Chapter II

Post-Implementation Use of a Complex Technology: The Case of a Southeastern U.S. University

Marie-Claude Boudreau, University of Georgia, Terry School of Business, USA

Abstract

This chapter reports on a qualitative research study conducted within a Southeastern U.S. university, which investigated how organizational members appropriated an ERP package over time. A framework suggested by Lassila and Brancheau (1999), which distinguishes different states of software usage, was found to be particularly appropriate in understanding ERP usage. The research, which used a grounded theory methodology supported by the software Atlas.ti®, uncovered different transition patterns of use exhibited by organizational members. Research findings suggest how the practice of informal learning was key in understanding how organizational members transited from one state of use to another.
Introduction

Enterprise Resource Planning (ERP) packages have recently gained acceptance among organizations from the public sector, which now represents one of the largest potential areas for new ERP sales (Wagner & Antonucci, 2004). Academic research focusing on ERP within the public sector has emerged, and within this stream of research, investigation of the higher-education environment has also taken place (e.g., Scott & Wagner, 2003; Sieber, Siau, Nah, & Sieber, 2000). Universities, it has been suggested, are somewhat different from other kinds of organizations (Pollock & Cornford, 2004), and therefore warrant targeted research for that specific environment. ERP implementations within higher education may be risky, as many unsuccessful implementations have been reported in the trade press (e.g., Brown, 2002; Leibowitz, 2000; Madden, 2002; Moodie, 2002; Olsen, 1999, 2000, 2000a). In many of these cases, ERP users are cited as contributors to the system failure, as their appropriation of the new technology is particularly demanding.

It is demanding, because, by many accounts, ERP packages are considered to be complex technologies (Akkermans & van Helden, 2002; Gill, 1999; Maney, 1999; Ribbers & Schoo, 2002). When introduced within organizations, a complex technology typically imposes a substantial burden on would-be adopters in terms of the knowledge needed to use it effectively (Fichman & Kemerer, 1997). The implementation of a complex technology creates what have been termed “knowledge barriers” (Attewell, 1992), which implies that a great deal of effort is required to obtain the necessary knowledge and skills for the proper appropriation of such a technology. This necessary knowledge tends to be acquired over time, with considerable difficulty (Cohen & Levinthal, 1990). Because of knowledge barriers, it is not uncommon for a complex technology to be successfully implemented, while being unsuccessfully appropriated. In such a scenario, expected benefits are only partially, if at all, attained.

Considering that success is a multidimensional concept that includes more than a technological component, it is purported that a fully successful ERP implementation is contingent upon adequate appropriation. ERP, in other words, must be utilized appropriately before leading to significant benefits. Based on this assumption, this research seeks to increase our understanding of how organizational members appropriate a complex technology (such as ERP) over time.

This chapter is structured as follows. First, the construct of use is discussed, and a specific framework of use is pointed out as being particularly relevant for the study of ERP. Then, the research approach that was used, the grounded theory methodology, is described. Next, empirical findings are presented according to the framework initially introduced. In the later part of the chapter, extensions to this framework are discussed, and contributions to academia and practice are emphasized.
Related Content

**Designing Data Marts from XML and Relational Data Sources**
[www.igi-global.com/chapter/designing-data-marts-xml-relational/48557?camid=4v1a](www.igi-global.com/chapter/designing-data-marts-xml-relational/48557?camid=4v1a)

**Generic Object Oriented Enterprise Modeling Approach Utilizing a Strategic Abstraction Mechanism**
(2010). *Organizational Advancements through Enterprise Information Systems: Emerging Applications and Developments* (pp. 322-335).
[www.igi-global.com/chapter/generic-object-oriented-enterprise-modeling/41835?camid=4v1a](www.igi-global.com/chapter/generic-object-oriented-enterprise-modeling/41835?camid=4v1a)

**The Digitization of an Aerospace Supply Network**
[www.igi-global.com/article/digitization-aerospace-supply-network/2121?camid=4v1a](www.igi-global.com/article/digitization-aerospace-supply-network/2121?camid=4v1a)
Three Dimensions of Business Intelligence Systems Use Behavior
www.igi-global.com/article/three-dimensions-of-business-intelligence-systems-use-behavior/116767?camid=4v1a