

Awareness of the Privacy Concerns in Knowledge Management in Scholarly Publications from 2000 to 2004

학술지(2000-2004)에 나타난 지식관리 관련 개인정보 인식에 대한 연구

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ABSTRACT

This study aims to investigate awareness of the privacy concerns in knowledge management in scholarly publications. As theoretical background, understandings of privacy and practices of knowledge management for privacy are discussed. Content analysis of scholarly publications which are limited to the period from 2000 to 2004 is used for examining the awareness. Result of this study shows that there is not much scholarly discussion on the privacy concerns in knowledge management during the period. Reasons for the result are identified, based on the theoretical understandings. This study is expected not only to investigate the research topic but also to bring attention to the necessity of discussions of the topic.

초 록

본 연구는 지식관리에 있어서 개인정보에 대한 학술적 인식을 파악하는 것을 목적으로 한다. 이론적 배경으로 지식이 갖는 본래적 사적 특성과 현실적 지식관리 방법에 따른 개인 정보에 대한 견해들이 연구 문제의 인식과 이해를 위해 논의된다. 학술적 인식 파악을 위한 연구방법론으로 2000년에서 2004년 사이에 발표된 관련 문헌을 검색하고 그에 대한 내용을 분석하였다. 이 문헌조사에 따르면, 지식관리에 있어서 개인정보에 대한 학술적 인식은 아직 낮은 것으로 파악된다. 조사결과는 이론적 배경에 기초해서 본문내에 분석되었다. 본 결과는 연구주제에 대한 현시적 상황을 파악하고 분석했을 뿐만 아니라, 지속적 연구의 필요성을 제공하고 있다.

Keywords: knowledge management, privacy, workplace, content analysis
지식관리, 개인정보, 사업장, 문헌내용분석

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1. Introduction

As society has shifted from an industrial to a knowledge-based economy and the business world is facing global competition and dynamic markets, organizations are beginning to realize the economic value of information as well as the vast and largely unrecorded intellectual asset which normally remains employees' memories and intellectuality(Gupta et al. 2000, 17). In order to stay competitive in their business, organizations should be innovative. Organizations recognize potentiality of undefined knowledge for the situation. This is the background of knowledge management emergence, as a strategic asset and a major communication challenge in business world(Albert 1999, 64).

Unlike information or record management which manages documented information and knowledge, knowledge management focuses on management of tacit knowledge, such as insights, intuitions, hunches, gut feelings, values, metaphors, and analogies, which usually remains in employees' subjectivity, cognition, and experiential learning around work places(Gupta et al. 2000, 17). As the object of management, tacit knowledge has a unique characteristic. Practically, it is not separable from people. It is private. In fact, the object of knowledge management is in the context of individual's privacy. Therefore, privacy issues are intrinsic and privacy concerns are critical for practicing knowledge management. In recognition of the problem, this paper aims to investigate privacy concerns in the field of knowledge management.

As an initiative study on the topic, this paper examines scholarly awareness of the privacy concerns.

For the purpose of the study, the next part inquires into the concept of 'privacy', as a theoretical background, and also reviews previous research. Later, this paper investigates privacy concerns in the knowledge management literature from 2000 to 2004, by retrieving academic articles on privacy concerns in knowledge management from Web of Knowledge by Institute of Science Information, which covers all science, social science, and arts and humanity subjects. Analysis of the investigation follows. This study is expected not only to investigate the research topic but also to bring attention to the necessity for further discussions on the topic.

2. Theoretical Backgrounds

On one hand, as a moral value, privacy protects individual's personality from surveillance which can result in bias and misunderstandings. Individual privacy is the basis of freedom and independence in social lives. On the other hand, society or organizations sometimes need to extract and use private information in the name of the public good or organizational purposes. This section discusses theoretical understanding of the privacy concept in a normative perspective. Since this paper focuses on knowledge management in the business field, the concept of privacy is limited to the workplace. This section also investigates changes in privacy

practices, particularly computer monitoring, which resulted from advanced technology and new management objectives in the context of knowledge management.

