

# 실행공동체를 이용하여 지식공유의 제약사항 극복: 철강회사 사례를 중심으로

## Overcoming Barriers of Knowledge Sharing through Communities of Practice: A Case Study of Steel Company

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### 요 약

지식경영은 조직의 중요한 자원인 지식을 개발, 수집, 체계화, 이용 및 활용이라는 프로세스를 통해서 지식을 체계적으로 관리하는 것이다. 지식은 조직의 지식자산으로서 조직의 경쟁력을 강화시키는 중요하기 요소이기 때문에 어떻게 조직 내에서 지식공유를 활성화할 것이냐가 조직의 당면과제이다. 지식공유활동을 제약하는 요소를 감안하지 않고 지식공유와 팀 협력을 시도하는 것은 조직의 지식경영문화 증진을 오히려 저해할 수 있다. 따라서, 본 연구에서는 조직 내에서 지식공유활동을 제약하는 문제점을 개인적 측면과 사회적 측면에서 파악하고 효과적인 지식공유도구로서 실행공동체 활용모형을 제안한다. 제안된 실행공동체 활용모형에서는 지식공유활동 저해요소를 극복하고 지식공유활동을 활성화할 수 있는 방안을 제시한다. 또한, 제안된 모형을 적용한 철강회사의 실행공동체 활용 우수사례를 소개한다. 마지막으로 구체적인 사례분석을 통해서 조직 내에서 지식공유를 활성화하기 위한 방법으로 실행공동체의 적용가능성과 효과성을 가늠해본다.

**키워드 :** 지식공유, 지식공유 제약사항, 실행공동체, 지식경영

## I. Introduction

Knowledge management involves the panoply of procedures and techniques used to get the most from an organization's tacit and codified know-how (Teece, 2000). While defined in many different ways, knowledge management generally refers to how organizations create, retain, and share knowledge (Argote, 1999). A key challenge emerging for such organ-

izations is how to encourage knowledge sharing because knowledge is the organization's intellectual capital, of increasing importance in promoting competitive advantage. For such capital to exist, individual members of the organization must make this knowledge available; share their knowledge with co-workers.

Knowledge sharing is the most important critical success factor to all knowledge management strategies.

Effective knowledge sharing practices allow individual to reuse and regeneration of knowledge at individual and organizational level (Chaudhry, 2005). However, at the heart of knowledge sharing, two types of bottleneck exist: individual and organizational barriers. Individual barriers include internal resistance, trust, motivation and a gap in awareness and knowledge. Organizational barriers consist of language, conflict avoidance, bureaucracy (Disterer, 2001) and distance. Effective knowledge sharing occurs when appropriate solutions are built in an organization.

Despite the wide agreement that knowledge sharing occurs within a social context, current efforts of knowledge sharing continue to put a heavy emphasis on knowledge delivery and technology. However, knowledge sharing is basically about people's interaction and its byproduct. This requires a change in focus from technology-driven to people-driven approach of knowledge management (Chatti *et al.*, 2007). That is to say, with technology evolving, the paradigm of knowledge management is shifting from a conventional approach to a communicational approach. With technology as an enabler, new conversational knowledge management is characterized by the combination of formal and informal knowledge sharing within a social context. The communicational approach to knowledge sharing can be implemented with community of practice.

The definition of a community of practice (CoP) is "a group of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in an area by interacting on an ongoing basis" (Wenger and Snyder, 2000). These groups tend to interact regularly by meeting face-to-face or relying on technology to facilitate discussion and due to their members' desire to exchange knowledge.

As the focus is put on human factors, the main limitations for effective collaboration are related to the human nature and a lack of adequate motivation policy. In this context, the communities of practice appear to be an instrument, overcoming the behavior constraints and manifesting the emergence of new organizational culture.

The main goal of this article is to investigate knowledge sharing barriers and to propose the use of communicational knowledge sharing based on CoP to remove barriers. The article demonstrates the opportunity for more effective knowledge sharing through the application of the CoP driven SECI model based on knowledge sharing. Also, the article introduces "Integrated operation and maintenance community" as CoP that enables effective knowledge sharing in organization. It empirically analyzes the integrated operation and maintenance community as a case study to provide evidence for the feasibility and effectiveness of the proposed approach. In order to provide a deep understanding of the communicational knowledge sharing, breaking the knowledge sharing barriers will be discussed in more details through case study.

