

Relationships Between the Knowledge Management and IT Infrastructure Services

Sang M. Lee¹⁾, Sung-kwan Kim²⁾

¹⁾University of Nebraska-Lincoln, Faculty of Business Administration (slee@unl.edu)

²⁾University of Nebraska-Lincoln, Management Department
(sungkwan@unlserve.unl.edu)

Abstract

The competitive environment surrounding business organizations has changed drastically during the past ten years. One of the key capabilities for corporate success is the ability to quickly adapt to changing conditions in the environment, innovate continuously, and achieve their goals. Organizational knowledge provides such capability. Organizational knowledge is a critical corporate asset. Organizational knowledge can provide the capability to understand the market, accurately assess the customers' needs, and turn them into products and services by integrating organizational resources including various production skills and technologies. Knowledge management includes the entire process of discovery, creation, dissemination, and utilization of knowledge. During the process, knowledge management needs extensive support of information technologies (IT). There is a powerful synergistic relationship between knowledge management and IT. The different knowledge management approaches require different types of IT support. However, to properly support knowledge management implementation, IT needs to be understood in terms of infrastructure - a set of tangible and shared information technologies. In this paper, the relationships between organizational knowledge management and IT infrastructure services will be investigated. This study will provide managers with new insights that can help them more effectively plan and control their knowledge management and IT Infrastructure.

1. Introduction

The competitive environment surrounding business organizations has changed drastically during the past 10 years. Organizations are looking for new ways to compete effectively. One of the key capabilities for corporate success is the ability to quickly adapt to changing conditions in the environment, innovate continuously, and achieve their goals. One important process is to recognize or discover assets that organizations already have but are not being used to their full potential.^[1] One of such assets is organizational knowledge. As we move from the industrial age into the information age, knowledge is becoming an ever more central force behind the competitive success of firms. In an economy where only the certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge.^[2] Organizational knowledge provides such capability. Especially, organizational knowledge can provide the capability to understand the market, accurately assess the customer's need, and turn them into products and services by integrating organizational resources including various production skills and technologies. Knowledge management includes the entire process of discovery, creation, dissemination, and utilization of knowledge. For the successful knowledge management, managers need to take a look at the various organizational aspects (organizational structure, culture, leadership, technology, etc.) Especially, information technology became one of the critical factors. During the process, knowledge management needs extensive support of information technologies. The different knowledge management approaches require different IT. Understanding the relationship between the knowledge management and IT (especially IT infrastructure) will be indispensable for the successful knowledge management implementation.

2. Knowledge and knowledge management

In the book of "Managing in a Time of Great Change," Drucker^[3] wrote that knowledge has become the key economic resource and the dominant-and perhaps even the only-source of comparative advantages.

Nonaka and Takeuchi^[2] explained that the fundamental reason why some Japanese enterprises have become successful is because of their skills and expertise at organizational level knowledge creation. Knowledge is not a clear concept since it has multiple interpretations. There are many different perspectives. Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight.^[4] Knowledge is information that is relevant, actionable and based at least partially on experience.^[5] Knowledge is characterized as "consisting of data or information that have been organized and processed to convey understanding, experience, accumulated learning, and expertise as they apply to a current problem or activity."^[6] Knowledge is tied to the context and experience. Therefore, when knowledge is transferred from one person to another, the knowledge is moved to the receiver's context and experience. The new knowledge is interpreted according to the receiver's context and experience. Therefore, if the receiver does not have such context and experience, the new knowledge will not be interpreted correctly and will not have much value. It will be helpful to understand that there is two dimension of knowledge: tacit knowledge and explicit knowledge. The first researcher who made distinction of the two was Polanyi.^[7] However, it was Nonaka and Takeuchi^[2] who brought their importance to organizational attention. Tacit knowledge is the one embedded in the expertise and experience of individuals and groups. Explicit knowledge is the one codified in organizational rules, routines, and procedures. Explicit knowledge can be easily captured, codified and shared in organizations while tacit knowledge is hard to be captured, codified and shared. However, most knowledge exists in between the extremes.

