

Adoption of E-learning Systems in Organization in China

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Abstract. The success of implementing an e-learning system in organizations relies on its effective adoption by users. This research investigates factors influencing the adoption of e-learning systems in organizations. The acceptance of e-learning systems is proposed to be subject to the influence of organization culture, top management support, organization facilitation infrastructure, training and education, perceived usefulness, perceived ease of use, and subjective norms. A research framework of e-learning systems adoption is designed and the rationale of the proposed hypotheses is discussed. An e-learning System Adoption Questionnaire Instrument is developed to test the proposed hypotheses empirically in China. This research is expected to contribute to the theoretical development of e-learning adoption theories and to provide insights for the design and management intervention of e-learning systems in organizations.

Keywords: e-learning, TAM, China

1 Introduction

E-learning is defined as learning facilitated on-line through network technologies. Considering lifelong learning has become an imperative, and communications technologies are transforming higher education (Carrison and Anderson, 2003), studying the acceptance of e-learning empirically would lead to an in-depth understanding e-learning, and thus facilitate the adoption of e-learning in organizations. As innovations go, many people consider technology based learning disappointing at best (Rosenberg, 2001). Major problems with e-learning are closely related to its design and adoption. Similar with other technology based systems, the success of implementing an e-learning system in organizations relies on its effective adoption by users.

2 Theoretical foundation

This research would draw upon the theory of technology acceptance model, which is developed based on the theory of reasoned action and the theory of planned behaviour, to establish the research model.

The social psychological perspective in user acceptance research has become dominant since Davis (1989) proposed TAM. TAM adopts the reasoning logic of the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975), which posits that human behavior is the result of rational reasoning by which information is processed along the logical chain of belief-intention-behavior. By the same logic, TAM states that it is only through internal beliefs that outside factors influence user intention to use a technology. The two key beliefs determining user Intention to Use (IU) are identified by TAM as Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) (Davis, 1989; Davis, Bagozzi and Warshaw, 1989). In addition to directly influencing IU, PEOU also has a positive impact on PU since the easier a system is to use the more likely it is to be perceived as useful, given other things being equal.

TAM-based research that aims to explain and predict user acceptance and usage behavior has proliferated and has further enhanced TAM's theoretical and statistical robustness. Venkatesh and Davis (2000) introduced a revised model that explicitly weaves the key antecedents of PU into the nomological net of TAM. They argued that although boiling everything down to internal beliefs makes the TAM model parsimonious, its usefulness is limited because environmental factors are not considered. In an attempt to reveal the role of social influence in the process of technology user acceptance, TAM is extended to TAM2 to include Subjective Norms (SN) as an additional determinant of user acceptance (Venkatesh and Davis, 2000).

3 Research Model

This research model is established based on TAM, to explore the influencing factors of the adoption of e-learning systems in organizations from social psychology perspective. Rosenberg (2003) suggested that in a technological world, the people-centric nature of learning shall be preserved. Therefore, e-learning needs to address issues of leadership, culture, support, justification and organizational realignment. It is also suggested that successful e-learning program should seek out the input of all stakeholders, including senior leaders, customers, and the training staff. Organization culture, top management support, organization infrastructure, training and education are proposed to be the external influencing factors, which impact the perception of e-learning systems by potential users.

Organization culture

In general, a culture supportive of knowledge management is one that highly values knowledge and encourages its creation, sharing and application. Research shows (Wong, 2005) that culture was the largest obstacle faced by organisations in creating a successful knowledge-based enterprise. To promote e-learning, there is a need to

foster an innovative culture in which individuals are constantly encouraged to generate new ideas, knowledge and solutions. The organization should work on building e-learning culture to promote its successful adoption.

Top management support

Leaders are important in acting as role models to use e-learning systems. They should exhibit a willingness to continuously learn and search for new knowledge and ideas, so that the employees would imitate them and increase the propensity of employees to participate in e-learning. Other important leadership competencies include conveying the importance of knowledge management of learning to employees, maintaining their morale, and creating a culture that promotes sharing, learning and creation. Top management also provides resources and leadership for the implementation of the systems.

For example, if business is adopting a knowledge management strategy that senior leaders endorse, then users would perceive the e-learning system as important, and intend to use it; and the senior managers' endorsement may reinforce the instrumental perception of the system through subjective norms. Another example is that if the organization has a culture of internal redevelopment, then very likely e-learning would be perceived as useful.

