

Perspectives on Managing Knowledge in Organizations

Chun Wei Choo

SUMMARY. This paper compares two influential attempts at presenting a comprehensive framework of knowledge management. For each perspective the author examines theoretical foundations, highlights conceptual elements and themes, and discusses the role of information and information management. Ikujiro Nonaka and Hirotaka Takeuchi analyze the dynamics of knowledge creation, particularly the importance of tacit knowledge and its conversion into explicit knowledge. Thomas H. Davenport and Lawrence Prusak focus on the design of organizational processes that enable knowledge generation, codification, and transfer. It is suggested that, to a degree, the concepts and practices of each model reflect the national cultures of their authors—Japan and the United States. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2003 by The Haworth Press, Inc. All rights reserved.]

KEYWORDS. Knowledge management frameworks, national cultures, knowledge creation, knowledge codification

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205

INTRODUCTION

The objectives of this paper are to compare two influential models of knowledge management, and to explore how differences in their approaches might be related to national culture dimensions. In order to identify influential works on knowledge management, the Social Science Citation Index database was searched for articles with a primary focus on knowledge management. Cited authors were ranked. The five most frequently cited authors and cited references were as follows:

<u>RANK No.</u>	<u>Items</u>	<u>Cited Author</u>
1	197	NONAKA IKUJIRO
2	111	DAVENPORT THOMAS
3	76	POLANYI MICHAEL
4	67	BROWN JOHN SEELY
5	62	LEONARD-BARTON DOROTHY

<u>RANK No.</u>	<u>Items</u>	<u>Cited Reference</u>
1	126	NONAKA I, 1995, KNOWLEDGE CREATING COMPANY
2	48	NONAKA I, 1994, V5, P14, ORGANIZATION SCIENCE
3	43	DAVENPORT TH, 1998, WORKING KNOWLEDGE
4	39	LEONARDBARTON D, 1995, WELLSPRINGS OF KNOWLEDGE
5	39	POLANYI M, 1966, TACIT DIMENSION

The data suggest that Ikujiro Nonaka and Thomas Davenport are the two most often cited authors. Each of their books, *The Knowledge Creating Company* by Nonaka and Takeuchi¹ and *Working Knowledge* by Davenport and Prusak² offers a comprehensive framework on how organizations should manage their knowledge. The first two sections of the paper present the two frameworks. The third section compares the two perspectives, while the final section looks at the approaches in terms of national culture dimensions.

THE KNOWLEDGE CREATING COMPANY

The highly cited work of Nonaka and Takeuchi³ emphasizes “management by creating *new knowledge continuously*” (*chishiki keiei*). The central idea is that knowledge creation in organizations is accomplished through knowledge conversion: existing knowledge is “converted” into new knowledge. Nonaka and Takeuchi adopt the traditional definition of knowledge as “justified true belief,” but point out that where Western epistemology has focused on “truthfulness” as the essential attribute of knowledge, they stress the nature of knowledge as “justified belief”:

While traditional epistemology emphasizes the absolute, static, and non-human nature of knowledge, typically expressed in propositions and formal logic, we consider knowledge as *a dynamic human process of justifying personal belief toward the “truth.”*⁴

The basis of organizational knowledge creation is the conversion of tacit knowledge into explicit knowledge and back again. Explicit knowledge is knowledge that “can be expressed in words and numbers, and easily communicated and shared in the form of hard data, scientific formulae, codified procedures, or universal principles.”⁵ Examples of explicit knowledge include chemical formulae, market forecasts, operations procedures, product specifications, software codes, and technical standards. Nonaka and Takeuchi do not view tacit knowledge and explicit knowledge as mutually exclusive but as complementary entities. Over time, human knowledge shifts between the tacit and the explicit through a process of social interaction between individuals that also produces new knowledge and expands its use.