Knowledge management is concerned with the entire process of discovery and creation of knowledge, dissemination of knowledge, and the utilization of knowledge. Knowledge management caters to the critical issues of organizational adoption, survival and competence in face of increasingly discontinuous environment change.^[8] Knowledge management is the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities.^[1] More specifically, Ruggles^[9] proposed eight major categories of knowledge management activities: generating new knowledge, accessing valuable knowledge from outside sources, using accessible knowledge in decision making, embedding knowledge in processes, products, and/or services, representing knowledge in documents, databases, and software, facilitating knowledge growth through culture and incentive, transferring existing knowledge into other parts of the organization, measuring the values of knowledge assets and/or impact of knowledge management. Given the various perspectives of knowledge management, knowledge management shares key processes of creating, organizing, locating, distributing and sharing knowledge and expertise within organizations for organizational goals.

3. Knowledge for Competitive Advantage

3.1 Knowledge as a Core Competence

Knowledge became a critical business asset. Influenced by Porter,^[10] until the 1980s management theories focused on the outside of the companies (such as industry and competitors). Competition in the industry has been the issue for organizations. However, this idea driven by competition has several latent, unintended effects.^[11] First, they are imitative, not innovative, approaches to the market. Companies often accept what competitors are doing and simply strive to do it better. Second, companies act reactively. Time and talent are absorbed in responding to competitive moves, rather than creating growth opportunities. Third, industry boundaries have become fluid and the traditional notion of industry is getting obsolete.^[11] From the late 1980s, the resource-based perspective of the firm challenged this competition-based view.^[12, 13, 14, 15, 16, 17, 18] The resource-based view suggested that competitive advantage did not arise only via various product market combinations in a given industry. On the contrary, it was mostly due to differences in organizational resource of different kinds. Because resources can't always be transferred or imitated, organizations must look inside the firm to find the real sources.

Core competence is such a resource that a company has. Core competencies constitute competitive advantages for a firm. They have been built up over time and can't be easily imitated. Core competencies are the collective learning in the organization and can coordinate diverse production skills and integrate multiple streams of technologies.^[15] Barney^[13] developed four criteria for assessing what kinds of resources would provide sustainable competitive advantages: first, value creation for the customers; second, rarity compared to the competition; third, inimitability; fourth, substitutability. The only resource that meets these criteria is knowledge. Core competencies such as knowledge would not diminish with use. Unlike physical

assets, which deteriorate over time, knowledge is enhanced as it is applied and shared. Rather, knowledge deteriorates if it is not used. Competencies are the glue that binds existing businesses. Competencies such as knowledge allow organizations to develop new businesses. The strategies of organizations may be guided by them. This resource-based approach has brought to organizational attention the role of organizational knowledge for competitive advantage. To keep sustainable competitive advantages, organizations need resources that are unique and difficult for competitors to copy. The organization's ability to manage their knowledge is the ultimate source of competitive advantage.

3.2. Knowledge as a Value Creator

The one critical factor in competition is customer. Today's business challenges include understanding and satisfying customers' needs; monitoring and staying ahead of the competition; determining industry trends and adapting to the challenges; increasing market share; entering new market.^[19] Customer should be placed at the center of all challenges. The ultimate goal of business organizations is to achieve profitability by providing products and services that create values for or add value to customers. Markides^[18] places the customer at the center of three basic strategic issues: Who is going to be our customer? What products or services should we offer the chosen customer? How should we offer these products or services cost efficiently? Understanding customers' needs is a challenging issue. Virtually every survey ranks knowledge about the customer as most important.^[20] However, many companies don't know about their customers. Even though organizations perform traditional customer surveys, most of the time they do not tell about the customer's real wishes and concerns. It is the role of knowledge that takes various inputs (i.e., interpreting the market research results, linking environment scanning and market intelligence systems, monitoring trend, identifying hidden pattern or relationship, and evaluating feed back from customer feedback) and decides what customers really want.

