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Abstract

The electronic knowledge management system (KMS) adoption phenomenon has long been researched with an objective of exploring and improving how corporations can best manage their knowledge assets and capabilities (Alavi and Leidner, 2001). Corporations invest in technology and in people with the assumption that acceptable returns of improved performance and organizational value will follow. A more complete perspective on what promotes potential KMS adopters to fully engage in the use, support, and promotion of the KMS provides an opportunity for both academics and practitioners to dig deeper into the adoption phenomenon. This paper proposes a research model expand academic insight into the use of a KMS. The perceived levels of user satisfaction resulting from "fully engaged" end users will be enhanced by a closer examination of the user's cultural characteristics and work role. In addition, this paper will consider the practitioner's perspective where initial acceptance must be extended beyond general use and into ongoing support and the continuous input necessary to keep the KMS useful for the end user community.

Keywords

KMS adoption and user satisfaction, expanded system accessibility (ESA), technology trust, system quality, information quality, and culture characteristics

Introduction

A KMS is a type of information system used for managing the organizational knowledge of a firm (Alavi and Leidner, 2001). An organization's acceptance or adoption of KMS has been associated with the improvements to a firm's competitive advantage (Darroch, 2003; Hemmatfar, Salehi and Bayat, 2010; Kulkarni, Ravindran, and Freeze, 2007; Sabherwal and Sabherwal, 2005). Researchers have identified the academic significance for both the use of an information repository and for the knowledge capability of managing information technology assets as having a strong affiliation with an array of strategic corporate initiatives (Piccoli & Ives, 2005). The purpose of the study is to continue the exploration of system adoption strategies associated with electronic KMS and the influences that impact a user's decision to fully adopt as represented by the behavior of continued use. Post-adoption behavior is the demonstration of use of the full range of functionality available within a system (Ahuja and Thatcher, 2005; Karahanna, Straub, and Chervany, 1999; Malhotra, 2005; Lippert, 2007). System adoption strategies aim first to establish system use and then progress to promote continued use maintaining user satisfaction, system acceptance, and promotion of post-adoption behaviors. The following literature review will present previous research into KMS adoption where both information culture and technology worker characteristics are considered as influencer upon both the user's satisfaction and upon overall perceptions of usefulness.

Literature Review

The extant literature on information system culture and adoption continues to inspire the need for understanding system acceptance and success. System adoption is a prominent topic within information systems and technology perspectives. Adoption attributes continue to develop and expand just as the technology itself and therefore this topic has become an

academic foundation for the discipline. This literature review focuses upon KMS adoption. Many knowledge management researchers have evaluated the characteristics of system use, system quality, information quality, user satisfaction, technology trust, acceptance, and their effects upon a performance outcome measure (Bock, Zmud, Kim and Lee, 2005; Chi and Holsapple, 2005; Lippert and Davis, 2006; Nattapol, Peter, and Laddawan, 2010; Petter, DeLone, McLean, 2008; Thatcher, McKnight, Baker, Arsal, and Roberts, 2011). Only minimal research exists on the characteristic of system accessibility. The present study looks to improve the research effort with an extension of the topic of accessibility and the influence it has on adoption and user satisfaction within the knowledge management system research stream. A new knowledge management system adoption model which includes the expanded systems accessibility construct (ESA) is compared to the "bring your own device" phenomenon, and is positioned as an adoption trigger leading to continued use. By understanding how cultural characteristics influence both consumer and workplace preferences upon ESA use and user satisfaction, the proposed project intends to expand the field of KMS research.

Studies which focus upon the antecedents to KMS success have identified KMS quality, as well as the quality of the information as being important attributes leading to improved system use (Halawi, McCarthy, and Aronson, 2008; Kulkarni et al., 2007; Nattapol, et al., 2010). Some of the early adoption research focused upon the use of the system and in some cases examined the generated output available through the use of an application or a system (Cole, 1983; Davis, 1989). In addition, system adoption research has assessed the overall organizational acceptance of an IT innovation with a closer look at the organizational attributes, such as size and readiness to use technology as key influences of adoption (Hameed, Counsell, and Smith, 2012). Other research has linked system adoption to use intentions, measured use, and the overall success of the delivery of applications or systems (DeLone and McLean, 1992; Mas-Machuca and Costa, 2012; Petter, DeLone, and McLean, 2013). These streams of research demonstrate how the specific technology artifacts and the perceived usefulness of the artifacts can be representations of an effective adoption strategy. The range of studies represented in the literature is characteristic of the broad influences, both behavioral (use) and perceptual (beliefs) that potentially affect KMS adoption.