Seeking a solution to the problems of organizational knowledge sharing, the article makes the following argument. Section 2 gives an overview of knowledge sharing in organization and previous approaches to communicational knowledge sharing, and identifies two types of knowledge sharing barriers in organization. Section 3 proposes a framework for overcoming barriers of knowledge sharing based on CoP in an organization. Section 4 explains the integrated operation and maintenance community as a case study and discusses solutions of breaking the knowledge sharing bottlenecks based on our experience. Finally, section 5 provides conclusions and implications of our study

## II. Related works

### 2.1 Knowledge sharing in an organization

According to Nonaka and Takeouchi (1995), knowledge creation should be viewed as a process whereby knowledge held by individuals is amplified and internalized as part of an organization's knowledge base. In this view, much of organizational knowledge is accumulated and managed at the individual level (Staples and Jarvenpaa, 2001). Members in the organization capture, store, use, and modify the knowledge that they have in their daily activities at work (Lam, 2000). Thus, knowledge is created and shared through the interaction between individuals at various levels in the organization. In other words, organizations cannot create knowledge without individuals and group, and, the knowledge is likely to have limited impact on organizational effectiveness unless individual knowledge is shared with other individuals and group

Ackerman *et al.* (2003) was considered the following three types of knowledge sharing within organizations: knowledge retrieval, knowledge exchange, and knowledge creation. First, knowledge retrieval means that the main purpose of knowledge sharing from the organization to the individual is retrieving existing organizational knowledge. Second, knowledge exchange describes that the purpose of knowledge sharing from an individual to other individuals is exchanging existing individual knowledge. Finally, knowledge creation explains that the main goal of knowledge sharing among individuals is generating new knowledge, resulting from new combinations of existing individual, shared, or organizational knowledge.

Knowledge sharing is basically the act of making

knowledge available to others within the organization. Knowledge sharing between individuals is the process by which knowledge held by an individual is converted into a form that can be understood, absorbed, and used by other individuals. Knowledge flow is concerned with developing channels or networks between knowledge provider and seeker (Shin *et al.*, 2001). Knowledge flow in organization is fundamentally driven by communication processes and information flows.

Knowledge sharing between individuals is also a process that contributes to both individual and organizational learning (Nidumolu *et al.*, 2001). Huber (1991) further identified four knowledge concepts that contribute to organizational learning: knowledge acquisition, information distribution, information interpretation, and organizational memory. The concept knowledge sharing presented in this article is linked to both knowledge distribution and knowledge acquisition. The voluntary act of sharing knowledge by an individual contributes to knowledge distribution. The process of sharing may result in knowledge acquisition by other individuals within the organization. Knowledge sharing between individuals thus results in individual learning, which in turn may contribute to organizational learning.

### 2.2 Barriers of knowledge sharing

Knowledge management has become much easier to use, higher productivity and effectiveness with technology support. But technology has confronted with the problem sometimes called the "cultural wall"(McDermott and O'Dell, 2001) in organization. Cultural factors are considered to intrinsically inhibit knowledge transfers. They include a lack of trust, different cultures and vocabularies, a lack of time and meeting places, a lack of absorptive capacities

in recipients, belief that knowledge is prerogative of particular groups, etc (Davenport and Prusak, 1998). The main problems are made of cultural restrictions that can divide into individual and social barriers (Bureš, 2003).

We can regard internal resistance, trust, motivation and a gap in awareness and knowledge as the main individual barriers. And passing on knowledge to colleagues or putting working results into a knowledge database may be felt to be and considered as a revelation, because it announces that this knowledge has a certain value and uncommon. Also trust influence on both the receipt and the propagation of knowledge. If an individual does not trust the information or knowledge they will receive they are clearly improbable to make full use of it (Barson, 2000). At the same time, some employees do not anticipate reciprocal benefits from transferring their knowledge since they do not accept these benefits or they do not experience it (Disterer, 2001). And some workers have largely only awareness of the trouble, but they do not know anything more. It influence that they do not want to listen to again things they already know (Bureš, 2003).

