fingers each member displayed).
> James (U.S.-based team member): "So we're committed."

Team members explained this meeting ending ritual, called the "Fist of Five." All team members simultaneously raise from one to five fingers, indicating their level of commitment to their plan for the upcoming sprint. The Fist of Five is done "in order to start a conversation if there is concern," explained Doug, a U.S.-based team member. If team members show three, four or five fingers, it signifies that they are committed to going ahead with the plan. If a team member shows one or two fingers, it is a signal that the member sees a problem going forward. It forces a discussion. Team Manager Ron explained, "The idea behind the Fist of Five is that everybody votes all at once so you aren't colored by other peoples' votes. You don't want people who don't want to commit to be bullied by people who do." With the Fist of Five, if a person does not agree with the plan, he or she could vote and not be overly influenced by others. In theory, the Fist of Five ritual allows everyone to vote how they feel and to have equal voting status. The Fist of Five ritual did not originate with Scrum. It is a ritual that had been used previously by team members when they were part of other teams in the company and brought into the Scrum process. The Fist of Five ritual helps counter conformity pressures and Groupthink (Janis, 1982), and reflects the team members' value of equal participation, a value that will be discussed later in this article.

The rituals that the team members participate in give a sense of membership and identification to Team Amit members. Just knowing what a Fist of Five ritual is and being able to explain it to others creates a sense of identity and belonging to the group. Such rituals provide shared understanding and context that help distributed team members mitigate potential conflict (Hinds & Bailey, 2003).

The Resources: Shared Values

During the sprint planning meeting, resources were observed being used by the team members to structure and guide their interactions. These resources were the values that were implicit during the observation and then explicitly discussed by team members in the interviews. Specifically, the observed and discussed resources were the encouragement to "communicate through the roof," to embrace the concept that "we are one team," and to demonstrate respect and accommodation by "meeting them halfway."

"Communicate Through the Roof"

Throughout the sprint planning meeting, rituals were enacted that encouraged all members to speak and be heard. For example, during the retrospective portion of the meeting, each member was asked to express his or her thoughts about what worked and what didn't work during the previous sprint. Amit reminded the team, "We all have to say something about the last sprint." There is not just an opportunity to say something in this meeting, members understand that there is an expectation that they will participate. Despite the fact that team members are separated by thousands of miles and have only a few overlapping hours in their workdays, Team Amit members communicate frequently. The Scrum process itself encourages frequent communication. "Communication is through the roof with Scrum," Team Manager Ron explained. The observed meeting was held via video conferencing technology, which supports richer and more open communication than telephone conferencing. Previously, under a more traditional development process, people would receive assignments, work independently, and come back together when they were finished, resulting in less communication and interaction.

In addition to the observed sprint planning meeting, team members talked about another type of regular meeting that requires all members to participate—the daily stand-up meeting. Every day, in the early morning in the United States and at the end of the workday in India, the team comes together for a brief meeting. Team Manager Ron explains the stand-up meeting:

> Ron: "Everyone knows they're going to have this stand-up meeting every day. And everybody says what they did yesterday and what they're going to do today and what their impediments are. We literally stand up; we just go around; it takes like maybe 10, 15 minutes. It keeps communication very steady, and progress is communicated at very small increments."

These short, daily meetings enhance communication and provide a coordination mechanism for getting work done. Again, the expectation is that everyone will contribute to the stand-up meeting. Everyone knows their roles. Doug, a team member based in the United States, said that the daily stand-up meeting encourages the feeling of one team "because everybody has to speak."

With the Scrum process, the frequency and regularity of meetings result in on-going communication opportunities. Ron explained that with Scrum, "It's very easy to stay in touch with people and in sync with what they are doing. Since

communication is usually the number one problem with remote teams of any kind, this really helps to plug that gap. It keeps everyone talking together.'' Amit agreed: ''The interaction would be less because you are so far apart, but Scrum helps overcome that because it forces the interaction with the meetings.''

Ron said that he believes in as much communication among team members as possible and would prefer to have them spend face-to-face time together so they could get to know each other as real people and not just faces and voices on the screen and on the telephone. However, budget constraints prohibit that, so Ron promotes frequent communication by using video cameras in combination with telephone calls. Video conferencing, which is as close to face-to-face communication as is technically possible, has been cited as the most promising mediated communication method for developing shared understanding because it enables more social cues to be conveyed and for understanding to be visually evaluated by the participants (Hinds & Weisband, 2003). Ron has purchased video cameras for everyone on Team Amit and encourages the team to use them all the time, as he does, noting, ''Every communication that I have with them [team members in India] is by video. Everything is video. Video 100 percent of the time all the time, even for the most innocuous meeting. It's just better.''