Successful KMS use and acceptance has been researched in relation to an organization's social, cultural, and work group characteristics (Alavi, Kayworth, and Leidner, 2006; Bock, et al., 2005; Leidner and Kayworth, 2006; Damodaran and Olphert, 2000; Darroch, 2003; Wang, Meister, and Gray, 2013). System adoption strategies can be found within broad organizational dimensions such as culture and business strategy or the narrower domain of a specific application and technology design. By understanding how to improve or enhance the adoption of KMS, additional benefits to corporate performance and competitive advantage can be realized (Shannak, Masa'deh, Al-Zu'bul, Obeidat, Alshurideh, and Altamony, 2012). The following diagram is the proposed KMS adoption model based upon past research initiatives along with consideration of recent technology innovations.
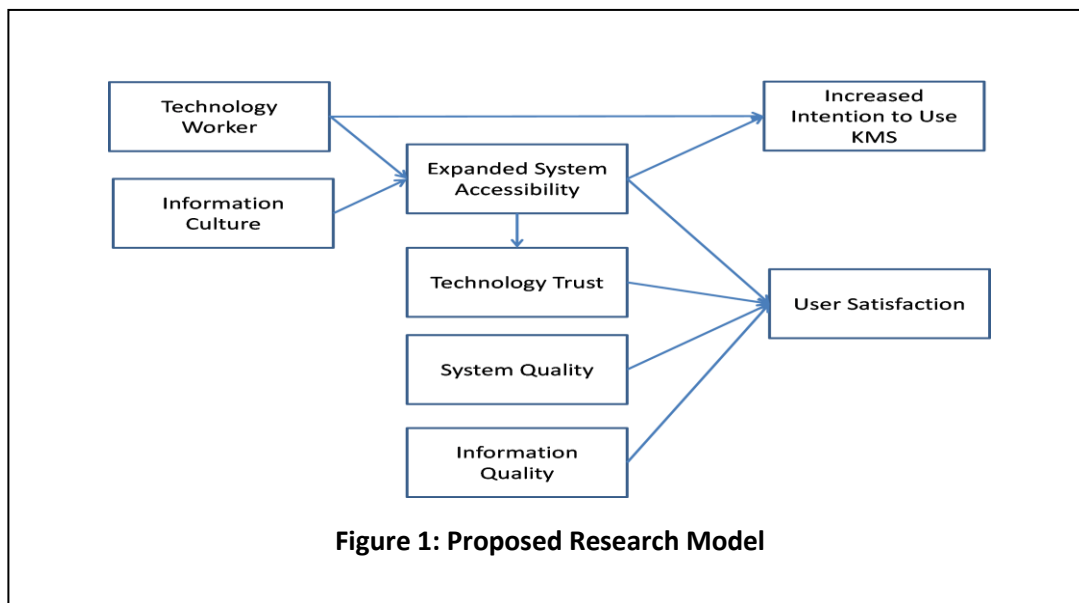

Figure 1: Proposed Research Model

Discussion

The proposed study is a quantitative design introducing ESA as a system adoption trigger variable and examining the relationship between ESA and user satisfaction. The data will be gathered via survey from both technology workers and knowledge seekers (Bock, Kankanhalli, and Sharma, 2006) across multiple industries. After pre-test confirmation of the factors and the identification of attributes that best define these adoption variables, the survey questionnaire will be developed, piloted, and then distributed for data collection. The collected data will be assessed using a standard regression method in order to evaluate the proposed relationships. Existing survey instruments will be selected as a means for identifying the scales relating to KMS use, technology trust, information quality, system quality, and user satisfaction. These elements will be combined into a single survey design which includes the new variable: ESA.

Because the idea of ESA via a personal device is a relatively new concept and academic research is sparse, any opportunity for quantitative research should be considered. I plan to introduce the ESA variable as a system adoption strategy which is proposed to be influenced by the information culture and the technology work force characteristics. The information culture construct is based on organizational cultures and adoption research (Curry and Moore, 2003). The technology worker construct will be defined by the characteristic of the work role and daily work task activities (Kaarst-Brown and Guzman, 2005). I will examine the cultural and technology worker factor dominance as a driver of ESA intention to use leading to an increase in user satisfaction and increased frequency of use. The present study will begin with a pretest assessment of the ESA via personal device. Other selected variables for this study include: KMS use, information quality, system quality, and technology trust. Common themes and beliefs are assessed for each unique variable through the pretest (semi-structured interview). Following the pretest, a pilot survey design will be produced and disseminated for verification of the tool's face validity. Each variable will then be evaluated for a direct relationship with user satisfaction. Any likelihood perceived by the respondents to increase the use of KMS when available via a personal device will be an indicator of improved user satisfaction.

