CASE STUDY ON THE ENTERPRISE MICROBLOG USAGE: FOCUSING ON KNOWLEDGE LEARNING

Arum Park, School of Management & The Management Research Institute, Kyung Hee University, Seoul, South Korea, penellope007@khu.ac.kr

Min Su Kang, Department of Business Administration, Graduate School, Kyung Hee University, Seoul, South Korea, hancan@khu.ac.kr

Kyoung-Jun Lee, School of Management & The Management Research Institute, Kyung Hee University, Seoul, South Korea, klee@ khu.ac.kr

Abstract

Knowledge Management Strategy can be classified by codification strategy and personalization strategy (Hansen et. al., 1999), and how to manage the two strategies were always studied. Also, current studies regarding the knowledge management strategy were targeted mostly for major companies, resulting in lack of studies in how it can be applied on SMEs. This research, with the knowledge management strategy suited for SMEs, sets an Enterprise Microblog (EMB), and with the EMB applied on SMEs' Knowledge Management Strategy, it is reviewed on the perspective of SMEs' Codification and Personalization Strategies. Through the advanced research regarding Knowledge Management Strategy and EMB, the hypothesis is set that "Depending on the development of the company, the main application of EMB alters from Codification Strategy to Personalization Strategy." To check the hypothesis, SME that have used the EMB called 'Yammer' was analyzed from the data of their foundation until today. The case study has implemented longitudinal analysis which divides the period when the EMBs were used into three stages and analyzes the contents. As the result of the study, this suggests a substantial implication regarding the application of Knowledge Management Strategy and its Knowledge Management System that is suitable for SME.

Keywords: Enterprise Microblog: Learning, Knowledge: Case Study: Content Analysis

1 INTRODUCTION

As knowledge is paid attention as a new production factor that generates added value, studies continue to apply knowledge management to business environment. In addition, as ICT (Information Communication Technology) was engrafted in business environment, it leads to increasing task efficiency and productivity of individual workers. Accordingly, the way that a business achieves its goal has changed to one in which its individual members are willing to take part in the organization and share information to create new values (Han, 2003) and studies for the system and service to support such transition are carrying out. Of late, a new concept called 'Enterprise 2.0' newly appears. It is the extension of Wen 2.0 and its technology, which focus on participation, sharing and openness, to the work environment of a business (Jung, 2013). Enterprise 2.0 is being used as a collaborative tool to prop up individual creativity and group brain power by combining Web 2.0 technologies such as blog, Wiki, RSS and tag with business software (McAfee 2006). Utilizing Enterprise 2.0, a company enables its members, external partners and customers to share information by which work efficiency and productivity is expected to rise and produce added value. As Tweeter gets popular, Enterprise Microblog (EMB), which is an example of Enterprise 2.0 for business, has been developed as equivalent to Tweeter in business circle and SaaS (Software as a Service) such as Yammer was introduced. The studies of EMB mainly focus on demonstrating its usability in terms of intra-firm communication and knowledge management. However existing studies learn too much towards large-sized companies and certain departments, rather than a company as a whole. Therefore, few studies have been conducted on small and medium-sized companies that have difficulty preparing separate resources and supplying exclusive workforce to introduce knowledge management. In this respect, the present study placed its analytic focus on small-sized companies actually equipped with EMB to know how they use it. And, based on the findings, this study examined their knowledge management strategies for EMB from the point of codification and personalization. Hypothesis –"as a company grows, it shifts EMB strategy from codification to personalization'- was established on the basis of reviewing precedent studies and literature. To demonstrate the hypothesis, this study analyzed the usage of EMB by small companies that have used it from foundation. For case study, the duration of the use was divided into 2 spans and longitudinal analysis was employed to examine the contents of the blogs. Using the key findings of the analysis, this study is aimed to propose practical implications for the operation of knowledge management of small-sized company and the suitable application of knowledge management system for operation.