The frequency of communication opportunities, plus the use of video conferencing for as rich of communication as possible, helps bridge the distance between members and helps mitigate potential problems with trust and conflict.

''We Are One Team''

The concept ''we are one team'' was both implicitly observed in the planning meeting and explicitly articulated by both the team manager and team members as a value that they enact. Team members frequently used the pronoun *we* in referring to the entire team, indicating a strong team identity. Team members also all actively engaged in the planning discussions, problem solving, decision making and negotiations, exemplifying a collaborative one-team approach to working together. Participation by all members was encouraged, and everyone was asked to provide opinions. In several instances, each team member was asked in turn to speak during the meeting.

During the planning meeting, James said, ''I'm really happy with how we're all continuing to work together, helping each other out, acting as one big team where we're all able to jump in and do what needs to be done at whatever point in time.'' In the subsequent interviews, the concept of one team was explicitly articulated by several team members and the team manager:

> ''It isn't like there's like an A team and a B team. It's just one team.'' (Ron, team manager)
> ''We are here, working as one team.'' (Amit, Scrum Master, located in India)
> ''We have to be one team. If we're going to be successful . . . we need there to not be any sort of distinction between our people, their people, whatever. We are one team with x-number of resources.'' (James, U.S.-based team member)

To reduce negative subgroup dynamics and enable team members to embody the one team concept, the playing field must be level for team members, with equal status

and a balance of power between the two work locations (Cramton & Hinds, 2005). Each individual needs to feel that they are indeed an equal, valued, contributing member of the team, no matter where they are located. The feeling of a level playing field starts with the team name. Team Amit is named after the Scrum Master, who is located in India and not in the U.S. headquarters. The position of Scrum Master is a resource of power that the team manager can allocate. Team members in the United States already have a power source by being co-located with headquarters administrative resources. By locating the position of Scrum Master in India, the team manager helps balance the power between the two locations.

Team Manager Ron influences the team to adopt the "we are one team" value when he articulates the expectation that all team members should be equally contributing members. He said that he holds all team members accountable for the quality of the product, stating that no matter where they are located, everyone has to "have the same responsibility, the same commitment as everybody else on the team."

The team manager can have an important influence on the values enacted by team members. The fact that Ron articulates the values readily and with enthusiasm contributes to his influence in this area.

"Meeting Them Halfway"

Another resource drawn on by members of Team Amit is the value of "meeting them halfway," indicating a showing of respect and accommodation. One observed example of this is how the team manages the time zone difference. Both locations compromise on this issue so no one location is overly burdened with odd work hours. Team meetings are not held at times dominated by or preferential to either location. The sprint planning meetings start early in the United States (as early as 6 a.m.), and end late in India. The traditional sprint planning meeting format was adapted to take into account the distance and time separating the members. James explained that the team combines its retrospective meeting with a sprint planning meeting so that members located in India do not have to work late on Friday evenings. James explained, "When we assemble the following Monday morning, we hold our retrospective at the very beginning, and we circle around and say what were everybody's thoughts. We do that as a lead-in to the planning." In the same vein of compromising on time differences, the team's daily stand-up meetings are held at 7:30 a.m. U.S. time, which is near the end of the workday in India. Also, the team members talked about how they focus their work schedule to take advantage of the few hours of overlap they have with team members in the other location.

Again, Team Manager Ron plays an influential role with team members in helping achieve equal power status between the two locations, mitigating the formation of geographically based fault lines. He articulated his philosophy about trying to achieve a level playing field and "meeting them halfway." He added, "It's about being fair and not expecting the other location to make all of the accommodations."

Another example of an accommodation grew out of a cultural difference. U.S.-based team member Doug explained that in the Scrum process when tasks

are completed, they would typically be recorded as a ''pass,'' and if a task was not totally completed, it would be termed a ''fail.'' However, Doug said that team members discussed how applying the word ''fail'' to a work effort has strong negative connotations in India, and the Team Amit members located in India were uncomfortable labeling work efforts as a ''fail.'' So, the whole team agreed to rename the work status to ''complete'' or ''incomplete.'' Although this may seem a small concession, it shows a cultural sensitivity and an interest in accommodating others on the team. Janssens and Brett (2006) suggested that such recognition and respect of cultural differences can contribute to more effective team dynamics.

In fact, in the sprint planning meeting and retrospective, numerous displays of respect, courtesy, and support for other members of the team were observed. For example, James said during the retrospective, ''I'm happy with how we operated on this sprint. There are always things we can improve upon and do better. We did a lot of good work, and I'm looking forward to this one.'' In that same meeting, Doug stated, ''Another point is that I thought it was great that Kumar [a team member located in India] coordinated [an issue with Team Jared]. I thought that was a great thing, just stepping into something else with Team Jared outside of our scope for this sprint.''