And as the main social barriers we can identify language, conflict avoidance, bureaucracy (Disterer, 2001) and distance. Sometime certain language used in one section, department or division, so it is unintelligible for others (Bureš, 2003). The result, in some companies a certain lack of an authentic language is perceptible (Krogh, 1998). And sometimes we can acknowledge effort to avoid changes and do not risk too much. That influence new knowledge and approaches containing new ideas or innovative points of view can be lost (Bureš, 2003). Also, high level of bureaucracy and organizational institution type often use procedures and approaches get worse knowledge sharing. And geographical separation

may also result in the companies working in different cultural, legislative or linguistic environments. Face-to-face communication as the most efficient methods, but the geographical location of the organizations may mean that this is not possible (Nonaka, 1991).

### 2.3 Approaches to overcoming barriers of knowledge sharing

According to Disterer (2001), he described various individual and social barriers that hinder people to share and transfer their knowledge. From analysis he draw some suggestions how to overcome these impediments. In detail, organization needs to strive for a culture of accepting mistakes and not to penalize errors and develop a common set of pattern and values for an organization to solve trust problem; informal and face-to-face communication reduce the distance between workers and executives. But it is just conceptual approach and is not easy to find real case how to share and practice the knowledge among organization members.

McDermott and O'Dell (2001) identified culture is often seen as the key inhibitor of effective knowledge sharing. So he proposes that linking sharing knowledge to solving business problems; introducing knowledge management in a way that alliances the organization's way; building on existing networks people use in their daily work. But it just focuses on link and collection of knowledge in a centralized repository and its accessibility.

As the barriers to knowledge, Rosen *et al.* (2007) assigned constraints on building trusting relationships; time constraints and deadline pressures; technology constraints on knowledge sharing; failure to develop a transactive memory system; cultural constraints on knowledge sharing. And as a best practice

solution for overcome barriers, he mentions that overcoming time constraints and deadline pressures; adapt technology to virtual team needs; Building a transactive memory system; Educate team member. Yet it is notional approach and is difficult to find real case. And it just focuses on collection of knowledge not focuses on conversational knowledge management.

And as the transfer problems of the knowledge management, Cantoni *et al.* (2001) focused on culture and localization. So he argues that training, web technologies and variety of organizational structures can lower the barriers to knowledge transfer. But it just focuses communication technology and it is not explain how make social network in the concrete.

## 2.4 Approaches to communicational knowledge sharing

With technology evolving, paradigm of knowledge management is shifting from a conventional approach to communicational approach. The traditional knowledge management focuses on collection of knowledge in a centralized repository and its accessibility. In this view, a knowledge network in an organization is the key enabler for knowledge workers to communicate with each other (Stewart, 2001). The organization is capable of chaining valuable knowledge resides in business competencies into a shared domain based on the information and communication technology. Also, Lan and Unhelkar(2005) explained that the knowledge sources of organization should originate from both intra and inter organizational scopes.

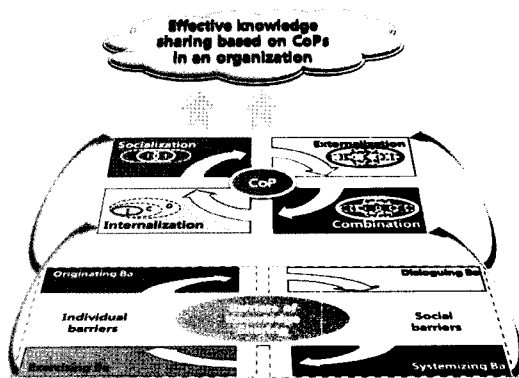
In contrast, conversational knowledge management focuses on the knowledge network infrastructure and collaboration of knowledge creation among knowledge workers. Wagner (2006) identi-

fied knowledge acquisition bottlenecks and proposes the use of collaborative, conversational knowledge management to remove them. Internet and Web connectivity has greatly improved the popularity of these conversational technologies in recent years. Major types of technologies to facilitate the communicational knowledge sharing through knowledge network include discussion forums, instant messengers, Internet chat, video and audio streaming, video and audio conferencing, group decision support system, weblogs, and wikis.

Iverson and Mcphee (2002) described the new approach to knowledge management as a “Community of Practice (CoP).” CoP is a group of people who’ve worked together over a period of time and through extensive communication have developed a common sense of purpose and a desire to share work-related knowledge and experience. Members of CoP may not stay in the same geographical location, share the same time zone, or use the same operating systems, but on the same knowledge network (Lee and Lan, 2007). The knowledge network is a powerful driver for knowledge sharing between members of organization.