Nonaka and Takeuchi suggest that the production of new knowledge involves “a process that ‘organizationally’ amplifies the knowledge created by individuals and crystallizes it as a part of the knowledge network of the organization.”⁶ Two sets of activities drive the process of knowledge amplification: (1) converting tacit knowledge into explicit knowledge; and (2) moving knowledge from the individual level to the group, organizational, and inter-organizational levels. The process grows like a spiral as the dance between tacit and explicit knowledge takes place at higher and higher levels of the organization.

There are four modes in which organizational knowledge is created through the interaction and conversion between tacit and explicit knowledge: socialization, externalization, combination, and internalization.⁷ We outline these processes, using examples from Nonaka and Takeuchi’s discussion of how Matsushita developed an automatic home bakery product.

Socialization is a process of acquiring tacit knowledge through sharing experiences. As apprentices learn the craft of their masters through observation, imitation, and practice, so do employees of a firm learn new skills through on-the-job training. When Matsushita started developing its automatic home bread-making machine in 1985, an early problem was how to mechanize the dough-kneading process, a process that takes a master baker years of practice to perfect. To learn this tacit knowledge, a member of the software development team, Ikuko Tanaka, decided to volunteer herself as an apprentice to the head baker of the Osaka International Hotel, who was reputed to produce the area’s best bread. After a period of imitation and practice, one day she observed that the baker was not only stretching but also twisting the dough in a particular fashion (“twisting stretch”), which turned out to be the secret for making tasty bread.

Externalization is a process of converting tacit knowledge into explicit concepts through the use of abstractions, metaphors, analogies, or models. The externalization of tacit knowledge is the quintessential knowledge-creation activity and is most often seen during the concept creation phase of new product development. Externalization can also be triggered by dialogue or collective reflection. Returning to the Matsushita case, Tanaka could not specify in engineering terms the “twisting stretch” motion she had learned from the master baker. Nevertheless she was able to communicate this tacit knowledge to the engineers by creating the mental concept of “twisting stretch,” and by indicating the power and speed of the kneading propeller in order to imitate this motion. For example, Tanaka would say, “make the propeller move stronger,” or “move it faster,” and the engineers would make the necessary adjustments through trial-and-error.

Combination is a process of creating explicit knowledge by bringing together explicit knowledge from a number of sources. Thus, individuals exchange and combine their explicit knowledge through telephone conversations, meetings, memos, and so on. Existing information in computerized databases may be categorized, collated, and sorted in a number of ways to produce new explicit knowledge. The Matsushita home bakery team drew together eleven members from completely different specializations and cultures: product planning, mechanical engineering, control systems, and software development. The “twisting stretch” motion was finally materialized in a prototype after a year of iterative experimentation by the engineers and team members working closely together, combining their explicit knowledge. For example, the engineers added ribs to the inside of the dough case in order to hold the dough better as it is being churned. Another team member suggested a method (later patented) to add yeast at a later stage in the process, thereby saving the cost of a cooler otherwise needed to prevent the yeast from over-fermenting in high temperatures.

Finally, *internalization* is a process of embodying explicit knowledge into tacit knowledge, internalizing the experiences gained through the other modes of knowledge creation into individuals’ tacit knowledge bases in the form of shared mental models or work practices. Internalization is facilitated if the knowledge is captured in documents or conveyed in the form of stories, so that individuals may re-experience indirectly the experience of others. Matsushita’s home bakery product was a great success. It sold a record 536,000 units in its first year, topped the list of Mother’s Day gifts, and was featured in a 1987 issue of Fortune magazine. The success story was disseminated throughout Matsushita by word of mouth and in-house publications, changing employees’ perceptions about the potential of home appliances and inspiring them to develop other innovative products. The new tacit knowledge being internalized was that Matsushita could develop a product by interfacing directly with customers and by pursuing quality without compromise.

