

Identifying the Usefulness of Weblog Genre Analysis in Organizational Knowledge Creation: A Social Construction of Technology Perspective*

조직내 지식창출을 위한 웹블로그 장르분석의 유용성 발굴:
기술의 사회구성론적 관점

박지홍(Ji-Hong Park)**

ABSTRACT

The purpose of this paper is to identify the usefulness of Weblog genre analysis in knowledge creation within an organization where communications are occurred frequently among the employees with information and communication technologies (ICTs). Knowledge creation is essential to achieve competitive advantage in today's knowledge-oriented working environments. There has been huge investment on knowledge management systems to achieve such advantages. It is, however, widely recognized that distributed knowledge management systems often fail due to the different social contexts across the sub-organizations where the local information systems are deployed. It is important to coordinate such social gaps across the sub-organizations to achieve better advantages. Given that Weblogs users often feel a shared social norm, Weblogs play a positive role of narrowing the social gaps. This paper argues that the genre analysis of Weblogs could provide important clues to narrow the social gaps existed across the sub-organizations within an organization. Hence, such taxonomical practice may be a solution for the high rate of failure in knowledge management system implementations in an organization. This paper uses the theory of organizational knowledge creation (Nonaka & Takeuchi, 1995) and social construction of technology (SCOT) approach (Bijker, 1995) to compare the socialized with the non-socialized integration of distributed information systems. The findings of this research provide a useful framework for better implementing knowledge management practices especially in distributed working environments.

초 록

이 논문은 정보커뮤니케이션 기술을 통하여 정보교류가 활발히 이루어지는 조직내의 지식창출에 있어서 웹블로그 장르분석의 유용성을 밝히는데 그 목적이 있다. 오늘날 지식창출은 지식 중심 업무환경에서 경쟁력 우위를 확보하는데 필수적인 요소이다. 이를 위해 기업들은 지식관리시스템에 막대한 투자를 하고 있다. 그러나 분산지식관리시스템의 하위 정보시스템이 배치된 부서들의 서로 다른 사회문화적 환경으로 인하여 전체 지식관리시스템은 기대했던 성과를 거두지 못하는 경우가 많다. 보다 나은 경쟁력 확보를 위해서는 하위부서간의 사회문화적 차이를 조절하는 것이 중요하다. 웹블로그 사용자가 사회적 규범을 공유하는 점을 고려한다면 웹블로그가 이러한 사회문화적 차이를 줄이는데 긍정적인 역할을 할 수 있을 것이다. 이 논문은 웹블로그의 장르분석이 조직내의 하위부서들 간의 사회문화적 차이를 줄일 수 있는 중요한 단서를 제공한다고 주장한다. 따라서 이러한 분류 행위가 지식관리시스템의 높은 실패율 문제를 해결하는 하나의 방법이 될 수 있을 것이다. 이 논문은 조직 지식창출이론과 기술의 사회구성론적 관점을 복합적으로 이용하여 사회화가 적용된 분산정보시스템과 그렇지 못한 시스템을 비교하여 보다 나은 지식관리를 구현하는데 유용한 프레임워크를 제공하는데 그 의의가 있다.

키워드: knowledge creation, genre analysis, weblog, social construction of technology
지식창출, 장르분석, 웹블로그, 기술의 사회구성론

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** 연세대학교 문헌정보학과 강사(jihongpark@yonsei.ac.kr)

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1. Introduction

The purpose of this paper is to propose the usefulness of Weblog genre analysis in knowledge creation within an organization where distributed information systems play an important role in communications among employees. Knowledge creation has become a source of sustainable competitive advantage in today's organizations such as consulting firms (Fong et al., 2007; Nonaka, 1994; Nonaka & Takeuchi, 1995; Pfeffer, 1994). Moreover, there has been considerable investment in knowledge management systems to achieve these advantages. Distributed information systems such as enterprise resource planning systems is one example; however, it is widely recognized that such distributed knowledge management systems often fail due to the different social contexts across the sub-organizations where the local information systems are deployed (Malhotra, 2004; Thomas, 2001; Venters & Wood, 2007). For example, a social gap exists between the financial department and the human resource management department in an organization. It is important to coordinate such social gaps across the sub-organizations to achieve better advantages.