## III. A framework for overcoming barriers of knowledge sharing based on Communities of Practice

This framework consists of barriers of knowledge sharing and knowledge sharing based on CoP. Also, the process of this framework is divided into the four steps based on Nonaka and Takeuch’s knowledge transfer spiral model (1995): Socialization, Externalization, Combination and Internalization. Ultimately, the implementation of this framework in an organization is to overcome bottlenecks of knowledge



〈Figure 1〉 A framework for overcoming barriers of knowledge sharing based on CoP in an organization

sharing and to share amount of knowledge through CoP.

The upper tier of the figure includes knowledge sharing model based on CoP. In this figure, each process of SECI model consists of individual, community, and organization. There are four modes of knowledge conversion, namely, socialization, externalization, combination and internalization. Socialization is the process of creating new tacit knowledge such as skills, out of existing tacit knowledge through shared experiences, for example in informal social meetings. The socialization starts with building a “space” to support interaction among members. Externalization is the process of articulating tacit knowledge into explicit knowledge such as concepts, hypotheses, or models. This field prompted by meaningful dialogues or reflections. Combination converts explicit knowledge into more complex and systematic sets of explicit knowledge, called “systemic knowledge”. Examples of such a conversion process are sorting, adding, combining, and categorizing explicit knowledge. Internalization, finally, is the process of turning explicit knowledge into tacit knowledge. Internalization produces “operational knowl-

edge”, for example by training.

The lower tier of the figure means barriers of knowledge sharing based on the knowledge transfer model. There are two types of barriers, which are defined by one dimensions of interaction whether the interaction takes place individually or collectively. The left half of the upper tier includes internal resistance, trust, motivation and a gap in awareness and knowledge as individual barrier. The right half shows language, conflict avoidance, bureaucracy and distance as social barriers of knowledge sharing. According to Nonaka *et al.* (2000), “Ba” can be thought of as a shared space for emerging relationships. This space can be physical (eg. office, dispersed business space), virtual (e.g., email, teleconference), mental (eg. shared experiences, ideas, ideals) or any combination of them. Ba provides a platform for advancing individual and collective knowledge. There are four types of ‘ba’ that correspond to the four stages of the SECI model. Each category describes a ba especially suited to each of the four knowledge conversion modes: originating ba, dialoguing ba, systemizing ba, and exercising ba.

In individual barriers, the originating ba corresponds to the socialization phase in the SECI mode. Tacit knowledge in the originating ba is shared among individuals, generally in face-to-face environments; sympathy, empathy, care, love, trust, commitment, freedom, and safety. Also, the exercising ba supports the internalization phase. Focused training with senior mentors and colleagues consists primarily of continued exercises that stress certain patterns and the working out of such patterns. Organizational issues that are closely related to individual barriers are vision and culture. In social barriers, on the other hand, the dialoguing ba is a situation in which, by means of dialogue, individuals share their experiences and abilities, converting them into common

terms and concept. Also, the systematizing ba offers a context for the combination of new explicit knowledge with the one that already exists within the organization. Organizational issues that are closely related to social barriers are IT infra and operation system for knowledge sharing.

We will use this framework to discuss how knowledge is shared and generated and learning take place in a virtual CoP and how bottlenecks of knowledge sharing are overcome in a virtual CoP.

## IV. Case study

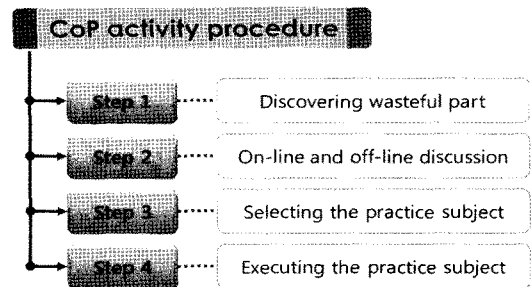
### 4.1 Overview of community

P company introduced CoP on a purpose of creation of core knowledge which help attain a goal of business strategy. Complicated and difficult Six sigma is changed to QSS (Quick Six Sigma) that everyone can participate. In other words, QSS is a composition of self managing activity that all members participate, formal activity and report and scientific methodology of 'six sigma.' CoP in P company is explained that it is an aggregate of 'spirit' of self management, 'technique' of six sigma and easy to use 'IT Infra'.

