The Impact of Technology Support for Contextualization and Media System Dependency on Enterprise Social Media Use

Emergent Research Forum Papers

Xiayu Chen
USTC-CityU Joint Advanced Research Center, University of Science and Technology of China, City University of Hong Kong
83 Tat Chee Avenue, Hong Kong
cxy1023@mail.ustc.edu.cn

Qian Huang
School of Management
University of Science and Technology of China
96 Jinzhai Road, Hefei, Anhui, China
huangq@ustc.edu.cn

Robert M. Davison
Department of Information Systems
College of Business
City University of Hong Kong
83 Tat Chee Avenue, Hong Kong
isrobert@cityu.edu.hk

Abstract

While enterprise social media (ESM) increasingly plays a vital role in improving teamwork in organizations, our understanding of how ESM is used by team members is still limited. Although researchers have investigated the impacts of ESM use, relatively few studies explore how individual members exhibit different extents of ESM usage behavior. Drawing upon media system dependency theory, we propose that ESM support for cognitive and affective contextualization can enhance individuals' different types of dependency relations with the ESM by fulfilling their needs, which in turn lead to their different extents of usage behavior. Firms in China where ESM applications are used regularly will be surveyed to verify the associated hypotheses. The research design and expected contributions of this research will be discussed.

Keywords: Enterprise social media, cognitive contextualization, affective contextualization, media system dependency.

Introduction

Enterprise social media (ESM) has been increasingly implemented in organizations for improving knowledge management, collaboration and coordination in recent years (Aral et al. 2013; Sun and Shang 2014). ESM is only restricted to use by the employees of an organization or members with whom they have a business relationship or are affiliated (Turban et al. 2011). According to a report from Forrester, the annual growth rate of sales of ESM platforms will be 61%, and the total market value is estimated to reach $6.4 billion by 2016 (Mullaney 2012). Despite a growing body of research on the emerging field of ESM (Aral et al. 2013; Leonardi et al. 2013), our understanding of how ESM is used by employees within organizations is still limited (Kane et al. 2014).

In particular, ESM is widely leveraged by team members to improve teamwork in organizations (Sha and Chang 2012; Sun and Shang 2014). These social technologies can help team members to engage in sense making and structuring messages for easy absorption and better understanding by providing different kinds of contextual cues (Sha and Chang 2012). Specifically, Te'eni's (2001) cognitive-affective communication model indicates that insufficient face-to-face communications can be overcome by sharing both cognitive and affective contextual cues with the capabilities provided by these technologies. Cognitive contextual cues enable explicit interpretation of task-related issues, such as specific terms used in the message that help reduce misunderstandings among team members. On the other hand, affective contextual cues include relational components that describe moods and emotions, such as team members' personal interests and current activities that facilitate the developments of personal relationships among team members (Sha and Chang 2012). ESM acts as a kind of technology that satisfies both cognitive and affective contextualization strategy requirements and can lead to individual member's different usage behavior in a team. In particular, we draw on media system dependency (MSD) theory to emphasize the dependency relations between users and the media (Ball-Rokeach 1985; Ball-Rokeach 1998). The MSD theory suggests that the extent to which an individual's expectations and needs are fulfilled by a media will stimulate the individual's dependency relations with the media, which in turn affect the individual's media usage behavior (Grant et al. 1991; Loges 1994). Based on the MSD theory, we aim to address the following research question: does ESM support for cognitive and affective contextualization enhance individual's dependency relations and their ESM usage behavior?

Theoretical Foundation

Media system dependency (MSD) theory

MSD refers to "a relationship in which the capacity of individuals to attain their goals is contingent upon the information resources of the media system" (Ball-Rokeach 1985, p. 487). MSD theory suggests that individuals have to depend on the media to access the information resources in order to achieve their various goals (Chiu and Huang 2014). MSD relations can be conceived along three distinct goals: understanding, orientation and play (Grant et al. 1991). Understanding centers on individuals' need to understand and explain themselves and the world around them; orientation deals with the need to behave effectively in personal behavioral decisions as well as in interpersonal interactions; play focuses on the need for escapism and entertainment (Chiu and Huang 2014). Understanding dependency relations can be conceptualized as the need for information-seeking; orientation dependency relations are operationalized as the need for interpersonal connection; and play dependency relations are conceptualized as the need for entertainment (Chiu and Huang 2014).