Given that Weblogs are informal communication channels, they play a role in narrowing the social gaps. Weblogs have no control mechanism and the users involve themselves by choice in a certain topic by reading, writing, and/or sometimes uploading pictures and movie clips. Weblog users often feel a shared social norm through these interactions. In other words, Weblogs provide a social channel among

people. Analyzing Weblogs based on genre may provide knowledge structures embedded in social groups as genre itself reflects socially-constructed concepts. This paper argues that the genre analysis of Weblogs could provide important clues to narrow the social gaps that exist across the sub-organizations within an organization. Hence, the genre analysis of Weblogs may highlight a solution to the high rate of failure in knowledge management system implementations in an organization.

This study focuses on the benefit of Weblog genre analysis in the process of ICT-driven organizational knowledge creation. The benefit of Weblog genre analysis is identified by comparing the socialized and the non-socialized integration of distributed information systems in knowledge management practices. This paper uses the theory of organizational knowledge creation (Nonaka & Takeuchi, 1995) and social construction of technology (SCOT) approach (Bijker, 1995) to compare the two types of integration. The proposed conceptual framework identifies the role of Weblogs in the knowledge management practices. The findings of this research may provide a useful framework for better implementation of knowledge management practices especially in distributed work environments.

2. Background

Weblogs are Web-based informal communication channels on a certain topic. Weblogs originated from combining the two words, "web" and "log" indicating

the trace of web uses. Initial format was simple comments to interesting hyperlinks but it has developed towards more complex format such as collaboration in a large virtual community. As Weblogs are widely publicized, the name, blogs rather than Weblogs are often used. Weblogs contents also vary from news on emerging technologies or new products, personal hobbies, to personal relationships.

Despite this variety in format and contents, a couple of points feature Weblogs. First, individual postings are presented in reverse chronological order. Since links are critical to Weblogs, they have a way of saving all the postings by using an address. Second, each posting has relatively short contents. Last, the contents are frequently updated as long as the Weblogs are active.

Weblogs are informal communication channels that can visualize individual life cycle. One can represent free thinking, complaints, or humor that occurred during daily life. Someone can also use Weblogs for sharing memories with his or her family members, or just for storing remembrances of certain events such as holiday party in an office.

Original concept of genre comes from identifying similar groups of literary works that include essays, novels, plays, fairy tales and critics. In this context, genre has inherent feature that distinguishes one another: purpose and form (Antunes & Costa, 2003). A play realizes a story in the form of actions and dialogues while poetry influences readers' emotions with verse.

Similarly, one perspective in information systems adapts genre concepts into identifying communica-

tive patterns among community members. According to Yates and Orlikowski (1992), genre focuses on the shared ideas of purpose (s) and form (s) of communication patterns among the members of a community. A genre constructed within a community plays a role of shaping communicative behavior among the community members (Orlikowski & Yates, 1994). Based on such genre rules, people can distinguish among different genres. People can easily distinguish between newspaper and magazine based on genre rules that are constructed through long history of social development.

Such genre rules also apply to a relatively new digital communication context. Introduction of new information and communication technologies (ICTs) change the enacted patterns of communication through the process of social structuration (Yates & Orlikowski, 1992). Conversely, the ICT-driven communication pattern can imply social structures embedded in a social group. Analyzing such communication patterns by classifying texts using the properties of genre (purposes and forms) can mirror a social structure. This is where the genre analysis has advantages over other classification practices. Based on the purpose, Blood (2002) classified three types of Weblogs. Some Weblogs contain external contents such as public news, social happenings and events while others focus on internal contents such as personal diary or thoughts on a certain topic. The external blogs are called filters and the internals are personal journals. The last type is notebooks. They are long narrative essays focusing on a certain topic. The length is one that makes distinguished from the other