2.1 A Normative Perspective of Privacy

The concept of private information can be understood in comparison with the concept of public information. A principle of privacy can be summarized as preservation of secured or invulnerable personality (Warren and Brandeis 1890, 195, 215). The normative principle is embedded in common law (Stanford Encyclopedia of Philosophy 2002). William Prosser has distinguished four privacy freedoms (Prosser 1955, 389):

1. Freedom from intrusion upon a person's seclusion or solitude, or into his private affairs.
2. Freedom from public disclosure of embarrassing private facts about an individual.
3. Freedom from publicity placing one in a false light in the public eye.
4. Freedom from appropriation of one's likeness for the advantages of another.

Characteristics of privacy are understood in two ways (Stanford Encyclopedia of Philosophy 2002). One way is to understand privacy as control over information about oneself. An individual should be capable of regulating time, methods, and scope of information about oneself (Westin 1967). The other understanding considers privacy as an in-

dividual's exclusive access to him- or herself. Within this perspective, ideal privacy can be conducted by one's complete inaccessibility to others. Therefore, confidentiality, anonymity, and isolation are the way to obtain this kind of privacy (Gavison 1980, 447).

The value of privacy is not only that it protects human dignity, 'shielding personality', but it also generates intimacy. Intimacy is considered a fundamental basis for integrity and social personality (Fried 1970). Because privacy authorizes one's controlling information about oneself, it sustains different types of intimacy, such as love, friendship and trust. The intimacy forms individual's characteristics and social identities. In this sense, privacy is essential for supporting various social relationships (Rachels 1975). Privacy also differentiates people and relationships, by regulating control over and access to information about oneself. This constructs individual's social relationships. Therefore, privacy is essential for individual's security as well as for social life.

Possible problems arise from conflicting circumstances between privacy and disclosure needs. What types of information from individuals does society expect or need to make public? And what types of information people ask to keep confidential? Generally, personal information that is recognized as central to one's sense of self and to social life is considered to be private and is protected by laws and regulations. Private information typically includes sexuality, emotional health, employment discrimination, identifiers

(names and address) and medical history and records(Karasik 1990, 620-627). Privacy may be legally violated only by personal requests with no potential harm or in the name of public concerns, such as welfare state maintenance by the government and law enforcement for public safety (Karasik 1990, 610-617).

Privacy practices in the workplace are different from the general understanding of privacy that is discussed here because the workplace is not a private place but a place where private life should be integrated into public life. In the workplace, generally, individual's privacy is not a primary consideration prior to organizations' goal or profit. Practically, employees are expected to be tolerant of violations of their privacy because they get paid. However, research and practical reports show that employees are cautious about their privacy and this affects organization's productivity(Hartman 2001, 4; Cohen 2001, 76).

2.2 Workplace Privacy

Since employees use employer's equipment and get paid, their right to privacy in the workplace is not considered as legitimate as compared with their right to privacy in other environments. The workplace is regarded as an integration of public and private lives(Linowes and Spencer 1996, 171). At work, people work within social roles, positions and formal relationships. They are also involved in various informal private relationships; however, employees' personal matters may be understood

not as private but a part of their work identities.

In addition, companies need information about employees in order to make decisions, such as employment, positioning, and promotion. They gather, store, and use employees' personal information, such as educational background, past employment, past residences, and associations with organizations. Later, a variety of personal information is added to files, such as interviews, references, background investigations, psychological tests, medical examinations, credit checks, health records, workers' compensation, attendances, payroll data, performance evaluations, etc. (Linowes and Spencer 1996, 173-176).

In addition to gathering personal information, companies disclose employees' personal information to third parties, like credit grantors, landlords, and charitable organizations(Linowes and Spencer 1996, 173-176). In the workplace, a certain amount of personal information and autonomy is expected to be lost and the loss is expected to give companies certain degrees of trust on their employees(Linowes and Spencer 1996, 171).

Technically, employees do not have any legal privacy rights in their workplaces. Many court cases indicate that companies can monitor their employees and use their employees' personal information in their business context. In practice, violation of privacy in the workplace can be justified and monitoring employees is legitimate(Cohen 2001, 76).

However, company policies and works should be based on legitimacy not only from regulations but also from normative dignity(Scott 2001, 59).

Even though employees do not have the legal right to privacy technically, many of employees are concerned about organizational invasion of their privacy (Hartman 2001, 4). Employees can react to the legitimate invasion of privacy with hostility, or in worse situations they can leave their jobs (Cohen 2001, 76). This can impose a terrible cost to companies and even worse, failure in management of human resources as well as business itself. Even though it is not a matter of regulation, companies need to pay attention to employees perception of privacy and compromise two contradictory values, 'organizational profit' and 'preserving individuals privacy'.

