Chapter 13
Triggering Specialised Knowledge in the Software Development Process:
A Case Study Analysis

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ABSTRACT

Many factors determine the success of software development projects. The exchange and harnessing of specialized knowledge amongst and between the project team members is one of these. To explore this situation, an ethnographic case study of the product-testing phase of a new human resources management system was undertaken. Extempore verbal exchanges occur through the interplay of project team members in weekly meetings, as the software was tested, analyzed, and altered in accordance with the customer's needs. Utilizing tacit knowledge from the project members as well as the group, new tacit knowledge surfaces and spirals, which allows it to build over time. Five extempore triggers surfaced during the research generated through explicit stimuli, allowing project members to share and create new knowledge. The theoretical development places these learning triggers in an interpretive framework, which could add value to other software development and project management contexts.

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INTRODUCTION

Recent research has identified and assessed the significance of a range of issues that determine software project development outcomes (Wynn, 2018a, 2018b). These include factors concerning not only technology, but also people and process related indicators, including knowledge transfer intensity (Figure 1). In other literature, the surfacing of such knowledge in projects has been conceptualised as emanating from a combination of improvisation, project management and knowledge management activities (Leybourne & Kennedy, 2015). The issue of improvisation, however, can be seen to be at odds with established best practice project management principles. Prescriptive, probabilistic and objective based project management systems are no guarantee of success and in some cases they can create an illusion of control that is not always justified (Hodgson & Drummond, 2009). All projects have a temporal focus and the dominant logic in this field is structured planning to achieve workable projects on time. Knowledge sharing is at the core of meetings where different forms of expert knowledge are required.

Tacit knowledge is a difficult form of knowledge to share and acquire during a project due to its intangible nature. Tacit knowledge is at the core of a knowledge based society and its exchange is still of great interest to researchers. How tacit knowledge is exchanged and used within the different project teams plays a vital role in project success. Banacu (2013) stresses the importance of tacit knowledge transfer due to companies needing it to obtain a competitive advantage. Project teams, and in particular those involved in software development, exist to provide workable solutions that incorporate and create new knowledge from the separate areas of expertise held within the team. This research analyses a project team's tacit knowledge exchange within a software development meeting environment.

White and Perry (2016) argue that there has not been enough focus on the expert knowledge of software developers and their influence on the production of information systems. This is an area where software work is highly socialized but careers were highly individualized (Benner, 2008). Their mutual standing in the work overcomes the set of partial knowledge that they each possess. Being able to manage different knowledge sources through coordination and integration is a significant challenge during such a project (de Souza et al., 2006). The focus of the research lies in exploring knowledge exchange in software development projects and sheds light on how this expert group knowledge actualises and thus contributes to theory. Embedded observation in a particular project provided the empirical material for this research.