Among many CoPs in P company, Integrated maintenance and operation community is the best example which has improved work efficiency pretty much. This community was set up on May, 2007 and is composed of 190 members who work in the department of operation, repair and others. The main activity of the CoP is finding common task to find out a way out by combination of special knowledge of equipment and driving knowhow. To put in detail, CoP activity procedure starts from the step of discovering wasteful part. All members participate in finding wasteful part and make a reform measure

and solution by managing wasteful part list. Members state their opinion by putting post-it on a wasteful part finding board in office or writing out a on-line space of CoP.

On the basis of standard process of renovating activity in department, themes on the wasteful part list are grouped as immediate practice, solution and QSS task. Then immediate practice themes are classified as several type and activity to solve these problems are launched.



〈Figure 2〉 CoP activity procedure in P company

The second step is on-line and off-line discussion. On this step, CoP members examine the suitability of subjects which was suggested by on-line and off-line. In the process of examination, members can raise their consciousness of problem and share a diverse way of solutions for those problems. Using a CoP as a space for on-line workplace, they suggest the problems and solutions on CoP and other members participate in CoP with replying their opinion of registered solution.

The next step is selecting the practice subject. On this step, members classify the subject into short time subject and long time subject. Short time subjects are needed to be practiced in improved way on a work place immediately. Members reach a conclusion with off-line discussion after listing on-line discussion issues and doing on-line poll to select the

practice subject.

The last step is executing the practice subject. Members register rotation work diary and the result of maintenance work on CoP. This change of working system helped to raise work efficiency and prevent an accident of large equipments. Moreover, trust between departments becomes higher and a cooperative atmosphere is created because of change of working style.

In conclusion, they can prevent accident in equipments using CoP as a tool of communication and discussion. After managing the problem, members register or report the result of immediate practice on CoP and revise a work standard. Sometimes money incentives are given to best suggestions and those standardized processes can be applied for a patent. Such a positive problem solving leads to a decreased number of mistakes. Moreover, by reason of the feature that most members of the integrated maintenance and operation community work in different place, on-line learning and discussion is very useful.

## 4.2 Knowledge sharing based on CoP

Based on Nonaka and Takeuch's knowledge transfer spiral model, begin to analyze how knowledge is shared and generated and learning take place in a CoP for P company.

Socialization is the process of creating new tacit knowledge such as skills, out of existing tacit knowledge through shared experiences. P company provides an informal space for employees with CoP that activates communication and discussion. CoP helps to recover the trust between employees consolidate their relationship. Also CoP offers a space of renovation activity such as discovering wasteful part on work-site.

Externalization is the process of articulating tacit

knowledge into explicit knowledge. P company creates core knowledge of company and makes it its immaterial property for attainment of business strategic goal with CoP. Also, P company makes major issues documentation by means of revitalization of on-off discussion in CoP. It enables result of CoP activity be knowledge of organization.

Combination converts explicit knowledge into more complex and systematic sets of explicit knowledge, called "systemic knowledge." P company establishes a database of overall knowledge of company based on the examination and feedback of outcome of CoP in each department. Company also support for production of CD which contains best knowledge and enhance quality of knowledge by classifying best CoP knowledge into knowledge bank.

Internalization, finally, is the process of turning explicit knowledge into tacit knowledge P company offer a space for lifelong study for employees by means of activation of CoP, thus employees can have a twenty-four hour study and innovation activity. Also, it share related technology data systematically with on/off line study, thus leads strengthen the voluntary study and personal competency. In this way, P company not only share and create knowledge but also make learning take place in CoP with knowledge transfer spiral model.

## 4.3 Overcoming barriers of knowledge sharing through CoP

### 4.3.1 Breaking individual barriers of knowledge sharing through CoP

As it is explained in the previous section, , The main characteristic of CoP of P company is informality. It provides an informal space between members by means of CoP. Free discussions and social inter-



actions are allowed and it help the creation of additional knowledge. Moreover, concern and encouragement of executives and other superiors causes the stimulant of CoP activities that help solve internal resistance problems.