In order to prevent problems from privacy concerns, Linowes and Spencer (1996) suggested making clear policies for managing employees' personal information. They thought that clarifying policies was the best solution for the privacy concerns in the workplace. They provided recommendations and best practices for privacy policies.

However, Cohen (2003) discussed limitations of privacy policies in practice. He studied company's monitoring of employees' internet use. He pointed out that having a policy for dealing with the privacy issue was not enough because the privacy issue was not just regulative but practically normative. He mentioned that what employers could do in policy did not justify monitoring of employees to employees. He offered potential negative reactions to companies' monitoring of their employees. According to his study, antagonistic reactions to monitoring could be expected. Even worse, em-

ployees could leave their jobs. He insisted that employers needed to provide clear and reasonable justification for monitoring. Importantly, this study shifted the notion of employees' privacy from personal information to individual's behavior in the workplace. Also, this study specified behaviors as monitoring.

Stanton and Lin (2003) clarified the focus of work performance monitoring on employees' communication. According to the study, while traditional monitoring focused on work performance, a new type of monitoring was conducted in employees' communication related to work-related activities or work procedures. The authors mentioned that the new type of monitoring provided communication flow which could show a human resource map of companies which knowledge management considers one of important organizational assets. The study stated that this type of new monitoring brought more serious privacy concerns because people considered their communication even in the workplace private.

2.3 Privacy Concerns in Knowledge Management

In the competitive business world, companies have been recognizing the economic value of information and knowledge that can be explicit or tacit around the workplace (Gupta et al. 2000, 17). In practice, individual employees' knowledge from customer service can affect companies' productivity directly. For example, knowledge held

by an employee working at a customer-service department can not only improve how to deal with customers' complaints at the front desks, but also contribute to designing new products and services because the employee heard about a variety of complaints and compliments from customers. Some of the employees' work experience can be recorded and shared. It is called explicit knowledge. However, not all of the experience can be extracted and documented. In the competitive business circumstance, the unrecorded or individualized employees' ideas, feelings, and thoughts, called tacit knowledge, are considered especially valuable. Organizations recognize the tacit knowledge as their intellectual assets and now aim to manage it. This is the background of knowledge management(Albert 1999, 64).

The objectives and strategies of knowledge management are to define organizational knowledge as a valuable resource and to use it for their profit. Some organizational knowledge can be externalized and shared with others, by documenting and representing the knowledge. However, much of the organizational knowledge is difficult to be codified because it is internalized in people's intellectuality.

Knowledge management focuses on internalized tacit knowledge. In order to manage tacit knowledge, knowledge management promotes communications and the sharing of experiences. Ways of transferring the tacit knowledge include apprenticeship and mentors. Knowledge management systems intentionally trace, gather, store, and disseminate

individuals' private information, not only personal information found in a profile in a human resource department, but also personal characteristics inseparable from personalities, such as behaviors and preferences. For instance, knowledge management applications, such as expert finding systems, analyze individual employees' activities from individual employees' email, web-browsing, and instant messages. And then the applications find out organizational knowledge from the employees' private behavior, such as communication flows which can work as knowledge maps of organizations(Adar et al. 2003, 16).

As mentioned in the previous section, there is important discrepancy in the way that employers and employees recognize employees' privacy. Employers or companies do not consider their monitoring of employees' behavior as an infringement of privacy. The reasons for the consideration can be summarized in two aspects. First, it is conducted in the workplace. Second, since knowledge management states that the management focuses on organizations' and employees' tacit knowledge which includes not only personal information but also individuals' behaviors and communications, it is assumed to have tacit agreement from employers. However, employees think that their communication is private(Stanton and Lin 2003, 258). People have strong negative reactions to monitoring their communication(Sipior 1995). In other words, while employers or companies justify their use of employees' private data in the regulative perspective, employees interpret the use of their

private data for knowledge management in the normative perspective and consider it invasion of privacy. Consequently, privacy concerns are intrinsic in knowledge management systems.

