

## Using Communication Norms for Coordination: Evidence from a Distributed Team

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In our empirical study of a small geographically-dispersed software development team, we examine the role and importance of communication norms in facilitating effective distributed coordination. Our longitudinal investigation of the ongoing communication engaged in by team members within multiple media highlights the creation and emergence of a number of key coordination norms that were critical to helping the team get its distributed work done.

Geographically-distributed teams have been receiving a lot of coverage lately in both the practitioner and academic literatures. These literatures recognize that while dispersed teams can bring benefits such as increased flexibility they also include challenges such as difficulties with coordination. The coordination challenge is particularly critical for dispersed teams because in addition to accomplishing their ongoing production work, they engage in activities that span many boundaries (e.g., temporal, geographical, cultural, and technical). There is thus a view, particularly in the practitioner discourse, that dispersed teams need advanced technologies to accomplish their distributed communication and tasks.

While the use of powerful groupware products may enable better coordination, such tools may not be available in all organizations. Start-up organizations that are financially constrained typically do not invest in coordination technologies, and their members rely on such media as chat, telephone, and email to conduct their distributed work. An important question thus arises: How do these organizations manage

to coordinate across geographic distance in the absence of powerful coordination technology?

Norms, shared expectations about patterns of behavior, may provide a way of supporting coordination in distributed teams. They have been seen as critical to the formation and coordination of collective action (Ullman-Margalit 1977). Norms allow actors to engage in socially coherent behavior, helping them to structure their activities in ways that are consistent with community expectations, and to avoid inter-personal problems or personal embarrassment (Feldman 1984). At the group level, there has been extensive research on the effects of norms on group decision making and conformity (Asch 1951). There are two important questions concerning norms: why group norms are enforced and how they develop. Gersick and Hackman argue that when members “have common previous task experiences, or share a common set of subcultural norms,” they “may simply proceed to do what everyone knows should be done, and a pattern of habitual behavior may be established without any explicit thought” (pp. 75-76). Feldman (1984) presents additional ways in which norms may form: norms could be created explicitly by others; norms could emerge through critical events in the group’s history; or norms could develop through primacy (the first behavior pattern that emerges in a group sets group expectations).

We argue, in contrast, that norm formation is sometimes a more emergent process. In the context of distributed teams especially, the issues of norm development are likely to be more dynamic and uncertain (DeSanctis & Monge 1999; Mazvenski & Chudoba 2000). In addition, the nature of media use within such distributed teams influences how and when norms may emerge (Orlikowski & Yates, 1994).

## RESEARCH SETTING

The organization that we studied, Little Company (LC),<sup>1</sup> was a start-up established in 1996 to develop a complex systems software product. The company included the founder and primary financier, Keith, and four other members: Robert, Dan, Martin and Fred. The five members were geographically dispersed from the start and each had ties to one or more of the others prior to working together in the LC start-up company. LC was a typical self-funded, start-up company that operated under severe financial constraints. Email was the most economical medium and was thus used very frequently. Email messages were normally sent to everyone on the team but every once in a while the members also exchanged dyadic emails. Telephone calls, including both weekly group phone meetings and dyadic phone calls, were used quite regularly. Face-to-face communication was rare at LC, and never included the entire team. The members did not use other media such as fax and Internet chat.

## RESEARCH METHODS

Our analysis is based on data obtained from LC archives and interviews with various members. The archival data include the following:

- Email messages
- Phone records
- Code logs

## ENACTING COORDINATION NORMS AT LC

We found that LC members used various communication norms to enable their ongoing and distributed coordination. In particular, we found that these norms were enacted in three primary ways: norms that were established upfront, norms that were created in response to triggering events, and norms that emerged over time. In what follows, we discuss each of these and illustrate them through drawing on examples of specific norms that LC members used to coordinate as a team.

### 1. Norms that were established upfront

LC members established a few norms upfront before starting to work together as a distributed team. These norms could be either explicitly stated or implicitly adopted. For instance, LC members decided upfront that they would avoid discussing confidential content in their email messages. These norms that were established upfront were typically based on conventions and practices that members' had used in their previous work experiences.

