

# Overcoming the “Ideology of Openness”: Probing the Affordances of Social Media for Organizational Knowledge Sharing

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*This study explores the ways in which the affordances of social media not only increase open communication and knowledge sharing, but also promote covert behavior, creating dialectical tensions for distributed workers that must be communicatively managed. Drawing on a case study of the engineering division of a distributed high tech start-up, we find our participants navigate tensions in visibility-invisibility, engagement-disengagement, and sharing-control and strategically manage these tensions to preserve both openness and ambiguity. These findings highlight ways in which organizational members limit as well as share knowledge through social media, and the productive role of tensions in enabling them to attend to multiple goals.*

**Key words:** Affordances, dialectical tensions, distributed work, ideology of openness, knowledge sharing, social media

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## Introduction

Social media tools such as blogs, social network sites (SNSs), wikis and microblogging are proliferating in organizations and providing new sites of collaboration, coordination, and community. Research suggests that enterprise social media may enable organizational knowledge sharing by helping individuals locate expertise and relevant content (Brzozowski, 2009) and engage in “sense-making” about other employees (DiMicco, Geyer, Millen, Dugan, & Brownholtz, 2009), as it provides access to new people and expertise (Steinfeld, DiMicco, Ellison, & Lampe, 2009) and increases awareness and contact among virtual employees (DiMicco & Millen, 2007). While this may be true, we argue that much of the emerging literature on social media (both academic and popular) is characterized by an “ideology of openness” that overstates the positive impacts of social media on knowledge sharing and assumes that

open communication is always desirable. Our findings from interviews with members of a distributed engineering start-up organization reveal that social media are used strategically to limit as well as share information, and that participants negotiate tensions between openness and closedness in their work. More specifically, we find that distributed workers navigate tensions in visibility-invisibility, engagement-disengagement, and sharing-control and that they draw on affordances of social media in strategic ways to manage these tensions. We will now discuss current literature on knowledge sharing in social media and recast it from a dialectical perspective.

### Critiquing the “Ideology of Openness”

Knowledge sharing is a complex process of making task-related and social information available to others so they may collaborate to resolve problems, generate new ideas, or implement organizational processes (Wang & Noe, 2010). Emerging research on social media use in organizations often emphasizes its promise for increasing knowledge sharing (e.g., Brzozowski, Sandholm, & Hogg, 2009; Burke, Marlow, & Lento, 2009). Open knowledge sharing certainly has many benefits. For instance, organizational innovation depends on combining and integrating knowledge to develop novel processes, products, insights, and solutions (Obstfeld, 2005). Open knowledge sharing and a supportive communication climate have been shown to be advantageous in this process (Gibson & Gibbs, 2006). Yet, there are also many instances in which open knowledge sharing is not desired or desirable—for instance, sharing of sensitive, face-threatening, or confidential information—which are often overlooked by literature that emphasizes and celebrates the “open” nature of social media.

We argue that much of the emerging literature on knowledge sharing in social media succumbs to an “ideology of openness” (Eisenberg & Witten, 1987) by assuming that open communication is an unmitigated good and that social media tools will be used primarily for facilitating communication and knowledge sharing in organizations. For instance, an IBM study of 1,700 CEOs found that social media technologies were widely thought to provide openness that contributed to company success by enabling them to draw on collective intelligence, be more agile, and act quickly for higher profitability and growth (Fidelman, 2012). Much of the academic literature on social media also tends to take an optimistic tone that emphasizes the ways in which social media affordances will promote openness in organizational knowledge sharing. For example, Brzozowski et al. (2009) suggest that social media afford broadcasting of messages—as opposed to email that targets recipients, as well as building reputation and social capital through expertise contribution—which in turn motivates further knowledge sharing.

The ideology of openness (whether explicit or implicit) is characterized by an “uncritical acceptance of the efficacy of open communication” (Eisenberg & Witten, 1987, p. 418) and has long been prevalent in organizational theory and research more broadly. It assumes that effective communication and knowledge sharing is characterized by openness, in terms of disclosure of both personal and task-related information and clear, unambiguous communication. Eisenberg and Witten argue that open communication can be but is not always desirable, and that the degree of communication openness depends on individual, relational, and organizational motivations/goals, as well as the environmental or situational characteristics of the workplace.

**Disclosure of personal and task-related information.** Although open disclosure of information is often considered beneficial, there are strategic reasons why organizational members may not share knowledge. While knowing more about others may improve working relationships, it may also increase awareness of differences and lead to interpersonal conflict. Further, disclosure of certain types of information is risky; for instance, the sharing of technical information by lower-level employees may reduce their access to informal power within the organization, and excessive management disclosure

during layoffs or crisis situations may weaken employee morale (Eisenberg & Witten, 1987). Managers and employees may also avoid openness in order to protect self-interests. Since organizational status may be conferred based on possession of specialized knowledge, some may fear others “stealing” opportunities based on their contribution (Olson & Olson, 2000), leading to concerns over job security. Some organizational cultures may discourage knowledge sharing due to the need to preserve confidentiality and competitiveness of proprietary knowledge (e.g. Ardichvili, Page, & Wentling, 2003). Finally, organizational members may simply be too pressed for time to document their knowledge, especially if there are no tangible incentives.