2 LITERATURE REVIEW

2.1 Knowledge Management

As knowledge is considered as a new production factor to create added value, studies on knowledge management are being carried out throughout the academic circles of business management and administration. Knowledge management is to develop individual's knowledge and experience, share it as universal knowledge within a company and use it as an asset of the company (Kang 2002). From the perspective of knowledge management, knowledge can be categorized by form into 'explicit knowledge' and 'tacit knowledge' (Kang & Chung 2002; Polanyi 1962, 1966; Nonaka & Takeuchi, 1995). Explicit knowledge means knowledge communicable through language or systematic codes while tacit knowledge is internalized and so hard to typologize and convey. Also, Krogh (1998) takes two different approaches - cognitivist perspective and constructionist perspective - to explain the essence of existing knowledge. Cognitivist perspective sees knowledge as one to be precisely and easily codified and conveyed to others. This type of knowledge is commonly known as explicit knowledge. On the contrary, constructionist perspective sees it having unique knowledge that is expressed through prior experience, mood and feelings. So this kind of knowledge is similar to tacit

knowledge, so it is hard to be shared and communicated among people. Foray & Ludvall (1998) divided knowledge into Know-What, Know-Why, Know-How and Know-Who. Know-What is to understand and know a certain fact and Know-Why is to know the laws and principles of human mentality and behavior and social change. And Know-How means ability and skill to know something and Know-Who is to know who know what and how he does.

2.2 **Knowledge Management Strategy**

The critical point of the discussions concerning knowledge management strategy is to derive a proper type of strategy of knowledge management for a company and a suitable type of it on which a company should focus when it applies it to itself (Seol 2009). In the case study with large consulting firms, Hansen et al (1999) divided knowledge management strategy into the strategies of codification and personalization. In the codification strategy, obtaining knowledge is open and official since knowledge is documented. And knowledge is re-used so that scale of economy can be achieved (Hansen et al 1999; Lee et al 1999). Furthermore, this strategy can enhance accessibility to knowledge of individual members in a company, which leads to increasing efficiency of the company's knowledge management. For personalization strategy, knowledge is acquired usually in the process of work process and the acquired knowledge is embedded in the members of a company on the basis of their experience (Nevis et al, 1995; Madhavan & Grover 1998). That is, knowledge is utilized and applied to work through the development of individual's competence. In addition, since knowledge spreads depending on the relationship among the members, the path of distribution is non-official (Jordan & Jones 1997). Therefore, it is important to establish relationship between those who own knowledge and those who need it in personalization strategy (Polanyi 1962). As far as the operation of codification and personalization strategy is concerned, Hansen et al (1999) asserted that focusing on one strategy is more effective based on 80:20 Law than using both strategies in an integrated way. Kankanhalli et al (2003) attempted to use codification and personalization strategy to match knowledge management with information technology. They classified the characteristics of a company by contextual volatility on the basis of its products and services and proposed approaches to knowledge management suitable for each class. On the other hand, Nonaka & Takeuchi (1995) maintained that interaction between tacit knowledge and tacit knowledge is important and integrate management is the very critical factor for the success of knowledge management. Jordan & Jones (1997) suggested two knowledge management types - tacit knowledge-based and tacit knowledge-based management – and emphasized the balance of the two types of the management. Using the case of information system establishment, Swan et al (2000) divided knowledge management into two types: cognitive and community approach. Cognitive approach places its focus on acquiring existing knowledge by suing information technology and codifying it. Community approach emphasizes sharing tacit knowledge through social network based on trust and cooperation. The researchers stressed the importance of balancing two types of approaches to manage knowledge efficiently. Choi & Lee (2000) divided knowledge management into passive, system-oriented, human-oriented and dynamic approach. Passive management of knowledge means insufficient state of interest in knowledge management itself and system-oriented approach is codification strategy focusing on tacit knowledge. And human-oriented approach can be understood as interpersonal strategy, focusing on tacit knowledge. Last, dynamic approach emphasizes both system-oriented and human-oriented approach at the same time. And the superior performance of knowledge management by dynamic approach was proved through case studies. Lee & Kwon (2001) proposed the strategic directions to knowledge management by industry: initial, organizational knowledge-based and combined. Initial knowledge management strategy is characterized with low concentration on the use of information technology and organizational knowledge. Organizational knowledge-based strategy is to systemize knowledge inside an organization and emphasizes the organizational knowledge. Information technology strategy for knowledge management transforms individual knowledge into data and shares it as organizational knowledge. Combined type of knowledge management stresses both

organizational knowledge and information technology and performs knowledge management. The authors also divided industry sectors into manufacture, distribution/finance and IT/consulting and suggested a strategic direction to knowledge management by sector.