two. According to Blood (2002), among the three, the personal-journal-type has the highest social interactivity. By using the Blood's classification scheme, Herring and colleagues (2004) analyzed 203 randomly-selected Weblogs based on purpose, form, and temporal measures like update frequency and age to show the status of the Weblogs. They concluded that most Weblogs contains internal contents of which antecedents came from off-line hand-written diaries. This is against the assumption that blogs are link-centered filters of Web content (Herring, et al., 2004). Moor and Efimova (2004) found that Weblogs facilitate distributed conversations and thus suggested that this conversational feature can be applied to knowledge management practices. Emigh and Herring (2005) analyzed two online encyclopedias (Wikipedia and Everything2) based on the genre concept. They concluded that the genre of online encyclopedia is not a single form of communicative practices and the purpose and form revealed that the two encyclopedias are the same genre. Herring and Paolillo (2006) identified that author gender did not influence the variation in the stylistic feature of the Weblogs. In other words, regardless of the author gender, diary has more female stylistic features while filter more male stylistic features.

This paper applies this genre concept to suggest the usefulness of the Weblogs in the knowledge management practices. Weblog formats and contents are assumed as genre forms and purposes respectively. The following sections propose a theoretical model by integrating the theory of organizational knowledge creation and the social construction of technology

perspective. The final section suggests the benefit of socialized upon non-socialized knowledge transfer processes.

3. The Usefulness of Weblog Genre Analysis: A Theoretical Model

This section develops a theoretical framework to explain how and why Weblog genre analysis provides benefits to organizational knowledge creation by expediting knowledge sharing practices. To achieve this goal, this section comprises three parts. The first part explains the theory of organizational knowledge creation proposed by Nonaka and Takeuchi (1995). This theory provides a basic framework to make sense of this paper's argument. The second part explains the social construction of technology (SCOT) approach (Bijker, 1995). This approach elaborates why social embedded-ness is necessary for active knowledge transfer in an organization. The last part identifies a useful role of Weblog genre analysis by comparing socialized knowledge sharing and non-socialized knowledge sharing practices.

3.1 Understanding the Theory of Organizational Knowledge Creation

Knowledge management is considered ongoing organizational practices to enhance knowledge creation, knowledge capture/storage/retrieval, knowledge transfer, and knowledge utilization (Alavi &

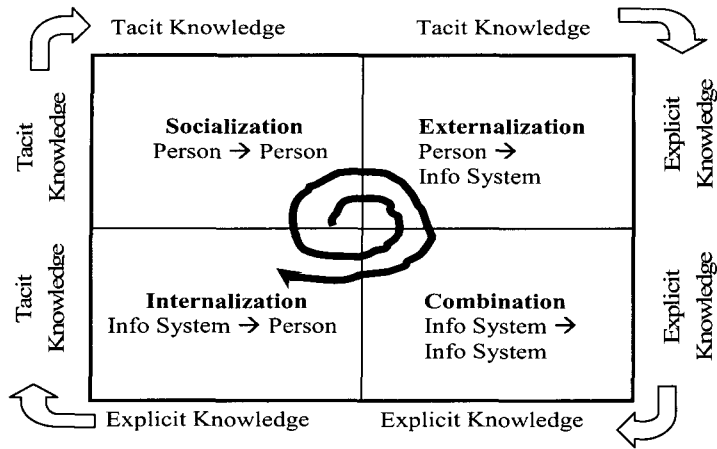
Leidner, 2001). It also refers to the formalization of experience, knowledge, and expertise to encourage better performance, innovation, and customer value (Davenport & Prusak, 1998).

The importance of organizational knowledge creation is indicated by Nonaka and Takeuchi (1995). They developed the theory of organizational knowledge creation based on two theoretical dimensions: ontological and epistemological. In an ontological dimension, the theory assumes that knowledge is created by an individual and diffuses from that individual to broader dimensions such as groups and organizations. This notion does not allow an organization itself to create knowledge without individuals. In the epistemic dimension, the theory assumes that knowledge has two distinctive types: tacit and explicit. The epistemic distinction originally comes from Polanyi (1997) who says that tacit knowledge is personal and specific knowledge and it comes from real experiences such as involvement, insights, and expertise. Explicit knowledge, on the other hand, is expressed knowledge such as in documents or pictures. Generally, explicit knowledge is more easily understood than implicit knowledge.

