Chapter 100
Measuring Knowledge Enablers and Project Success in IT Organizations

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ABSTRACT

Knowledge enablers exist at the organizational and project levels. There is however, no meaningful means to measure organizational or project knowledge sharing. The need to understand the elements that enable this flow of knowledge is dramatically evidenced in information technology organizations in which insufficient knowledge sharing leads to intellectual capital loss, rework, skills deterioration, and repeated mistakes that increase project costs or failures. The goal of this study was to examine the relationship among knowledge sharing processes at the organizational level – organizational learning enablers (OLEs) – the project level – project learning enablers (PLEs) – and project success variables (PSVs). After identifying and validating the OLE, PLE, and PSV constructs they were codified in a survey. Results showed a positive and significant relationship among OLEs, PLEs, and PSVs. A multiple regression indicated that the combination of OLEs and PLEs accounted for 30% of a project's success, however, PLEs alone were not statistically significant.

BACKGROUND

IT Projects continue to fail for many of the same reasons that they did 30 years ago (Cerpa & Verner, 2009). These failures lead to economic consequences. For example, companies spent millions of dollars on failed ERP implementations (Wu, Ong, Hsu, 2008). In the United States, the cost of failed IT projects amounts to $63 billion (McCafferty, 2010). Citing Panorama Consulting, Jeng and Dunk (2013) reported that 59% of ERP implementations cost more than anticipated. One interviewee, in Reich (2007) opined

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that project knowledge issues cost 10% of the total amount of a $60 million IT project. A failed hospital IT implementation cost $13 million and wasted six years of effort (Gauld, 2007). Customers conclude that too many of their IT projects fail (Ballou, Belardo, & Pazer, 2010).

The scope of the problem is significant. The magnitude of IT expenditures, lost benefits during the period of delay (Banker and Kemerer, 1992), forgone value when projects fail or under deliver, and employee impact combined suggest a large problem. In a very meaningful sense, "these dismal findings can be traced to poor organizational learning mechanisms in software organizations" (Desouza, Dinsøyr, & Awazu, 2005, p. 204). Project teams are not learning lessons from other teams and this contributes to higher project costs (Hanisch, Lindner, & Mueller, & Wald 2009). Vital knowledge from prior projects is lost and not passed on to subsequent project teams (Jugdev, 2012). Lack of knowledge is the key reason that IT projects fail (Nemani, 2012).

Knowledge frequently does not flow among project teams (Ajmal & Koskinen, 2008; Newell, Bresnen, Edelman, Scarbrough, & Swan 2006; Owen, Burstein, & Mitchell, 2004; Petter & Randolph, 2009; von Zedtwitz, 2003). Organizational failures to extract and apply project lessons learned are widespread (Newell & Edelman, 2008). Since knowledge exists at both the organizational and project levels, barriers to knowledge flow can exist at the organizational or project level (Ajmal & Koskinen, 2008; Crossnan, Lane, & White, 1999; Keegan & Turner, 2001; Nonaka, von Krogh, & Voelpel, 2006). Meaningful means to measure organizational or project level knowledge enablers do not appear to exist.

When knowledge does not flow among project teams within an IT organization resources are wasted. New project teams 'reinvent the wheel' as opposed to learning from prior projects (Newell, et al., (2006). Some projects repeat errors for years because learning from previous projects did not occur (Ajmal & Koskinen, 2008). Furthermore, companies experience waste in the form of lost potential to build employee skills (von Zedtwitz, 2003). Thus, when project teams do not share lessons learned, poor solutions are duplicated, mistakes repeated, and knowledge of good procedures lost, leading to rework and missed opportunities (Owen, et al., 2004; Petter & Randolph, 2009).

PROBLEM

IT leaders often do not make it a priority to share lessons learned among project teams. Managers may not understand the value derived from sharing lessons among project teams. For example, a knowledge manager faced a challenge convincing senior management on the value of KM. "My bosses want to see how KM implementation improves the ROI [return on investment] of the company, and how am I going to convince them since it is hard to measure KM using dollars and cents?" (Choy, Yew, & Lin, 2006, p. 930). In addition, IT staff resist efforts to capture and share lessons learned (Jugdev, 2012). In short IT leaders fail to reuse "knowledge to improve organizational effectiveness by providing appropriate knowledge to those that need it when it is needed." (Jennex, Smolnik, & Croasdell, 2009, p. 185). Knowledge management success is not being achieved and IT leaders may not realize the cost of this over sight.

Attempts have been made to solve the problem using IT. At the National Aeronautics and Space Administration (NASA), project managers did not use the technology to access lessons learned because many felt the system was too onerous (The United States General Accounting Office (GAO), 2002). Even when the information database was easy to use and accessible project managers did not use knowledge management systems because it detracted from other work (Newell, et al., 2006).