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# Examining the Factors Influencing Continued Knowledge Contribution in Electronic Knowledge Repository

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## ABSTRACT

Electronic knowledge repositories facilitate knowledge discovery and reuse by providing computer-mediated repositories for users to codify their expertise. However, why individuals volunteer to help strangers in these electronic networks is not well understood. There is no apparent benefit for the contributor and free-riders have same access to the public good as everyone else. Based on previous research positing that the interaction created by network participants produces an online public good of knowledge, the purpose of this paper is to investigate individuals' intention to continue sharing knowledge in electronic knowledge repository. Drawing from social cognitive theory, and cognitive evaluation theory, we propose a theoretical model employing environmental factors such as feedback, rewards, and communication, and individual motivations such as perceived knowledge self-efficacy and self-esteem to explain person's behavior (continuance intention) to contribute knowledge in the electronic knowledge repositories.

## Keywords

Knowledge contribution, electronic knowledge repository, social capital, continuance intention

## INTRODUCTION

Recent advances in information and communication technologies have led to the emergence of online social structures where the primary purpose is knowledge exchange. Known by a variety of names, e.g., virtual, electronic, or online communities, the study of these online social structures is critical because they have fundamentally altered our understanding of how and why people share knowledge through the computer mediated communication.

Knowledge Management Systems (KMS) are IT-based systems developed to support and enhance knowledge creation, storage/retrieval, exchange and application. Knowledge sharing, which is critical for the strategic utilization of knowledge resources for the benefit of the organization, can only take place when both knowledge contribution and knowledge seeking exist.

Knowledge flows are best understood by examining how work is actually performed and cognitive benefits as the outcome of actual engagement in the activity (Brown and Duguid, 2001). So long as individuals are engaged in a common practice, knowledge can readily flow across that practice and enable the creation of social networks to support knowledge exchanges (Brown and Duguid, 2000). Resultantly, communities of practice and networks of practice are essential for understanding learning, work and the movement of knowledge.

A *community of practice* consists of a tightly knit network of people who know each other and work together in a shared practice. Communications among members of the community are often direct and face-to-face. In a community of practice, joint engagement in activities and problem-solving nurtures the formation of strong interpersonal ties and that creates norms of reciprocity within a small community (Wenger, 1998).

In contrast, *networks of practice* are characterized by a larger, loosely knit and geographically distributed group of individuals engaged in a common practice. The members of the network may not know each other and have no face-to-face contact (Brown and Duguid, 2001). Communications within networks of practice are often mediated by third parties, such as professional associations. While individuals connected through a network of practice may never know each other, there is still great potential for knowledge sharing (Brown and Duguid, 2000).

Advances in information communication technologies (ICT) mean that networks of practice are able to extend their reach through establishing an online presence such as websites, electronic bulletin boards and electronic mailing lists. Wasko and Faraj (2005) described an *electronic network of practice* as a special case of networks of practice, where knowledge sharing occurs through primarily computer-mediated communication channels. More formally, the electronic network of practice is defined as self-organizing in that participation is open to all and voluntary in nature. This facilitates knowledge exchange by creating a climate of open discussion and collaboration. Knowledge is considered a public good where members of the community collectively contribute to its provision and all members may access the knowledge provided (Wasko and Faraj, 2000).

However, the openness and volitional nature of participation in electronic networks of practice imply that participants are typically strangers. Knowledge seekers have no means of control over who would answer their questions or the quality of help that they can receive. In turn, knowledge contributors have no guarantee of reciprocity and lurkers may leech on the knowledge of others without giving anything back in return. In sharp contrast to communities of practice, the presence of strong ties creates expectations of obligation and reciprocity, which are enforceable by social sanctions.

The availability of electronic communication technologies like EKR is no guarantee that knowledge sharing will actually take place (Alavi and Leidner, 1999). EKR, an electronic knowledge repository is a KMS implementation which facilitates knowledge discovery and reuse by providing computer-mediated repositories for users to codify their expertise.

Despite growing interest in online communities and virtual teams, there has been little research focused on understanding knowledge contributors' intentions to engage in future participation once they have become involved in electronic knowledge repository. Past research found that most electronic communities are facing the problems with retaining members and motivating them for active participation. As the sustainability of an electronic knowledge repository relies on members' continuous voluntary contributions, how to maintain a sustainable electronic community remains as an appealing question for both researchers and practitioners.

Based on social cognitive theory (SCT) and cognitive evaluation theory (CET), we proposed a research model that identifies factors that generally influence participants' intentions to continue their involvement in future knowledge contribution to electronic knowledge repository (EKR).