2.3 Enterprise Microblog (EMB)

The existing systems that companies use has exposed the limitations in sharing information and knowledge or drawing the members of an organization into active participation in sharing process. To overcome this shortcoming of the systems, companies introduced social network service to help their members voluntarily participate in opening and sharing information and knowledge and smooth communication among them, all of which are aimed to increase task productivity (Min 2011). Enterprise 2.0 that had emerged under such circumstance can be defined as the application of Web 2.0 as base paradigm for participation and sharing to such technologies as RSS, Wiki and Folksonomy in order to create knowledge, share it and generate profit of a company at work (McAfee 2006). As one of Enterprise 2.0, EMB is more secured than general microblogs in that the former is only available to only the members with the email account of a company. In addition, it does not put limit to the capacity of text to enter at a time and supports such functions as file attachment, hash tag and group creation. Therefore, it is utilized to improve communication and cooperation in a company and share information and knowledge. From the viewpoint of knowledge management, the precedent studies on EMB has mainly focused on it as a tool of knowledge sharing and storing and demonstrated its usefulness for work. The precedent studies on EMB can be summarized as in Table 1.

Case	Scale	Purpose	Implication
CPA Australia (Howard&Ryan, 2010)	Small & Medium	Peripheral	Implementation for knowledge exchange and repository Expert information easily acquired.
Communardo (Riemer & Richter, 2010)	Small & Medium	Peripheral	Record Information. Knowledge acquisition rapidly through expert.
Siemens (Muller&Stocker, 2011)	Large	Peripheral	Written in short sentence, Reduce the risk of Information overflow. Continuous acquisition of knowledge through 'Following'
IT company (Zhao et al, 2011)	Large	Peripheral	Expert information easily acquired and spread through real time sharing
IREKO (Riemer et al, 2011)	Small & Medium	Main	Useful for Work & Time coordination, discussion, etc. The use of EMB behavior depends on the organization's situation..
Fortune 500 Company (Zhang et al, 2010)	Small & Medium	Peripheral	Useful for know other person's work situation & make networking Worry about "Noise-to Value paradox"
Capgemini (Riemer et al, 2011)	Large	Peripheral	The most verbose required for comments and descriptions provided. Demend for Information on how to fix the problem, suggest solutions, situations and work sharing, and used for the purpose of sharing Information

Table 1. Previous Researches on EMB

2.4 Hypothesis

Lee (2008) maintained that knowledge in an organization is closely related to experience and information and dynamic in course of time, so that it is necessary to reflect the dynamics of knowledge in information and technology. In this context, it was considered that since the type of knowledge can

change depending on the circumstance under which a company grows and is positioned, the type of knowledge management using microblog also can change. Based on the theoretical background and literature review that were examined earlier, the hypothesis of this study is set as follows.

H: As a company grows, the emphasis of EMB strategy changes from codification to personalization.

In <4. Case Study>, a case study was conducted on the small-sized companies that are actually using EMB to demonstrate the hypothesis.

3 RESEARCH METHOD AND OBJECTS

3.1 Research Method

Most of existing studies on EMB mainly focused on large companies and they further narrowed research scope to the cases in which some of the employees use EMB, rather than covering a company as a whole. On the contrary, this study places analytical focus on small companies that have used EMB since foundation for the purpose of supporting knowledge management. Therefore, the cases this study handle could be somewhat unique and extreme, so they are worth analyzing and reporting. Therefore, this study obtained and divided EMB contents of 2 years and 6 months registered in EMB into 3 different time periods to carry out a single case study aiming for EMB usage analysis through longitudinal research. Last, to precisely understand the environment and circumstances of use, the author directly joined the part of the case projects of the companies, playing a restricted role (as peripheral member).

3.2 Research Objects

Company B is a venture company that is leading the domestic market of R&D in the field of technology and application services of Near Field Communication (NFC). It is organized with 4 departments and 12 employees, which belongs to small company in size. The departments are company-affiliated research center, finance, development and BDM (Business Development and Marketing). The company-affiliated research center performs system research, service design research and policy study; finance team engages in financing, accounting and general management. Development team is responsible for platform and UX development. Last, BDM team carries out such tasks as business and service planning, site installation and support and marketing. Figure 1 shows the organization chart of the company. Company B emphasizes the balance of work and life to improve the creativity and productivity of its employees. To support it, it executes Smart Work System. And since the employees often work outside of the company, the company thinks sharing information and knowledge and real-time communication are important factors. Therefore, Company B introduced EMB called Yammer as an official supporting tool for knowledge management when founded and has used it since then.