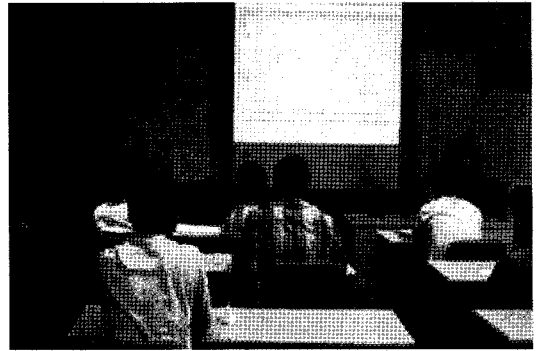
Relationship not only between staff and superior but also between staffs is strengthened due to participating in physical and social activities together. CoP with full of love and trust among all the members of CoP can be achieved through of a strong relationship among Cop members. CoP members participate in various social activities outside the work with their family members. For example Members in CoP share hobby or social activities with other members in group or their families. Active communication and discussion help Cop members build the strong trust and connective between members.

When the derived problem is solved, members report that problem reached a conclusion and resettle the work standard.

P company intensified compensation system of production result standard. Company has operated 'CoP leader's club' which has 450 members CoP from 2005. In this CoP, members share best CoP and innovation cases and study development direction for successful CoP. Company encourages CoP activity



〈Figure 3〉 Informal discussion between the day shift and the night shift



〈Figure 4〉 Workout meeting for improvement and solution

giving a reward to the top 10~15% best communities and intensifying proposal or patent related compensation. It also constitutes the best CoP Man and gives valanced knowledge miles for all knowledge activities. This knowledge mile is related to promotion of employees on a human resource management level.

The reliability of knowledge is improved through the circulation of problem solving process in CoP. When a problem needed to be solved comes up to CoP, CoP members get together and begin to solve the problem. Then, the solution is stored in CoP, and the solution to the problem keeps continuously updated and become standardized. Based on the knowledge obtained by solution the gap in awareness and knowledge and the solution is constantly updated by other CoP members.

#### 4.3.2 Breaking social barriers of knowledge sharing through CoP

People who are exposed to common class of interest and problems often develop a common language to communicate and develop a sense of mutual obligation to help each other. In the integrated maintenance and operation community, members do intimate activities such as physical training or volun-

teer work with their members. Jargons used in one department and contents cannot be understood by the members in other department. CoP can resolve this issue. The characteristic of CoP provides the communication bridge between two groups. Members in CoPs can share jargon, and information through CoP and resolve identify language problems.

Sometimes we can acknowledge effort to avoid changes and do not risk too much. Complicated six sigma was changed to QSS (Quick Six Sigma) that all staffs can participate on the base of CoP. Using a CoP as a base, company can make a organizational culture that work, innovation and study are natural in everyday life. Also members have easy access to CoP because community is based on 'IT Infra' that is very easy to use. As a result, there could be no aversion and any one can ask informal questions which could manage a liberal space for communicating knowledge among group members. The result, company members don't feel to effort to avoid changes and do not risk too much.

High level of bureaucracy and organizational institution type often use procedures and approaches get worse knowledge sharing. To overcome these kinds of barriers, superiors give staff great encouragement to carry out the plan for solving the prob-



〈Figure 5〉 A meeting for familiar talk among members

lem with the feeling of intimacy that leads staff can feel pride for CoP activity. To give an example, a lot of members state that it was very helpful to reach a goal when they feel their high-ups are very concerned about CoP activity. Moreover most staff feels superiors are men of easy access not men of difficult access after CoP activity.

And to solve geographical separation, many companies have used the Web as a technology for enabling knowledge sharing at both workgroup and company levels. As seen in the case of integrated maintenance and operation community, large number of community members work in diverse department and different place. They use CoP as a tool of on-line discussion and a pool of various opinion. Web is playing an important role when the problem solving theme is decided with on-line pole and members participate in process of solving the problem by replying other member's registered opinion. Also, using a function of managing schedule of on-line community, it can manage the schedule such as off-line meeting time what lead to raise a participation of community and efficiency of work.

## V. Conclusion

The knowledge management theoretical and practical literature review emphasize on overcoming barriers of knowledge sharing as major factors for success of the KM within an organization. Individual and social barriers often prevent effective knowledge sharing. It is therefore necessary to identify and eliminate the maximal number of these barriers. In fighting with individual and social barriers we can use tools and techniques like narrative, expressive communication, trust, managing people, team work, balanced usage of codification and personalization approaches, design and organization of workplaces.