The goal of this study is to identify salient determinants of EKR participants' intention to continue making knowledge contributions. Toward this goal, SCT was adapted to form a theoretical model of knowledge contributors' satisfaction and continuance behavior. Specifically, we attempt to answer the following questions:

- What are the salient individual factors underlying EKR users' intention to continue contributing knowledge
- How do the characteristics of the underlying environmental factors affect the sustainable electronic network of practice?

## **THEORETICAL BACKGROUND**

Knowledge sharing is the behavior when an individual disseminates his acquired knowledge to other members within an organization. Prior research has highlighted the various factors that affect individual's willingness to share knowledge, such as costs and benefits, incentive systems, extrinsic and intrinsic motivation, organization climate, and management championship (e.g., Bock et al., 2005; Kankanhalli et al., 2005; Wasko and Faraj, 2005; Chiu et al., 2006).

While most KM research has been studied theoretical and empirical explanations on the motivations of an individual to share knowledge in electronic communities using different sets of influential factors such as contextual, technological, and motivational factors (e.g. Tiwana & Bush, 2005; He & Wei, 2006; Chen, 2007; Cheung & Lee, 2007), very few studies examined them from both personal and environmental perspectives. Hsu *et al.* (2007) proposed a SCT-based model to examine whether personal and environmental factors support or hinder one's knowledge sharing behavior in virtual communities. The findings showed that self-efficacy, personal outcome expectations and identification based trust have significant influences on knowledge sharing behavior. Therefore, we could reasonably determine that individuals' behavior for knowledge sharing will be guided by personal factors and the environmental events.

Although there has been a growing interest in examining the factors that influence one's knowledge sharing behavior in the electronic communities, yet there exists a lack an understanding of why and under what conditions people are willing to continue knowledge contribution in EKR.

In order to understand the sustainability of electronic network of practice in general, and users' intention to continue contributing knowledge in EKR in particular, we provide a review on literature of social capital theory and cognitive evaluation theory to conceptualize a research model for this study.

### **Social Cognitive Theory (SCT)**

Social cognitive theory is a widely accepted model for validating individual behavior as it examines the reasons why individuals adopt certain behaviors. It proposes that behavior is evaluated through an individual's expectation of the *outcome* of their behavior, thus the major premise of social cognitive theory is that individuals can influence their actions (Bandura, 1986).

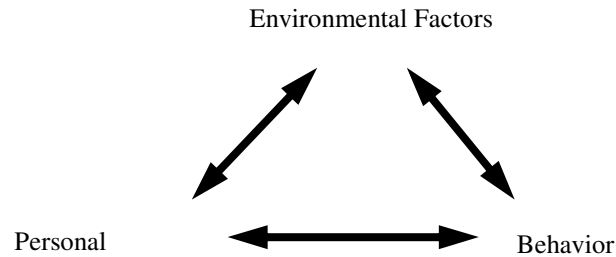
Social cognitive theory (Bandura, 1986) posits that people are driven neither only by *inner forces*, nor simply by *external stimuli*. Instead, human behavior is explained via a model of triadic reciprocity in which environmental influence, personal factors, and behavior act as interacting determinants that will influence each other bidirectionally (Wood and Bandura, 1989).

A key regulatory mechanism in this dynamic relationship that affects human behavior is *self-efficacy* – individuals' judgments of their capabilities to perform certain activities.

SCT has been utilized in a number of disciplines due to its dynamic nature as it considers human behavior to constantly change (Kock, 2004). It has been applied in business through the analysis of organizational management, user acceptance of technology, and technological innovation adoption (Wood and Bandura, 1989; Compeau *et al.*, 1999). The rapid changing technological environment has meant that social cognitive theory is a useful theoretical framework to understand human behavior.

Two similar concepts in knowledge management literatures were also found as salient motivators when conducting different behavior in the KMS: *knowledge self-efficacy* which refers to “the extent to which people may believe that their knowledge can help to solve job related problems, improve organizational efficiency, or make a difference to their organization” (Kankanhalli *et al.*, 2005) and sense of self-worth (*self esteem*) which refers to “how much a person likes, accepts, and respects himself overall as a person” (Bock *et al.*, 2005). Their studies supported that both of them had positive relationship with knowledge contribution.

In this study, knowledge is viewed as an object that can be contributed and accessed by members of EKRs. Self-efficacy and self-esteem are seen as predictors of personal factors since both of them are considered as the main influences shaping users' behavior (Bandura, 1982, 1986, 1997). On the other hand, performance measurements (*reputation status* and *user rating* of knowledge contribution) are treated as major environmental factors influencing personal factors and behavior. Based on SCT, we could possibly determine that the environmental events shaped by performance feedback as an individual's expectation of the outcome, could have influence on personal factors and behavior (continuance intention).



