Chapter 5.7
Sharing Usability Information:
A Communication Paradox

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ABSTRACT

In this chapter, we investigate the social and communication challenges surrounding usability information sharing. Our objective is to investigate a communication paradox: software development teams, consisting of usability engineers, software developers, and project managers, chose communication channels to use every day that are not channels they prefer to use. This paradox was discovered in a survey and explored further in interviews with software development teams. Results indicated that challenges with common ground and work coupling affect the extent to which the affordances of different communication channels can be taken advantage of. The value of this study highlights and explains the paradox from a time-space perspective and provides insight to usability information sharing among software engineering teams. Future work includes investigating the effect of social capital on communication channel preference along with understanding how important usability issues can be discussed in complex teams.

INTRODUCTION

Cooperative aspects of complex teamwork include communicating through various communication channels about important issues. Software development teams work together to solve problems of various types, regularly communicating with co-workers in different job roles (usability engineers, software developers, and project managers). They communicate about issues and share information across a variety of communication channels (email, chat, web tools, bug trackers, face-to-face meetings, casual face-to-face interactions). Thus, software development is a form of complex teamwork. Historically, usability teams have had challenges with integrating their activities into

DOI: 10.4018/978-1-61350-456-7.ch5.7

software engineering processes (Boivie, Gulliksen, & Goransson, 2006) making communication and information sharing particularly challenging for usability issues. Software engineering groups are responsible for designing and implementing the system taking special care that the software is free of errors and works according to specification. In contrast, usability groups are responsible for designing and evaluating interactive systems taking special care to create a desirable user experience.

In this chapter, we investigate the social and communication challenges surrounding usability information sharing. Our objective is to investigate a communication paradox where software development teams consisting of usability engineers, software developers, and project managers chose communication channels they used every day as the opposite of what they preferred to use. This paradox is investigated using a survey and interviews with software development teams.

BACKGROUND

In this section we overview background literature on information sharing in software development and prior literature on information sharing in teams to demonstrate the challenges and benefits of information sharing in groups. We also overview the affordances and constraints of various communication channels available for teams to use and share information.

Information Sharing

Sharing usability information across interactive system development teams is essential for communicating and understanding the needs of each team member's activities when working together to produce the system. Personal connections and interactions that transcend organizational boundaries, such as the separation between development teams and usability specialist teams, support the flow of information (Salvador & Bly, 1997). The idea is to package information so that many different people can use it. For example, developers need usability information to understand the designs they are coding (Poltrock et al., 2003). Ko et al. (2007), found that such information needs include answers to the following questions: What is the program supposed to do? Is this problem worth fixing? What are the implications for this change? These needs connect to usability information because changes could affect the user experience. Thus, indicating where code changes might affect usability would be more easily addressed via communication channels that enhanced information sharing. In addition, software design teams consisting of members across different job functions, including managers, project coordinator, usability engineers, developers, and visual designers, have collective information needs including identifying information needs, formulating information queries, retrieving relevant information, and communicating about information needs (Poltrock et al., 2003). Furthermore, teams use different channels for communication. Yet they have a tendency to choose informal face-to-face communication, such as walking in others' offices or chatting in the hallway (Bach et al., 2008). Development, management, and usability teams have a variety of information needs that can be accomplished through various communication channels.

Prior research investigates the social effects of information sharing. Because psychological costs exist for asking about information, individuals follow the law of least effort (Daft & Lengel, 1986). For example, if a manager is concerned about making a deadline he might ask a developer how technical a usability fix is to implement. On one hand, he could wait until the team meeting or send an instant message to the developer to get a quick answer. The manager might be concerned however, that he must explain the details of the rationale in order for the developer to fully understand the fix. This is a psychological cost of information sharing. Contrary to psychological costs of information sharing is the benefit of shared experiences. Shared