WORKING KNOWLEDGE

In their well-known book, Davenport and Prusak define knowledge as “a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, process, practices, and norms.”⁸ In their view, organizations behave as knowledge markets, with buyers (people seeking knowledge to resolve an issue), sellers (people with an internal market reputation for having substantial knowledge about a process or subject), and brokers (people who make connections between people who need knowledge and those who have it: gatekeepers, boundary spanners, corporate librarians).

Markets work by having pricing and payment mechanisms. In knowledge markets, three kinds of payments operate: reciprocity, reputation, and altruism. A knowledgeable employee will take the time and effort to share knowledge if she expects the favor to be returned when it is her turn to seek or buy knowledge. An employee sharing knowledge may also be rewarded by gaining a reputation for being knowledgeable and being willing to share knowledge. Some individuals enjoy helping others, and share knowledge altruistically. Whatever the reason or incentive for sharing, knowledge markets require an environment of trust in order to function.

Any organization that wants to excel at managing knowledge will need to perform three KM processes well: generation, codification, and transfer of knowledge.

Knowledge generation refers to activities that increase the stock of organizational knowledge. Five modes of knowledge generation are discussed: acquisition; dedicating resources; fusion; adaptation; and building knowledge networks. Organizations may acquire knowledge by hiring individuals, buying another organization, or renting/leasing external knowledge. They may also dedicate resources to the generation of knowledge by establishing units that undertake research and development. The authors note that some corporate libraries function like R&D departments, developing and providing new knowledge to the organization. Knowledge generation through fusion can occur when different individuals and groups with different specializations and perspectives are brought together to work on a problem or project. Adaptation takes place when the organization responds to new conditions in its external environment. Here, knowledge generation is a result of organizations adapting to significant competitive, economic, or technological changes; and the most important adaptive resources are employees who can acquire new knowledge quickly and who have the openness to learn new skills. Knowledge is also gen-

erated in networks of people in an organization who share common work interests, face common work problems, and are motivated to exchange their knowledge. Organizations may attempt to formalize these informal, self-organizing networks over time.

Knowledge codification. Davenport and Prusak offer four principles that should guide the codification of organizational knowledge.

1. Managers must decide what business goals the codified knowledge will serve.
2. Managers must be able to identify knowledge existing in various forms appropriate to reaching these goals.
3. Knowledge managers must evaluate knowledge for usefulness and appropriateness for codification.
4. Codifiers must identify an appropriate medium for codification and distribution.⁹

Codification of tacit knowledge is generally limited to locating someone with the knowledge, pointing the seeker to it, and encouraging them to interact. For example, a knowledge map (an actual map, a Yellow Pages, a directory database) can be constructed to point to knowledge but does not contain it. Trying to turn knowledge into a “code” can sometimes seem to defeat the purpose of communicating it. The challenge is to codify knowledge and still leave its distinctive attributes intact, putting in place codification structures that can change as rapidly and flexibly as the knowledge itself. Davenport and Prusak suggest that stories, in their ability to embody and extend experience, and to combine feeling and thought, may be a way of capturing knowledge without removing its richness.

Knowledge transfer. Since organizations behave as knowledge markets, they should create market spaces and places where this trading and sharing of knowledge can happen. Much of knowledge transfer occurs through personal conversations, so places such as water coolers, talk rooms, knowledge fairs, and open forums become important venues for sharing information. A major theme in Davenport and Prusak’s discussion is that the sharing of knowledge between people and groups in an organization may be the most daunting task in knowledge management. Most of the impediments are related to the culture of the organization. Davenport and Prusak identify seven barriers: lack of trust; different cultures, vocabularies, and frames of reference; lack of time and meeting places; status and rewards going to knowledge owners; lack of absorptive capacity in recipients; belief that knowledge is the prerogative of particular groups; the “not-invented-here” syndrome; and intolerance for mistakes or need for help.