**Figure 1 – Social Cognitive Theory (Bandura, 1986)**

### **Cognitive Evaluation Theory (CET)**

Cognitive evaluation theory was proposed as a sub theory of Self Determination Theory (SDT) to specify factors in the social context that can produce variability in an individual's intrinsic motivation (Deci and Ryan, 1985). In Self Determination Theory, motivations are distinguished based on the different reasons or goals that give rise to an action. SDT defines the basic distinction between *intrinsic motivation*, which refers to doing something because it is inherently interesting or enjoyable, and *extrinsic motivation*, which refers to doing something because it leads to a separable outcome.

CET posits that *external events* (e.g. rewards, communications, and feedback) that conduce feelings of competence can enhance intrinsic motivation for an action because they allow satisfaction of the basic psychological need for competence. CET further advances that feelings of competence will not enhance intrinsic motivation unless they are accompanied by a *sense of autonomy*, in attributable terms, by an *internal perceived locus of causality* (IPLOC; de Charms, 1968). People must not only experience perceived competence (*self-efficacy*), they must also perceive their behavior to be self-determined if their intrinsic motivation is to be maintained or enhanced. Hence, the primary focus of CET lies in the satisfaction of two basic psychological needs for competence and autonomy.

As participation in electronic networks of practice is typically *voluntary* in nature, *autonomy* is less of a concern for knowledge contributors but their feelings of competence (*self-efficacy*) may still be affected by peer appraisals or feedback.

According to CET, environmental events such as feedback, communications, and rewards that are related to performance measurement (Deci and Ryan, 1985) are important factor influencing the user's intention to share knowledge. This is why practitioners emphasize *incentive systems* for successful knowledge management. On the one hand, *outcome expectations* imply that, if members of electronic community believe that they would receive *extrinsic benefits* such as monetary rewards, promotion, or educational opportunity from their knowledge sharing, then they would develop a more positive attitude toward knowledge sharing (Bock and Kim, 2002; Kankanhalli et al., 2005). On the other hand, if members believe that they would receive *intrinsic benefits* such as self-satisfaction, social recognition, or power, then they would also have pleasure in knowledge sharing (Kankanhalli et al., 2005).

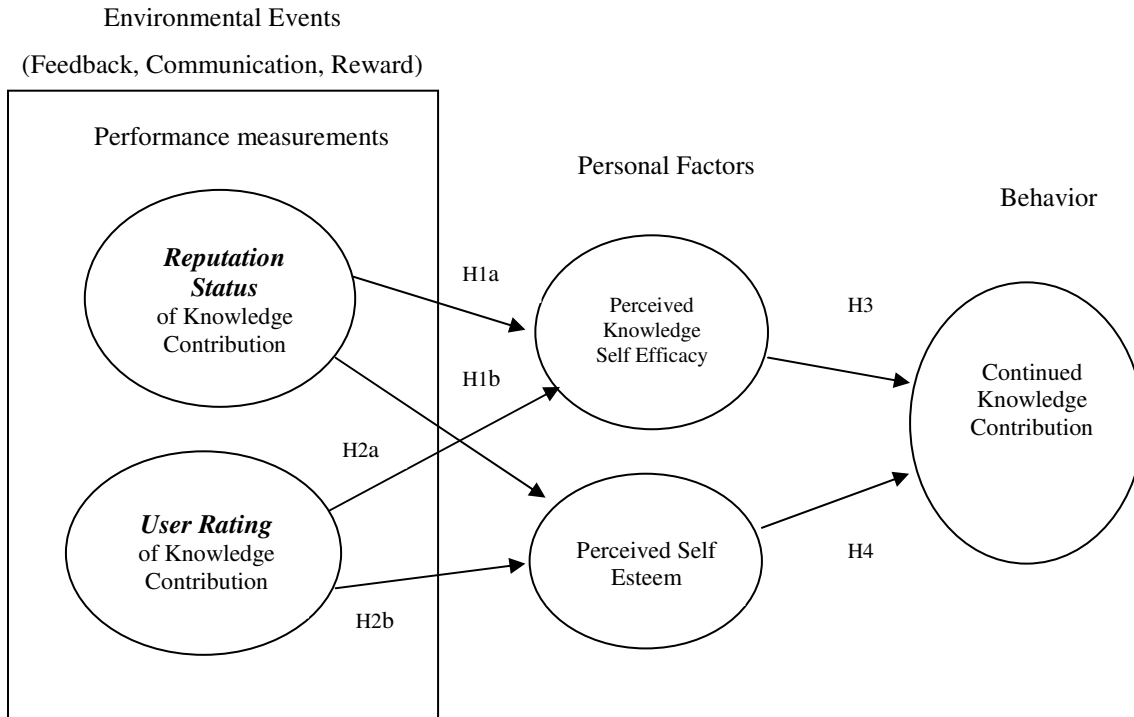
In the context of open content electronic community like EKR, members voluntarily contribute their knowledge without receiving monetary rewards. So, we will focus on how intrinsic benefits affect individual motivation to contribute knowledge when using EKR in this study.