Competition-based view does not strive for catching what customers really want. Rather, they strive to outperform competitors. They do not take values for customer into a critical consideration. This can be misleading to their strategy and long-term survival. Kim and Mauborgne^[11] found that companies of sustained high growth and profit pursue value innovation. Value innovation makes the competition irrelevant by offering fundamentally new and superior value in existing markets or creating new markets. It is a great contribution for the resource-based view to identify organizational knowledge as a core competence. However, resource-based view limits the organization's opportunity for strategic innovation to the inside of business organizations. Prahalad and Hamel^[15] gave an analogy of a tree to explain core competence. Core competence is working as roots of a tree. Every trunk, branches, leaves, flower and fruit is flourishing on roots. However, when the roots could not get a sunshine or air from the markets or customers, then the trunk and even roots are subject to be withered away or dried up. Knowledge management can integrate both competition-based view and resource-based view. Knowledge provides the capability to understand market, catch the customers' needs, and turn them into products and services by integrating all organizational resources including various production skills and technologies. That will be a real core competence of the organization.

3.3. Knowledge Management Model

Knowledge management is the collection of processes that govern the creation, dissemination, and utilization of knowledge. There are two major approaches of knowledge management (i.e., codification vs. personification).^[2, 22, 23, 24, 25] Of course, companies take both of the approaches. However, successful companies do not take them to the equal degree. They employ one dominant knowledge management approach. Hansen et al.^[25] developed a model of mapping strategy and knowledge management approach in the management consulting industry. There are two very different knowledge management approaches depending on their business strategies. In some companies, knowledge is carefully codified and stored in databases where it can be accessed and used easily by anyone in the company. They call this codification strategy. The other knowledge management strategy is personalization strategy. The chief purpose of this strategy is to help people communicate knowledge, not to store. Through the case studies of consulting companies, computer manufacturing companies and medical centers, they found that companies used both codification and personalization approaches but effective firms excelled by focusing on one of the strategies and using the other in a supporting role. The companies studied did not try both approaches to an equal degree. Jordan and Jones^[23] also found that an organization uses both types of knowledge management approach but not to an equal degree, there is a dominant type of approach. Companies are

adopting one of the two approaches: internal opportunistic vs. external opportunistic. Zack^[22] call them as interactive application and integrative application. Sarvary^[24] introduces two markedly different approaches to knowledge management in the consulting industry: bottom up and top down knowledge management system. March^[21] call these exploration and exploitation. Exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, and innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, and execution. Maintaining an appropriate balance between exploration and exploitation is a primary factor in system survival and prosperity. Whatever they are called, they describe same dimension of the two basic knowledge management model.

However, this classification is limited given that there are many factors affecting how organizations build and apply their knowledge to compete in the market. Knowledge required can be dependent on the industry, size, business nature, the customers and market, and products and service that they provide. We propose a new framework of knowledge management. Especially the two most important factors are the business nature and knowledge used. For example, Hansen et al.^[25] recommended to ask three questions for knowledge management assessment: Do they offer standardized or customized products? Do they have a mature or innovative product? Do people rely on explicit or tacit knowledge to solve problems? We developed a more comprehensive knowledge style assessment model using the aforementioned variables (See "Table 1 & 2".)

Table 1. Nature of Business

INCREMENTAL	BUSINESS	INNOVATIVE
Standardized	Product/service provided	Customized
Mature	Nature of product/ service	Innovative
How to develop, make, and deliver products and services	Product vs. process focus	What product and services are
Less structured to structured	Business problems	Unstructured
Highly reliable/quality/ fast delivery of product and service	Business strategy	Creative/ totally new type of product/ service delivery