**Clear, unambiguous communication.** Further, organizational members are not always motivated to enhance clarity and consensus. Rather they are strategic, symbolic actors who are often motivated to engage in “strategic ambiguity” (Eisenberg, 1984) in which they intentionally foster multiple meanings of messages or communicative events in order to enhance their own image or goals through deceptive, ambiguous, or covert communication. For example, organizational mission and vision statements are often kept deliberately vague in order to appeal to diverse values of a variety of stakeholders (Fairhurst, Jordan, & Neuwirth, 1997). Strategic ambiguity promotes “unified diversity” in which differing interpretations persist among diverse group members while giving them the sense that they are all in agreement (Eisenberg, 1984). Gibbs (2009) found that global team managers in a software outsourcing organization worked to preserve ambiguity in their reporting structure rather than imposing clear roles to better attend to competing goals and preserve flexibility to be more responsive to both employee and customer needs. Barley, Leonardi, and Bailey (2012) also found that automotive engineers employed strategies of ambiguity in presenting design solutions to members of other knowledge communities, especially in early design stages, in order to establish common understanding, promote compromise, and avoid conflict. These studies highlight benefits of strategic ambiguity in fostering collaboration among diverse communities and increasing flexibility.

**Strategic technology use to limit knowledge sharing.** There is evidence that mediated channels are particularly useful for such strategic and covert communication. Research finds that individuals use technology strategically in interpersonal relationships to regulate and restrict the flow of social information in face-threatening situations, due to its ability to obscure unattractive or embarrassing information and give their counterpart greater control over when and how to respond (O’Sullivan, 2000). Birnholtz, Dixon, and Hancock (2012) examined how organizational members exploited ambiguities afforded by media use, finding that ambiguity played an important role in maintaining impressions and relationships. For example, they found that the “return receipt” feature in e-mail was rarely used and was considered an invasion of privacy, as employees preferred to retain ambiguity in knowing when an e-mail was read so that it was not apparent that a nonresponding recipient was ignoring their e-mail rather than just not having read it yet. It is important to note that these studies did not examine social media use specifically, and that social media tools are arguably richer in social cues than e-mail and other text-based forms of CMC. Nevertheless, they reveal that impression management motivations often drive technology use and that individuals often make strategic choices to limit or restrict information. Choices to share or not to share knowledge in social media applications are likely to be influenced by such concerns as well.

## Affordances of Social Media for Knowledge Sharing

Although much of the emerging research on enterprise social media seems to assume that social media will and should promote knowledge sharing and open communication, such tools are also likely to be used in strategic ways to limit or obscure knowledge sharing. As such, technology use is socially

constructed by users who make strategic choices about how to draw on particular technological tools and features in a way that meets their particular goals, which may be unintended by designers (DeSanctis & Poole, 1994). As such, users may be motivated to use social media in particular ways that may constrain or limit knowledge sharing as much as they enable it. To explain the user-technology relationship and its mutually constitutive nature, we draw on an affordance view.

Affordance (Gibson, 1979) is a relational concept that takes into account both the material features of the technology and the subjective perceptions and goals of the user. Affordances are “constituted in relationships between people and the materiality of the things with which they come in contact” (Treem & Leonardi, 2012, p. 146) such that the same technology may provide different affordances to different users. In this way, an affordance lens is helpful in explaining why people use different technologies in similar ways or the same technology in different ways (Fulk, 1993). Being a recent innovation, communication scholars are still exploring the affordances of social media. Treem and Leonardi (2012) propose four unique affordances of social media in organizations: visibility and association (of content and people), as well as persistence and editability (of content). They argue other collaborative technologies such as e-mail, instant messaging, teleconferencing, and collaborative software afford only limited visibility and association, as well as inconsistent persistence and editability. While older technologies may be high on one or two of the affordances (for example, e-mail affords persistence and editability), social media are distinguished by being consistently high on all four. Majchrzak et al. (this issue) propose a similar taxonomy of affordances of social media in the particular context of organizational knowledge sharing: metavoicing (providing collective feedback through commenting, voting, or rating of content), triggered attending (relying on automatic notifications about changes to specific content to guide one’s participation), network-informed associating (strategic linking with others to enhance opportunities to participate or engage), and generative role-taking (taking on emergent rather than prescribed roles to facilitate dialogue).

While literature often emphasizes the role of social media in increasing knowledge sharing, the affordances of social media may in fact promote both openness and closedness. We recognize that social media affordances may encourage open knowledge sharing, but there may also be “strategic affordances,” or affordances that draw on organizational members’ desires for strategic ambiguity (Eisenberg, 1984) and selective self-presentation (Walther, 2007) that consequently motivate them to conceal or restrict, rather than share, knowledge.

## **Managing the Openness-Closedness Dialectic in Knowledge Sharing Through Social Media**

Distributed workers are likely to navigate a dialectic of openness and closedness in their knowledge-sharing practices through social media. On one hand, they are motivated to share knowledge and communicate clearly with distributed others to accomplish tasks, build relationships, and achieve innovative solutions. On the other hand, they are also motivated by impression management concerns to protect certain knowledge and communicate in ambiguous or deceptive ways. We draw on dialectical theory to explain this tension between openness and closedness and the ways in which it is communicatively managed. Rooted in Bakhtin’s (1981) dialogism, dialectical theory has been adapted to explain dialectics in interpersonal relationships (Baxter & Montgomery, 1996) and extended to organizational settings to explain communicative tensions (Gibbs, 2009). A tension is defined as an opposition between two conflicting poles, such that both poles are necessary but in contradiction with one another. It is not a simple “either-or” choice between two mutually exclusive alternatives but one that requires simultaneously attending to both competing poles. Although tensions framed as simple

contradictions or untenable pragmatic paradoxes may be detrimental in constraining action (Tracy, 2004), dialectical tensions have been found to be productive in enabling the accomplishment of multiple goals since they enable organizational members to creatively attend to both poles of the opposition by transforming or transcending it and embracing both alternatives as “both-and” options (Putnam & Boys, 2006). A framework of organizational tensions is helpful in explaining the necessary contradictions that arise when members face competing goals and interests (Gibbs, Scott, Kim, & Lee, 2010).