In the privacy concerns in knowledge management systems, the practice of monitoring has been affected by computer technology. Computer technology has a great role to enhance people's access to information and to increase the volume of available information (Karasik 1990, 627). Furthermore, it changes ordinary communication methods. Most office workers are using email as one of primary communication methods. While this electronic communication method works as a tool for working effectively and efficiently in terms of time and cost, it can be monitored easily and thoroughly. Since employees in their workplace do not have legitimate protections for their privacy, technically, almost all their works with computers can be monitored. In practice, "[t]he courts have ruled that the US Electronic Communication Privacy Act of 1986, which prohibits unauthorized interception and disclosure of the contents of any electronic communication, does not apply to a company's internal email system because of an except for business purposes in intercepting messages" (Ariss 2002, 554). Under current law, companies that provide employees with their private communication networks are allowed to monitor their employees' messages for business reasons.

In addition to the legal legitimacy, tacit knowledge is expected to be transferred through communication, in knowledge management systems.

Therefore, monitoring employees' communication is critical for extracting internalized organizational knowledge which is the object of knowledge management systems. However, employees emotionally disagree with this notion. They think that their communication is private and their privacy is invaded. This may adversely affect the quality of employees' work. For instance, Weisband and Reinig (1995, 41-42) showed that employees may expect their email to be private. The authors pointed out three reasons for the expectation. First, technology factors, including hardware and software features, may give the perception that email messages are secure. For example, typing in a password may give the idea that email messages can be accessible only by authorized passwords. Second, when people use email, they psychologically feel secure in their communication. Therefore, people may forget the nature and reality of electronic communications that can be monitored easily. Third, organizations do not have clear email policy. Consequently, employees do not know about email monitoring well and want to protect their email as their privacy.

3. Research Methodology

In this study, content analysis is used for investigating awareness of the privacy concerns in knowledge management scholarly literature. This study is expected to answer the following research questions:

1. How many research articles mention privacy

concerns in knowledge management?

2. What portion of the research articles is devoted to privacy issues?
3. What are major privacy issues that research articles discuss?
4. How do research articles conceptualize privacy?
5. What kinds of solutions are discussed in research articles?

As an initiative for the research topic, this study started with a focused literature search on the subject of knowledge management from 2000 to 2004 in Web of Knowledge by Institute for Scientific Information. The literature search was conducted on December 20, 2004. This literature search and its analysis consists of four steps: (1) defining the subject of knowledge management and selecting a group of scholarly journals that are assumed to publish the topics of knowledge management, (2) setting up search strategies, (3) searching research articles, and (4) analyzing contents of the scholarly articles.

In order to optimize recall and precision rates, it was assumed that it would be effective to use subject categories for a literature search. Also, it was expected having subject categories for knowledge management would help identify context of knowledge management. However, Web of Knowledge does not have subject categories for knowledge management. In addition, most reference and bibliographic databases do not provide a disciplinary boundary of knowledge management.

For example, Ulrich's Periodical Directory, and international reference for periodicals, does not provide a subject heading or keyword for 'knowledge management'. As an alternative to subject categories, a group of academic journals for the subject of knowledge management were defined. Prusak's study(2001, 1005) on practice components of the field of knowledge management was applied to select a group of academic journals for the literature search. He claimed that three practices, information management, the quality movement, and the human factors/human capital movement, were contents and tools of knowledge management. Subjects covering these three fields were used for defining a group of academic journals of knowledge management in this paper. Based on Prusak's study, four subject categories were selected for the knowledge management literature: Library and information science, computer science(information systems), business, and management. The subject of computer science was limited to information systems in this study because the notion of computers and technology in knowledge management means information system. Even though it was expected that the two subjects, management and business could be overlapped contextually, the both subjects were selected as components because journals of the fields of business and management are not identical.

After deciding the component subjects, a group of journals based on the subjects mentioned above were extracted from Journal of Citation Report (JCR) 2003 by Institute for Scientific Information.

Annually, JCR calculates every journal's impact factors based on frequencies of individual articles' citation published in a journal. JCR ranks all journals by the impact factors. Top ten journals with high impact factors in the four subject categories were selected. After removing duplicated journals, thirty three journals were used for the literature search(Refer to Appendix).