MSD theory has been applied in communication research to examine dependency relations with mass communication channels including television (Grant et al. 1991), newspapers and radio (Loges 1994), and Internet (Patwardhan and Yang 2003). However, to date, no studies have employed MSD theory in the organizational context, and no attempts have been made to examine the dependency relationships between team members and ESM and their effect on the individuals' ESM usage behavior. Although MSD theory focuses on "why do I go to this medium to fulfil this goal?" (Grant et al. 1991, p. 780), no attention has been paid to what activities this medium can support.

### Enterprise social media support for contextualization

Previous research has proposed that technology-supported contextualization can improve organizational communication (Te'eni 2001). Contextualization means the explicit presentation towards context information, such as intentions and feelings in regard to an issue or action and definitions of a situation (Te'eni 2001). Individuals who communicate with others should share not only the content but also the context of a message (Brown and Duguid 1998).

According to Te'eni's (2001) cognitive-affective model, ESM can be designed and used to support contextualization strategy about cognitive and affective requirements. Specifically, ESM support for cognitive contextualization (ESMSCC) is the ability of ESM to satisfy sharing of task-related cognitive contextual information (Sha and Chang 2012). For example, ESM allows individuals to post, edit and sort messages linked to others in the organization and view the messages posted, edited, sorted and communicated by others (Leonardi et al. 2013).

In addition to cognitive cues, affective element is another critical type of contextual cue that has a great impact on organizational communication (Te'eni 2001). ESM support for affective contextualization (ESMSAC) refers to the ESM is capable of supporting sharing affective or relational contextual cues, such as team members' personal background and interests (Sha and Chang 2012). Affective contextualization can be realized in the team by ESM that bridge online social networks and offline interpersonal relationships (Sha and Chang 2012).

Research Model and Hypotheses Development

Based on the above discussion, we propose a research model to explain how technology support for contextualization affects individuals' media system dependency, which in turn influences their media behavior (see Figure 1).

Figure 1. Research Model
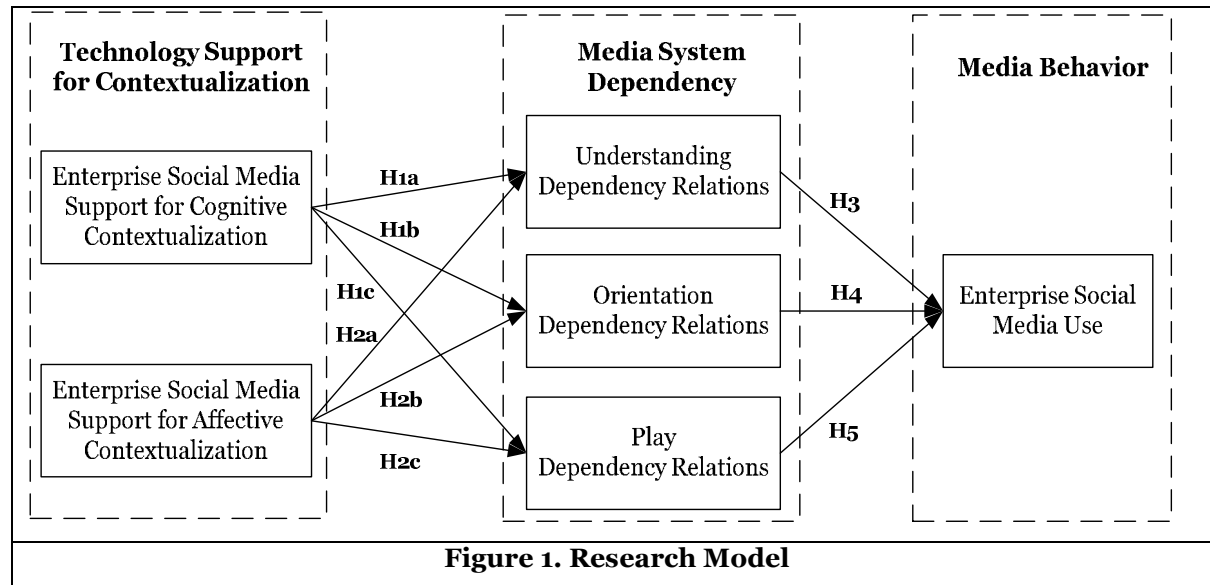
The impacts of technology support for contextualization on MSD

ESMSCC reflects that ESM enables individuals to share task-related cognitive contextual cues (Sha and Chang 2012). The intensity of information exchanged and the different perspectives of individuals can increase the probability of misunderstanding between communicators (Straus and McGrath 1994), which leads to cognitive complexity. With the support of technologies for distributed cognition, individuals' own understanding of the situation can be refined as well as the understanding of others be better appreciated (Boland et al. 1994). For example, ESM can allow individual members to know who shares a piece of knowledge (Leonardi et al. 2013). Then, individuals can better understand themselves and their teams through seeking information on the social media. Thus, we propose:

H1a. ESMSCC will have a positive effect on understanding dependency relations.

