ERP Training and User Satisfaction: A Case Study

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ABSTRACT

Training is still a neglected part of most ERP implementation projects. This case study investigates the relation between training satisfaction and

- the perceptions of ease of use,
- the perception of usefulness,
- effectiveness and
- efficiency

in implementing an ERP system at a mid-sized organization. Training satisfaction is viewed as a necessary condition for technology acceptance. A survey of 143 employees involved in the implementation of ERP in a mid-sized university was conducted. ANOVA and t-tests were used to explore differences in training satisfaction among groups of users by gender, job type, and education level. We found that training satisfaction differed based on job type and gender but not education level. Multiple regression analysis found (1) post implementation training satisfaction related to ease of use and (2) current training satisfaction and user participation related to perceived efficiency and effectiveness of the ERP systems in doing respondents’ jobs.

Keywords: ERP; ease of use; technology acceptance model; training; use

INTRODUCTION

Enterprise resource planning (ERP) systems are complex off-the-shelf IT solutions that promise to meet the information needs of an organization. ERP systems are frequently used to replace aging and difficult-to-maintain legacy systems. Despite ERP’s promise, these systems are difficult and expensive to implement. Many failed implementation projects have been widely cited in the business and academic press.

In today’s constantly changing business world, many organizations are implementing ERP systems. Large sums are still being spent on ERP installations. A Forrester survey found that ERP and enterprise applications in general remain “the top IT spending priority for 2005” (Hamerman & Wang, 2006). A survey of Society for Information Management members conducted in the summer of 2005 concluded that ERP is among the top six application concerns of its members (Luftman, Kempaiah & Nash, 2006).

ERP systems allow separate business process to be put together into one compact software
system using what the vendors consider “best practices.” The integration of different information systems using off-the-shelf ERP solutions is predicted to reap benefits that will outweigh the costs involved with the implementation; however, practice has shown that ERP implementation is not an easy task. Davenport (1998) identified unsuccessful implementation efforts at Fox-Meyer Drug, Mobile Europe, Dell, and Applied Materials. Stedman (1999) found that after spending $112 million on an ERP project, Hershey Foods was unable to fill Halloween candy orders in 1999, resulting in a 19% drop in quarterly profits. Wah (2000) observes that “ERP projects have snarled internal processes in big companies like Whirlpool, Hershey’s, Waste Management, Inc., and W.L. Gore & Associates.”

The case we report in this article deals with a university. Universities face many of the same problems as for-profit organizations in installing ERP such as coordinating resources, controlling costs, and “stimulating and facilitating enterprise among the staff (Pollock & Cornford, 2004).” In face of cut-backs in funding, many universities turned to ERP systems to improve efficiency and to become more responsive to student needs. Higher education institutions are not exempt from implementation difficulties. Universities often suffer lost revenue, wasted time, cost overruns, and delays during ERP systems implementations. For example, the state of Ohio sued PeopleSoft for $510 million for fraud and breach of contract (Songini, 2004). The University of Massachusetts—Amherst experienced a “nightmare” at registration (Bray, 2004) and Indiana University experienced difficulties in financial aid payments (Songini, 2004b).

We know from the technology acceptance model (Davis, 1989) that successful implementation requires user acceptance. Since ERP systems are potentially a disruptive technology change, organizations undertake training as a way to gain technology acceptance. Only a small number of existing studies examined the effectiveness of training and education in ERP system implementation at higher-education institutions. This lack of exploration of an important factor in successful ERP implementations is what led us to this study. The purpose of this article is to explore the relationship of training and education to ERP project success. We use:

- user perceptions of ease of use,
- user perceptions of usefulness,
- efficiency and
- effectiveness

as predictors of use, an important element of ERP project success.

The data collected is from a medium-sized public university in the northwestern region of the United States. The university experienced delays and unexpected costs during ERP system implementation. We use multiple regression analysis to determine the effect of training satisfaction on use and usefulness. We use ANOVA on survey data to look for differences in perception of training satisfaction by gender, job type, education level, department, and longevity in current position.

**RESEARCH PROBLEM**

This research examines the relation between the users’ perceptions of whether training is adequate before implementation and after implementation in terms of the users’ perception of ease of use and usefulness in doing their job after the implementation. We sought to find out (1) How does training impact the technology acceptance model? (2) Do different groups perceive training adequacy differently? (3) What factors are related to the perceived ease of use, effectiveness, and efficiency of the ERP system?

**LITERATURE REVIEW AND HYPOTHESES**

IS Success. User acceptance and use are key factors in the success of any new technology in information systems. An example of this can be found in the DeLone-McLean IS success model. Measuring the success in information systems is difficult. DeLone and McLean (1992;