The theory of organizational knowledge creation suggests that organizational knowledge is created through the ongoing process of the transformation between individuals' tacit and explicit knowledge. According to this theory, organizational knowledge is created through the four ongoing cyclic processes: socialization, externalization, combination, and internalization. Socialization refers to the sharing of tacit knowledge between individuals. The sharing

occurs through joint activities such as being together, spending time, and living in the same environment rather than written or verbal instruction. Externalization refers to the transfer of tacit to explicit knowledge. Tacit knowledge is translated into comprehensible forms that can be understood by others. Examples include expressing one's ideas as words, concepts, figurative language (such as metaphor, analogies, or narratives), and visuals. Combination refers to the conversion of explicit knowledge into more integrated sets of explicit knowledge. Finally, internalization refers to the transfer of explicit to tacit knowledge. Typical example of this process is learning. When people learn something by experience, they internalize what they see, feel, or hear into tacit knowledge.

Figure 1 shows the graphical representation of the four processes. The arrows represent the knowledge transfers between tacit and explicit knowledge. Tacit knowledge is transferred to another person through the socialization between the persons' face-to-face interactions. Tacit knowledge is then transferred to explicit knowledge through the externalization from a person to an information system by his or her inputting ideas into an information system. Once explicit knowledge is stored in an information system, explicit knowledge is integrated with another explicit knowledge through the combination of one information system with another. As the last step of the cycle, explicit knowledge stored in an information system is transferred to tacit knowledge through the internalization from the information system to a person when he or she learns the



<Figure 1> Process of Knowledge Creation (Nonaka & Takeuchi, 1995)

knowledge. These four processes are repeated, expanding the ontological dimension from individuals to groups to organizations.

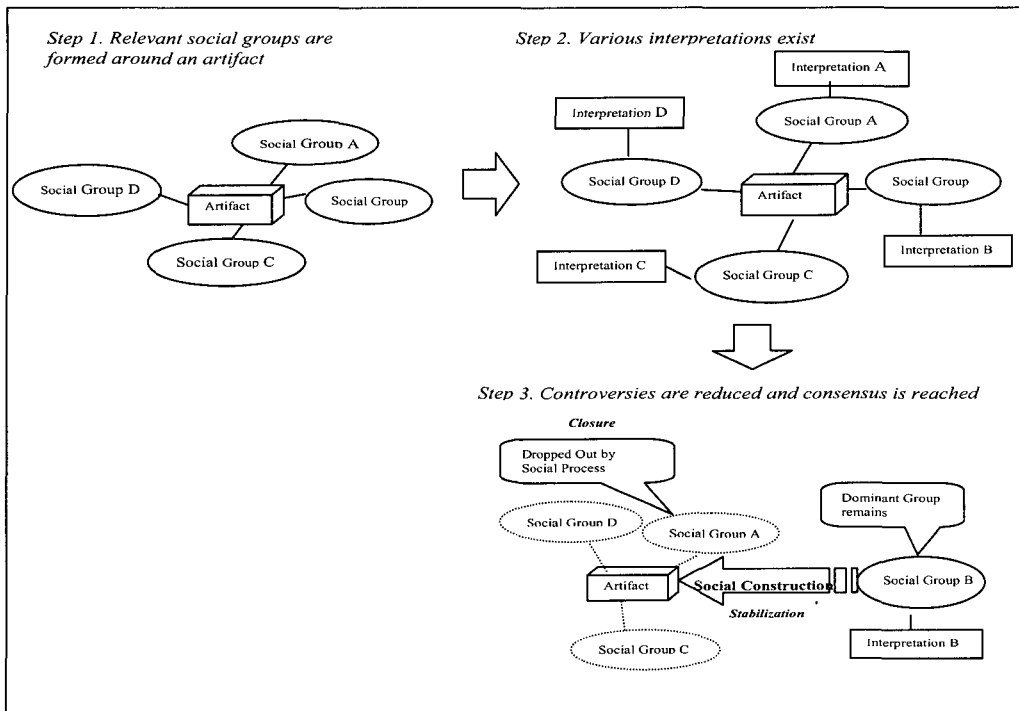
3.2 Understanding the Perspective of Social Construction Of Technology (SCOT)

Rejecting that technologies determine human behaviors, the SCOT approach asserts that human behaviors shape technologies. Socially-embedded human behaviors explain why and how a current design of a technology was adopted and being continued. This reason and process is based on complex social interactions among the relevant people and other artifacts. The importance of social environment has been stressed by phrase, social construction of technology (Pinch & Bijker, 1989).