''Communicating through the roof'' within Team Amit helps establish trust among team members. The ''we are one team'' philosophy helps equalize power levels between the two locations and keep subgroups from forming an ''us'' versus ''them'' mentality. The value of ''meeting them halfway'' and showing mutual respect and accommodation also balances power dynamics and contributes to trust and open communication, reducing the potential for conflicts that would be difficult to resolve.

Discussion

As illustrated, the primary rule that members of Team Amit drew on to structure their interactions is Scrum, the software development process. The structure provided by Scrum, its routinized meetings, and its shared rituals enable Team Amit to achieve its level of effectiveness. The integration of tasks and the collaborative planning routine help develop an interdependence among team members. Adhering to the Scrum process requires participation and frequent communication by all team members. Team Amit members build on that foundation of communication by using video conferencing extensively, making the medium for their interactions as rich as possible to make up for the lack of face-to-face communication opportunities. The regular meetings and communications also help members to stay in touch about progress and work status, extensively sharing knowledge and information. This helps keep communications in context and avoid misunderstandings. The team's collaborative work on joint goal-setting and commitment also helps them avoid the pitfalls of ineffective teams, which do not have clear goals or good collaboration.

The data also point to the importance of the resources that members of Team Amit drew on. The Scrum rituals provide a great deal of the structure, which is enhanced and supported by the resources—values or principles that guide team

member behavior. Ritualized structures alone would not likely achieve the level of trust and relationship needed for successful GVT interaction. The values embraced by Team Amit—''communicate through the roof'' and the concepts of ''we are one team'' and ''meeting them halfway''—are the extra factors that help this team succeed. The open and frequent communications help establish trust among team members. The ''we are one team'' philosophy helps to level the playing field and to keep subgroups from forming an ''us'' versus ''them'' mentality. The mutual respect and accommodation also balances power dynamics and contributes to trust and open communication and reduces the likelihood of conflicts that would be difficult to resolve. Without these shared values and guiding principles, simply the regular schedule of meetings would likely not result in interdependence and might not deter conflict and the growth of subgroups. It is the combination of structure and values that make this team effective, despite being separated by distance, time, and culture.

Not every GVT may be able to adopt and enact such principles. The members of Team Amit appear open to working in a cross-cultural environment, appreciating differences and demonstrating mutual respect that such long distance team interactions require. Important factors in this team's effectiveness are the support, expectations and role modeling provided by Team Manager Ron. He expresses strong opinions about communication and about the importance of being ''one team.'' He voices expectations for behaviors that show mutual respect and accommodation. Support from their team manager, who models the principles himself and who articulates his philosophy of one team, certainly helps shape this team's values.

This study provides a new perspective on GVTs. By using a structurational framework to explore what makes a GVT effective, this study identifies the rules and resources that members draw on to overcome the challenges presented by working together, although separated by time, distance, and culture. By focusing on an existing corporate team, this study adds knowledge from a real-world situation. The findings of this study suggest that existing GVTs might consider ways to improve their effectiveness by reflecting on the rules and resources that they draw on to structure their interactions. What values have they adopted, and which ones should they consider adopting to improve their interactions?

Although the purpose of this study was to examine in depth the interactions of one specific team, this approach limits the applicability of the findings to other situations, but points to future research opportunities. Studying other GVTs to determine what rules and resources they draw on to structure their working interactions would be of interest. Also of interest would be a comparison of the findings of this study with a study of a successful co-located team to determine if the rules and resources that the members draw on differ or are the same as those of Team Amit.

References

Berczuk, S. (2007, August). Back to basics: The role of agile principles in success with a distributed scrum team. *Proceedings of the AGILE 2007, IEEE Computer Society,* 382–388. doi: 10.1109/AGILE.2007.17

Browning, L. D., Beyer, J. M., & Shetler, J. C. (1995). Building cooperation in a competitive industry: Sematech and the semiconductor industry. *Academy of Management Journal*, *38*(1), 113–151.

Connaughton, S. L., & Daly, J. A. (2004). Identification with leader: A comparison of perceptions of identification among geographically dispersed and co-located teams. *Corporate Communications*, *9*, 89–103.

Connaughton, S. L., & Shuffler, M. (2007). Multinational and multicultural distributed teams: A review and future agenda. *Small Group Research*, *38*, 387–412.

Cramton, C. D. (2001). The mutual knowledge problem and its consequences for dispersed collaboration. *Organization Science*, *12*, 346–371.

Cramton, C. D., & Hinds, P. J. (2005). Subgroup dynamics in internationally distributed teams: Ethnocentrism or cross-national learning? *Research in Organizational Behavior*, *26*, 231–263.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed methods approaches*. Thousand Oaks, CA: Sage.