Davenport and Prusak distinguish between formal and informal knowledge transfer, and point out that: “Informal knowledge transfer is endangered by a

particularly American sense of what is and isn't 'real' work . . . an employee who reads a book at his desk—arguably an effective approach to knowledge acquisition—is looked at with suspicion . . . A company that claims to value knowledge but discourages reading and talking on company time sends mixed messages. The more convincing message is that knowledge is not much valued after all. Managers need to recognize that the availability of 'slack' time for learning and thinking may be one of the best metrics of a firm's knowledge orientation."¹⁰

TWO PERSPECTIVES COMPARED

Tacit Knowledge and Knowledge Creation

Nonaka and Takeuchi contrast Western and Eastern epistemological traditions, and conceptualize the importance of tacit knowledge. For them, the tacit knowledge of individuals lies at the heart and is the prime mover of knowledge creation in organizations. Davenport and Prusak develop a more pragmatic definition of organizational knowledge, and a more operational view of managing knowledge. They focus on how organizations can capture, codify and transfer knowledge, with a particular emphasis on knowledge sharing. Nonaka and Takeuchi concentrate on knowledge creation, and explain why organizational knowledge creation as a phenomenon has not been examined before in management research:

There is a reason why Western observers tend not to address the issue of organizational knowledge creation. They take for granted a view of the organization as a machine for 'information processing.'¹¹

This view is deeply ingrained in the traditions of Western management, from Frederick Taylor to Herbert Simon. And it is a view of knowledge as necessarily "explicit"—something formal and systematic . . . Japanese companies have a very different understanding of knowledge. They recognize that the knowledge expressed in words and numbers represents only the tip of the iceberg. They view knowledge as being primarily "tacit"—something not easily visible and expressible. Tacit knowledge is highly personal and hard to formalize, making it difficult to communicate or to share with others.

Organizational Design

Although both models recognize the complex, dynamic nature of creating, sharing, and using knowledge, each recommends a different structural approach to managing this complexity. Nonaka and Takeuchi believe that orga-

nizations need to be designed and managed as multilayered, “hypertext organizations.” Davenport and Prusak believe that organizations need to function as knowledge markets and marketplaces where knowledge can be traded and transacted efficiently between buyers, sellers, and brokers. Nonaka and Takeuchi’s hypertext organization consists of three layers: the knowledge base, business system, and project team. The knowledge base includes both tacit knowledge associated with organizational culture and procedures, and explicit knowledge in the form of documents, filing systems, databases. This layer “functions as an archive, or corporate university for the knowledge creation of the company.”¹² The second layer is the business system where normal, routine operations are carried out by “a formal, hierarchical, bureaucratic organization.” The topmost layer, the project team, is where multiple, loosely interlinked self-organizing project teams share in the joint creation of knowledge through a common corporate vision. In this hypertext organization, the agent of knowledge creation is the self-organizing team led by middle managers as team leaders who translate top management visions into more concrete concepts, which are to be realized in the field. Nonaka and Takeuchi call this “middle-up-down management.”

Organizational Enablers

For Nonaka and Takeuchi, knowledge management requires the development of enabling conditions that promote or stimulate knowledge creation. For Davenport and Prusak, knowledge management in practice consists of identifiable activities and planned projects. Nonaka and Takeuchi¹³ discuss five enabling conditions as being particularly important. First, since the knowledge spiral is driven by *organizational intention* or aspirations, the organization needs to clearly conceptualize a vision about what kind of knowledge would be most valuable to realizing the organizational intention, and to apply this vision as the principal yardstick for judging the usefulness of new knowledge. Second, organizational members, either on their own or in self-organizing teams, should be given the freedom to act with *autonomy* so that they would motivate themselves to experiment and discover new knowledge. Third, the organization can stimulate the knowledge creation process by inducing *fluctuation and creative chaos* by, for example, introducing breakdowns of set routines or habitual frameworks, evoking a sense of crisis, and stating ambiguous visions and goals. Fourth, information should be made available to organizational members, which goes beyond their immediate operational requirements. *Information redundancy* promotes the sharing of tacit knowledge, and the exchanging of ideas. Fifth, according to the principle of *requisite variety*, an organization’s internal diversity must match the variety and complexity of its external environment. This implies that organizational members should have

prompt access to a wide range of information so they can cope with fast-changing contingencies. Davenport and Prusak expand on the pragmatics of managing knowledge, and elaborate on the different types of projects that an organization might pursue. They distinguish between three types of projects.