The essential process of SCOT consists of the following sequence (Bijker, 1995; Pinch & Bijker, 1989): First, people who are interested in an emerging

technology appear. These people called “relevant social group” and can be both producers and users of the technology; Second, each group of people comes to have different understanding on the technology. This different understanding is called “interpretative flexibility” and the distinct view “technological frame”; Finally, such different interpretation comes to end (“closure”) and reaches to “stabilization” stage. To reach this final stabilization stage, however, some constraints is unavoidable.

For clearer explanation, formerly presented figures (Figure 2, 3 & 4) by the author and his colleague (Park & Hossain, 2003) were adapted in this paper. Figure 2 shows each step of SCOT. The first step indicates the formation of relevant social groups around a technological artifact. The groups are both the producers and the users of the artifact. In the case of an information system dealing with employees’ salary, the producers can be financial-department employees who generate data on salary, and the users be human-resource-management employees who



<Figure 2> Procedure of Social Construction Of Technology (SCOT)

uses the salary data as a reference for managing employees' position, for instance. These groups can be distinguished based on their shared interpretations of the artifact because each group has a relatively unique "technological frame." These distinct interpretations are shown in the second step of Figure 2. One typical example of such interpretations provided by Pinch and Bijker (1989) is the air tire of bicycle. When the air tire was first introduced to the public, some people liked it for its convenience while other people disliked for the speed reduction problems and the ugly style. Finally, as shown in the third step, the number of interpretations decreases as one group becomes dominant and others disappear ("closure"). At the same time, the dominant group's

interpretation becomes a major frame. This process is called "stabilization."

This paper aims to propose the role of Weblog genre analysis in knowledge creation within an organization where distributed information systems play an important role in communication among employees. As such, Weblogs contribute to reducing the social gaps existing between the sub-organizations that use distributed information systems. The SCOT approach serves as a useful framework to achieve this goal. Figure 3 shows how SCOT is applied to understand how the social gaps emerged in the distributed information system environments. When a distributed information system integrates local information systems in various functional units

such as financial, human resources, and marketing, SCOT implies that the local information systems are socially constructed through the following steps: (1) relevant social groups are formed, (2) interpretative flexibility and technological frame are constructed, and (3) closure and stabilization are achieved (see Figure 3).

3.3 Identifying the Usefulness of Weblog Genre Analysis

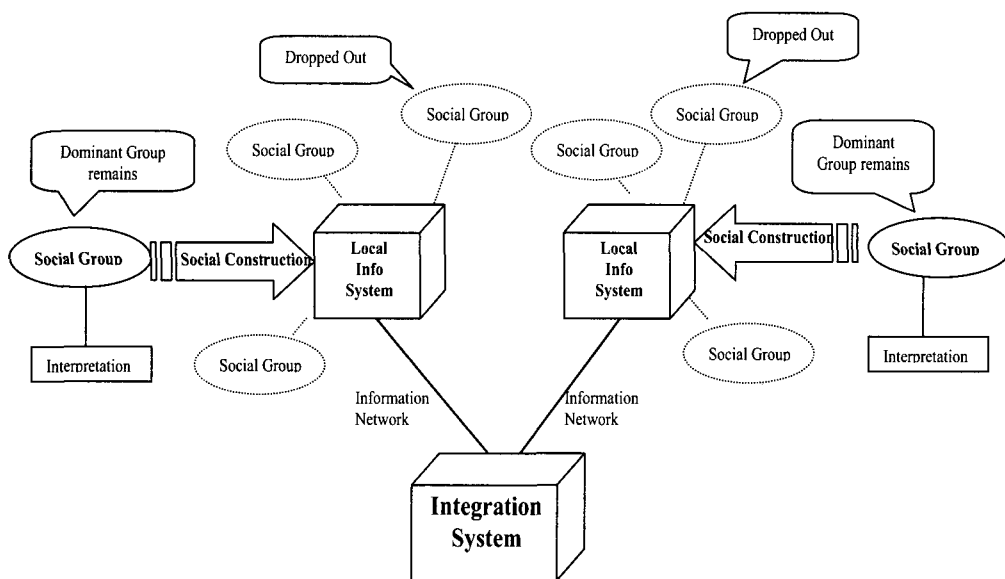
Based on the SCOT (Bijker, 1995) and the theory of organizational knowledge creation (Nonaka & Takeuchi, 1995), this paper attempts to identify the usefulness of Weblog genre analysis by comparing the socialized and the non-socialized integration models.