Wenger et al. (2004) also observe that rewarding "voluntary" behavior poses a *dilemma*: "How do we encourage behavior through extrinsic means when the *intrinsic motivation* for such behavior is considered a matter of pride and confidence?" They observe that people often value the satisfaction derived from giving for reasons of professional recognition or commitment to a greater status, not because they are rewarded with a "carrot". They assert that: (a) recognition by peers, not financial rewards, is the primary motivator for community participation; and, (b) people who contribute regularly to a community often want that contribution to be recognized by the organization.

This is also corresponding to Wasko and Faraj's (2005) proposition of the feedback influence from knowledge contribution to individual motivation in electronic networks of practice.

**RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT**

In order to explore the knowledge sharing behaviors within the electronic network of practice, this study proposes a social cognitive theory (SCT)-based model that includes determinants as performance measurement (*reputation status* and *user rating* of knowledge contributed) for environmental influences which would stimulate the individual’s motivation for knowledge sharing and self-efficacy and self esteem for personal influences, which in turn determines the behavior of continued contribution of knowledge in EKR.



**Figure 2 – Proposed Research Model**

**Performance Measurements**

According to CET, environmental events (e.g. rewards, communications, and feedback) that conduce feelings of competence can enhance intrinsic motivation for an action because they allow satisfaction of the basic psychological need for competence. Several early studies showed that positive performance feedback enhanced intrinsic motivation (e.g., Deci, 1971; Harackiewicz, 1979), whereas negative performance feedback diminished it (e.g., Deci & Cascio, 1972).

For knowledge contribution in the electronic community like EKR, some communication mechanisms as performance measurement could be used to promote user participation by informing contributors that their postings are appreciated, and by increasing their status in the community in proportion to their contributions.

Certain knowledge such as best practices, articles, can be rated by the community. *User Rating* system is a system where members can review and rate other people’s posted messages regarding the information usefulness. User ratings can be used as a filter to identify premium content in the eyes of the community.

A *reputation system* for site members can be developed based upon their contributions to the community. The output is a personalized point total that accompanies a member's name throughout the site, and is instantly increased whenever a member contributes content to the community knowledge base. This system allows other users to quickly determine a member's prominence, and to also assess their own status in the community. (Kelly et al., 2002)

User Participation in a community site over time adds tremendous value to a knowledge collection on line, since there are users who have gained an “institutional memory” of the site and its composition who can help and guide others, influence how they use the site, and correct their behavior when necessary.

The point total is a fairly accurate metric of the amount of time invested in the site by users. There should be a defined period for longevity range of members in order to identify the most active members or the most recent contribution for average rating, such as members with less than a month of membership were excluded, current active contributors on the site 6 months or more, etc.

This is a key to the sense of community and drives users to continue to participate, since many of their ‘peers’, who joined when they themselves did, continue to be active contributors.

A reputation status which is based upon their contributions to the community can enhance the motivation for continuance intention. Whenever a member contributes content, their status in the community grows, and their perception of their importance to a non-member public also grows, which promotes prolonged participation. In addition, low-status members are often encouraged by high-status members to increase their status by contributing.

These systems allow members to track the feedback of their contributions. Consequently, they become encouraged to contribute more knowledge because they can see that many other users are interested in their viewpoints.

If members believe that they would receive *intrinsic benefits* such as self-satisfaction, social recognition, then they would have pleasure in knowledge sharing. This is also corresponding to the Bandura’s human behavior model posits in SCT that the environmental events shaped by performance feedback as an individual’s expectation of the outcome, could have influence on personal factors and behavior.

In the context of EKR, such conditions serve as an impetus for the intrinsic motivation to contribute knowledge. It drives individuals by giving them the sense of self confidence (self-efficacy) and worth (self-esteem) from volunteering.

Hence, it is hypothesized:

Hypothesis 1a: *Reputation status has a positive influence on perceived self-efficacy of knowledge contributors.*

Hypothesis 1b: *Reputation status has a positive influence on perceived self-esteem of knowledge contributors.*

Hypothesis 2a: *User Rating has a positive influence on perceived self-efficacy of knowledge contributors.*

Hypothesis 2b: *User Rating has a positive influence on perceived self-esteem of knowledge contributors.*

### **Perceived self efficacy**

According to SCT, the concept of self-efficacy refers to confidence in one’s capability to fulfill a specific performance (Bandura, 1986). Self-efficacy is a form of self-evaluation that influences decisions about what behaviors to undertake, the amount of effort and persistence to put forth when faced with obstacles, and finally, the mastery of the behavior.