In practice, the selected journals for retrieving of knowledge management-related scholarly publications can bring validity and reliability issues. First, even though the journals were extracted from the four component subjects, not all selected journals are contextually related to the field of knowledge management. This fact can raise the validity issue. Also, the main resource for the selected journals, JCR 2003, changes the journal ranks annually. It means that the selected journal list can be different every year. Reliability issue can be expected. In recognition of the validity and reliability issues, the literature search was conducted in two ways: one within the selected thirty three journals and the other from all journals in Web of Knowledge. The later searching method was expected to be useful to prevent the validity and reliability issues. Also, it was expected to help define knowledge management-related journals inductively.

In the second step, a search statement was designed. From the topic of this paper, 'awareness of the privacy concerns in knowledge management scholarly publications', two main search concepts were extracted: 'knowledge management' and 'privacy'. In order to find synonymous expressions

for the two search concepts, ERIC thesaurus was used. Also, a pilot search was conducted.

In ERIC thesaurus, 'knowledge management' is not an entry item so that the thesaurus does not provide any additional search words. In addition to ERIC thesaurus, it is possible to use expressions of the concept of 'information management' because it is generally accepted that 'knowledge management' is developed from 'information management'. However, the concept of 'information management' does not reflect the characteristic of the notion of 'knowledge management'. Therefore, 'information management' was not used in the search statement. The abbreviation, 'km' for 'knowledge management' was not selected. Based on a result from a pilot search, 'km' is an expression of chemical compounds. Therefore, 'km' was not a proper keyword for the literature search.

The concept of privacy has additional search keywords. ERI thesaurus provides a narrow term and several related terms for the concept of privacy. In the context of this study topic, four terms were selected: confidentiality, ethics, disclosure, and information policy. The search statement of this study topic was set up as follow: (knowledge management) and(privacy or confidential* or ethic* or disclosure* or information policy)

In the third step, for searching scholarly articles, Web of Knowledge by Institute of Scientific Information(available from 1970 to present) was used on December 20, 2004. Since knowledge management is multidisciplinary, it was necessary to conduct a unified literature search from compre-

hensive subjects. For the purpose, Web of Knowledge was selected because the bibliographic database includes extensive subjects, covering science, social science, and arts & humanities. As already mentioned above, first, the selected thirty three journals were retrieved. Later, the search statement was conducted in all journals in Web of Knowledge. Since Web of Knowledge does not provide full text search, the retrieval was limited to three text fields which include titles, keywords, and abstracts, during the publication period from 2000 through 2004. Eventually, two search results were combined for content analysis.

In the final step, the search results from the selected journals as well as results from the all journals in Web of Knowledge were analyzed in the context of the five research questions.

4. Results

From the search in the thirty three selected journals, there was no article on the topic of privacy concerns in knowledge management from 2000 to 2004. From the additional search that covered all journals in Web of Knowledge within the same period, eight articles were retrieved and bibliographic information of the articles is below <Table 1>.

Among the eight retrieved studies, six articles are related to ethical issues in knowledge management. These articles include 'ethics' or 'ethical' in their abstracts and keyword fields but do not discuss privacy issues. Two articles, by Adar et al. and by Schirmer, are discussing about privacy issue in knowledge management. These articles are published in 'Information Systems Frontiers' and 'IBM Systems Journal' respectively.

<Table 1> List of retrieved articles

1. Adar E., Lukose R., Sengupta C., Tyler J and Good N. 2003. "Shock: Aggregating information while preserving privacy," <i>Information Systems Frontiers</i> , 5(1): 15-28.
2. Barber M. 2001. "The very big picture," <i>School Effectiveness and School Improvement</i> , 12(2): 213-228.
3. Camiah N. and Hollinshead G. 2003. "Assessing the potential for effective cross-cultural working between "new" Russian managers and western expatriates," <i>Journal of World Business</i> , 38(3): 245-261.
4. Graesser, A., Jackson G.T., Ventura M., Mueller J, Hu XG and Person N. 2004. "The impact of conversational navigational guides on the learning, use, and perceptions of users of a web site," <i>Agent-Mediated Knowledge Management Lecture Notes in Artificial Intelligence</i> , 2926: 48-56.
5. Richardson S.M., Courtney J.F. and Paradice D.B. 2001. "An assessment of the Singerian inquiring organizational model: Cases from academia and the utility industry," <i>Information System Frontiers</i> , 3(1): 49-62.
6. Ruppel C.P. and Harrington S.J. 2001. "Sharing knowledge through intranets: A study of organizational culture and intranet implementation," <i>IEEE Transactions on Professional Communication</i> , 44(1): 37-52.
7. Schirmer, A.L. 2003. "Privacy and knowledge management: Challenges in the design of the Lotus Discovery Server," <i>IBM Systems Journal</i> , 42(3): 519-531.
8. Varey R.J., Wood-Harper T. and Wood B. 2002. "A theoretical review of management and information systems using a critical communications theory," <i>Journal of Information Technology</i> , 17(4): 229-239.