More specifically, we argue that the affordances of social media are likely to create tensions between openness and closedness in knowledge sharing. On one hand, social media may make it easier to identify distributed expertise (Brzozowski, 2009) and motivate contribution, as employees’ participation in a social media tool was enhanced by visible feedback to their posts and visible activity by managers and coworkers (Brzozowski et al., 2009), enhancing knowledge sharing. Further, the aggregated content provided by one’s contacts in the form of media streams can provide context awareness in the form of status updates that provide organizational members with quick, lightweight opportunities to communicate both task-related and social information to one another for coordination and interaction purposes (Ellison, Gibbs, & Weber, in press).

On the other hand, social media may also be used for selective self-presentation (Walther, 2007) as the ability to edit and craft messages may lead to manipulation or selective sharing of information, and the archived or documented nature of social media interaction may put limits on what is shared (Ellison et al., in press). For example, research has found that managers avoided delivering negative feedback over e-mail and preferred to communicate it in person (Westerman & Westerman, 2010). Further, employees may use knowledge-sharing technologies strategically to foster perceptions that they are experts in areas in which they wish to gain expertise rather than areas in which they are already experts (Leonardi & Treem, 2012). Finally, the “pervasive awareness” (Hampton, Lee, & Her, 2011) afforded by social media may increase the flow of knowledge through passive information-seeking strategies (Ramirez, Walther, Burgoon, & Sunnafrank, 2002) but it may also encourage lurking behaviors, as users may traverse others’ information streams unobtrusively and gain knowledge without interacting at all. Such affordances may serve to limit rather than promote organizational knowledge sharing. Identifying the tensions associated with the affordances of social media helps to overcome the bias toward openness and present a more balanced account of how such tools may be used to promote *and* limit knowledge sharing. Accordingly, we propose the following research questions: *What dialectical tensions arise in social media use among distributed workers? How do they draw on social media affordances to strategically manage such tensions?*

## Methods

### Research Context

To answer our research questions, we conducted a case study of a high-technology start-up organization producing innovative memory hardware and its supporting software. The company, which we refer to by the pseudonym of FlashTech, was founded on the East Coast in the mid-2000s and later shifted most of its operations to Silicon Valley for better business opportunities. The company had experienced rapid growth in its West Coast location specifically, drastically increasing in size during our study period to reach 300 employees—about 150 engineers and 150 sales, marketing, and customer support employees—and was in the process of expanding its sales offices in Europe and Asia. The company’s evolution had resulted in a power shift in technical knowledge and decision-making, requiring a great deal of knowledge transfer from the East Coast to the West Coast offices and creating concern for East Coast employees over the future of their office and jobs.

## Data Collection

We conducted an initial site visit to the East Coast office and carried out informal interviews with several key personnel from that office as well as several managers from the West Coast office who were in town. This initial visit helped us gather data on the company and the context in which social media were used. We also toured the facilities, including the lab, and learned more about the company's products and procedures. We used the insights gained to formulate our interview questions. (The interview protocol is available from the authors.)

Based on the list of names we obtained from the head of the engineering division, we conducted in-depth interviews with a total of 12 engineers (10 men, 2 women) in March and April of 2012. Nine were located on the West Coast and three on the East Coast. The gender and location split is reflective of the distribution within the broader organization. Interviews were conducted either in person on-site, via telephone, or via Skype, and they were semistructured in nature to preserve consistency while allowing for unanticipated issues to emerge (Lindlof & Taylor, 2002). Our goal was to get diverse perspectives on social media use and knowledge sharing from organizational members in both locations at various levels. We focused on the engineering division of the company, as that was its core business, and to bound our study in terms of job function and type of work. Our study thus captured mainly collaboration among software and hardware engineers, rather than between engineering and other functions. The engineers worked in project teams drawn from both the West and East Coast offices. Their routine interactions involved knowledge exchange, daily communication, weekly meetings, and managing access to equipment in different locations.

We selected this organization because its distributed nature created some interesting knowledge sharing challenges, and we thought that employees at a high-technology company might use or see value in social media for collaboration across locations. In contrast to the large high-technology corporations studied in much prior social media research (e.g., DiMicco et al., 2009), this site provided a contrast in both corporate and functional culture as an engineering start-up (in which employees had no vested interest in the success of social media *per se*). In fact, we found that FlashTech employees were generally quite resistant to using social media in the form of social networking applications although they used a variety of other electronic media for collaboration. Team members communicated and exchanged information primarily through telephone (including Skype voice calls and video conference), e-mail, wikis, Google Docs for Business, and group instant messaging (Google Talk or Skype chat), as well as informal face-to-face meetings and hallway conversations. Of these, they tended to consider Google Docs, wikis, and group instant messaging to be "social media"—with Skype chat and Google Docs being most frequently used—so we focused our analysis primarily on these tools and their affordances.