In this context, we proposed the use of communicational knowledge sharing based on CoP to remove them. As a new communicational knowledge management tool, CoP is characterized by the combination of formal and informal knowledge sharing within a social context. CoP tends to interact regularly by meeting face-to-face or relying on technology to facilitate discussion and due to their members' desire to exchange knowledge.

In this study, we demonstrated the opportunity for more effective knowledge sharing through the application of the CoP driven SECI model based on knowledge sharing in order to overcome bottlenecks of knowledge sharing in an organization. In order to produce evidence for the feasibility and effectiveness the proposed approach, we introduced and analyzed the integrated operation and maintenance community as CoP that enables effective knowledge sharing in organization. Among many CoPs in P steel company, this community is the best example which has improved work efficiency pretty much.

To break individual bottlenecks of knowledge sharing, P company provides an informal space between members by means of CoP. Community activities are done with family of members, for example they share hobby or social activity with other members or their families. Members of community share study plan or personal schedule with management of community schedule. Also, Company has operated 'CoP leader's club' which has 450 members CoP from 2005. In this CoP, members share best CoP and innovation cases and study development direction for successful CoP. Company encourages CoP activity giving a reward to the top 10~15% best communities and intensifying proposal or patent related compensation..

To overcome social barriers of knowledge sharing, members in the integrated maintenance and op-

eration community do intimate activities such as physical training or volunteer work with their family. As seen in the case of integrated maintenance and operation CoP, large number of community members work in diverse department and different place. They use CoP as a tool of on-line discussion and a pool of various opinion. Members have easy access to CoP because community is based on 'IT Infra' that is very easy to use. Using a CoP, company can make a organizational culture that work, innovation and study are natural in everyday life.

In this way, P company not only share and learn knowledge but also overcome barriers of knowledge sharing in CoP with knowledge transfer spiral model. Although CoP has demonstrated the ability to facilitate effective knowledge sharing in an organization, the authors believe that there are concerns still yet to be resolved. Questions to be considered are the further research topics embracing mechanisms or algorithms to measure the validity of knowledge, implications of the cultural change, and governance of the collaborative platform.

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## Overcoming Barriers of Knowledge Sharing Through Communities of Practice: A Case Study of Steel Company

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### Abstract

Knowledge management is systematic management of vital knowledge resources and its associated processes of creating, gathering, organizing, diffusion, use and exploitation. A key challenge emerging for such organizations is how to encourage knowledge sharing within organization because knowledge is the organization's intellectual capital, of increasing importance in promoting competitive advantages. Isolated initiatives for promoting knowledge sharing and team collaboration, without taking consideration of the knowledge sharing limitations and constraints can defeat further development of KM culture.

This article investigates knowledge sharing bottlenecks and proposes the use of community of practice as an effective instrument for knowledge sharing. The article demonstrates the opportunity for overcoming barriers of knowledge sharing through the application of communities of practice. The article introduces a steel company case as the best practice of communities of practice. Then, the paper empirically analyzes the case study to provide evidence for the feasibility and effectiveness of the proposed approach.

***Keywords: Knowledge Sharing, Barriers of Knowledge Sharing, Communities of Practice, Knowledge Management***

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동국대학교 컴퓨터공학과에서 학사를 취득하였고, 금융결제원에서 금융공동망 관련 네트워크 기획을 담당하였다. 현재 POSTECH(구, 포항공과대학교) 정보통신대학원에서 MIS 전공 석사과정에 재학 중이다. 주요 관심분야는 지식경영, 정보전략 및 전략경영, e-비즈니스, 기업전략 등이다.



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Decision Support Systems, International Journal of Information Management, IEEE Transactions on Engineering Management, Expert Systems with Applications, Journal of Knowledge Management, Knowledge and Process Management, Electronic Commerce Research and Applications, 경영정보학 연구 등 국내외 우수 전문학술지에 다수의 논문을 게재하였다. 주요 관심분야는 정보전략 및 전략경영, 기술경영 및 e-비즈니스, 지식경영 및 실행공동체, 경영 정보시스템 및 의사결정지원시스템 등이다.

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