The extent of self-efficacy will influence people to choose the behavior that they are capable of and the sustainability of the behavior that they choose (Bandura, 1986; Gist and Mitchell, 1992). In general, the perceived self-efficacy plays an important role in influencing individuals’ motivation and behavior (Bandura, 1982, 1986). People who have high self-efficacy will be more likely to perform related behavior than those with low self-efficacy.

Kankanhalli et al. (2005) indicated that knowledge self-efficacy is positively related to the knowledge contribution in an organization. Therefore, it is applicable in the context of EKR; individuals with higher levels of perceived self-efficacy seem to participate in knowledge contribution more frequently thus leading to continuance intention in EKR.

Hence, it is hypothesized:

Hypothesis 3: *Individuals with perceived self-efficacy are likely to continue contributing their knowledge to EKR.*

#### **Perceived self-esteem**

The contribution of knowledge may give EKR users a sense of belonging to something greater, and can lead to improved self-esteem as their contributions become remarkable by performance measurement from users or peers.

By contributing knowledge to EKR, individuals can perceive how their knowledge helps others in solving problems or make difference to the community which increase their perception in their own capabilities and hence, enhance their self-esteem and confidence.

It is suggested that potential helpers are more likely to help others when they believe themselves competent and confident, thus become more willingness to continue contributing their knowledge to EKR.

Hence, it is hypothesized:

Hypothesis 4: *Individuals with perceived self-esteem are likely to continue contributing their knowledge to EKR.*

## **RESEARCH METHODOLOGY**

In order to validate our research model, we intend to collect survey data by posting a self-administered online English questionnaire on the NUS server. The questionnaire items are to complete either by selecting options from radio buttons, drop-down lists or filling in textboxes. Compared to traditional paper-based survey, online survey has little missing data, more accurate and time economic data entry, and more reliable and valid data (Neuman, 2006). To encourage more participation, incentives of S\$10 will offer as a reward to the respondents.

The sample is randomly drawn from students of NUS with relevant experience according to the program of study. Participation is requested via an electronic mailing using student account which describes the purpose of the study, a request for voluntary participation, and a hyperlink for connecting to NUS online survey form. The questionnaire also collects demographic data.

#### **Operationalization of the Constructs**

Table 1 provides the formal definitions of the constructs. These constructs were adapted based on a review of the relevant literature.

<b>Construct (Abbreviation)</b>	<b>Definition</b>
<b>Continued Knowledge Contribution (CKC)</b>	User's intention to continue using EKR for knowledge contribution (Bhattacharjee, 2001)
<b>Perceived Knowledge Self Efficacy (PKSE)</b>	The confidence in one's ability to provide knowledge that is valuable to the organization via EKR (Constant et al., 1996)
<b>Perceived Self Esteem (PSE)</b>	An individual's sense of his or her value or worth, or the extent to which a person values, appreciates, prizes, or likes him or herself (Rosenberg, 1965).
<b>Reputation Status (RS)</b>	Personalized point total instantly increased whenever a member contributes content to the community knowledge base. (Kelly et al., 2002)
<b>User Rating (UR)</b>	User's evaluation of the usefulness of content by knowledge contributors. (Kelly et al., 2002)

**Table 1 Formal Definition of Constructs**



### **Measurement Instruments**

Constructs in the research model were all measured by using multiple-item scales adopted from previous studies (See Appendix A). A pretest of the questionnaire was performed asking 3 research colleagues in the IS area to assess its logical consistencies, ease of understanding, sequence of items, and relevance. The comments collected from these colleagues led to several minor modifications of the wording and the item sequence to ensure contextual consistency.

Items for *continued knowledge contribution scale* were measured using three items adapted from Bhattacharjee (2001) continuance intention scales. Items for measuring *perceived self-efficacy scale* were adapted from Jones (1986). It is a five-point Likert scale from strongly disagree to strongly agree. Items on *perceived self-esteem* were developed from the Rosenberg's four point scale (1965) modified to five point scale – from strongly agree to strongly disagree. The scales for *reputation status* and the *user rating* of knowledge contributed are based on the definitions of Kelly et al. (2002).

### **CONCLUSION AND FUTURE IMPLICATIONS**

This study aims at understanding the sustainability of electronic communities, specifically; we attempt to find out what drives people to continue contributing knowledge in organizational EKR. We propose a research model by integrating the key concepts of social cognitive model and the cognitive evaluation model.

We believe that this study will contribute to both the conceptual understanding of continuance of electronic communities and the practical guidelines for maintaining organizational EKR.

#### **Implications for Researchers**

The research model provides new insights in understanding the continuance of electronic communities. In particular, this study examines the continued contributing knowledge in EKR. It builds upon the human behavior model and cognitive evaluation theory and explains user intention to continue using the EKR for knowledge contribution.