ESMSCC enables individuals to inform action and engage in dialogue with others (Boland et al. 1994). Individuals "change their decision-making behavior according to the way information is presented" (Katz and Te'eni 2007, p. 262). ESM can support in sharing contextual cues relevant to processes and tasks, which helps individuals obtain guidance or information in making behavioral decisions. Moreover, cognitive contextualization highlights annotations and comments on knowledge made by other members (Sha and Chang 2012). Using ESM helps individuals find something interesting to say with other team members, which facilitates developing conversational skills. In order to deal with personal relationships or develop interpersonal skills, individuals may depend on the ESM to obtain guidance. Consequently, we propose:

H1b. ESMSCC will have a positive effect on orientation dependency relations.

Furthermore, ESMSCC has a great effect on increasing individual members' play dependency relations. ESM allows individuals to contribute knowledge as well as comment on other team members' contributions (Sha and Chang 2012). Contributing content on social media platforms can be regarded as a good source of entertainment (Lee and Ma 2012). This is because individual members can gain a sense of fulfilment through sharing their knowledge with others. This is particularly the case when they perceive that other members comment on the knowledge that they contributed. If individuals are actively involved in sharing cognitive contextualization information on ESM, they can obtain more fun with other members as well as obtain more topics to discuss with others. Therefore, we propose:

H1c. ESMSCC will have a positive effect on play dependency relations.

ESMSAC reflects that the ESM enables individuals to share affective contextual cues (Sha and Chang 2012). Then, a working environment that allows blogging and online chatting will be created in the teams. For example, ESM enables individuals to update their personal profile statuses, express personal likes or dislikes and blog about any topic (Kaplan and Haenlein 2010). Hence, using ESM can help individuals understand their own beliefs and behaviors. Meanwhile, by using ESM, individuals can easily find other team members' personal information and interests (Sha and Chang 2012). This implies that individuals can rely on the ESM to acquire affective cues for understanding other members. Consequently, we propose:

H2a. ESMSAC will have a positive effect on understanding dependency relations.

ESM allows individuals to construct public profiles through building connections with other team members (Boyd and Ellison 2007). In addition, ESM enables individuals to interact with other team members informally (Majchrzak et al. 2009). The psychological distance can be shortened and the feeling of co-presence can be heightened among team members with the richness of affective contextual cues (Sha and Chang 2012). Social media technologies help individuals build and maintain relationships with friends, which facilitates individuals to feel connected (Boyd and Ellison 2007). To create an internal social network of friends, individuals are more likely to connect with other team members with similar interests. Individual members thus can depend on the ESM to better act and interact with others. Thus, we propose:

H2b. ESMSAC will have a positive effect on orientation dependency relations.

ESMSAC can also affect individual members' play dependency relations with the ESM. For instance, ESM allows individuals to share photos or past stories with other team members, which serve as a means for escaping pressure and entertaining. In addition, individual members can obtain enjoyment through interactions with other members with the support of ESM, such as discussions and gossip. Individuals may discuss, gossip and make fun of persons and issues with those who share entertainment-oriented content (Lee and Ma 2012). Meanwhile, individuals' stress in their daily life could also be released (Lee and Ma 2012). Therefore, we propose:

H2c. ESMSAC will have a positive effect on play dependency relations.

The impacts of MSD on media behavior

Individual members can depend on the ESM to better understand themselves and their teams through acquiring information resources. Social media can satisfy individuals' information-seeking motivation (Lee and Ma 2012). When individuals need to maintain and interpret their own beliefs and behaviors or understand their team, they will rely on the ESM to seek the relevant information. Xu et al. (2010) indicate that individuals' information-seeking motivation, such as seeking task and social information, signals the individual's affection to the source and willingness to be affiliated with it in the future. Individuals who seek information from the ESM to understand themselves or to gain insights into their teams may generate a personal preference for the ESM, which in turn increases the extent to which they use the ESM. Consequently, we propose:

H3. Understanding dependency relations will have a positive effect on individuals' ESM use.

Individuals can know how to deal with daily work-related problems as well as to develop personal relationships with other team members through depending on the ESM. Individuals' continuous usage behavior is related to the instrumentality of IS use (Bhattacherjee 2001). The instrumentality of IS use, such as seeking advice on making behavioral decisions, is associated with continued usage of the ESM. In addition, individuals need to depend on the media to obtain guidance about how to develop effective conversational and interpersonal skills (Loges 1994). Individuals who seek social interaction will use the social media more often (Hughes et al. 2012). Thus, we propose:

H4. Orientation dependency relations will have a positive effect on individuals' ESM use.