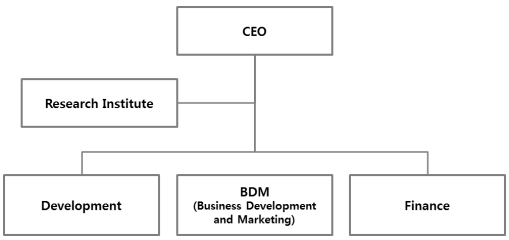

Figure 1. 'B' Company's Organization chart

3.3 Content Analysis Method

To examine the usage of EMB of Company B, this study divided the history of the company into 3 spans: early period of April, 2011 when it was established, middle period of March, 2013 when the company had the same organizational structure as now and the present period of October, 2013 and 30-day contents were extracted from each span for longitudinal analysis. Content analysis was conducted by using the typology of communication suggested by Riemer et al (2010). Figure 2 shows the diagram of the communication form used for content analysis.

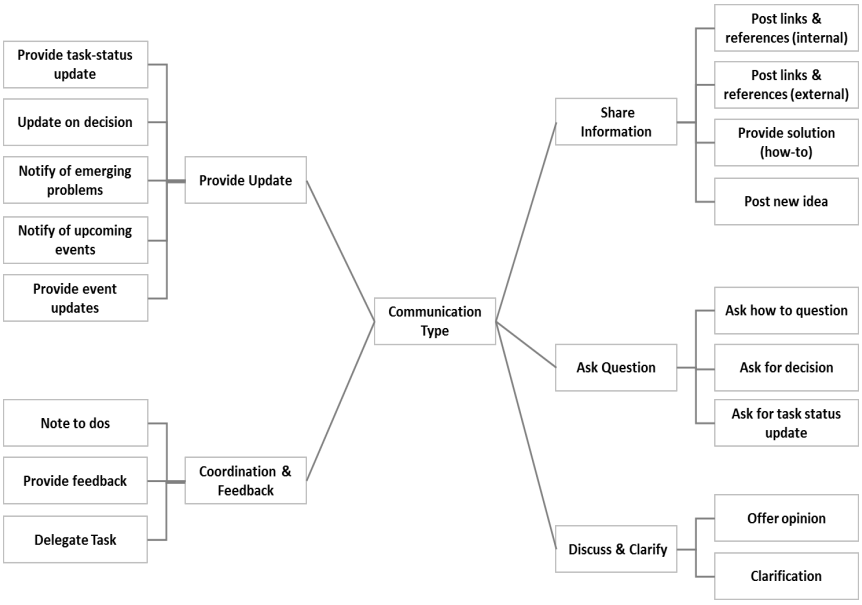

Figure 2. Communication Type

Becerra-Fernandez & Sabherwal (2001) proposed that task orientation (content-oriented vs. process-oriented) and task scope (concentrating vs. spreading) has impact on the process of knowledge management of task. Here, content-oriented task is What-To-Do task and focuses on achieving goal. Therefore, it is closely related to explicit knowledge. Process-oriented task is How-To-Do Task, emphasizing process as means of fulfilling a certain goal. Accordingly, it has many things to do with tacit knowledge. To find out the type of knowledge management focused on each period, this study each of the communication types into explicit or tacit knowledge and compared the proportion of them in each period. This attempt was to examine the change of knowledge management using EMB as the company has grown. Table 2 shows the summary of the classification (explicit vs. tacit).

	Knowledge Type Classification	Communication Type
Tacit Knowledge	Oriented social network Expertise classification / evaluation / registration / renewal Expert search / connection / feedback Teaching and learning support Working methods and business processes-based	Note to dos Provide feedback Delegate Task Provide solution(how-to) Post new idea Ask how to question Ask for decision Ask for task status update Offer opinion Clarification
Explicit Knowledge	Document-oriented Knowledge acquisition / found / suggestions Knowledge classification / evaluation /	Provide task-update Update on decision Notify of emerging problem Notify of upcoming event

	storage / update Knowledge distribution / search Business results and performance-based	Provide event update Post links & references (Internal) Post links & references (external)