Table 2. Nature of Knowledge

EXPLOITIVE	KNOWLEDGE	EXPLORATIVE
Procedure oriented	Knowledge production	Expertise oriented
Database/ software/ manual	Location of knowledge	Worker's head
Table look up	Nature of problem solving	Trial and error
Class room	Method of training new workers	Apprenticeship/ coaching
Yes	Suitability for automation	None
High	Ease of transfer to another site	Low
Formal/prescribed/ structured	Dissemination	Informal/role modeling/ daily interaction
Incremental/ corrective	Learning focus	Transformative/ radical
Explicit	Type of knowledge needed	Implicit

These two variables make four knowledge management models. We tentatively call them as Type I, Type II, Type III, and Type IV (See "Figure 1".) The vertical axis is concerned about the organization's business nature. The horizontal axis is concerned about the nature of knowledge usage. For the organizations positioned in the top half, their product/services are characterized as customized. The nature of product /services are innovative. Their business problem is unstructured. Their strategy is to provide creative and totally new type of product and services. For the organizations positioned in the bottom half, their product/services are characterized as standardized. The nature of product /services are mature. Their business problem is less structured or structured. Their strategy is to provide highly reliable and quality product or services. For the organizations positioned in the right half, the nature of knowledge used is characterized mainly as implicit. Therefore, knowledge production is expertise oriented and the location of knowledge tends to be in the worker's head. The method of learning knowledge is through apprenticeship or coaching. The knowledge dissemination is informal and through role modeling. In the organizations positioned in the left half, the nature of knowledge used is characterized mainly as explicit. Therefore, knowledge production is procedure oriented and the location of knowledge tends to be in the database or manuals. The method of learning knowledge is through classroom. The knowledge dissemination is formal and prescribed.

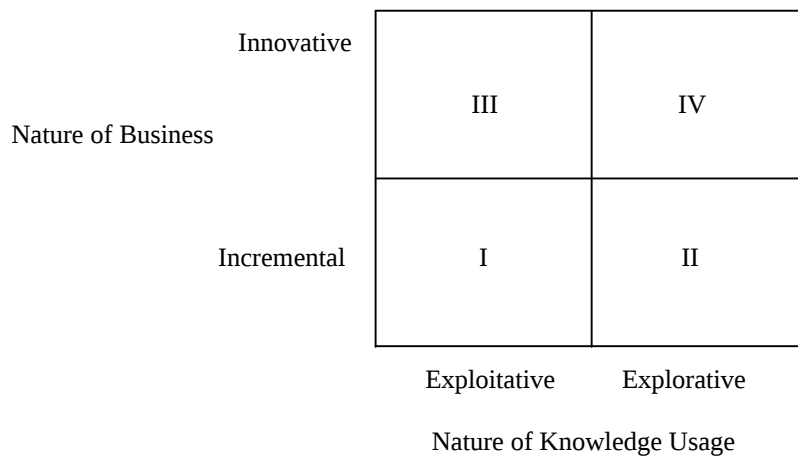


Figure 1. Knowledge Management Model

4. IT as an Enabler of Knowledge Management

4.1. IT for Knowledge Management

Knowledge management needs an extensive IT support: for knowledge input, knowledge processing, knowledge repository, knowledge flows, and knowledge outputs. Information technology has been cited as one of the key enablers of the successful knowledge management.^[26, 27] In a survey of 431 U.S. and European companies, Ruggles^[9] found that the four most popular knowledge management projects related to IT (i.e., intranet, data warehouse and knowledge repository, decision support tool, and groupware). There is a powerful synergistic relationship between knowledge management and IT; that relationship drives increasing returns and increasing sophistication on both fronts.^[26] IT facilitates the rapid dissemination of knowledge and improves communication and collaboration among employees at all levels and all locations.^[27] Especially the rise of the new technology such as intranets and groupware has had critical implications for knowledge managers. Intranet has reduced the cost and sped up the process of transferring best practices and knowledge. New group software can provide the communication required for knowledge acquisition. There are many examples of IT used for knowledge management: knowledge repository, data warehouse, document management, data mining, knowledge mining, Internet technology (such as search engines and intelligent agents), intranet, artificial intelligence technology (such as case-based reasoning and expert systems), group collaboration technology (such as groupware and videoconferencing), etc.