MSD theory suggests that individuals can depend on the media to reduce their stress and share pleasurable experiences with others (Chiu and Huang 2014). If individuals find inherent enjoyment and pleasure in using a system, they may express greater commitment to its use (Gerow et al. 2013). It is crucial for individuals to have pleasurable experiences with IT, especially when using it for communication purposes (Dimmick et al. 2000). When individuals come to perceive that their experience with an IT (e.g., ESM in our case) is pleasurable, they are more likely to put more time and effort into the usage, utilize it to process more information and repeatedly use it in the future (Turel and Serenko 2012). Therefore, we propose:

H5. Play dependency relations will have a positive effect on individuals' ESM use.

Research Methodology

Sample and participants

To test our hypotheses, we will collect survey data using Wenjuanxing (www.sojump.com), a popular Chinese professional survey website. In order to identify appropriate respondents for our study, we will use a customer panel database offered by Yiqitong, an IT software development firm in China. Yiqitong, which was founded in 2005, focuses on developing ESM for small and medium-sized enterprises. The main ESN tool, jingoal, has been used by more than 700,000 users[1]. Based on this database, we will randomly select 100 teams in China where ESM is used by employees as a communication medium. The online survey hyperlink will be sent out to the 100 panel teams. To encourage responses, a follow-up phone call will be made and a reminder email will be sent.

Measurement

All measurement items will be adapted from the existing literature. Specifically, ESMSCC is assessed by six items adapted from Sha and Chang (2012). Sample item is "To what degree do the ESM that we used in our team enabled me to easily know who contributed a piece of knowledge". ESMSAC is measured by five items adapted from Sha and Chang (2012). Sample item is "To what degree do the ESM that we used in our team enabled me to share my photos or personal information with other members". The

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[1] http://www.jingoal.com/index.html

measurement of MSD relations are operationalized as second-order constructs. The items are adapted from Chiu and Huang (2014). ESM use is measured by three items adapted from Kang et al. (2012).

Conclusions and expected contributions

Our study aims to investigate how ESM is used by team members in the organizations. We indicate that ESMSCC and ESMSAC can enhance individuals' dependency relations with the ESM, which in turn strengthen the different extents to which individuals use the ESM.

Our study will make valuable contributions to the extant literature and practice. First, although prior research has investigated the impacts of ESM use, relatively few studies have examined how individual members' ESM use can be formed. By drawing upon MSD theory, we investigate how individuals' different types of dependency can increase ESM usage behavior. Second, we further investigate how ESM support for contextualization influences individual members' different types of dependency. To the best of our knowledge, this study is the first to examine the antecedents of these three dimensions of dependency relations. Finally, in order to facilitate individual members' use of the ESM, practitioners should focus on individuals' different types of dependency relations with the media by providing different types of technologies to support the ESM.

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REFERENCES

Aral, S., Dellarocas, C., and Godes, D. 2013. "Introduction to the Special Issue Social Media and Business Transformation: A Framework for Research," *Information Systems Research* (24:1), pp. 3-13.

Ball-Rokeach, S.J. 1985. "The Origins of Individual Media-System Dependency a Sociological Framework," *Communication Research* (12:4), pp. 485-510.

Ball-Rokeach, S.J. 1998. "A Theory of Media Power and a Theory of Media Use: Different Stories, Questions, and Ways of Thinking," *Mass Communication and Society* (1:1-2), pp. 5-40.

Bhattacherjee, A. 2001. "Understanding Information Systems Continuance: An Expectation-Confirmation Model," *MIS Quarterly* (25:3), pp. 351-370.

Boland, R.J., Tenkasi, R.V., and Te'eni, D. 1994. "Designing Information Technology to Support Distributed Cognition," *Organization Science* (5:3), pp. 456-475.

Boyd, D.M., and Ellison, N.B. 2007. "Social Network Sites: Definition, History, and Scholarship," *Journal of Computer-Mediated Communication* (13:1), pp. 210-230.

Brown, J.S., and Duguid, P. 1998. "Organizing Knowledge," *California Management Review* (40:3), pp. 91-111.

Chiu, C.-M., and Huang, H.-Y. 2014. "Examining the Antecedents of User Gratification and Its Effects on Individuals' Social Network Services Usage: The Moderating Role of Habit," *European Journal of Information Systems*, forthcoming.