By conceptually combining Figure 1, 2 and 3

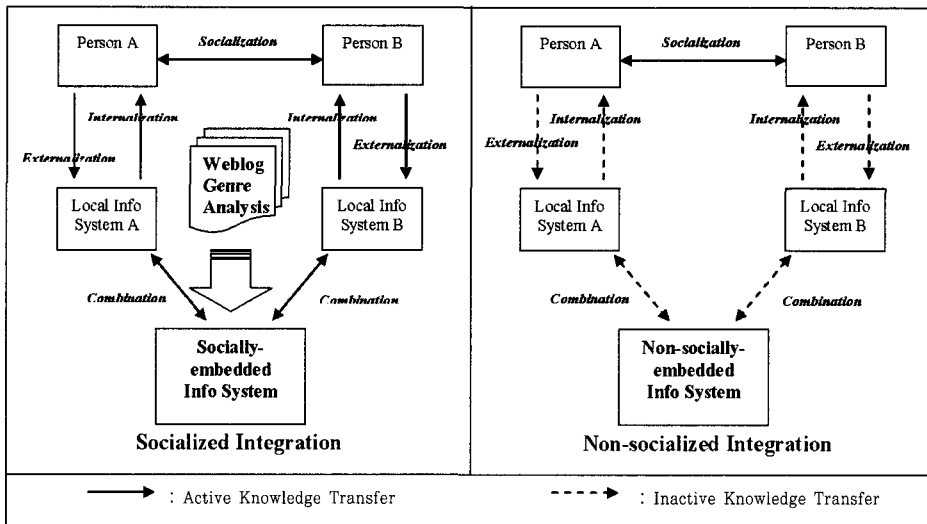
above, two contradictory frameworks are graphically represented in Figure 4. The left shows socialized integration and the right non-socialized integration.

The users of two geographically-dispersed local information systems are embedded in the respective social context. For instance in Figure 4, Person A and Person B are surrounded by two distinct social contexts thus each interprets the respective local information system (Local Information System A and B) differently (“interpretative flexibility”; see section 3.2).

On the other hand, the theory of knowledge creation (see section 3.1) informs that effective knowledge creation requires the on-going four processes (socialization, externalization, combination, and internalization). These fours are also reflected in Figure 4. For instance, Person A and Person B externalizes his or her tacit knowledge into explicit knowledge in the Local Information System A and Local



<Figure 3> Application of SCOT to Distributed Information System



〈Figure 4〉 Socialized Integration versus Non-socialized Integration

Information System B respectively. Then the information system integrates the externalized explicit knowledge through the combination process (e.g., information processing such as classifying, organizing, and merging). Socialization process might also take place between Person A and Person B. If the information system, however, cannot properly integrate the two sets of socially-embedded explicit knowledge, the whole knowledge creation process would fail as shown in the non-socialized integration (right figure) of Figure 4.