1. Knowledge repositories that are aimed at capturing knowledge in documents and organizing them in a repository where it can be retrieved easily.
2. Knowledge access and transfer projects that link up people who possess knowledge and people who are prospective users of this knowledge.
3. Knowledge environment projects that include attempts to measure the value of knowledge capital, raising awareness and cultural receptivity, and changing behaviors that relate to knowledge.

NATIONAL CULTURE DIFFERENCES

This section applies the national cultural dimensions developed by Hofstede and his associates^{14,15} to explore possible interactions between national cultural traits and the knowledge management concepts and practices presented in the models. Hofstede's ideas were first based on a large research project into national culture differences across subsidiaries of a multinational corporation (IBM) in 64 countries. Subsequent studies by others covered students in 23 countries, elites in 19 countries, commercial airline pilots in 23 countries, up-market consumers in 15 countries, and civil service managers in 14 countries.^{16,17} These studies together identified and validated five independent dimensions of national culture differences: power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, and long-term versus short-term orientation. (Scores on the first four dimensions were obtained for 50 countries and 3 regions on the basis of the IBM study, and on the fifth dimension for 23 countries on the basis of student data collected by Bond.)¹⁸

Power distance is defined as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally."¹⁹ This represents inequality as perceived by the members, and suggests that a society's level of inequality is endorsed by the followers as much as by the leaders. In the field studies, power distance scores were found to be higher for Latin, Asian and African countries and lower for Germanic countries.

Nonaka and Takeuchi do not examine organizational power in detail. However, they suggest that a formal, bureaucratic hierarchy is an effective way of managing routine operations, and this hierarchy should be one of the three layers in their "hypertext organization." Moreover, they write that it is the responsibility of top management to develop strategic visions (aspirations), and the

task of middle management to translate these visions into attainable goals. Davenport and Prusak discuss the politics underlying the identification of employees who have knowledge valuable to the organization. They see the mapping of knowledge as being inherently political:

Organizational knowledge maps are political documents too. Questions about who has the most useful knowledge are open to interpretation. If knowledge is genuinely important to an organization and those who have it are recognized and rewarded, then the knowledge map will be a picture of status and success as well as a locator.²⁰

In an earlier analysis of more than 25 organizations, Davenport, Eccles and Prusak²¹ observed five models of information politics: technological utopianism, anarchy, feudalism, monarchy, and federalism. The most common political model of information management was a form of *information feudalism*, in which individual managers and their departments control information acquisition, storage, distribution, and analysis. This fragmentation of information undermines efforts to consolidate knowledge assets so that the organization as a whole can learn and adapt. Instead of feudalism, Davenport et al. recommend a form of *information federalism* as being the most appropriate model in today's environment. Federalism recognizes that politics is a necessary and legitimate activity for people with divergent interests to work out a collective purpose and the means for realizing it. Under federalism, managers negotiate among themselves in order to produce a larger pool of knowledge that they can tap into and exploit to advantage.

Individualism versus collectivism. Individualism pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family. Collectivism pertains to societies in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty.²² The word "collectivism" in this sense has no political meaning: it refers to the group, not to the state. Individualism prevails in developed and Western countries, while collectivism prevails in less developed and Eastern countries; Japan takes a middle position on this dimension.