While not normally considered social media, the affordances of Skype chat and Google Docs as used by FlashTech engineers were consistent with social media. For instance, they used Skype to create group chat sessions for each product they were working on and kept them active throughout the day. This enabled them to collaboratively monitor and resolve any technical issues and bugs that arose in a more interactive and visible way than email, similar to how media streams function on social network sites (Ellison & Boyd, 2013). The persistence of messages in such open sessions also provided team members not involved in the immediate conversation the opportunity to check in later and stay updated. Meanwhile, the use of Google Docs for Business for sharing content and technical documentation provided affordances of persistence and editability of content, as well as interactive commenting and association with others for whom this content was relevant. FlashTech engineers thus drew on a suite of tools that collectively provided them a high level of each of the social media affordances of visibility, association, persistence, and editability (Treem and Leonardi, 2012).

## Data Analysis

All interviews were audio recorded and transcribed verbatim. The interviews lasted an average of 45 minutes and transcripts provided a total of 240 double-spaced pages. We used ATLAS.ti, a software program for qualitative data analysis, to code and analyze the data in a systematic manner. Our coding procedure followed the conventions of grounded theory, in which theoretical categories and insights are allowed to emerge inductively from the data (Glaser & Strauss, 1967). We used the constant comparison method (Strauss & Corbin, 1998) to look for key axes of difference within our data and identify and further refine important theoretical categories, in an iterative process. First, each author read through two of the transcripts (six in total) and assigned codes to the data through open coding. The authors then discussed their codes and came to agreement on a set of codes to be applied in the second stage of axial coding. Two authors then went through the transcripts in ATLAS.ti and coded each one line-by-line, applying the codes from the coding list. In the process, tensions in social media use began to emerge.

In the next step, all of the instances of tensions in the data were flagged for more in-depth analysis. A second round of coding was performed on these excerpts specifically. Through a number of subsequent discussions, the authors engaged in selective coding to refine the codes and translate raw codes into broader themes. In this process, three dialectical tensions arising from social media affordances emerged—visibility-invisibility, engagement-disengagement, and sharing-control—along with their respective communicative responses, which constitutes our emergent theoretical structure. Table 1 provides sample codes and quotes.

## Findings

### Visibility-Invisibility Tension

Due to the geographical dispersion of FlashTech between the East and West Coasts and the complex nature of computer engineering work, employees drew heavily on collaborative technologies to provide access to coworkers and remote equipment. Skype chat in particular was used as a collaborative tool to increase transparency in scheduling and use of remote machines that were under development. It also increased the visibility and accessibility of remote coworkers. At the same time, it also enabled them to hide or avoid being disturbed. The East Coast engineers, in particular, were highly sought after by the waves of new hires on the West Coast due to their longer tenure and greater product expertise, and were often barraged with questions and requests for information. As software engineer P1 explained, “Because I’ve been here for so long, people may come to talk to me [about a certain product] partly because they don’t know anybody else [with the knowledge] to go talk to . . . It’s not that I don’t like to, but you find that you got 150 things to do in one day.” P1’s comment illustrates the tension he faced between wanting to help answer his colleagues’ questions and not always having time due to the need to attend to his own work tasks. As he states, his status as an expert increases his workload as he gets more immediate requests. Thus, being visible is not necessarily desirable for him.

This tension was exacerbated by the 3-hour time difference between the East and West Coast offices, which not only limited hours for synchronous team interaction but resulted in East Coast engineers receiving a flurry of requests from their West Coast counterparts at the end of their workday. As software engineer P3 lamented, “When it gets later in the evening, like all of a sudden, people in California need me for something. I don’t know if they realize I’m going to be leaving soon, but I’m going to get my questions then.”

**Strategic response.** Unable to completely disconnect for fear of missing out on urgent requests or important conversations, some East Coast engineers managed this tension by “going invisible” on

**Table 1** Tensions and Strategic Responses: Sample Codes and Quotes

Visibility-Invisibility Tension	Strategic Response
Keep everyone informed	Going invisible
When questions pop up on the Skype sessions, everybody in the group knows when there's some outstanding requests that they haven't reviewed . . . It tends to foster a fairly quick response in the sense that everybody is seeing what's going on.	So during normal hours I'll be online, when it gets later in the evening, and when I want to get something done, and I don't want to be disturbed much . . . I go invisible. When it's 6 o'clock she went invisible. I haven't done that yet.
When we have a specific issue, we start a Skype session specifically dedicated for it. It helps us keep a transcript of all the communication that took place on that issue through resolution. Engagement-Disengagement Tension	Constant requests I basically get overwhelmed with communication requests trying to repeat the same things over and over again. It seems like there's always a fire of one sort or another. Whichever fire is blazing the hottest is the one that gets attention. It's one of those things I noticed--after 6 o'clock, boom boom boom, all of a sudden, these [requests] appear. Oh come on, stop it, you're killing me.
Ready to engage/interact	Strategic Responses
If you have a look at my desktop, I typically have anywhere between 10–15 chat sessions active. If I need [information] within the next 10–15 minutes, I send them Skype. Skype gives us the ability to focus very quickly on an issue and stay focused.	Triggered attending If I need to pay attention to that subject, I am. If I don't need to pay attention to that subject, I'm not. Every once in a while I get back to it, run through no, no, no, no, ok. Temporary disconnect I would be mostly ignoring it if I'm in the middle of something. Strategic Response Limit content & audience Google Docs allows me to specify exactly who I want looking at this. When we had our discussion about the new architecture for a system that we're developing, we open up the discussion to all of engineering. Ways to alleviate them [job security related fears] are to really make the folks know for sure that if you do provide all these information, nothing's gonna happen to you.
Sharing-Control Tension	Strategic Responses
Knowledge sharing Skype basically is open, everybody makes comments, everybody communicates. I think it's just the culture of the company. It's just very low level. We're pretty open to sharing knowledge. The thing in our company, or at least in my group, the way we put it is, the job will be more secure if you share knowledge.	Limit content & audience Google Docs allows me to specify exactly who I want looking at this. When we had our discussion about the new architecture for a system that we're developing, we open up the discussion to all of engineering. Ways to alleviate them [job security related fears] are to really make the folks know for sure that if you do provide all these information, nothing's gonna happen to you.
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Skype when they were preparing to leave the office, or later in the evening when they were back online at home. As P3 explained:

Sometimes when I try to get something done, I just go to the Skype icon and select 'Invisible' so it looks like I'm not online. I'll still see any messages that come in. I'll see issues that come up, but I can choose to respond when I want to. . . . People eventually catch on that I may actually be online, but they tend to know what that means. . . . They'll think twice before they message me, like "[P3] is probably in but wants to hide." . . . This seems to deter or quiet things down a little for me so that I can get other stuff done.

Going invisible was therefore a strategic move that enabled better time management, as the engineer could limit his or her availability to others and respond only when he or she chose to. This strategy differs from going offline completely or choosing the more direct "Do Not Disturb" status that might signal a complete rejection of any potential interaction. Preserving ambiguity through the "invisible" status was a way of signaling one's unavailability in a way that helped manage impressions and preserve amicable relationships with remote colleagues. Becoming invisible thus enabled distributed workers to remain available while working undisturbed.

### Engagement-Disengagement Tension

Unlike the visibility-invisibility tension which concerned the signaling of employees' presence or availability, the engagement-disengagement tension concerned employees' attention allocation. As FlashTech was a rapidly growing start-up company in a highly competitive industry, its engineers worked long hours to meet tight project deadlines, while staying updated and troubleshooting issues in other parts of the system. In the process, distributed workers needed to be readily connected to one another, often across teams, for interactive discussion of ideas, technical issues, and alerts about new developments. Their use of Skype chat afforded them quick interactions and constant updates, which were informative but could be distracting. Project teams would create a chat session for each product and topic they were working on, and keep multiple chat windows—sometimes 10–15 at a time—open throughout the day with running conversations about technical challenges and updates. In this way the group chats functioned as a media stream (Ellison & Boyd, 2013) that team members could use to check in throughout the day to keep abreast of developments and issues. Software manager P8 described this collaborative process:

We have dozens of Skype groups running. People can be working in two to three Skype groups, almost simultaneously exchanging information. For each system that's being shared, we have a Skype group. We have a team Skype group for people to ask generic questions. . . . Skype is like a bunch of hallway conversations with a history. We can jump in . . . scroll all the way up, and oh, here's all the information I need to catch up on the conversation and chip in if I need to. . . . You can even get someone in . . . and they can see what occurred and catch up quickly.

P8's description of Skype groups as "a bunch of hallway conversations with a history" reveals the interactivity of the tool that allowed for quick, lightweight exchange and traversing of information in a more visible and associative way than e-mail—which tended to bury information—while providing persistence in allowing for earlier conversations to be preserved and shared later with others to provide context to technical discussions. This is similar to how public social media tools like Facebook's

News Feed or Twitter's Trends are used; real-time content is streamed and stored, but typically recent information receives the most attention. In other words, Skype was used in a way that afforded "ephemeral persistence."

Nonetheless, actively monitoring several Skype groups could be cognitively taxing. The interactive nature of the open chat windows provided interruptions as new updates popped up on the screen. Allowing oneself to become too engaged in the discussions and attending to all messages could be terribly disruptive to work. Some requests for help, for example, were quite complex and time-consuming to resolve, especially when they involved troubleshooting a computer program:

When I'm busy trying to get stuff done, suddenly I get interrupted. I have to stop what I'm doing and think about something else, and address someone's concerns, which is one of the drawbacks of Skype as opposed to email. Email, you can reply on your own time, but Skype seems to have more immediacy to it. If you're not careful, it can just pull you away for an hour, because now someone wants you to debug their system.

This quote by software engineer P3 again reveals the immediacy of Skype compared to e-mail. While Skype was generally preferred to e-mail due to its ability to maintain "continuous dialogue" among teams—as P4 put it, "you don't have to go look for 10 different emails where the issue was addressed, it's all captured in one place," which was beneficial in quickly engaging others in discussion—it could also be perceived as disruptive when it interrupted other work and required engineers to divide their attention. In this way, engagement with others was not always desirable.

Corresponding desires for disengagement may have been particularly prevalent for our computer engineers, who generally preferred to work autonomously without much social interaction. One software engineer, P10, exclaimed "I don't do social" when asked if he used public social media tools to interact with others at or outside work. Hardware engineer P2 elaborated on this point: "I think engineers in general are less socially graceful than other people. We become engineers because all we have to do is sit in front of the computer. We don't actually have to talk to people." This preference to be isolated from others was seen by some managers as problematic, and Skype chat was preferred for its ability to overcome the "social barrier" by allowing for quick exchange of task-related information in a focused manner without the additional social interaction that often comes with in-person meetings. Given the engineers' preference for careful deliberation and reflection in isolation from others, FlashTech managers found Skype groups a more immediate and engaging forum for quick, interactive discussions in order to speed up the pace of their time-sensitive work. They also faced pressures to disengage as well, though, due to the sheer volume of messages.