The first journal, 'Information Systems Frontiers' belongs to two subjects: Computer science(information systems) and computer science(theory and methods). In JCR 2003, which was used for selecting journals in this paper, 'Information Systems Frontiers' is ranked 61st out of 78 journals in computer science(information systems) and 56th out of 70 journals in computer science(theory and methods). The second journal, 'IBM Systems Journal' belongs to three subjects: Computer science(information systems), computer science(software engineering), and computer science(theory and methods). JCR 2003 ranks this journal 14th out of 78 journals, 6th out of 78 journals, and 11th out of 70 journals respectively. While 'Information Systems Frontier' is not evaluated as substantial in the two subjects of computer science(information systems and theory and methods), 'IBM Systems Journal' is influential in its three subject areas.

This finding is useful for justifying the second literature search of all journals in Web of Knowledge in order to prevent questions of validity and reliability. This search provides journal titles and subject areas which this study did not include in its first search. This finding can be used for redefining the subject areas in which knowledge management is discussed.

Adar et al's article(2003) described designing and implementing a knowledge management system, named Shock. This study demonstrated and explained Shock's functions and interfaces for protecting the privacy of users' personal information, such as email, web browsing habits, and file view-

ing habits, by supporting secure and anonymous interactions. In addition, Shock provided individuals with control over their information, by allowing users to create, correct, and delete their profiles, and by physically storing the individual profiles on local machines.

Schirmer's article reported on the design of a knowledge management system, titled the Lotus Discovery Server. The study featured recognition of privacy concerns in designing a knowledge management system and explained how to protect individuals' privacy in the system. The design team of the Lotus Discovery Server identified that even though privacy concerns in computer technology had been discussed, they could not find helpful policies or guidelines for designing the knowledge management system. In order to identify potential privacy issues, the design team conducted interviews with potential system users and found out their privacy concerns. People concerned about gathering, usage, and influence of appropriate information. Also, the future system users raised questions of system users' controlling over information sources, consequences of information use, and accessibility to confidential information. In addition, the design team recognized the importance of flexibility in controlling privacy policies. The defined privacy concerns were embedded within the system in policies, guidelines, interfaces, and functions.

5. Analysis

From the literature search for the topic of this paper, 'the privacy concerns in knowledge management', two articles published in 2003 were retrieved. The result shows that there is not much discussion on privacy concerns in knowledge management during the investigated time from 2000 to 2004. Since this study does not have enough data for answering the five research questions individually, analysis is here conducted into reasons for the scarcity of the research result as well as into the contents of the retrieved articles. At the end of this section, limitations of this study are discussed.

One of reasons for this result can be deduced by the fact that it takes business more time to understand and adapt normative value than regulative value. According to Scott's institutional theory(2001), while legitimacy of regulative value is legally approved, that of normative value is morally justified. Social obligation plays a role as a basis for practicing normative value. Social agreement on morality, norms, and ethics needs time to be set up. Moreover, it is hard to explicitly demonstrate relationships between normative value and productivity in business. Even though normative legitimacy is as important as regulatory legitimacy in companies, it takes more time to recognize practicality of normative value. From this perspective, it might be early to deal with the privacy concerns in academic literature.

Furthermore, the characteristics of knowledge

management, externalizing individuals' tacit knowledge and managing the knowledge as an organizational assets, may decrease employees' expectation or concerns of their privacy. Even though employees may care for their privacy, they cannot reasonably justify their concerns. Because employees are assumed to have a tacit agreement with the objectives of knowledge management when they start work, privacy concerns in knowledge management may not be seriously arguable. This fact may be reflected in the scarcity of publications on this topic.

Content analysis of the two articles is summarized in three issues: Perception of knowledge management as an operating system for workplace, causes of privacy concerns, and suggestions for privacy concerns.

