Motivational Determinants of Training Utilisation in Enterprise Systems

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ABSTRACT
System utilisation is important for enterprise systems (ES) implementations to succeed. However, even though users may have undergone training on these systems, they may not decide to apply the skills they have learned. This affects the benefits that can accrue to firms from their IT investments, as well as being a waste of the time and money spent on training. We interviewed end-users of enterprise systems to find out what influenced them to use the skills that they had learnt during enterprise systems training sessions. Individual malleable characteristics and workplace favourability were the main drivers of their decision to apply the skills they had learned to accomplish their workplace tasks, confirming previous conceptual propositions.

Keywords
Training utilisation, computer self-efficacy, mastery orientation, organisational support.

INTRODUCTION
User training is a key ingredient for the successful implementation of information systems (Gallivan, Spitler, & Koufaris, 2005). However, since system utilisation and appropriate usage are choices that individuals make (Amoako-Gyampah & Salam, 2004), end-users could decide not to use skills they acquired during training, regardless of the time and cost of the training (Baldwin & Ford, 1988; Shayo & Olfman, 1994). When users do not use the skills they have gained, the time and money spent on training can be considered a waste and the benefits that their firm may have wanted to obtain by putting in place the enterprise system (ES) may not be realised. Thus, training transfer, defined as the continual and effectual utilisation of skills learned during training in the work environment (Baldwin & Ford, 1988; Holton & Baldwin, 2003), is essential for ensuring that firms receive value from their IT investments.

Certain factors shape the attitudes and behaviour of users in a post-training environment (Colquitt, LePine, & Noe, 2000; Marler, Linag, & Dulebohn, 2006), and we argue that the absence or presence of these factors affects the application of the skills acquired during training. Both individual attitudes and organisational features (Holton and Baldwin, 2003) affect this process. Understanding these relationships is important to minimise the possibility of limited system utilisation. The next section provides some background on the role of training in ES, and is followed by a discussion of the theories relevant to this issue.

ENTERPRISE SYSTEMS TRAINING UTILISATION
A substantial body of research has looked into individual motivational patterns in learning and task environments. Several of these investigations emphasize both individual and organisational factors (Compeau & Higgins, 1995; Garavan, Carbery, O'Malley, & O'Donnell, 2010; Gravil & Compeau, 2003; Santhanam,
The organisational factors include supervisory support, peer or co-worker support, and top management support (Chiaburu & Marinova, 2005; Tai, 2006). Organisational support mirrors the organisational resources assigned to staff development and the organisation’s culture of learning (Orvis & Leffler, 2011). Social support affects technology assimilation and usage through the exertion of pressure and the expectation of compliance from referent others (Compeau & Higgins, 1995; Thomson, Compeau, & Higgins, 2006).

In this study, we examine organisational-based motivational factors in terms of management and supervisory support. While these issues have received some attention from IS literature, this study differs as we examine individual characteristics that are malleable, as well as contextual issues, and adopt a motivational perspective on enterprise systems training utilisation.

Management support is a critical success factor for enterprise systems implementations (Dong, Nuefeld & Higgins, 2009). Top management support and managers’ buy-in impacts end-users formation of positive attitudes and skills in the overall implementation outcomes (Umble, Haft, & Umble, 2003). In an enterprise systems training context, a supervisor’s pre- and post-training activities influence the performance of end-users during the training activities, as well as the post-training utilisation of the learned behaviours (ability, skills and knowledge) in the task environment (Tai, 2006; Webster & Martocchio, 1995).

Individual characteristics play a role in influencing learning and task performance. For example, computer self-efficacy eliminates anxiety during computer learning and usage (Gravill & Compeau, 2003). Mastery orientation as a malleable attribute refers to an individual’s quest to learn new concepts and their ability to cope with such learning difficulties. End-users with high level of mastery orientation focus more on increasing and improving their learning and mastery of tasks (Garavan, Carbery, O’Malley & O’Donnell, 2010). In particular, mastery-oriented individuals seek challenges, competency and are persistent in the face of failure (Chiaburu and Marinova, 2005). Thus, mastery oriented end-users are more motivated to learn, and can devise coping strategies even when learning difficult and complex tasks.

**THEORETICAL BACKGROUND**

The importance of end-user training, including multimedia, e-learning and web-based training, has attracted the attention of enterprise systems researchers (Davenport, 2000; Igbria & Tan, 1997; Kumar, Maheshwari & Kumar, 2003; Choi, Kim & Kim, 2007; Piccoli, Ahmad & Ives, 2001; Scott & Walczak, 2009). These studies have looked at the impact of training, models of training and design in information systems (Gupta & Bostrom, 2006), training satisfaction (Rajagopalan, York, Doane & Tanniru, 2007) and the influence of training on information systems acceptance (Bedard, Jackson, Ettridge & Johnstone, 2003; Marler et al., 2006).