The important questions that come to mind when planning the design and methods for these potential relationships are: How can an organization improve the KMS post-adoption behaviors for KMS? Does the use of KMS increase when an ESA solution is provided to the employee's personal devices? Will the system adoption strategies improve perceived user satisfaction and the likelihood of using the current KMS more frequently?

The literature review (also see Appendix A) supports the prediction of positive relationships within the research model among the independent variables and the dependent variable of user satisfaction. The model will also give consideration to the potential cultural influences upon the overall relationships leading to user satisfaction. As defined in my KMS adoption model, the proposed relationship includes the exploration and the perceived impact of ESA on user satisfaction.

Conclusion

Within the information system user satisfaction literature, the initial discussion revolved around the argument justifying use as a behavior and user satisfaction as an attitude. Many of the corresponding models positioned the attitude as a result of the behavior (Bailey and Pearson, 1983; Wixom and Todd, 2005; Doll, Deng, Raghunathan, Torkzadeh, Xia, 2004). The proposed research model is looking at the user through a culture-orientated lens that influences the perceptions of system quality, information quality, technology trust, and ESA. The ESA variable is proposed to be influenced by both technology worker and information culture. The combination of cultural influences adds complexity in determining if use, intention to use, and user satisfaction is directly influenced by the ESA or indirectly by culture dominance factors.

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APPENDIX A: User Satisfaction Research References

Authors	Journal/Year	Antecedents	Resultant/Method	Notes
Bock, Kankanhalli, and Sharma	European Journal of Information Systems/ 2006	Ease of Use and Perceived Usefulness	Usage Survey PLS-SEM	Improved KMS Usage
Doll, Deng, Raghunathan, Torkzadeh, and Xia	Journal of Management Information Systems/ 2004	Content, Ease of Use, Accuracy, Format, Timeliness	User Satisfaction Survey Factor Analysis and Regression	End User Computing
DeLone and McLean	Information Systems Research/1992	Information Quality, System Quality, Service Quality	User Satisfaction and Intention to Use/Use Taxonomy	Individual Impact leading to Organizational Impact
Halawi, McCarthy, and Aronson	Journal of Computer Information Systems/2008	Information Quality, service quality, system quality	User Satisfaction and intention to use Survey Confirmatory Factor Analysis and Structural Equation Modeling	Net benefits as a measure of Success
Jennex and Olfman	AMCIS Conference/2003	Information (Knowledge) Quality and System Quality	User Satisfaction and Intention to Use and Perception of Benefits	Net Benefits result representing IS Success
Kulkarni, Ravindran, and Freeze	Journal of Management Information Systems/2007	Organizational support leads to perceived usefulness, information quality and system quality	User Satisfaction Survey Confirmatory Factor Analysis and Structural Equation Modeling	User satisfaction leads to IS Success measured by use of knowledge MBA Midlevel Managers
Nattapol, Peter, and Laddawan	World Academy of Science, Engineering and Technology /2010	Knowledge Quality, System Quality, Service Quality	User Satisfaction and Use EFA, Multiple Regression	KMS Success Thai Banking Industry
Ong and Lai	Computers in Human Behavior/2007	Content, Ease of Use, Personalization, Community	User Satisfaction A factor represented by the four dimensions Survey Exploratory Factor Analysis and Regression	Focused on KMS within the semi-conductor manufacturing industry. User satisfaction is measured based on the user's likelihood to recommend
Thatcher, Harrison, McKnight, Baker, Arsal, and Roberts	IEEE Transactions on Engineering Management/ 2011	Technology Trust, Service Quality, Perceived Ease of Use, Perceived Usefulness	Intention to Explore (Post Adoption) advanced use leads to KMS success	Examine user's perceptions of a KM portal and professional of a KMS Students in a University
Wixom and Todd	Information Systems Research/2005	Information Quality leads to usefulness & System Quality leads to Ease of Use	User Satisfaction (attitude & intention) Survey PLS-SEM	Technology workers in the field of data warehousing spanning a variety of industries