Dimmick, J., Kline, S., and Stafford, L. 2000. "The Gratification Niches of Personal E-Mail and the Telephone Competition, Displacement, and Complementarity," *Communication Research* (27:2), pp. 227-248.

Gerow, J.E., Ayyagari, R., Thatcher, J.B., and Roth, P.L. 2013. "Can We Have Fun@ Work&Quest; the Role of Intrinsic Motivation for Utilitarian Systems," *European Journal of Information Systems* (22:3), pp. 360-380.

Grant, A.E., Guthrie, K.K., and Ball-Rokeach, S.J. 1991. "Television Shopping: A Media System Dependency Perspective," *Communication Research* (18:6), pp. 773-798.

Hughes, D.J., Rowe, M., Batey, M., and Lee, A. 2012. "A Tale of Two Sites: Twitter Vs. Facebook and the Personality Predictors of Social Media Usage," *Computers in Human Behavior* (28:2), pp. 561-569.

Kane, G.C., Alavi, M., Labianca, G., and Borgatti, S.P. 2014. "What's Different About Social Media Networks? A Framework and Research Agenda," *MIS Quarterly* (38:1), pp. 275-304.

Kang, S., Lim, K.H., Kim, M.S., and Yang, H.-D. 2012. "A Multilevel Analysis of the Effect of Group Appropriation on Collaborative Technologies Use and Performance," *Information Systems Research* (23:1), pp. 214-230.

Kaplan, A.M., and Haenlein, M. 2010. "Users of the World, Unite! The Challenges and Opportunities of Social Media," *Business Horizons* (53:1), pp. 59-68.

Katz, A., and Te'eni, D. 2007. "The Contingent Impact of Contextualization on Computer-Mediated Collaboration," *Organization Science* (18:2), pp. 261-279.

Lee, C.S., and Ma, L. 2012. "News Sharing in Social Media: The Effect of Gratifications and Prior Experience," *Computers in Human Behavior* (28:2), pp. 331-339.

Leonardi, P.M., Huysman, M., and Steinfield, C. 2013. "Enterprise Social Media: Definition, History, and Prospects for the Study of Social Technologies in Organizations," *Journal of Computer‐Mediated Communication* (19:1), pp. 1-19.

Loges, W.E. 1994. "Canaries in the Coal Mine Perceptions of Threat and Media System Dependency Relations," *Communication Research* (21:1), pp. 5-23.

Majchrzak, A., Cherbakov, L., and Ives, B. 2009. "Harnessing the Power of the Crowds with Corporate Social Networking Tools: How Ibm Does It," *MIS Quarterly Executive* (8:2), pp. 103-108.

Mullaney, T. 2012. "Social Media Is Reinventing How Business Is Done," *USA Today*, pp. 1A-1B.

Patwardhan, P., and Yang, J. 2003. "Internet Dependency Relations and Online Consumer Behavior: A Media System Dependency Theory Perspective on Why People Shop, Chat, and Read News Online," *Journal of Interactive Advertising* (3:2), pp. 57-69.

Sha, X., and Chang, K.T. 2012. "The Role of Leadership and Contextualization on Citizenship Behaviors in Distributed Teams: A Relational Capital Perspective," *IEEE Transactions on Professional Communication* (55:4), pp. 310-324.

Straus, S.G., and McGrath, J.E. 1994. "Does the Medium Matter? The Interaction of Task Type and Technology on Group Performance and Member Reactions," *Journal of Applied Psychology* (79:1), pp. 87-97.

Sun, Y., and Shang, R.-A. 2014. "The Interplay between Users' Intraorganizational Social Media Use and Social Capital," *Computers in Human Behavior* (37), pp. 334-341.

Te'eni, D. 2001. "Review: A Cognitive-Affective Model of Organizational Communication for Designing It," *MIS Quarterly* (25:2), pp. 251-312.

Turban, E., Bolloju, N., and Liang, T.-P. 2011. "Enterprise Social Networking: Opportunities, Adoption, and Risk Mitigation," *Journal of Organizational Computing and Electronic Commerce* (21:3), pp. 202-220.

Turel, O., and Serenko, A. 2012. "The Benefits and Dangers of Enjoyment with Social Networking Websites," *European Journal of Information Systems* (21:5), pp. 512-528.

Xu, Y., Kim, H.-W., and Kankanhalli, A. 2010. "Task and Social Information Seeking: Whom Do We Prefer and Whom Do We Approach?," *Journal of Management Information Systems* (27:3), pp. 211-240.