From the knowledge management perspective, some researchers have argued that knowledge and assimilation barriers during ES implementation are easily overcome by spending time and money on end-user training (Mendoza, Caroll & Stern, 2008). Put succinctly, end-user training is seen as an influence on end-user attitudes towards enterprise systems utilisation. The continuous diffusion of behaviours in enterprise systems seem to be contingent upon effective end-user training, and skill is a contingent factor in system utilisation (Choi, Kim, & Kim, 2007).

Effective training indicates the improvement of job performance through the transference of skills learned during training (Holton and Baldwin, 2003). It also involves fulfilling the conditions of generalisation and maintenance of learned skills on the job (Baldwin and Ford, 1988). Consequently, skills transfer is synonymous with the effective utilisation of learning (skills and knowledge) in tasks environment.

In fact the success of an ES deployment and implementation depend on the skill-set of the end-user, or else the investments in the system will fail to yield the desire results. Perhaps, this explains why some enterprise systems implementations failed (Garg, 2010). While prior research accepted that end-user training was a critical success factor in enterprise systems implementation, it was assumed that users would transfer the skills learned during training into their work environment. Researchers have given much less attention on how to enhance the utilisation of learned skills in an enterprise systems context. Studying this issue by examining the multiplicative influence of individual characteristics and contextual factors will help to overcome the dominant perspective of technological determinism, a scenario in which ES are seen as a complete solution by themselves, which often leads to end-user resistance and high rates of failure (Olson & Kesharwani, 2010).
Our research question is: “What influences skill utilisation in enterprise systems?” This paper is part of an ongoing research project focused on understanding the motivational mechanisms of skills transfer in mandatory enterprise systems (Arasanmi, Wang, Singh, & Ekundayo, 2011). The study drawn upon theories across multiple disciplines, and proposes a nomological net of predictors of effective skills utilisation in enterprise systems context.

RESEARCH METHOD

We took a positivist qualitative approach in this study, and use unstructured interviews to obtain an in-depth understanding of the individual mechanisms that affect post-training utilisation of enterprise systems. The use of unstructured interviews allows flexibility during the interview. The unstructured interview took the format of how, why, and what question format. Some of the questions include; what is your role/job function? How do organisational climate influence skills utilisation and individual performance in enterprise systems? What specific organisational factor enhances skills utilisation? How do individual factors reinforce adoption behaviours in this terrain?

Unstructured technique has also been adopted because of the complex nature of enterprise systems and different perception regarding motivation, attitude and behaviours among end-users. The data were collected and coded from end-users and managers from two organisations who had participated in a prior enterprise systems training. The two companies provide supply chain and logistics services among other functions in the Asia-Pacific region. The enterprise system’s training was conducted for about five months.

RESEARCH FINDINGS

This section provides the key and relevant themes that encourage the use of learned skills on enterprise systems. The end-users differ in their explanation as to what motivated them to use or not use their skills in task-related environment. Consistency and similarity in participants’ comments, theoretical development and the literature in this domain guides the integration of the findings.

Computer self-efficacy

Some participants believed in their ability to use the computer systems because of their previous experiences in working in a computer-based task environment. They did not believe that there would be serious issues in the use of the systems. The enterprise systems training provision increased their attitude and self-efficacy beliefs.

Table 1. Computer Self-efficacy

<table>
<thead>
<tr>
<th>Comment</th>
<th>Source</th>
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<tr>
<td>I think I have some ability to use the computer systems, and I believed I can operate any systems that I am trained-on.....</td>
<td>(User C, Firm A)</td>
</tr>
<tr>
<td>I have self-assurance that I can work on the on the system to carry out my daily transactions........</td>
<td>(User A, Firm A)</td>
</tr>
<tr>
<td>I am sure that my previous ability on the computer will assist me...though this is a new technology...but at the end of the day I should be able to cope........no matter how complex and difficult the technology might be, in terms of usage. ....</td>
<td>(User B, Firm B)</td>
</tr>
<tr>
<td>The training provided enables us to interact with the system........by doing a lot of trial and errors so many times...............but the training and training resources provided some confidence........as we can always consult the training resources.....With this, I am not frustrated to continue to try.....because I know I can always manipulate a system. ......</td>
<td>(User D, Firm A)</td>
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In the former company I worked for, there was a time when they implemented some changes in the IT packages, the new package posed a lot of problems initial....but I encouraged myself that.......since I have some computer knowledge previously.......the present scenario is similar.......I am sure just like my previous experience.......and ability in computer usage will be useful too...(User D, Firm B)....
Some of the participants acknowledged the fact that, mastery of a new technology is usually difficult; however, they were confident that, previous experiences and knowledge in computer systems will be relevant in the new dispensation. Past computing experiences became referent point and a motivational element. This is consistent with previous IS studies that higher computer self-efficacy increases user confidence in the use of computer system (Compeau and Higgins, 1995).