Weblog genre analysis provides a cue for the proper integration by narrowing the social gaps between different contexts. As shown in Figure 4, the social life of Person A and Person B embeds in his or her own institutional context where the respective local information system (A and B) is deployed. Considering the social nature of Weblogs, the Weblogs of these two persons reflects each social

life thus the analysis of the Weblogs can reveal some social norms and cultures embedded in each institutional context. The analysis results can be combined with other information to support more socialized integration where the four knowledge creating process is seamless. Without the analysis of Weblogs, an information system might not effectively combine the institutionally different information. This non-socialized integration is shown in the right side of Figure 4. As such, genre-based classification of Weblogs provides some clues for information systems to combine the disparate knowledge together.

In summary, the socialized integration model facilitates all four knowledge transfers (socialization, externalization, combination, and internalization) while the non-socialized integration model does not effectively facilitate the knowledge transfers. Externalization, combination, and internalization processes are hindered because the non-socialized integration system

does not effectively narrow the social gaps between the two sub-organizations.

4. Discussions

The purpose of this paper was to theoretically propose the usefulness of Weblog genre analysis in organizational knowledge creation context where employees often communicate with one another across geographically distributed information systems. This effort was successful in several aspects. The conceptual framework was developed to identify the benefits of Weblog genre analysis in streamlining knowledge creation processes. In addition, several new insights were generated about the social construction of information systems in an organization.

The benefits of Weblog genre analysis were identified using a multi-step process. Nature of Weblogs was stated, followed by explanation of Weblogs' concept and functions, including socialization. Genre analysis was explained to imply that the social structure could be identified by analyzing Weblogs by genre. To identify the benefits of the Weblog genre analysis, two theoretical approaches were explained. Essential parts of the theory of organizational knowledge creation and the SCOT were summarized for better theoretical foundation. Four cyclic knowledge creation processes were presented: socialization, externalization, combination, and internalization. In addition, the major social constructional steps were articulated: formation of relevant social groups, existence of interpretative flexibility and technological frame, and clo-

sure and stabilization. Final step was to locate and integrate Weblog genre analysis into the two theories to provide a useful framework to narrow down social gaps among distributed sub-organizations.

One of the most significant findings is that Weblog genre analysis has a potential to narrow social gaps among sub-organizations that have different cultures. With such social gaps, employees may have trouble in effective communication with employees in other sub-organizations. This difficulty became explicit by graphically showing the inactive knowledge transfers among the knowledge creation processes: internalization, combination, and externalization. Inactive knowledge transfers and ineffective communication may negatively affect collaboration and thus reduce organizational work performance. Thus, even though some of the companies have realized knowledge-sharing as one of the most effective and powerful ways to facilitate knowledge management, not all of them can make this necessary improvement simply because their company culture does not support knowledge sharing.

Socially-embedded information systems are necessary to solve the social gap problem. Information systems can reflect organizational cultures if Weblog genre analysis is applied to the systems' initial developmental stages. It is noticeable that socially-embedded design of information systems can create and maintain good personal relationships amongst the organization's employees. For example, it enables the employees to help customers learn about products, seminars about products, customer education, etc. If individual competence is codified

as purpose and form as genre analysis suggests, it can be shared more easily and efficiently by narrowing the cultural differences.

This study has limitations that should be pointed out. The proposed framework remains to be empirically tested by future research. Case studies that compare the active and the inactive knowledge transfers or that examine effect of Weblog genre analysis on knowledge transfer would confirm the framework in a real environment. Another limitation can be drawn from the meaning of Weblogs in an organization. Although Weblogs have a potential in knowledge management practices, they are still a part of whole informal knowledge transfers.

5. Conclusions

While this study provides a theoretical foundation

by integrating SCOT into the theory of organizational knowledge creation to identify the usefulness of Weblog genre analysis, future research is needed to address how the genre analysis would be conducted. Developing a natural language processing algorithm for the analysis would be one option. If the algorithm automatically extracts purpose and form to build and update a genre classification scheme, it may reduce time-consuming human tasks of coding and checking reliability.

Technology alone cannot solve knowledge transfer problems in an organization. The real solution resides in people and their social contexts as effective knowledge transfers happen among people in a situated social surroundings. This paper further suggests that this genre-based taxonomical practice to knowledge creating practices can help an organization to leverage their investment of knowledge sharing culture.

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