Organization facilitation infrastructure

Organization aiding factors would impact perception of the ease of use (PEOU), which in turn influence intention to use. For example, if corporate intranet and e-learning system have proven to be accessible, stable and easy to use, then people would tend to use it. Organizational infrastructure includes IT infrastructure and IS/IT department. The PEOU of an e-learning system would be dependent on whether the organization utilize capacity of IT infrastructure facilitate e-learning and whether IS/IT department in the organization support and facilitate the use of e-learning systems.

Training and education

Training and education is another important factor for the successful adoption of e-learning systems. Organizational members need to be aware the need to continuing learning and utilise the organizational IT infrastructure to acquire and manage knowledge. Training to use e-learning system will ensure that they can utilise the full potential and capabilities offered by e-learning tools. If organizations provide employees with adequate and quality training to facilitate use of e-learning systems, then employees would likely to find e-learning system easy to use. It is important that the organization promotes and educates employees to use e-learning system rather than forcing them.

Based on the above statements and the theory of TAM, this paper proposes the following hypotheses:

H1: Organization culture has a positive impact on the perceived usefulness of e-learning system.

H2: Top management support has a positive impact on the perceived usefulness of e-learning system.

H3: Organization culture has a positive impact on subjective norms to use e-learning system.

H4: Top management support has a positive impact on subjective norms to use e-learning system.

H5: Organization facilitation infrastructure has a positive impact on the perceived ease of use of e-learning system.

H6: Training and education has a positive impact on the perceived ease of use of e-learning system.

H7: Perceived usefulness of e-learning system has a positive impact on intention to use the system.

H8: Perceived ease of use of e-learning system has a positive impact on intention to use the system.

H9: Subjective norms to use e-learning system have a positive impact on intention to use the system.

H10: Perceived ease of use of e-learning system has a positive impact on the perceived usefulness of e-learning system.

H11: Subjective norms to use e-learning system have a positive impact on the perceived usefulness of e-learning system.

4 E-learning System Adoption Questionnaire Instrument

The research model would be tested using survey data from China. The respondents would be MBA and EMBA students in a large university in South China. The research instrument is designed based on the work of Xu and Quaddus (2005) and other research as follows:

Organizational culture

My organization works on building e-learning culture

Flexible and organic structure

Rigid and bureaucratic structure

Organizational facilitation infrastructure

My organization utilize capacity of IT infrastructure to facilitate the e-learning efforts. IS/IT department in my organization support and facilitate the use of e-learning system.

My organization creates imperatives to push the end users to use the system. (creating imperatives)

My organization monitors end users' usage of the acquiring to enhance the acceptance and use of the systems. (monitoring system usage)

My organizations keep end users interests in the acquiring by providing what they want. (satisfying needs continuously)

My organization makes acquiring knowledge a part of the end users' life in the organization. (making use of e-learning system a part of users' organizational life)

Top management support

Top management provide resources and leadership for the implementation of the systems.

Top management endorse e-learning in the organization.

Training, Enticement and education

My organization promotes, educate, persuade, and entice employees to use e-learning system rather than forcing them.

My organizations provide employees with adequate and quality training to facilitate use of e-learning system.

Perceived usefulness

E-learning system can save time and money for organizations through cost and time reduction.

E-learning system can help build my knowledge base and increase my knowledge. (knowledge building)

By having access to appropriate e-learning system, I can do my job better. (effectiveness)

Perceived ease of use (user friendliness)

An e-learning system should be simple to learn and use and should have simple procedures (simple to learn and use)

An e-learning system must be reasonably cheap to learn and use (cheap to learn and use)

An e-learning system should be up to speed and must provide knowledge faster (speed)

An e-learning system should be accessible to everyone in the organization. (accessibility)

Knowledge in our e-learning system should be properly structured, organized, and stored. End users should be able to easily retrieve required knowledge from the system. (complexity of knowledge)

Subject norm (SN)

Peers have influence on my use of an e-learning system. (peer pressure)

I follow leader or manager's lead to use an e-learning system. (following leaders' lead)

I use the e-learning system as a result of encouragement from respected people. (respected people influence)

Encouragement from superiors have influence on my acceptance and use of e-learning system. (superiors encouragement)

Encouragement from subordinates have influence on my acceptance and use of e-learning system. (subordinates encouragement)

Intention to use e-learning system

I will adopt the e-learning system for communication with knowledge holders. (communication with knowledge holders)

I will adopt the e-learning system for acquiring knowledge. (knowledge acquiring)

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