Table 2. Knowledge Type Classification

4 VERIFICATION OF CASE STUDY AND HYPOTHESIS

4.1 Analysis of Communication Type

This study analyzed the communication types of Company B to understand the change in the usage of EMB by the employees of Company B. To do so, a total of 1,269 registered in EMB for a month at each period of three spans were collected for analysis. The findings from the analysis showed that, for communication type, Company B mostly used EMB for information updating (45.3%) and information sharing (43.55) at the early stage and they were followed by inquiry and request (8.7%) and job adjustment and feedback (4.4%). In the middle period, the company utilized EMB for information updating (43.0%), information sharing (29.1%), debate and explanation (13.4%), job adjustment and feedback (9.0%) and inquiry and request (5.5%) in the order. At present, it uses the EMB for information sharing (37.7%), information updating (32.8%), debate and explanation (14.3%), job adjustment and feedback (9.2%) and inquiry and request (6.1%). Figure 3 shows the proportion of communication type by period. Information updating means a type of communication that one intends to inform that one informs others of information that is created in a company or a team of neighboring others. It implies that a great deal of knowledge is shared through EMB as business and the number of employees grows. What is distinctive is the decreased proportion of information updating as the company moved from the middle period to the present time. It can be explained by the change of daily work report system in the company. In the middle period, the company implemented the reporting system of daily work that the entire employees should report daily work progress directly to the representative of the company. However, CEO of the company was jammed with too many reports not always necessary and Noise-to Value paradox occurred. As a result, at present team teams compile the daily works of his or her workers and report to CEO. The changed reporting policy has reduced the amount of contents created. Information sharing is a type of communication that members share internal/external data and knowledge with each other. Company B has used EMB to keep sharing internal/external data and knowledge, solutions to problems and newly created ideas. As workload increases due to increasing work adjustment, feedback and inquiry and request, communication has mainly concentrated on work adjust and work methods. Last, debate and explanation is not a communication type witnessed in the initial stage but started maintaining a constant proportion of about 14% from the middle period. The reason behind it is that the members of Company B are using EMB to suggest their voices and opinions of strategy establishment and planning and decision making through it. It shows that they have vertical communication through the system.

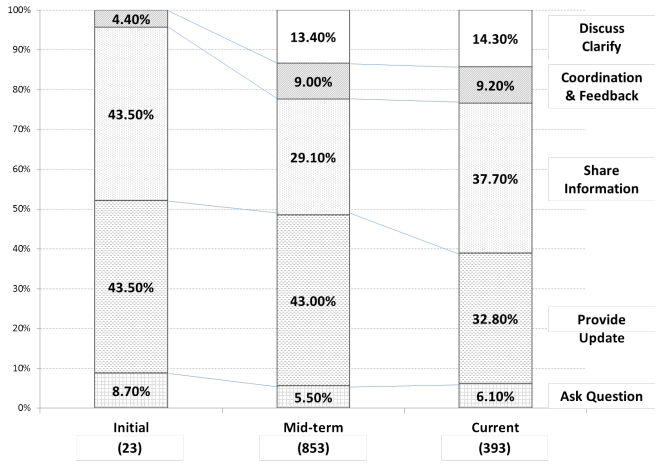

Figure 3. Communication Type Analysis through Time Series

4.2 Analysis of knowledge Types

The communication types of Company B were classified into tacit and tacit knowledge and their proportion was calculated as in Figure 4. As seen in Figure 4, EMB was used mainly in form of explicit knowledge at the initial period of communication. During the stage, the main usage of EMB was information sharing of articles and data related to technology and services or the internal system in development. However, as time went by, tacit knowledge was gradually bigger in proportion of usage. It was because EMB-based opinion sharing and idea creation got more active after the middle period and tacit knowledge became less used as means of communication to update work progress and status.

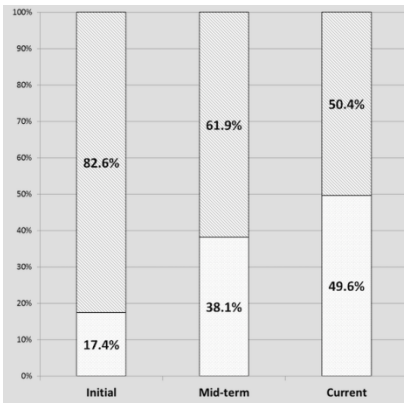

Figure 4. Knowledge Type Analysis through Time Series

4.3 Hypothesis Test

H: As a company grows, the emphasis of EMB strategy changes from codification to personalization.