There are a number of information technologies that can be used for knowledge management. However, as suggested in a knowledge value chain by Skyrme,^[20] there is usually not a one-to-one relationship between IT tools and processes. Nevertheless there are some common underlying technologies that can be focused on. This indicates that organizational knowledge is influenced by and also influences IT. This also suggests that organizational knowledge influences IT infrastructure. The relationship between knowledge management and IT should be approached by the infrastructure view. A knowledge management system itself is an infrastructure necessary for the organization to implement the knowledge management process. It includes a good IT infrastructure.^[24] Therefore, IT infrastructure is subject to the organizational knowledge requirements.^[24, 25, 27, 28] With the strong indication of possible relationships between knowledge management and IT infrastructure, there has not been enough research in this area because knowledge management itself is a relatively new phenomenon and IT Infrastructure is starting to draw attention only recently.

4.2. IT Infrastructure

Knowledge management interacts with a firm's approach to organizational learning, information management, human resource management, and its information technology infrastructure structure capabilities.^[27] For example, the repository of knowledge is locked into the company's organizational infrastructure and is supported by the information technology infrastructure involving a communication network and shared groupware applications. These infrastructure capabilities include a well-developed communications network enabling the easy transfer of messages and information between employees. IT infrastructure generally describes a set of shared tangible, IT resources that provide a foundation to enable present and future business application. The primary tangible resources include platform technology (i.e., hardware and operating systems), network and telecommunication technologies, key data, core data-processing applications.^[29] IT infrastructure is causally and positively related to the service capabilities of the IT.^[29] Niederman et al.^[30] characterized IT infrastructure as consisting of a platform technology such as the processing hardware and operating system, networking and communication technologies, data, and core data processing applications. McKay and Brockway^[31] see IT infrastructure as the enabling foundation of shared information technology capabilities upon which business depends. It is the backbone of networks, databases, applications and groupware that enables effective long-term use of IT by individuals, work groups and entire companies.

IT infrastructure is the base foundation of the IT portfolio (including both technical and human assets), which is shared throughout the firm in the form of reliable services, and is usually coordinated by the IS group.^[31] The IT infrastructure capability includes both technical and managerial expertise required to provide reliable services. Because it can be shared across boundaries, IT infrastructure is different from other IT investments and applications that directly perform business processes in a particular functional area or business unit. Broadbent and Weill^[27] developed measures to assess IT infrastructure capability. One of them is IT infrastructure services. They tell the extent of the firm's infrastructure services (the number of infrastructure services) and the provision of boundary-crossing infrastructure services.

4.3. Knowledge Management and IT Infrastructure Services

The infrastructure services in a firm often include telecommunications network services management and provision of large scale computing (such as Mainframe), the management of shared customer databases, and research and development expertise. Some key applications used by all business units (i.e., accounting systems) are increasingly viewed infrastructure services, too. The set of infrastructure services required by a firm is usually relatively stable over time. Generally, similar services are required from year to year, with gradual improvements over time to take advantage of new technologies and efficiencies.^[27] The information technology for business processes utilizes the infrastructure services necessary for the particular application. The nature of IT infrastructure can be described from a business perspective using a concept of IT infrastructure services. Weill and Broadbent^[27] suggested 25 IT infrastructure services that can measure IT Infrastructure capability.

