The Socio-Technical Process of Newcomer Participation: Lessons from a Field Study

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Abstract. Newcomer participation is fundamental to most organizations yet we have limited understanding of how this process unfolds in real world organizations. In this paper I present preliminary findings from a field study of five newcomers in a research and development laboratory. The findings show that to move from peripheral to full participation newcomers make use of both interpersonal and technological resources available within the organization. In addition to these resources, newcomers' participation trajectories depend on experiences that they bring with when they enter the organization. These experiences provide templates that influence and shape consequent participation. The findings also suggest that as newcomers participate in a community they influence oldtimers as well as established practices in that community, suggesting that a community of practice undergoes changes as a result of newcomer participation.

Introduction

Although work in situated learning and community of practices paradigm has been extremely influential and well-cited, we know very little about how newcomers *actually* participate in a community of practice and what situated learning in a real world organization entails. In their work Lave and Wenger (1991) provide secondary analysis of several studies to show that learning is situated within a community and can actually be called "learning to participate." We are told that newcomers learn by "experience" but not what learning by experience entails. Several questions remain unanswered: What role does the experience newcomers bring with them play in their participation? Do newcomers influence practices within the community? Moreover, given the technology pervasive nature of today's workplaces, what role does technology play in participation?

Newcomers are essential for any organization and their successful participation determines their performance, turnover, motivation, and overall productivity and innovation in an organization. Empirical literature on how newcomers become part of an organization comes from literature in the 'management' and 'organizational studies' field and usually focuses on two aspects related to newcomers: socialization (Ostroff & Kozlowski, 1992; Van Maanen & Schein, 1977) and assimilation (Miller & Jablin, 1991). Studies in these streams focus primarily on how newcomers proactively seek information and how information acquisition leads to formation of social relationships and assimilating in the work environment. Newcomers essentially use information to make sense of the new world they are in and they generally look for what, how and whom kinds of information which they acquire by observing, monitoring, or asking others (Louis, 1980; Morrison, 1993).

My conception of newcomers departs from an information acquisition and use perspective and encompasses *participation* as the core of what newcomers do. This conception is derived from the literature on communities of practice which emphasizes that becoming a part of the community is what newcomers primarily do. Newcomer participation and movement from peripheral to full participation is a fundamental process within any community of practice (Brown & Duguid, 1992; Lave & Wenger, 1991; Wenger, 1998). Accordingly, newcomers not only need to socialize and be assimilated but have to become a participating member of a community. Despite the popularity of the communities of practice concept, few studies have looked at how newcomers actually participate and what role, if any, does technology play in this process. In this paper I present preliminary findings based on a 5-month ethnographic study of 5 newcomers on how they become members of a community of practice and their engagement with technology during this process.

Field Study: Setting and Methods

The data reported in this paper are part of a larger study that involved an in-depth investigation over a period of five months of an R&D laboratory which I will call TechLab. TechLab does research in the area of

software and hardware technology and has offices in the U.S. and Asia. The researchers in TechLab constitute a community of practice as they have common concerns and passions and draw on a shared repertoire of artifacts and events for participation (Wenger, 1998). Data were collected using interviews, observations, surveys, and diaries. For this particular paper a sample of 5 newcomers, who were all hired as fulltime researchers, was chosen and examined in-depth. Interviews were conducted with the newcomers at the time of joining and follow-up interviews were conducted three months later. Newcomers were observed as they participated in different practices and I conducted informal conversations with them about their participation between the two formal interviews. I also took observation notes in meetings and other activities of the lab in which they participated. In my first interview with the newcomers I asked them about their background including previous work experience and education; their day-to-day work at their current job; interaction with their mentors; future plans; their experiences so far at this job; their expectations in the coming weeks/months; their interactions with their colleagues; and their job interview process. Subsequently, I asked each newcomer to keep a diary for a week. In this diary I asked them to note their interactions with a coworker, which was decided in advance, including the medium of interaction as well as the content. I also asked them to record if this interaction was significant for them in some way. In the follow-up interview, in addition to asking them about their experiences at the job I also asked them questions about particular interactions they had listed in their diaries. I was also able to observe their interaction in meetings and their contributions to websites and other technologies in the workplace.

Findings

In this short paper I present an overview of newcomers' participation (Figure 1) focusing primarily on their engagement with technology. When talking about technology newcomers reported using the Intranet initially to look for information about their coworkers and for downloading documents related to travel, payroll and HR functions. In the first few weeks they reported looking at the photos on the Intranet to put faces and names together.

Entry - - - - - - - - - - - ▶ **Peripheral Participation** - - - - - - - - - - - ▶ **Towards Full Participation** - - - ▶

When newcomers enter the organization they bring with them prior experiences that serve as templates that guide their participation. This happens before learning by doing or learning by experience.

These templates *frame* newcomer's sensemaking processes shaping how they participate in the organization. Based on their subsequent experiences (feedback) – positive or negative – they re-calibrate these templates.

As newcomers move from peripheral to full participation in the community they re-calibrate their sensemaking templates continuously. Each calibration can be seen as an instance of learning.

Technology

Before joining, newcomers use technology to learn about the organization and to apply for the job. When they join they have a template of technology use based on prior experiences.

While participating, they use technology for filling forms, making presentations, interacting with coworkers, finding information about processes and people, and displaying information about themselves.