The first issue is about understanding of knowledge management or knowledge management systems in the two studies. By introducing their systems, the two studies mention what knowledge management is. They practically treat the concept of knowledge management as an operating system in the workplace. According to the two studies, knowledge management is a computer system, designed by computer engineers, that assists employees to work with information and knowledge, and also facilitates communication between employees. In fact, there has been on-going discussion about the definition of knowledge management. This finding can be useful for identifying knowledge management in practice.

The second issue is about causes of privacy

concerns in knowledge management. Based on the two retrieved studies, knowledge management focuses on tracking individuals' communication, rather than on monitoring of work performance. In knowledge management, individuals' communications are considered as potentially valuable resources for tracing organizational knowledge flows (Adar et al. 2003, 15-16; Schirmer 2003, 521). Therefore, content of email and web-browsing behaviors are traced. Knowledge management systems analyze employees' relationships. Companies formally use these relationships as their asset. This is directly related to the privacy concerns because employees consider contents and behavior of their communication personal. Also, employees think that their relationships are neither product of work performance to be reported nor formalized organizational resources. The two studies are based on the recognition. Since employees' negative reactions from their privacy concerns to companies are expected and this fact is critical for management, it is desirable to think about protecting employees' privacy. According to the two studies, this is the underlining reason for discussing the privacy concerns in knowledge management.

Since the two articles were written by computer system engineers, all suggestions for the privacy concerns are technical solutions. Practically, the technical suggestions are made for knowledge management system design and construction.

In fact, the literature search in this paper was limited to Web of Knowledge from 2000 to 2004. Therefore, it is hard to generalize the finding and

its analysis for the entire awareness of privacy concerns in knowledge management. However, it is a useful initiative to value the importance of the research topic and to provide methodological challenges for developing the topic more thoroughly.

6. Conclusion

With the recognition that knowledge management has innate privacy issues, this paper investigates awareness of the privacy concerns in knowledge management scholarly publications. The result of the literature search shows that there is not much scholarly discussion on the privacy concerns in knowledge management. Some reasons for the reality are estimated. Content analysis of the two articles was conducted.

Some future research can follow this study. First, the literature search can be expanded so that more comprehensive research could be possible. For instance, literature searches could be conducted from full texts of articles and with more synonyms. Also, future studies can be based on literature searches from multiple bibliographic databases. Potential full text searches and multiple database searches can provide rich data for the research topic. Furthermore, future studies can be expanded to include practitioners' publications. These studies will provide empirical understanding of the privacy concerns from practice. In fact, it is possible that scholarly publications do not cover practitioners'

perspective fully. Investigating discrepancies between scholarly and practical perspectives in knowledge management can be useful to construct holistic understanding of the topic. In addition,

the focused publication period, from 2000 to 2004 can be expanded. As longitudinal studies, this type of research will provide historical changes in and understanding of the privacy concerns.

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Appendix: A list of selected journals

Journal Title	Subject
Academy of Management Journal	BUS, MAN
Academy of Management Review	BUS, MAN
ACM Transactions on Information Systems	COMP(IS)
Administrative Science Quarterly	BUS, MAN
Annual Review of Information Science and Technology	COMP(IS), LIS
College & Research Libraries	LIS
Data Mining and Knowledge Discovery	COMP(IS)
Human Resource Management	MAN
IEEE Network	COMP(IS)
IEEE Personal Communications	COMP(IS)
Information and Management	LIS
Information System Research	LIS
Information Systems	COMP(IS)
Journal of ACM	COMP(IS)
Journal of Chemical Information and Computer Science	COMP(IS)
Journal of Consumer Research	BUS
Journal of Documentation	LIS
Journal of American Society for Information Science and Technology	LIS
Journal of Management Information Systems	LIS
Journal of Marketing	BUS
Journal of Marketing Research	BUS
Journal of Organizational Behavior Management	MAN
Information & Management	MAN
International Journal of Selection and Assessment	MAN
Journal of Product Innovation Management	BUS
Journal of the American Medical Information Science	LIS
Marketing Science	BUS
Journal of Management	BUS
MIS Quarterly	COMP(IS), LIS, MAN
Organization Science	MAN
Scientometrics	LIS
Strategic Management Journal	BUS, MAN
VLDB Journal	COMP(IS)

* Abbreviations: BUS: Business; COMP(IS): Computer Science(information Systems); LIS: Library and Information Science; MAN: Management.