In the meantime, the strategies used in managing various knowledge can be categorized into two broad thrusts.^[20] First one is to know what we know. Organizations try to aware, share and apply the existing knowledge. Many organizations underutilize much of their existing knowledge, because its existence is unknown to those who need it. Here, the issue is how to locate, organize, share, and utilize the existing

knowledge. Second one is innovation. It can be done by taking knowledge from the external environment, by creating new knowledge through creative thinking and interchange of ideas, by the rapid diffusion of ideas and insights through knowledge networking, by the validation, refining and managing of innovation knowledge, by the matching of creative ideas to unmet customer needs and unsolved problems, and by encapsulating knowledge into an appropriate form. Here knowledge continually flows between people, gets codified into design and databases, is disaggregated and recombined, restructured into new forms and so on. The issue is how to locate the source of knowledge and to create new knowledge. IT infrastructure should provide such support. The ideal IT infrastructure will be the one that can allow IT to provide all possible support for anyone at anytime or anyplace. However, the organizational resource is scarce (i.e., financial or human resources). IT infrastructure investment needs huge financial and human resources. We can't build IT infrastructure that can connect any people to anywhere, any application on any platform. If we can be sure of the relationship between IT infrastructure and organizational knowledge, then we can prioritize IT services and distribute resources more effectively and efficiently. Organizations need to prioritize their management issues. Organizations have different organizational knowledge depending their business nature and customers that they serve, embedding it into their product, process or service, communicating it to people and utilizing it. Then this different knowledge requirement will need different support from IT and IT infrastructure services.

5. Implications and Discussion

IT infrastructure service is measured by the total number of services that it can provide in data access and use, hardware and software resources, communications capabilities and services, architecture and standards approach, and IT skill accumulated. The two important concepts of IT infrastructure are integration and collaboration. Collaboration is defined as a mutual effort by more than two individuals to accomplish certain tasks.^[6] The quality of collaboration rests on the quality of interactions, communications, and coordination among people. Collaboration is a joint commitment to a target output, with team members sharing authority and responsibility as needed, at different stages and for different tasks.^[33] Collaborating services of IT infrastructure enable tacit knowledge and high value practice to transfer. Integration refers to the linking of individual IT components and services for the purpose of sharing software, communications, and data resources. Incompatibility is diametrically opposed to integration; architecture is the blueprint for achieving it.^[33] The integrating services of IT infrastructure enable help organizations to capture, share, and utilize explicit knowledge.

Different knowledge management models require different support from information technology. In other words, different knowledge management approaches need different IT infrastructure services. For example, in Type I organizations, their business nature is characterized as standardized, mature, procedure oriented and the knowledge required is explicit. In this type of knowledge management, it is important to capture the existing knowledge and reuse. How to efficiently gather, store, retrieve and access knowledge is important. Then the major concern is to collect, organize, share, access and use the existing knowledge. It will need such support from IT and IT infrastructure services. While doing this, the companies in this type need integrating capability of IT infrastructure. The integrating IT capability (such as firm wide database, data access standard, standard, security, disaster planning or recovery services) will be critical. However, in Type IV organizations, their business nature is characterized as customized, innovative, expertise oriented, and the knowledge required is implicit. How to effectively locate the source of knowledge and generate new knowledge is real concern. The flow of knowledge is from people to people. They need different IT infrastructure services. Connecting people or collaborating them is critical. In this type of organizations, collaborating IT Infrastructure capability is more important.

In this model, there are several issues that need to be addressed for knowledge management and IT infrastructure management. In this report, mainly the comparison and discussion of Type I and Type IV will be presented. First, Type I model will need more IT infrastructure services than any other models. Companies using Type I model is extensively using pre-existing knowledge for their problem solving. The capability of database or knowledge repository is extremely important. Their major concern is how to structure, organize, store, transfer, and utilize knowledge. Knowledge flow tends to be people to computer and computer to people. They need more supports from IT (database, knowledge repository, data warehouse and data mining, document management, expert system, or case based reasoning system etc.).