Dekker, D. M., Rutte, C. G., & Van den Berg, P. T. (2008). Cultural differences in the perception of critical interaction behaviors in global virtual teams. *International Journal of Intercultural Relations*, *32*, 441–452.

DeSanctis, G., & Poole, M. S. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science*, *5*, 121–147.

Dubrin, A. J. (1998). *Leadership: Research findings, practice, and skills* (2nd ed.). New York, NY: Houghton Mifflin.

English-Lueck, J. A., Darrah, C. N., & Saveri, A. (2002). Trusting strangers: Work relationships in four high-tech communities. *Information, Communication & Society*, *5*, 90–108.

Giddens, A. (1984). *The constitution of society*. Cambridge, England: Polity Press.

Green, J., & Thorogood, N. (2009). *Qualitative methods for health research*. Thousand Oaks, CA: Sage.

Hardcastle, M. R., Usher, K. J., & Holmes, C. A. (2005). An overview of structuration theory and its usefulness for nursing research. *Nursing Philosophy*, *6*, 223–234.

Hinds, P. J., & Bailey, D. E. (2003). Out of sight, out of sync: Understanding conflict in distributed teams. *Organization Science*, *14*, 615–632.

Hinds, P. J., & Mortensen, M. (2005). Understanding conflict in geographically distributed teams: The moderating effects of shared identity, shared context, and spontaneous communication. *Organization Science*, *16*, 290–307.

Hinds, P. J., & Weisband, S. P. (2003). Knowledge sharing and shared understanding in virtual teams. In C. B. Gibson & S. G. Cohen (Eds.), *Virtual teams that work: Creating conditions for virtual team effectiveness* (pp. 21–36). San Francisco, CA: Jossey-Bass.

Janis, I. L. (1982). *Groupthink: Psychological studies of policy decisions and fiascoes*. Boston, MA: Wadsworth.

Janssens, M., & Brett, J. M. (2006). Cultural intelligence in global teams: A fusion model of collaboration. *Group & Organization Management*, *31*, 124–153.

Kiesler, S., & Cummings, J. N. (2002). What do we know about proximity and distance in work groups? A legacy of research. In P. J. Hinds & S. Kiesler (Eds.), *Distributed work* (pp. 57–80). Cambridge, MA: MIT Press.

Kirby, E. L., & Krone, K. J. (2002). ''The policy exists but you can't really use it'': Communication and the structuration of work–family policies. *Journal of Applied Communication Research*, *30*, 50–77.

Kunda, G. (1992). *Engineering culture: Control and commitment in a high-tech corporation*. Philadelphia, PA: Temple University Press.

Larson, C. E., & LaFasto, F. M. J. (1989). *Teamwork: What must go right, what can go wrong*. Newbury Park, CA: Sage.

Lindlof, T. R., & Taylor, B. C. (2002). *Qualitative communication research methods* (2nd ed.). Thousand Oaks, CA: Sage.

Lukes, S. (1975). Political ritual and social integration. *Sociology*, *9*, 289–308.

Newell, S., David, G., & Chand, D. (2007). An analysis of trust among globally distributed work teams in an organizational setting. *Knowledge and Process Management*, *14*, 158–168.

O'Leary, M. B., & Cummings, J. N. (2007). The spatial, temporal, and configurational characteristics of geographic dispersion in teams. *MIS Quarterly*, *31*, 433–452.

Paasivaara, M., Durasiewicz, S., & Lassenius, C. (2008). Using scrum in a globally distributed project: A case study. *Software Process Improvement and Practice*, *13*, 527–544.

Poole, M. S., & McPhee, R. D. (2005). Structuration theory. In S. May & D. Mumby (Eds.), *Engaging organizational communication theory and research* (pp. 171–195). Norwood, NJ: Ablex.

Riley, P. (1983). A structurationist account of political culture. *Administrative Science Quarterly*, *28*, 414–437.

Scott, C. R., Corman, S. R., & Cheney, G. (1998). Development of a structurational model of identification in the organization. *Communication Theory*, *8*, 298–336.

Stake, R. E. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 443–466). Thousand Oaks, CA: Sage Publications.

Walsham, G. (2002). Cross-cultural software production and use: A structurational analysis. *MIS Quarterly*, *26*, 359–380.

Zaidman, N. (2001). Cultural codes and language strategies in business communication: Interactions between Israeli and Indian businesspeople. *Management Communication Quarterly*, *14*, 408–441.

Zakaria, N., Amelinckx, A., & Wilemon, D. (2004). Working together apart? Building a knowledge-sharing culture for global virtual teams. *Creativity and Innovation Management*, *13*, 15–29.