Mastery Learning Orientation

The results show that, end-user’s learning attitude and disposition is very important in determining ERP learning outcomes and post-training transferability. This is evident in the responses presented below.

Table 2. Mastery Orientation

<table>
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<tr>
<th>Description</th>
<th>User/Manager</th>
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<tr>
<td>I really love learning new things.....people who hates learning and upgrading of skills....will find out soon....that they are out of practice.....Technological advancement.....complexity.....rapid changes has made it more important and compulsory than.....before for user to always be ready...motivated.....to learn the changes brought about by rapid technological innovations and breakthroughs........................................... User C, Firm A</td>
<td></td>
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<tr>
<td>Enterprise systems are popular.... and embraced by corporate brands...end-users in such environment are left with no choice than to embrace learning new hi-tech skills provided by their organisations.....putting on good attitude and disposition towards knowledge acquisition is essential.... User B, Firm B</td>
<td></td>
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<tr>
<td>Knowledge...whether complex or not, is good in terms of individual and organisational performance....I am always eager to learn...never want to be left behind...even in the face of discomfort and hardship...after all.....I will be better user at the end of the experience (learning)........................................... User C, Firm A</td>
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<td>Knowledge...whether complex or not, is good in terms of individual and organisational performance....I am always eager to learn...never want to be left behind...even in the face of discomfort and hardship...after all.....I will be better user at the end of the experience (learning)........................................... User C, Firm A</td>
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The above suggest that, mastery-oriented users have more motivation for success in learning tasks, due to their positive attitudes in learning environment. Goal orientation is a motivational pattern that affects performance in diverse task environments, especially in the development of new skills for task performance (Bell & Kozlowski, 2002; Santhanam et al. 2008; Gravil & Compeau, 2003; Yi & Hwang, 2003).

Organisational support (Management and supervisory support)

Several elements emerged as supportive mechanisms, including IT managers, help desks, and the commitment of the top management team/project teams, departmental heads and supervisors. The involvement of the top hierarchy of the organisation gives impetus to the motivational state of the end-users and enhances the standing of the ES project.

Table 3. Organisational Support

<table>
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<tr>
<th>Description</th>
<th>User/Manager</th>
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<tr>
<td>There are several motivating factors within our environment..... The IT project managers.....who are the champions of the projects...the top management team.....the help desks...the departmental managers and supervisors........................................... (Manager Logistics, Firm B)</td>
<td></td>
</tr>
<tr>
<td>From my perspective as a manager, the top management team showed great enthusiasm and commitment to the implementation program........................................... (Manager Logistics, Firm A)</td>
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Top management played important role during the training...they demonstrated keen interest in various phases of the project...Every resources needed were provided.....the involvement of the senior management in this project was commendable........................................... (User C, Firm B)

I received a signal that....the project is very important to the organisation....aside from the provision of needed resources...the importance of the project was visibly displayed...through various meetings with implementation team...vendors...technical partners.....Head of departments etc.....in fact....it was a different atmosphere during this period...................................................... (User D, Firm A)

After the training...my manager monitors my work progress daily........ especially the use of the systems in my job role........my manager asked to know of the difficulties I encounter in my daily transactions often... (User A, Firm B)

I seeks helps from my manager on difficult tasks...especially when I suddenly lost track of what I am doing or got stuck.... midway into a task......leaving it uncompleted........(User C, firm A)

Yea... I can say knowledgeable managers were very helpful........IT managers and staffs were ok for IT related stuffs mainly.....They seem to lack the know-how of the modules.....and I understand why..............................................................(User D, Firm B)

Management commitment during certain phases of the implementation project, such as training, affects transfer intentions and system utilisation. This is because, workplace environment that promotes, rewards, and assists employee development communicates that it is a valued activity, one that may increase the employee’s current standing and potential for organisational advancement (Orvis & Leffler, 2011). The literature on leader-member exchange also shows that emotional support and the exchange of valued resources between leaders and their members improves work output (Kang & Stewart, 2007); and skills usability (Scaduto, Lindsay, & Chiaburu, 2008). Employees who spend more time developing social relationships with influential managers within the organisation participate well in developmental activities (Ng & Feldman, 2010) and perform better on the job on the basis of social exchange and norm of reciprocity (Blau, 1964; Gouldner, 1960).