They need an extensive use of IT to manage their knowledge. Second, Type I model will need more IT infrastructure services supporting compatibility than any other models. In this model, companies get knowledge from the stored source. Therefore, applications should be compatible. An employee in one department should freely get the knowledge stored in other part of the companies. Third, Type I model requires more IT Infrastructure services supporting the integrating capabilities than Type IV model. Here compatibility among applications will be an important issue. Also, since they use IT more extensively (i.e., database, data warehouse, knowledge repository, or Web documents, case based reasoning system etc.), they tend to commit more resources on IT. Therefore, they need to be managed more efficiently. Maintaining effective and efficient control of IT is a critical issue. They will need more support from the integrating capabilities of IT infrastructure such as architecture, policy or standard. Fourth, Type IV model will require more IT infrastructure services supporting connectivity than Type I model. In Type IV model, the major concern is not utilizing the existing knowledge. The major concern is to locate the source of knowledge or generate new knowledge. During the process, many experts need to get involved. Therefore, the connectivity service of IT infrastructure is more important than in Type I model. Fifth, Type IV model will require more IT infrastructure services supporting the collaborating capabilities than Type I model. In Type IV model, connecting people, making them work together, or generating new ideas through interactions is important. Therefore they need more support from the collaborating capabilities from IT infrastructures (i.e., groupware, teleconferencing, video conferencing or group decision support system).

6. Contributions and Limitations

The most important contribution of this study is the extended classification of knowledge management models. The existing study of knowledge management models reflects only one dimension of knowledge management focusing on knowledge itself, ignoring the business nature of organizations. Hansen et al.^[25] proposed a knowledge management model of two dimensions, reflecting business nature and knowledge nature. It classifies knowledge management models into two types. However, considering complexity of real world, this classification is simplistic. The framework proposed in this study extends the models into four different types. It will provide more realistic insights into the industrial practices. The second contribution of this paper is the new effort to see the relationship between the knowledge management model and IT infrastructure. Considering the need for support from IT, it is logically natural for the organizational knowledge management model to have a significant impact on IT Infrastructure. However, there has been no such research. This will provide significant help for managers to identify the key factors of IT infrastructure implementation or knowledge management project implementation. The third contribution of this paper is that the suggested framework can provide useful guidelines for IT Managers to manage IT infrastructure. It is almost impossible for a company to have a perfect IT infrastructure, which can allow connectivity and compatibility anytime, anywhere, and any platform basis. IT infrastructure needs a huge amount of resources. Every function of a company competes for the scarce resource. If we can be sure of the relationship between the knowledge management model and IT infrastructure, then manager can prioritize their management issues or investment decisions. By identifying the appropriate knowledge management model, which reflects their business nature and knowledge required, managers can easily identify which IT infrastructure services should receive immediate attention. It will allow effective and efficient IT infrastructure management. There are also some limitations. This study has focused on discussing some possible relationships between the knowledge management model and IT infrastructure services especially in Type I and Type IV models. There needs to be a closer study of the characteristics in Type II and Type III model. Also, this study depends on the logical inference based on the existing literature. It needs to be tested empirically. Finally, there are companies which are engaged in more than one stand-alone business such as GE. An issue of multiple businesses within a single company needs to be explored.

7. Conclusion

In this paper, the question about the relationship between the knowledge management model and IT infrastructure services was raised. What is supposed to determine the capabilities of IT infrastructure? How different knowledge management models need different IT infrastructure services was discussed. Based on existing theories, extended knowledge management model were presented. Four different knowledge management models were identified and some possible relationships between the knowledge management

models and IT infrastructure services were discussed. This study is a new effort. There have been some studies only indicative of the possible relationship between knowledge and IT infrastructure. If we can be sure of the relationship between organizational knowledge and IT infrastructure, managing knowledge and IT infrastructure would be more effective. For IT infrastructure building, we can root it in a more stable factor (organizational knowledge.) By identifying their knowledge management models, organizations can better manage their IT infrastructure. By this way, when companies attempt to implement new strategies, then this already existing IT infrastructure would allow them to build the applications quickly making them the first mover in the market. Every function of business is competing for scarce resource. By identifying the most appropriate organizational knowledge management approach and thereby organizational knowledge requirement, management can prioritize where resources should be directed. For example, managers can put an emphasis on collaborating IT Infrastructure capabilities if their organizational knowledge management is in Type IV. Depending on their knowledge management style, managers can easily identify what will be the critical issues in their IT infrastructure.

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