From the case study of Company B, it was confirmed that the proportion of tacit knowledge gets greater in EMB as the company grew from the early stage to the present. It is because the type of communication focusing on tacit knowledge is more used while that relying on explicit knowledge decreases. This finding is supported by the interviews with the employees of Company B. At the early period, Company B introduced EMB as a means of managing and sharing data and files that were generated during the performance of works. However, as time went, the amount of documents and

files increased, which made the employees less comfortable. As a result, there occurred a need among them for a new service that could manage data and files. Accordingly, Company B decided to use a new service called Goggle Drive that can set permission for file management, search, retrieving and reading. However, the employees felt more convenient with EMB in terms of real-time work sharing, job understanding, consulting with professionals and real-time problem cracking. This kind of convenience comes from the support of EMB for real-time communication as it can be accessed from smartphone application. Figure 5 shows the diagram of knowledge types used in EMB as the company has grown. Therefore, a small company with less resource for knowledge management can use EMB as codification strategy of knowledge management. Since the amount of documents and files to share is small at the early stage of a company, EMB is enough to support a company to execute codification strategy with it. However, as a company grows, works get complicated and employees have to handle a great deal of data and files. Therefore, using EMB for codification comes to face limitation. At the same time, the employees feel more of needs for real-time communication and to form a network among them. That is, as a company develops, EMB is more used to support personalization than codification strategy.

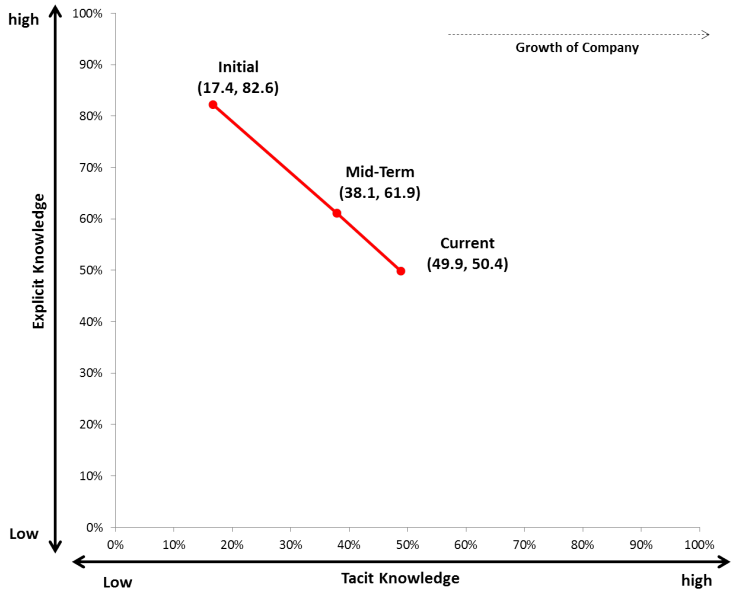

Figure 5. *'B' Company's Knowledge Type Changes*

5 CONCLUSION

5.1 Results and Implications

The present study analyzed EMB used by small companies, rather than large ones that most of existing studies paid attention, to examine the change in the type of knowledge management strategy as a company evolves. The case company that this study chose has uniqueness in that it does not use any other knowledge management tools than EMB. In addition, the research perspective of this study is also unique in that it carried out Cofort research that tracks same class and repeats data collection from it. Furthermore, the researcher of this study himself joined the case study as peripheral member can also be distinguishable. The results and implications of the present study can be summarized as follows. First, Company B is the success case of employing EMB. Precedent studies suggested that active participation of the management, connectivity with hand-on tasks, performance evaluation and compensation and easy accessibility are the success factors of knowledge management system (Koo 2000; Kim et al 2003, Alavi & leidner 2001). Company B satisfies the factors as below.

Active participation of the management: CEO of Company B uses EMB very actively. His registered contribution to the contents takes as much as 25% of the total contents.

Connectivity with hand-on tasks: Company B uses EMB as a main service to support works and it is closely linked to hand-on tasks as well as effectively utilized.