### 2. Norms that were triggered by events

While norms in the previous category were typically preventive in nature, norms in this category tended to be corrective and were often triggered by an observable (and undesirable) event or problem. Their purpose was to provide a solution to a problem that had generated the undesirable event and avoid its recurrence. One such problem occurred in the first year when LC members, who were usually very congenial, had a major conflict over the accomplishment of a particular task. Over the course of a lengthy discussion, LC members realized that there was some misalignment of expectations about technical goals perhaps due to a lack of explicit communication about this among the team members. On realizing this and to avoid such conflicts in the future, the members established a norm of having weekly technical telephone meetings. This example highlights how LC members developed norms to help reduce ambiguity that may arise in a distributed team that relies primarily on email communication.

### 3. Norms that emerged over time

Some norms emerged as slow adjustments and subtle adaptations to members' preferences, working styles, and task situations, and often did not involve any explicit discussion by the members. We briefly describe three such norms:

- *Using frequent, short phone conversations:* Telephone is often seen as more intrusive than other media such as email and group chat. However, we noticed that over time phone calls between

<sup>1</sup> Names of the company, its products, and organizational members have been disguised for confidentiality purposes.

LC members increased in number and reduced in length. This norm emerged implicitly as members realized the need for more frequent coordination, and as they accommodated Keith's preference for phone communication.

- **Adjustments to others' temporal rhythms:** At LC, norms also developed in relation to *when* individuals could call each other. Different individuals learned about the appropriate times to call others in the group. For example, Robert gradually adjusted his calling practice to more easily connect with Keith.
- **Increasing communication in periods of high activity:** A third emergent norm was associated with LC activity levels. Code commits, when members changed the working version of the system, were significant events in the work schedule as a code change had implications for all members' work due to the many interdependencies between individual modules. LC members thus developed an implicit pattern of increasing their communication, both phone and email, on days when they had multiple commits. This helped them achieve better task coordination in critical periods.

### CONCLUSION AND IMPLICATIONS

We found that multiple coordination norms were used at LC over time and that these norms were created and emerged in different ways. As discussed earlier, Feldman (1984) suggested that norms could be formed variously: be explicitly mandated by a supervisor, emerge from critical events, develop through primacy, and be carry-overs from the past. The members at LC used some of these processes to create and develop their norms. That is, they established some norms upfront as a result of their prior experiences, and they set some norms explicitly in response to difficulties they encountered over time. We found that emergent norms were particularly dominant at LC. These norms tended to emerge slowly over time as people subtly and often tacitly adjusted and adapted

their individual practices, preferences, and expectations to be more aligned with those of other team members or the group as a whole. In this way our findings resonate with those of Yates et al. (1999) around the establishment of genre norms in a community. They found that some genre norms were actively and deliberately shaped by community members while others gradually took shape through variations and migrations.

Our identification of different types of coordination norms created at different times and through different processes may also offer some interesting insights into how distributed or virtual teams can work effectively over time. That is, at the initial stages, team members may establish some *preventive norms* through deliberate discussion and reflection on prior work experiences and situations encountered. Then as work proceeds and the team members begin to interact and coordinate over time, they will encounter difficulties that will trigger some remedial action, in particular, the creation of *corrective norms* that attempt to respond to an unexpected event or undesirable problem. Finally, the ongoing interaction of team members will also generate, albeit more tacitly, a number of *adaptive norms* that reflect members' continuing learning about each other, their tasks, their use of media, and their team as a whole, and what is required to coordinate collectively and effectively over time.

Despite knowing each other beforehand, LC members took some time to develop their set of effective norms. In a team consisting of members from diverse backgrounds, a more concerted effort may be needed to engage everyone. A limitation of our data is that we were only able to study coordination enacted through telephone, email, and server logs. However, the findings we have identified should still have implications for other teams using at least these media for coordination. Our study has also shown how relatively simple media such as telephone and email may be used in such different and effective ways for the purpose of coordinating complex, distributed

work. The use of more sophisticated new media may offer additional opportunities for team members to develop norms that facilitate their distributed coordination.

In conclusion, effective coordination in distributed teams requires the development of shared expectations and alignment of temporal rhythms over time. This enables a common and ongoing understanding among team members that can often prevent problematic surprises and create the opportunities for mutual adaptation.

**ACKNOWLEDGMENTS:** This research was supported by NSF grant #IIS-0085725.

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