**Strategic response.** Although they generally appreciated the interactivity and immediacy of Skype groups, managers and employees devised strategies to deal with the pressure for constant engagement by finding ways to disengage. A few participants such as hardware engineer P7 expressed concern over the burden created by constant engagement but admitted they nevertheless remained continuously connected to Skype, even while on vacation, terming it "work-cations." Many others reported strategies of disengagement. Software engineer P6 tried to discipline himself by temporarily ignoring the information stream "for 15 minutes or even half an hour" at a time.

Managers especially tended to be involved in many conversations, and they devised an efficient way of dealing with the tension by monitoring the status of various projects in the Skype chat threads but limiting their engagement only to crucial issues that required their attention. In an information-rich environment in which technology such as social media provides continuous information streams, attention is a scarce resource. As the engineering Vice President P5 claimed, "Skype is great for having

an interactive conversation where you don't need to give the person 100% of your attention." He further explained his situation and coping strategy:

As the head of engineering, people tend to pull me into a lot of conversations because they think I care. Maybe I do, and maybe I don't, but I sort of get to the part where I can figure out if something needs my attention or not. I scan it very quickly, look at it and go, "Yes, I need to pay attention to this," or "No, these guys have got it."

This response is similar to the "triggered attending" affordance (Majchrzak et al., this issue), in which automatic notifications provided by social media systems allow participants to monitor discussions and participate only when relevant—although in this case, the trigger was more cognitive than technological. More importantly, it enabled managers and other busy employees to simultaneously engage yet disengage from conversations. The ability for engineers and especially managers to quickly scan updates in information streams and limit their participation accordingly afforded them an enhanced ability to manage communicative interruptions.

### Sharing-Control Tension

Given the highly competitive nature of FlashTech's industry, knowledge sharing across teams—as well as across geographical locations—was critical. None of our interviewees had any overt qualms about sharing knowledge with other organizational members, often citing "for the good of the company" as an overriding consideration. While social media affordances enabled ease of knowledge sharing, the tools were also subject to leaks. Concerns about confidentiality and job security often resulted in attempts to control rather than share certain types of knowledge.

**Job security-related tension.** As mentioned earlier, FlashTech was shifting its operations from the East to the West Coast. East Coast employees were acutely aware that they were in a precarious position as hiring had been frozen in their office while it continued at a rapid pace on the West Coast. West Coast employees were less aware of it, but East Coast employees felt their job security threatened. As senior software engineer P1 on the East Coast put it, "If we're considered the remote site and then everybody knows how to do the things that we know how to do, then there's no reason for this site at all." One of the West Coast engineers, P10, confirmed this perception and the ways in which it influenced knowledge sharing dynamics: "There's a bit of replacement fear. They're going to be the orphan office, not getting much new and other things like that. They're holding tight to what they know . . . Because they're remote, they don't want to share quite as much."

Thus some of the East Coast experts faced concerns that sharing their expertise would make them and their site expendable, which created pressures to control rather than share knowledge. The West Coast managers disputed this and suggested that such concerns were unfounded, stressing that they tried to keep the East Coast engineers involved in all matters, including them in video-based meetings, even flying them in periodically to meet with the rest of the team to ensure they did not feel isolated. For the East Coast employees, though, these site visits served mainly as "brain dumps." They mentioned that visits from West to East Coast were much less frequent, and expressed concern about knowledge flow being one directional from the East Coast to the main office, with a lack of reciprocal knowledge flowing back. Hardware engineer P7 on the East Coast explained, "So they pull information from us when they need it, but don't always keep us informed. So it's one-way communication . . . I think because that site is big and wants to make all the decisions. They're forced to tolerate this site because we have the knowledge they don't." This quote illustrates the power dynamics—common in distributed

work arrangements (Cramton, 2001; Metiu, 2006)—that resulted in a one-way flow of knowledge from the remote site to the main site, while the main site often neglected to share decisions or other important information with engineers at the remote site.

**Confidentiality-related tension.** Another concern that created tension between sharing and controlling knowledge was related to confidentiality of information. Much company information was considered proprietary or sensitive and was not intended for even all internal audiences. Certain documentation, for example, was restricted to only team members working on a particular project. Thus, assessing the appropriate audience for a particular piece of information or documentation was a constant concern, as FlashTech members were aware that not everyone may be interested in it and attempted to avoid unnecessary sharing with irrelevant parties. Software engineer P3 explained how Google Docs was used for document sharing:

Although Google Docs allows me to specify exactly who I want looking at this, sometimes I'm asked beyond that, "Can you share this with me?" "Well, ok." It's usually nothing. If somebody wants to see it, fine. I don't want to first of all, bombard everybody with something they may not be interested in.

This quote reveals the ways in which confidentiality concerns were aligned with concerns about maintaining good relationships with coworkers and not "bombarding" them with unwanted information. FlashTech employees largely preferred more bounded media such as Google Docs in which they could limit the audience for particular documents and information, rather than public or enterprise social media tools meant for interaction among large-scale audiences.

The engineers were also aware of the highly competitive nature of the industry their company was in and had concerns about proprietary information falling into the hands of their competitors:

We work in a highly competitive field. We don't want company proprietary information to be leaked out . . . The problem with Facebook and other (social media platforms) is . . . there are 500 million users . . . If you share that information, and if your friend's friend knows about it, they post it on somebody's wall and it's visible to other people . . . the likelihood or probability of information getting out is very, very high.