As they move towards full participation they realize ways in which use of technology is important and the technological skills that are important to learn and display in the organization.
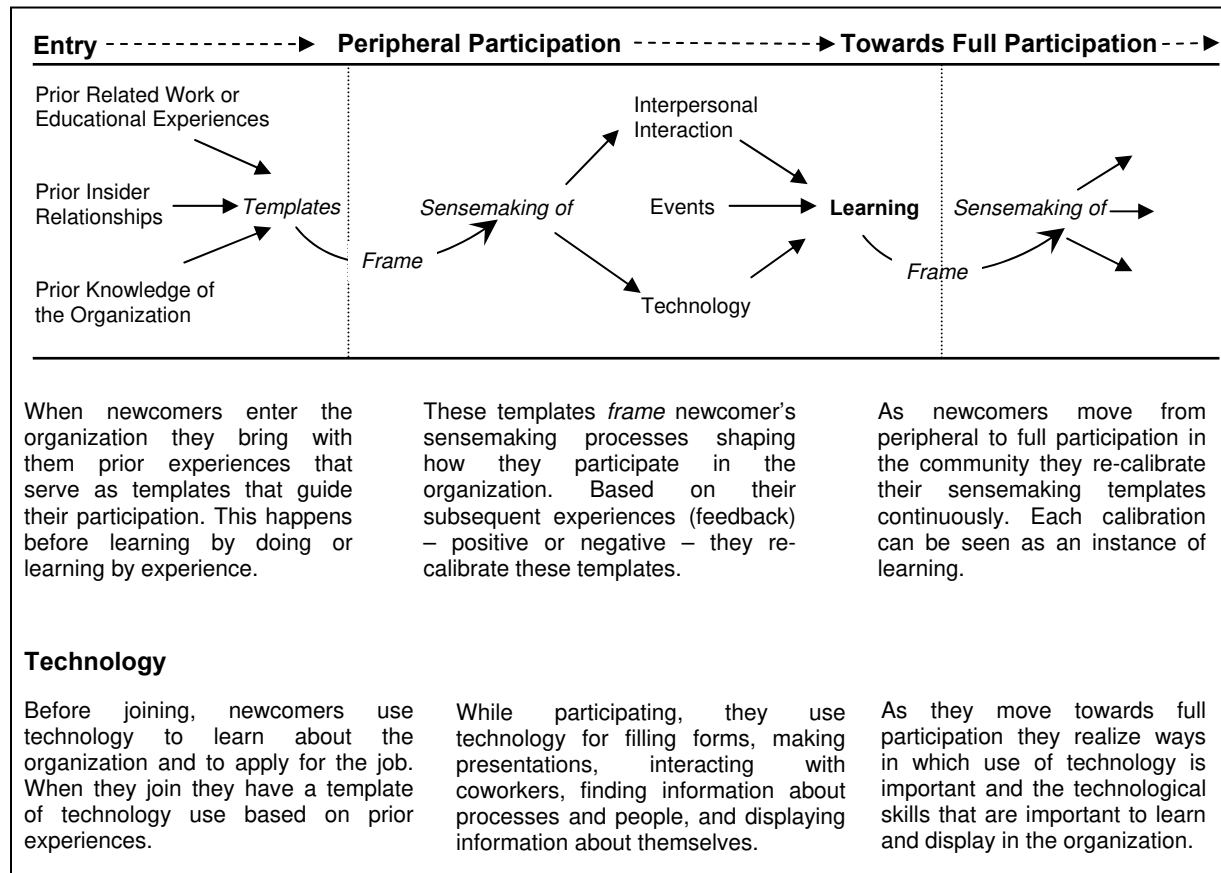
Figure 1: Newcomer sensemaking from entry to full participation

During interviews they would often pull up that page and point to a photo and say this is the person I am talking about. They used the archives to see what their coworkers had published and patented as well as to look at examples of works. Newcomers also used the archives to look at presentations they had made including their job talks to be able to improve their presentation skills. They reported that they used the Intranet to start conversations and build relationships by looking at a coworker's prior work and then going and talking to them about it. Newcomers with preexisting relationships within the organization reported using technology far less for information acquisition, both for interpersonal as well as organizational information, than those newcomers who did not know anyone when they joined. Newcomers' use of technology changed with time. Over time technology was used used to get information about artifacts and to understand how those artifacts, such as papers, demos, were produced. Technology, primarily email, was used to a large extent for communication but informants reported that technology-mediated communication complemented face-to-face interaction but did not substitute it and evidence from the diaries showed communication regarding the same topic through both email and face-to-face interaction. Newcomers reported talking to coworkers to understand how to contribute to the Intranet, since these contributions were a part of their practice. For instance, every month researchers had to write a monthly activities report which was submitted to the manager and then he put it on the Intranet. Technology use changed gradually and technology use became a practice in itself. Newcomers learned the value and meaning of technology use within the organization and started to 'engage' with technology. Proficiency in technology was seen as being able to speak the "language of the laboratory."

Implications and Discussion

Engagement with technology, which involves more than just using it for communication, is critical for newcomers to participate in a community of practice. Theoretically, this work shows that when looking at how technology affects newcomers in an organization, it is important to look at not only how they are using technology but how they are engaging with technology in different ways, including using technology as the raw material for producing artifacts and as a medium to display and present work. In addition to theoretical contribution on newcomer literature and communities of practice, there are several design implications of this work. It highlights that system designers need to pay more attention to designing systems for particular audiences in the organization keeping in mind their practices. For instance, newcomers might be an audience towards whom a system is directed and if well built that system might be adopted by others in the organization. A well designed system that serves a particular audience really well is likely to be used by others (Cooper, 2004). Given the proliferation of technology in organizations and its manifestations in different forms such as for communication, for designing work, for presenting work, for finding information about coworkers, and so on, there might be a need to fundamentally reexamine how technology has changed our relationship to work and to other people.

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