This study examines the effect of environment and personal factors on knowledge sharing behavior and the relationship between these factors. Actually, according to the SCT (Bandura, 1986), determinants influence each other bidirectionally, that is, behavior in electronic communities is affected by environment and personal factors, which in turn are influenced by behavior (Compeau and Higgins, 1995). Hence, we hope future study may conduct a *longitudinal survey* to examine the interactive relationship among the three reciprocal determinants.

It would be interesting for further research to extend the present model with the cognitive evaluation theory to investigate how external events can enhance internal perceived locus of causality (IPLOC), another proposition of CET which may influence the knowledge sharing behavior.

Finally, this study only focused on the most important factor (i.e. Self-efficacy) of SCT, other relational constructs in the environmental dimensions that can affect knowledge sharing behavior should also be examined.

#### **Implications for Practitioners**

Design and development of feedback methods can solve critical challenges in on-line social behavior, content creation, and retention as these strategies encourage greater user participation in the community, create better site navigation and user awareness.

From the practitioners' standpoint, management of electronic communities should provide *some strategies* (e.g., online training programs, support mechanism and many others) to increase members' self-efficacy so that people would believe they will be able to share their knowledge in the electronic communities.

It may be necessary for managers of electronic communities to offer *reward systems* (e.g., award of best knowledge contributor, ranking of knowledge sharing) to raise individuals' positive personal expectations. Once individuals in the electronic communities perceive the future reward, they would be likely to contribute knowledge with others. Members in the electronic communities expect to share the knowledge they are interested to reach their personal goals (e.g., praise, promotions, image, social status). Hence, members are likely to share their knowledge when positive outcome evaluation can be realized.

The community designers should enhance the perception of the credibility of the message contribution by offering a *recognition mechanism*, where participants can get recognized for their expertise during their participation and contribution. They should also include some features that can increase members' familiarity with other users, for example, allowing them to put their *personal profile*. This page should include a picture, some self-description, and links to other resources relevant to the member's professional and may be personal life which they wish to share. These profiles facilitate the exchange of ideas and recognition of the other's person's expertise and interests which may encourage for future collaboration.

Knowledge managers and community designers must design a generic production process for knowledge content including peer and expert *reviewing* and feedback and impact-based *rating mechanisms*. This requires that they define and publish minimum *information quality criteria* and corresponding *metrics* that authors or contributors have to meet since the quality and credibility of knowledge stored in KMS are critical for knowledge utilization behavior.

In the context of EKR, developing *knowledge quality control procedures* seems crucial to improve users' confidence and consequently knowledge contribution behavior. At the system technical level, KMS should be designed with an *easy-to-use interface*, should provide *effective codification mechanism*, should be *up to date* and should be *integrated* as one organizational system with a single interface.

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## REFERENCES

1. Alavi, M. (2000). "Managing Organizational Knowledge," in *Framing the Domains of IT Management: Projecting the Future through the Past*, R. W. Zmud (Ed.), Pinnaflex Education Resources, Cincinnati, OH.
2. Bandura, A. (1986), *Social Foundations of Thought and Action: A Social Cognitive Theory*, Prentice-Hall, Englewood Cliffs, NJ.
3. Bhattacharjee, A. (2001) "Understanding information systems continuance: An expectation-confirmation model", *MIS Quarterly* (25:3), pp. 351-370.
4. Bhattacharjee, A. and Premkumar, G. (2004) "Understanding changes in beliefs and attitudes toward Information Technology usage: A theoretical model and longitudinal test", *MIS Quarterly* (28:4), pp. 229-254.
5. Bock, G.W., Zmud, R.W., Kim, Y.G., Lee, G.N. (2005): Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-Psychological Forces, and Organizational Climate. *MIS Quarterly*, 29, 87-111
6. Brown, J.S. and Duguid, P. (2000). *The social life of information*. Harvard Business School Press, Boston.
7. Brown, J.S. and Duguid, P. (2001). Knowledge and organisation: A social-practice perspective. *Organisational Science*, Vol. 12, No. 2.
8. Chen, I.Y.L. (2007). The factors influencing member's continuance intentions in professional virtual communities – a longitudinal study, *Journal of Information Science*, 33(4), pp. 451-467.
9. Cheung, C.M.K, Lee, M.K.O. (2007). What drives members to continue sharing knowledge in a virtual professional community? The role of knowledge self-efficacy and satisfaction, Z. Zhang and J.Siekman (Eds.); *KSEM 2007, LNAI 4798*, pp. 472-484.