Performance evaluation and compensation: Company B sets a policy of using EMB for daily work reporting and reflects the conformity to the policy to personal performance. Also incentive is granted to those employees who find or create new knowledge.

Easy accessibility: Personal smart terminal application of EMB is provided so that the users have access to it anytime and anywhere.

Second, as a company grows, EMB faces limitation to supporting codification strategy. As seen the case study of Company B, EMB had problems classifying and searching documents and files as their contents and amount get large. Because EMB shows newly registered contents first, users have to scroll down to find the contents they look for. When they do not know the exact name or title of a file or document, it is very difficult to retrieve it. Although EMB offers hash tag function to classify contents, it makes employees feel cumbersome in registering contents. This shortcoming can be a hurdle to activate the use of EMB. Without hash tag, however, codification strategy becomes more difficulty. As indicated in the case of Company B, when the volume of data and files are enlarged to a certain extent, it should be considered to employ Goggle Drive or such to support codification strategy for knowledge management.

Third, when a company grows, EMB is more useful for personal strategy for knowledge management. EMB can be easily accessed to a smart device of a member on individual base and enables to feed back and suggest opinion in real time. Company B is actively using the contents mainly in form of tacit knowledge for sharing job-related contents, understating works, consulting with a professional and solving a problem in real time. Interviewing with the employees of Company B verified that they feel it is useful. Therefore, it is necessary to find a way to activate EMB for knowledge management focusing on personalization strategy including network building with professionals and real-time communication.

5.2 **Limitations**

The present study has limitation to generalization because it uses a single case for research method. Although the case used for this study employs EMB as a main tool for knowledge management, it has room for improvement in following studies. In addition, this study was conducted, only focusing on the official channels of communication such as email, messenger and offline meeting, excluding unofficial types of communication. Therefore, it is required for following studies to include unofficial channels in and use integrated research methods such as questionnaire survey and usage survey in designing a research.

References

Alavi. M., leidner, D.E. (2001). Review; Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues. Management Information Systems Quarterly, 25(1), 107~136

Becerra-Fernandez, I., and Rajiv S. (2001). Organizational knowledge management: A contingency perspective. Journal of management information systems, 18,123-56.

Bierly, P. & Chakrabarti, A. (1996). Generic Knowledge Strategies in the U.S. Pharmaceutical Industry. Strategic Management Journal, 17, 123-135.

Choi, B. G., & Lee, H. S. (2000). Analysis of corporate performance based on knowledge management styles, Proceedings of the The Korea Society of Management information Systems Conference.

Foray, D., Ludvall, B.A. (1998). The knowledge-based economy: from the economics of knowledge to the learning economy. The economic impact of knowledge, 115-121.

Han, S.-E. (2003). Construction and Operation of Effective Knowledge Management System. Proceeding of 2003 Information Policy Seminar on Seoul Association for Public Administration, 216-236.

Hansen, M., Nohria, N., & Tierney, T. (1999). What's your Strategy for Managing Knowledge?. Harvard Business Review, 106-116.

Howard, Z., & Ryan, D. (2010), Replacing the watercooler: connecting through enterprise microblogging. Proceedings of the 15th VALA Biennial Conference and Exhibition, VALA, Melbourne, Victoria, Australia.

Johri, A. (2015). Supporting Global Virtual Work through Blogs and Microblogging, 2015 48th Hawaii International Conference on System Sciences, Proceedings of 2015 48th Hawaii International Conference on System Sciences, 423-431.

Jordan, J., & Jones, P. (1997). Assessing your Company's Knowledge Management Style. Long Range Planning, 30(3), 392-398.

Jung B. H. (2013). Role Based Social Software Platform Model for Enterprise 2.0. Master Degree Thesis in Graduate School, Ajou University.

Kang, B. Y. (2002). A Comparition on the Knowledge Management Level of Small Firms. Journal of Intelligent Information Systems, 8(2), 37-49.

Kang, S. H., & Chung S. W. (2002). Knowledge Management and RAD Performance of Venture Firms. Entrepreneurship and Venture, 5(3), 31-60.

Kankanhalli, A., Tanudidijaja, F., Sutanto, J., & Tan, B., C. (2003). The role of IT in successful knowledge management initiatives. Communications of the ACM, 46(9), 69-73.