As this quote from hardware director P9 demonstrates, FlashTech members were highly sensitive to company proprietary information being leaked to their competitors. This acute concern was exemplified by the fact that the company did not even have an official documented organization chart. Some employees speculated that this was due to fear that it would fall into the hands of competitors who would try to identify good people and poach them away from the company. Concerns about data confidentiality deterred FlashTech members from using public social media tools such as Facebook and Twitter which they deemed too "leaky," as well as enterprise social media, as they were averse to sharing potentially confidential information with large and unknown audiences due to the perceived risk of unauthorized dissemination of proprietary information.

**Strategic response.** engineers managed this tension between sharing and control of information in two ways: East Coast engineers with concerns about job security engaged in extensive knowledge sharing by answering requests and training new hires, but they also enacted "selective sharing" in order to retain their expertise and not weaken their position. Second, FlashTech employees combatted confidentiality concerns by relying on tools that allowed them to bound and limit their audience more

easily and thus control what was shared with whom. In Google Docs this was administered by restricting sharing settings, while in Skype, control was exercised in creating groups and inviting team members. Although these were public tools, our participants seemed confident these technologies would keep proprietary information secure within the corporate firewall.

If there's something that needs to be distributed and it's not appropriate for email, you'll make a Google Docs for it . . . I think at the company level we believe that Google Docs is secure. And therefore, we know we can store the design specification and so on that we would not want to see distributed outside this company. But again that's controlled by the permission we set on things.

As this quote by software engineer P12 illustrates, Google Docs was considered more secure than e-mail (which can be easily forwarded) for sharing sensitive proprietary documents such as design specifications. Participants felt they were able to exercise more control over such information by limiting permission settings and thus restricting the audience to a known group of individuals.

## Discussion

Our analysis revealed that engineers in a high-tech start-up organization faced tensions in their social media use due to the interplay of technological affordances that allowed for both overt and covert behavior. Due to pressures to share knowledge while managing their availability to others, their attention, and concerns about job security and data confidentiality, they drew on these affordances to engage in strategic responses that allowed them to be open at times while limiting what they shared at others, in ways that were often at odds with open communication and knowledge sharing but allowed them to attend to conflicting goals. Specifically, we identified three dialectical tensions of visibility vs. invisibility, engagement vs. disengagement, and sharing vs. control in collaborating and sharing knowledge across geographical locations. FlashTech employees drew on social media affordances to communicatively manage such tensions in a way that allowed them to productively attend to each set of competing needs. Table 2 shows our emergent theoretical framework. These findings have implications for social media use in the workplace.

## Theoretical Implications

Our findings help to temper the “ideology of openness” that pervades much emerging literature (both academic and popular) on social media use in organizations. While employees in our case study did use social media to facilitate knowledge sharing, our analysis highlights important ways in which social media affordances also enabled them to limit their accessibility to others, their attention to incoming messages, and the knowledge they shared. This provides a counterpoint to the prevalent assumption that social media will and should foster open communication and knowledge sharing (e.g., Burke et al., 2009) and shows that organizational members are also motivated to conceal information about themselves or the organization and may have good reasons for doing so.

Our findings have implications for the affordances perspective and organizational use of social media. First, they help to further articulate the relationship between technology features and user perceptions by emphasizing the individual agency users bring to social media through choices to use it to accomplish strategic goals (Eisenberg, 1984) such as managing impressions and relationships with others, managing time and attention, and managing accessibility to others in a way that helped them meet their own and others' needs. We find empirical evidence in support of the affordances of visibility,

**Table 2** Emergent Theoretical Framework

Tension	Visibility-Invisibility	Engagement-Disengagement	Sharing-Control
Motivation	Need to manage accessibility to remote co-workers and equipment	Need to manage attention and interruptions	Need to manage job security and confidentiality concerns
Tension	Social media affordances enabled remote co-workers to be more visible but also to lurk	Social media affordances enabled quick interactions and constant updates, but could be distracting	Social media affordances enabled lightweight knowledge sharing but subject to leaks
Challenges	Inability to truly disconnect due to urgent requests Time zone differences impacted work flow	Information overload and lack of time to participate in conversations Engineers less socially engaged	Concerns about job security due to shifting power dynamics among locations Concerns about confidentiality of proprietary company information
Strategic Responses	Going invisible (but not totally disconnecting)	“Work-cations” Temporary disengagement Cognitive “triggered attending”	Selective sharing Controlling access to shared documents

association, persistence, and editability outlined by Treem and Leonardi (2012), but we extend this line of theorizing by articulating the ways in which these affordances allow for both openness and ambiguity or control in knowledge sharing. Further, our findings suggest that the interplay among affordances may lead to tensions for users that require creative responses in order to attend to both poles of the openness-closedness dialectic in social media use. While these tensions may arise with other technologies as well, we argue that social media allow for relatively greater openness (in addition to strategic covertness) that makes these tensions particularly salient. In this sense, social media may be unique in allowing employees more latitude for strategic behaviors in addition to openness. While prior research on technology use has emphasized its strategic affordances (Birnholtz, Bi, & Fussell, 2012; Birnholtz et al., 2012; Leonardi & Treem, 2012; O’Sullivan, 2000; Walther, 2007), it has not studied social media per se but rather communication media in general, including e-mail, instant messaging, and group collaboration tools. Social media is often heralded for the greater degree of openness and connection it provides users. We find that this openness is likely to exist in tension with strategic affordances—and further, that it may even provoke greater strategic behavior, requiring careful negotiation by organizational members.