10. Compeau, D., Higgins, C. and Huff, S. (1999), "Social cognitive theory and individual reactions to computing technology: a longitudinal study", *MIS Quarterly*, Vol. 23 No. 2, pp. 145-58.
11. Constant, D., Sproull, L., and Kiesler, S. (1996). *The Kindness of Strangers: The Usefulness of Electronic Weak Ties for Technical Advice*. *Organization Science*, Vol. 7, No. 2.
12. De Charms, R. (1968). *Personal causation*. Academic Press, New York.
13. Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*.
14. Deci, E. L., & Cascio, W. F. (1972). *Changes in intrinsic motivation as a function of negative feedback and threats*. Presented at the meeting of the Eastern Psychological Association, Boston.
15. Deci, E.L. and Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behaviour*. Plenum, New York.
16. Gist, M.E., Mitchell, T.R.: Self-Efficacy: A Theoretical Analysis of its Determinants and Malleability. *Academy of Management Review*, 17 (1992) 183-211
17. Harackiewicz, J. (1979). The effects of reward contingency and performance feedback on intrinsic motivation. *Journal of Personality and Social Psychology*, 37, 1352-1363
18. He, J.W. & Wei, K.K (2006). Knowledge management systems continuance in organizations: A social relational perspective, J.Lang, F. Lin, & J. Wang (Eds.):KSEM 2006, LNAI 4092, pp. 34-41.
19. Hsu, M.H., Ju, T.L, Yen, C.H, Chang, C.M. (2007). Knowledge sharing behavior in virtual communities: The relationship between trust, self-efficacy, and outcome expectations, *International Journal of Human-Computer Studies*, 65, pp. 153-169.
20. Jin et al. (2007), "Understanding the Sustainability of Virtual Communities in China", University of Science and Technology of China-City University of Hong Kong Joint Advanced Research Center, Suzhou, China.
21. Jones, G. (1986), "Socialization tactics, self-efficacy and newcomers' adjustments to organizations", *Academy of Management Journal*, Vol. 29, pp. 262-79.
22. Kankanhalli, A., Tan, B.C.Y., and Wei, K.K (2005) "Contributing Knowledge to Electronic Knowledge Repositories: An Empirical Investigation," *MIS Quarterly* (29:1).
23. Kelly et al. (2002), "Designing for improved social responsibility, user participation and content in on-line communities", Proceedings of the SIGCHI conference on Human factors in computing systems: Changing our world, changing ourselves, Minneapolis, Minnesota, USA.
24. Kock, N. (2004), "The psychobiological model: towards a new theory of computer-mediated communication based on Darwinian evolution", *Organization Science*, Vol. 15 No. 3, pp. 327-48.
25. Neuman. W.L. (2006), "Social Research Methods: Qualitative and Quantitative Approaches", Pearson International Edition, 6<sup>th</sup> Edition.
26. Rosenberg (1965), Rosenberg's Self-Esteem Scale: <http://www.atkinson.yorku.ca/~psyctest/rosenbrg.pdf>
27. Tiwana, A., and Bush, A.A. (2005). Continuance in expertise-sharing networks: A social perspective. *IEEE Transactions on Engineering Management*, 52(1), 85-101.
28. Wasko, M.M. and Faraj, S. (2000). "It is what one does": Why people participate and help others in electronic communities of practice. *Journal of Strategic Information Systems*, Vol. 9.
29. Wasko, M.M. and Faraj, S. (2005). Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice. *MIS Quarterly*, Vol. 29, No. 1.
30. Wenger, E., McDermott, R., and Snyder, W.M. (2004), *Cultivating Communities of Practice: A Guide to Managing Knowledge*. Boston: Harvard Business School Press.
31. Wood, R. and Bandura, A. (1989), "Social cognitive theory of organizational management", *Academy of Management Review*, Vol. 14 No. 3, pp. 363-84.

**Appendix A: Operationalisation of Constructs**

<b>Construct</b>	<b>Item Wording</b>	<b>Source</b>
<b>Continued Knowledge Contribution (CKC)</b>	<ol style="list-style-type: none"> <li>1. I plan to make future contributions of my knowledge to this EKR</li> <li>2. I intend to continue participating in this EKR rather than discontinue my involvement</li> <li>3. My intentions are much greater in contributing knowledge to this EKR than using other alternative means</li> </ol>	Adapted from Bhattacharjee (2001)
<b>Perceived Knowledge Self Efficacy (PKSE)</b>	<ol style="list-style-type: none"> <li>1. I feel confident that my skills and abilities equal or exceed other contributors</li> <li>2. My past experience and accomplishments increase my confidence that I will be able to perform successfully in this EKR</li> <li>3. My technical skills satisfy my expectations of myself</li> </ol>	Adapted from Jones (1986)
<b>Perceived Self Esteem (PSE)</b>	<ol style="list-style-type: none"> <li>1. I feel that I have a number of good qualities in knowledge contribution</li> <li>2. I am able to contribute knowledge better than most other people</li> <li>3. I certainly feel that I am a person of worth, at least on an equal level with others</li> <li>4. I take a positive attitude toward myself</li> </ol>	Developed based on Rosenberg (1965)
<b>Reputation Status (RS)</b>	<ol style="list-style-type: none"> <li>1. What is your reputation status in EKR?</li> <li>2. How do you feel about reputation status of your knowledge contribution to EKR?</li> <li>3. Do you think that reputation status improve your performance in contributing knowledge to EKR?</li> </ol>	Self developed
<b>User Rating (UR)</b>	<ol style="list-style-type: none"> <li>1. What is your user rating in EKR?</li> <li>2. How do you feel about user rating of your knowledge contribution to EKR?</li> <li>3. Do you think that user rating system enhance your motivation in contributing knowledge to EKR?</li> </ol>	Self developed

