Chapter 10
Technology Stewardship for Distributed Project Teams

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ABSTRACT
Distributed project teams and communities of practice face similar challenges in using technology to work together and “be together.” However, these technologies are not only powerful enablers, they also present persistent challenges in and of themselves and in that they enable and filter multiple kinds of heterogeneity. These challenges are magnified by linguistic and cultural heterogeneity, multiple time zones, organizational boundaries, and the variance in technology literacy in project teams. Project teams need to adopt some of the practices that are found in technology-mediated communities to cope with their persistent technology challenges. The notion of a “digital habitat,” which has been developed by Wenger, White, and Smith (2009), is used to describe the landscape of technologies and practices that in combination will enable a project team to accomplish its tasks. For some distributed teams, a project must include ensemble work to ensure that all team members can participate and contribute, that communication and collaboration practices exist or are being developed, and that what has been learned in the process of completing the work is assessed and retained. The technology steward is proposed as a new role and function for project teams that operate at this level. Activities that support the exploration of a digital habitat include the development of technology literacy and increase the learning capacity of project teams.

INTRODUCTION
Project teams are one of the dominant forms of organizing work, and project management is one of the essential skills for a company’s survival. Throughout the history of project management, much of the literature on the subject has adopted a command-and-control model of project management, where learning was not an explicit or salient element. Project teams are now more complex...
because of factors such as globalization, the need to work across organizational boundaries, and the way that work is increasingly mediated by technology (Zuboff, 1988). But because of the way projects bring workers together in ad hoc groupings, they are differentially exposed to the challenges of distributed collaborative technologies, and technologies present their own learning challenges. In a knowledge economy, learning is a more important element of project work than in the industrial age. A learning model such as a community of practice framework augments more traditional project management thinking, particularly as it addresses technology use.

This chapter explores some of the connections between project management and learning, and connects them to the technology challenges that project teams face. It proposes that a technology steward role, which is significant in distributed communities, can support the learning and ongoing sense-making that is an important ingredient of knowledge-intensive and distributed project work. The conceptual discussion of a technology steward is complemented by two concrete examples of the kind of contribution that a technology steward makes to a project team. The first is a case study describing an exploration episode where a group collectively explores the use of a new tool for teamwork. The second illustrates how a technology steward breaks down the different functions of a software platform from a social and collaboration perspective that is derived from the study of communities of practice.

**BACKGROUND**

Project management is probably as old as organized work itself. As a formal discipline it is a direct descendant of Taylor’s “scientific management” approach (Cleland & Gareis, 2006). Tools such as Gantt Charts and methods such as Critical Path Analysis and Work Breakdown Structure all aim at the rational organization of discrete activities that can be known in advance, repeated, measured, and thus improved. Spreading from large civil engineering projects in the early 20th Century to defense contracts to software development, today project management techniques are commonplace and essential to corporate operations (Cleland & Gareis, 2006). Recent developments such as Agile methods for software development (Derby & Larsen, 2006) are innovative and relevant to knowledge-intensive projects because they make learning an integral part of the project management process.

Communities of practice are probably as old as human society as well. As a concept and a term, “community of practice” was proposed in Lave and Wenger (1991) as a way to account for the social organization of apprenticeship. Further conceptual elaboration occurs in Wenger (1998). Ito et al. (2009) place communities of practice in the larger context of a “social turn” in literacy studies, new media studies, learning theory, and childhood studies that moved away from the previously dominant focus on individual cognition and knowledge acquisition.

A working definition is provided by Wenger (2006), p. 1: “Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.” The early adopters of the community of practice framework were corporations managing knowledge (Wenger, McDermott, & Snyder, 2002; Wenger & Snyder, 2000) where technology by itself was inadequate as a means of managing this critical resource. In Digital Habitats, Wenger, White, and Smith (2009) develop a framework for thinking about technology as an integral component of the life of communities of practice and propose the role of technology steward as a key kind of community leader.
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