Kim, J. H., S. H. Yoo, & Y. G. Kim(2003). An Exploratory Case Study on the Factors Affecting the Knowledge Management System Performance. Journal of the Korean Operations Research and Management Science Society, 20(1), 1-23.

Koo, G, B. (2000). Study on the Success Factors for Knowledge Management System. Proceedings of the Korea Institute of Information Systems.

Krogh, G. V. (1998). Care in Knowledge Creation. California Management Review, 40(3), 133-153.

Lee, H. S., Chang, Y. S., & Choi, B. G. (1999). Analysis of Effects of Knowledge Management Strategies On Corporate Performance. Journal of Intelligent Information Systems, 5(2), 99-120.

Lee, K. C., & Kwon, S. J. (2001). Derivation of Industry-Specific Knowledge Management Framework and Its Empirical Validity. Korea Information Science Society (KISS) Journals, 30(3), 957-986.

Lee, K. C., Kwon, S. J., & Lee, K. Y. (2001). A Self-Organizing Map Neural Network Approach to Segmenting Knowledge Management Type of Venture Business in KOSDAQ. Journal of Intelligent Information Systems, 7(2), 95-115.

Lee, Y. C. (2008). Dynamic Value Chain Modeling of Knowledge Management. The Journal of Information Systems, 17(3), 205-233.

Madhavan, R., & Grover, R. (1998). From Embedded Knowledge: New Product Development Times: Six Case Studies. Journal of Marketing, 62, 1-12.

McAfee A., (2006). Enterprise 2.0 - the dawn of emergent collaboration. MIT Sloan Management 2. Review, 47(3).
Min, S. K. (2011). The Impact of enterprise SNS on business performances in organization. Master Degree Thesis in Graduate School, Yonsei University.
Muller, J., and Alexander S. (2010). Enterprise Microblogging at Siemens, Building Technologies Division: A Descriptive Case Study. Proceedings of 10th International Conference on Knowledge Management and Knowledge Technologies, Graz, Austria. Journal of Universal Computer Science.
Nevis, E., Anthony, D., & Gould, J. (1995). Understanding Organizations as Learning Systems. Sloan Management Review, 73-85.
Nonaka, I. and H. Takeuchi. (1962). The Knowledge Creating Company. Oxford University Press.
Osch, V. W., Steinfield, W. C. and Valogh, A. B.(2015). Enterprise Social Media: Challenges and Opportunities for Organizational Communication and Collaboration, Proceedings of 2015 48th Hawaii International Conference on System Sciences, 763-772.
Polanyi, M. Personal Knowledge: Towards a Post-Critical Philosophy. Chicago University Press, Cicago, IL.
Polanyi, M. (1966). The Tacit Dimension. Routledge and Kegan Paul, London.
Prusak, L. (1997). Knowledge in Organizations, Butterworth-Heinemann.
Riemer, K., and Richter, A. (2010). Tweet Inside: Microblogging in a Corporate Context. BLED 2010 Proceedings, 41.
Riemer, K., Altenhofen, A. and Richter, A. (2011). WHAT ARE YOU DOING? - ENTERPRISE MICROBLOGGING AS CONTEXT BUILDING, ECIS 2011 Proceedings.
Riemer, K.., Diederich, S., Richter, A., & Scifleet, P. (2011). Tweet Talking-Exploring The Nature of Microblogging at Capgemini Yammer.
Seol, H. D. (2009). Knowledge Management Strategy and Task Characteristics: the department level in the financial institute. Business Management Research, 2(1), 67-87.
Suh, A. & Bock, G. (2015). The Impact of Enterprise Social Media on Task Performance in Dispersed Teams, Proceedings of 2015 48th Hawaii International Conference on System Sciences, 1909-1918.
Swan, J., Newell, S., & Robertson, M. (2000). limits of IT-driven knowledge management initiatives for interactive innovation processes. System Sciences, Proceedings of the 33rd Annual Hawaii International Conference.
Zhang, J., Qu, Y., Cody, J., & Wu, Y. (2010). A case study of micro-blogging in the enterprise: use, value, and related issues. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. ACM, 123-132.
Zhao, D., Rosson, M. B., Matthews, T., & Moran, T. (2011). Microblogging's impact on collaboration awareness: A field study of microblogging within and between project teams. 2011 International Conference on Collaboration Technologies and Systems, 31-39.