These findings also draw our attention to specific tensions that provide open knowledge sharing as well as more covert, surreptitious, and strategic uses of social media in distributed organizations.

While scholars have emphasized social media's ability to promote visibility of self, information and contributions, we find that social media may also allow for *invisibility*, by allowing individuals to engage in passive information-seeking strategies (Ramirez et al., 2002) or "lurk" to gain "ambient awareness" of others' content and activity while remaining invisible to others in the information stream. Our participants used the "invisible" status on Skype to signal unavailability to others while preserving some status ambiguity to allow them to attend to important requests.

Whereas social media features such as information streams, alert notifications, and social networks may be used for greater engagement by organizational members in the process of knowledge creation, they also allow for *disengagement* as employees can monitor on-going discussions quickly and limit their attention and engagement through "triggered attending" (Majchrzak et al., this issue). Our findings suggest that the overwhelming attention-deficit effect created by information overload in the system may lead subscribers—especially busy managers—to disengage from knowledge sharing activities, as was evident in FlashTech managers' use of Skype chat to limit their engagement in online discussions. This affordance has been supported by other research finding that teleworkers sometimes used ICTs strategically to increase, rather than decrease, the distance they felt from colleagues to combat an expectation of constant connectivity (Leonardi, Treem, & Jackson, 2010), as well as research on instant messaging finding that while its interactive affordances were initially attractive, this interactivity came to be perceived as a distraction, and the lack of control over interruptions became more annoying as one's contacts grew and one's social time decreased (Birnholtz, 2010).

Finally, despite - or perhaps because of - its affordance of persistence, social media also affords organizational members the ability to both share and exert greater *control* over knowledge and connections. We found that employees attempted to control dissemination of knowledge through selective sharing with the dominant site due to concerns about job security and limiting the audience by controlling permission settings or avoiding sharing of sensitive information in documented media. Our participants were more motivated by concerns over job security and confidentiality than other factors such as fear of demonstrating lack of adequate expertise or the threat of exposing drafts and unfinished products to one's reputation, which all reveal the strategic (Eisenberg, 1984) and self-presentational (Goffman 1959) concerns motivating social media use.

Finally, these findings contribute to theory on organizational tensions. Prior research has distinguished between simple contradictions, pragmatic paradoxes, and dialectical tensions (Tracy, 2004), as well as outlining specific communicative responses to tensions such as selection, vacillation, withdrawal, or transcendence that may enable or constrain action (Putnam & Boys, 2006). Transcendence strategies are generally considered the most productive, since they transform the tension to allow for both opposing poles to be attended to without contradiction, whereas the other responses involve ignoring one or more of the poles at certain times or altogether. Indeed, the engineers in our study faced challenges in their work and demands on their time, but overall FlashTech was a highly successful and rapidly growing company and our participants felt positive about the role of the social media tools they used in facilitating their work. Our findings highlight the overall productive role played by dialectical tensions among our participants, and in processes of distributed organizing more broadly, in allowing members to attend to multiple, conflicting goals.

## Practical Implications

Our findings suggest several practical implications as well. First, they call into question organizational efforts to enhance contributions to social media systems with the assumption that more information sharing of any type will benefit the organization. This has design implications for enterprise social media

tools. Given the sensitive nature of much workplace information, it is important to provide tools with different levels of access that easily allow for formation of smaller groups in order to manage knowledge sharing with diverse audiences. It is also important to implement features (such as status updates) that signal availability and make newly contributed content visible without providing interruptions or distractions from tasks at hand. This implies that designers should consider not just open flow of information as the goal of such tools, but strategic goals that users have to protect or restrict certain types of information and to limit overload. Finally, our findings indicate that certain user populations may prefer less sophisticated, simpler and more lightweight tools such as Skype chat and Google Docs that limit the degree of social communication and allow them to exchange task-related knowledge quickly and efficiently while minimizing distractions. Such preferences should be considered when designing enterprise social media tools.

### Limitations and Future Research

It is important to note that our findings are based on a relatively small number of interviews and are limited to a particular organization and job function (although engineering was the company's core business). Thus, we should be cautious in generalizing to other types of organizations and social media tools, or in drawing conclusions about the impacts of social media on organizations more broadly. Future research should extend the theoretical frame provided here to other types of organizations and other types of work to further define the contextual features that shape social media use. Some of our data suggested that social media may play an important role in cross-functional knowledge sharing, by increasing awareness among different divisions such as engineering and sales, which were currently rather isolated from one another. Further research should include a variety of departments and functions, as well as cross-functional collaboration.

Nevertheless, these findings help to establish tensions around social media use and the nuanced ways in which employees respond to such tensions to both share and restrict knowledge, offering a more tempered view to the rather utopian discourse about the virtues of social media for open organizational knowledge sharing. Our focus on tensions and strategic affordances highlights the importance of understanding the different goals motivating employees' actions and behaviors and how they interact with social media features. Examining not just affordances associated with openness but strategic affordances as well—and the ways in which they are in tension—will help us better understand social media use in organizational contexts and why it may promote and well as restrict or limit knowledge sharing. This understanding will continue to become more important as enterprise social media become more prominent in organizations and their use for knowledge sharing continues to evolve in new and complex ways.

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