This study showed that IT managers were not a source of motivation to end-users in terms of accomplishing their daily tasks on the system because they lacked skills in the tasks that the end-users had to carry out. In sum, organisational support for skills development among other things, leads to positive work attitudes and these attitudes lead to improved work performance (Kraimer, Seibert, Wayne, Liden, & Bravo, 2011).

DISCUSSION

Our research question was “What influences skill utilisation in enterprise systems?” The findings showed that the decision to apply skills acquired during training in the ES-based work environment depend on a mix of individual characteristics and organisational factors. Individual characteristics, such as computer self-efficacy and mastery orientation (Chiaburu & Marinova, 2005; Compeau & Higgins, 1995) were motivational determinants. End-users with prior experience of computer use were confident because they could refer to their earlier achievement. Previous computer usage strengthened the belief that the new enterprise systems would be easy to use and belief in their ability would help them when faced with challenges.

Mastery orientation also affected end-users’ motivation to learn. The quest for knowledge and new skills by individuals precedes skills transfer. Mastery orientation tends to have a stronger influence on transfer performance in the enterprise systems context:

“Knowledge...whether complex or not, is good in terms of individual and organisational performance....I am always eager to learn...never want to be left behind...even in the face of discomfort and hardship...after all....I will become a better user at the end of the experience (learning)” ......................(User C, Firm B)

Organisational factors, such as top management commitment, IT team support, project champions, and support by departmental and supervisory heads, are important determinants of skills transfer by end-users from their training to their work environment. Effective utilisation of enterprise systems stems from numerous work-environmental cues and the organisational climate. The organisational climate is a signal on the importance of corporate project to the end-users in an organisation. Top management commitment to the project indicates an endorsement and support for the implementation. The involvement and commitment of top management, aside
from the provision of the necessary resources and the provision of effective leadership in the project implementation, strengthens learning motivation and exploration of the enterprise systems.

The study also reveals that while there were post-training help desks and IT support, these channels of support were found to be ineffective in influence ES utilisation. These supporting channels were unable to resolve most queries, because they were only technically competent - they knew about the system’s architecture and design but could not help with navigating through certain modules. The most active supportive mechanism of the use of learned skills was the immediate manager or supervisory head. Task-related problem resolutions were better handled by the end-users’ immediate supervisor. In fact, end-users were more comfortable seeking help from their supervisory head than IT support. Again, problems and challenges with the use of the systems were often discussed with the managers who could put them through whenever there was a hold-up. Finally, the supervisor provided feedback and encouragement for improved and better performance. The results corroborate previous findings on the role of the supervisor as a motivational determinant of enterprise systems utilisation.

CONCLUSION

Extraordinarily high IS implementation failures rates have left many business leaders sceptical and contemptuous about the advantages of IT projects (Dong et al., 2009). This study investigates the motivational determinants of post-training skills utilisation, an important aspect of enterprise systems implementation. Our findings reveal that both individual and organisational factors played important roles in supporting the utilisation of learned skills. Computer efficacy and mastery orientation affected end-user learning performance and skills application on the enterprise systems. Past experience with computer systems provides end-users self-assurance, and minimises the anxiety associated with the fear of failure or the inability to utilize enterprise systems. In the same vein, mastery oriented end-users were very motivated to learn about enterprise systems and perform. This could be because rapid changes in IS imply the importance of constantly and quickly updating one’s skills to avoid obsolescence. In fact, they see their job performance as being dependent on direct upgrading and mastering the new skills on the systems. Updating their skills is an option for remaining in the practice, and it is also a way of achieving success during the adoption of enterprise systems.

Finally, the role of the management in the implementation supported the opinion that adoption environment must be favourable. Environmental favourability is consistent with the diffusion of innovation model’s (Rogers, 1983) dimensions of compatibility and complexity. The implication therefore is that complexity may be negatively related to adoption and training transfer in unsupportive transfer climates but positively related to transfer in supportive environments (Gilpin-Jackson and Bushe, 2007). Top management demonstrated strong financial and emotional commitment to the success of the ES project, unlike previous IS upgrades and migrations. The support from supervisory managers encouraged end-users to double their efforts during learning and post-training transfer. Also, supervisory heads were useful pillars staff could rely on if they were stuck in their tasks. In fact, supervisory attitude encouraged and increased end-users’ exploratory behaviours in enterprise systems.

REFERENCES