**Appendix B: Online Survey Questionnaire****Welcome to the IS Research Project on Organizational EKR****Abstract**

The Department of Information Systems (IS) is conducting a research study on organizational electronic knowledge repository (EKR). The primary objective of the study is to find out what drives people to continue contributing knowledge in organizational EKR.

- An intriguing question: What are the salient individual factors underlying EKR users' intention to continue contributing knowledge?

**Online Survey**

We are conducting an online survey to solicit for responses from the organizational EKR. The survey is open from **NOV 1 to DEC 31, 2008**.

We are monitoring the response rate and we may make changes to the schedule as necessary. The survey is estimated to take 10 minutes of your time and it contains 23 questions, most of which are multiple-choice.

Participation in this study is entirely **VOLUNTARY**. The data collected from the survey will be kept **CONFIDENTIAL**; and the data reported for research purposes will be **ANONYMOUS**.

**Information for Respondents**

As a token of appreciation for your time and effort taken to participate in the study, we would like to give you S\$10 for your kind assistance.

We are expected to attain 120 respondents who have prior experience in using organizational EKR. Upon completion of the survey, please give us seven (7) working days to process your answer script and dispense the reward according to your matrix number. All eligible students can collect the reward (S\$10) at Ms. Khet Khet Oo Tha, #21-06, Collaborative IT Lab, SOC 1, 3 Science Drive 2, National University of Singapore. Subsequent follow-up would be done through email, so please give us a valid email address where we can reach you.

The point of contact for respondents is the study coordinator, Mr. Ryan Seah. Should you have any queries or comments, please do not hesitate to write us email at [k2ootha@comp.nus.edu.sg](mailto:k2ootha@comp.nus.edu.sg).

**The online survey is administered by Ryan for the purposes of the Research Proposal HT060973J.**

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**Please read each statement carefully. People contribute their knowledge to organizational EKR for different reasons. Thinking of your own participation, please indicate the extent to which you agree with the following statements, using the appropriate scales.**

1. What is your user rating in EKR?

10  9  8  7  6  5  4  3  2  1

2. How do you feel about user rating of your Knowledge contribution to EKR?

Very satisfied  Satisfied  Neutral  Dissatisfied  Very dissatisfied

3. Do you think that user rating system enhance your motivation in contributing knowledge to EKR?

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

4. What is your reputation status in EKR?

Five star  Four star  Three star  Two star  One star

5. How do you feel about reputation status of your knowledge contribution to EKR?

Very satisfied  Satisfied  Neutral  Dissatisfied  Very dissatisfied

6. Do you think that reputation status improve your performance in contributing knowledge to EKR?

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

7. I feel that I have a number of good qualities in knowledge contribution

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

8. I am able to contribute knowledge better than most other people

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

9. I certainly feel that I am a person of worth, at least on an equal level with others

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

10. I take a positive attitude toward myself

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

11. I feel confident that my skills and abilities equal or exceed other contributors

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

12. My past experience and accomplishments increase my confidence that I will be able to perform successfully in this EKR

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

13. My technical skills satisfy my expectations of myself

Strongly agree  Agree  Neutral  Disagree  Strongly disagree

14. I plan to make future contributions of my knowledge to this EKR

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

15. I intend to continue participating in this EKR rather than discontinue my involvement

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

16. My intentions are much greater in contributing knowledge to this EKR than using other alternative means

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

**Demographics and Participation**

We would like to know more about you.

**1) Gender**

- Male
- Female

**2) Age** -- AGE--

**3) Employment Status** -- EMPLOYMENT--

**4) Place of Residence** -- REGION--

**5) Highest Level of Formal Education Completed** -- EDUCATION--

**6) How long have you been a member in your community (EKR)?** --Month/Year--

**7) Were you paid to contribute your knowledge to EKR?**

- No
- Yes

**8) If "Yes", approximately how many hours a week were you paid for contributing your knowledge to EKR?** --  
Hours per week--

**9) On average, how many hours in a week do you currently contribute your knowledge to EKR?** --  
Hours per week—

**10) How frequently do you contribute your knowledge to EKR?**

- Less than once a month
- Once a month
- Once a week
- Several times a week
- Once a day
- Several times a day



SUBMIT SURVEY