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# Change Management and ERP Implementation Success

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## ABSTRACT

Enterprise Resource Planning (ERP) systems have become an integral part of the technology infrastructure of large organizations. However, its implementation has been troublesome partly due to end-user resistance arising out of an inadequate understanding of system functionalities and related processes and fear of disruption to existing work routines. To counter this, ERP implementation teams execute user-centric change management strategies such as the establishment of an ERP help-desk, user involvement in system implementation, end-user training, and the deployment of power-users. This study analyses the impact of these change management strategies on implementation success. Analysis of empirical data indicates that an ERP help-desk and the deployment of power users influence implementation success, whereas user involvement in system design and user training has no significant impact. The study contributes to a better understanding of change management as it relates to the end-user and would aid organizations in prioritizing their strategies.

## Keywords

Enterprise resource planning, implementation success, change management.

## INTRODUCTION

ERP systems span multiple users across functional units within the organization; hence, its implementation is viewed as complex and challenging (Dezdar and Ainin, 2011). Existing business functions within the organization may need to be reconfigured, entailing users to acquire complex new knowledge and unlearn large portions of what they already know. User resistance arising out of an inadequate understanding of the intricacies of the ERP system and fear of disruption to existing work routines has been identified as contributing to implementation failure (Barker and Frolic, 2003; Palaniswamy, 2002). To address this, ERP implementation teams adopt a variety of user-centric change management strategies including user involvement in system development, establishment of an ERP help-desk, user education through hands-on training, and deployment of “expert” power users. This study examines the impact of these change management strategies in influencing user acceptance of ERP systems.

## USER INVOLVEMENT

A sense of ownership and commitment can be inculcated in the end-user by making them active participants in the implementation of the ERP system. To this end, implementation teams solicit user input and often co-opt users into the team on a part-time basis to “buy-in” their allegiance towards the ERP system (Grossman and Walsh, 2004). Due to their personal “sunk” investment in the implementation, such users can be expected to foster positive attitudes towards the system and contribute towards its success.

*P1: User involvement will be positively related to ERP implementation success.*

## HELP-DESK

The establishment of an ERP help-desk to address and solve ERP-specific problems can serve to mitigate user concerns regarding the system. User learning via the help-desk will be influenced by the quality of the problem solving process, the depth of explanation provided to the user, and the responsiveness and reliability of the help-desk personnel (Haggerty and Compeau, 2002). Hence, the help-desk staff should be knowledgeable about the ERP system and must have adequate trouble shooting skills that would enable them to analyze problems and provide solutions.

*P2: User-interaction with the ERP help-desk will be positively related to ERP implementation success.*

## USER TRAINING

User training is critical to new technology implementation. However, training on an ERP system differs considerably from conventional stand-alone system training. Due to the complexity of the knowledge to be transferred, training has to take place over an extended period and should involve transfer of both technical and procedural knowledge. Implementation teams often provide custom training that focus on user/unit specific business processes and functionalities. Such training enables users to come to terms with the changes introduced by the system and could help build positive attitudes toward the system (Dezdar and Ainin, 2011; Palaniswamy, 2002).

*P3: User training will be positively related to ERP implementation success.*

## POWER USERS

The use of complex systems entails sustained long-term knowledge transfer across users with differing capability levels and skill competencies (Sykes, Venkatesh and Gosain, 2009). ERP implementation teams identify and provide targeted training to users with significant prior skills in organizational processes and having experience with complex information systems. Designated as “power” users, these experts are deployed to their home units with the intent of providing sustained help and support to other users (Liu, Feng, Hu and Huang, 2011).

*P4: User interaction with power-users will be positively related to ERP implementation success.*

## RESEARCH METHODOLOGY

### System and Sample

The study context was an ERP system being implemented at a large public university in the United States. The software being implemented included four major modules: Financials, Materials Management, Human Resource Management, and Campus Management. As part of their implementation strategy, the implementation team actively solicited user input and feedback regarding system requirements and functionalities, established an ERP help-desk distinct from the existing IT help-desk, identified and provided priority training to select users who were subsequently deployed as power-users, and conducted extensive user training sessions. Using a survey questionnaire, data was collected from users transitioning to the newly implemented Financials module. This was the most complex of the modules and involved the largest number of users from the university community.

### Measures

The questionnaire asked users to rate their extent of involvement in system implementation (Likert Scale: 1(min) to 7(max)), communication with the ERP help-desk for system-specific issues (Dichotomous variable: 1-Yes, 0-No), number of training sessions attended, and communication with power-users for solving system-specific problems (Dichotomous variable: 1-Yes, 0-No). User demographics such as age, education, and prior experience, as well as the user beliefs of computer self-efficacy and perceived ease of use (Likert Scale: 1(min) to 7(max)) were also measured.

ERP implementation success was measured using the individual impact dimension of the DeLone and McLean (1992) implementation success model. Individual Impact is defined as “an indication that an IS has given the user a better understanding of the decision context, has improved his or her decision-making productivity, has produced a change in user activity, or has changed the decision makers’ perception of the importance of usefulness of the IS” (DeLone and McLean, 1992, p 69). As ERP systems are implemented to enhance organizational efficiency and productivity, individual impact would be an appropriate measure of implementation success and an existing measure (Doll and Torkzadeh, 1998) was adapted to suit this study’s context.

## PRELIMINARY DATA ANALYSIS AND RESULTS

702 questionnaires were distributed based off the user list provided by the ERP implementation team. After eliminating questionnaires that were incomplete or returned blank there were 207 usable responses. Descriptive statistics are presented in Table 1. The average age of respondents was 44 years and they had on an average undergone 3.7 training sessions. Around 40% of respondents had communicated with the ERP help-desk and over half had communicated with power-users regarding system-specific issues.

Measure	Mean (n=207)	SD
Age (Years)	44.33	(10.36)
Experience (Years)	6.70	(7.01)
Education	1.47	(1.11)
Self-Efficacy	4.13	(1.27)
Ease of Use	3.93	(1.27)
Involvement in system design	1.44	(0.82)
Help-desk	0.41	(0.49)
Training	3.74	(1.39)
Power-users	0.52	(0.50)
Individual Impact (DV)	4.38	(0.96)

**Table 1. Descriptive Statistics**

A preliminary multiple regression analysis indicated a significant relationship ( $p < 0.05$ ) between the help-desk and individual impact, hence there is initial support for P2 [*User-interaction with the ERP help-desk will be positively related to ERP implementation success*]. Similarly, there is a significant relationship ( $p < 0.05$ ) between power-users and individual impact, hence there is initial support for P4 [*User interaction with power-users will be positively related to ERP implementation success*]. However, P1 and P3 are not supported.

## CONCLUSION AND FUTURE DIRECTIONS

Initial results indicate that both the help-desk and power users have a positive impact in influencing implementation success. Interestingly, user involvement and training had no significant impact on implementation success. A hierarchical regression analysis is being conducted, the results of which will be presented and discussed at the conference.

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