In Nonaka and Takeuchi's model, while the seed of new knowledge is individual (tacit) knowledge, this knowledge increases in utility when it becomes available to others in the organization. Thus, the externalization of tacit knowledge is a quintessential process in the knowledge conversion cycle, and this typically requires a group's members to interact and reflect collectively on a problem or an idea. Nonaka and Takeuchi²³ also contrast the Western view of human relationships as "atomistic and mechanistic" with the Japanese view

that they are “collective and organic.” For the Japanese, to work for others means to work for oneself: employees realize themselves in their relationship to others. Bhagat et al.²⁴ propose that people in individualist cultures emphasize explicit knowledge, preferring knowledge independent of its context, whereas those in collectivist cultures emphasize tacit knowledge, preferring systemic or contextually relevant knowledge. They note that Nonaka and Takeuchi discuss the relative superiority of collectivist cultures (i.e., Japan) in being able to convert tacit types of knowledge into explicit forms.

In examining organizations as knowledge markets, Davenport and Prusak identify several factors that can prevent the market from working efficiently. Generally, a strong sense of individualism can stymie the sharing and use of knowledge. Davenport and Prusak identify at least two cultural barriers that can exacerbate this effect: organizations reward and raise the status of people who own knowledge; and groups developed the belief that knowledge is their special right and privilege that should be preserved.

Both models recognize that the creation, sharing, and utilization of knowledge is a group phenomenon. Nonaka and Takeuchi describe self-organizing teams that emerge to work on problems. Davenport and Prusak discuss communities of practice that also self organize around shared interests and work practices in order to exchange knowledge. Indeed, the concept of communities of practice is one of the more enduring ideas to have emerged from knowledge management practice. Communities of practice, initially written about by Wenger,²⁵ are groups whose members face common work tasks and interests, who can see the benefit of sharing knowledge, and who share norms of trust and reciprocity. In a related vein, Nonaka and Takeuchi introduce the idea of “ba” as a shared space (physical, mental or virtual) where knowledge conversion and creation can unfold. Although “ba” appears similar to a community of practice, Nonaka, Toyama and Boisiere²⁶ underline some differences: “ba” is a place where new knowledge is created; participation in a “ba” is fluid and ad hoc; participants relate to a “ba” but do not belong as members.

Masculinity versus femininity refers to the distribution of roles between the genders. Masculinity refers to societies in which social gender roles are clearly distinct, i.e., men are supposed to be assertive, tough, and focused on material success whereas women are supposed to be more modest, tender, and concerned with the quality of life. Femininity refers to societies in which social gender roles overlap, i.e., both men and women are supposed to be modest, tender, and concerned with the quality of life.²⁷ The IBM studies revealed that (a) women’s values differ less among societies than men’s values; (b) men’s values from one country to another contain a dimension from very assertive and competitive and maximally different from women’s values on the one side, to modest and caring and similar to women’s values on the other. The assertive

pole has been called “masculine” and the modest, caring pole “feminine.” Masculinity is high in Japan, in some European countries like Germany, Austria and Switzerland, and moderately high in Anglo countries; it is low in Nordic countries and in the Netherlands and moderately low in some Latin and Asian countries like France, Spain and Thailand.

Analyzing gender roles in the context of knowledge management has not been an active area of research. Recently, Nonaka and his associates highlight the importance of caring and care in enabling knowledge creation:

to care for others is to help them to learn; to increase their awareness of important events and consequences; to nurture their personal knowledge while sharing their insights . . . the concept of care matters most in an organization when those in charge provide a context in which knowledge is created and shared freely . . . we have found that the concept of care quite satisfactorily describes relations that have a positive impact on knowledge creation . . . More recently, many American researchers and commentators have studied the increasing number of female executives, along with the overall rise in the number of women in the workforce . . . For these writers, women managers naturally have a more cooperative style, excelling at networking, team-building, mentoring—all hallmarks of a caring organization and an enabling context.²⁸

Davenport and Prusak²⁹ appear to be relatively silent on the differentiation of gender roles in knowledge management in their book.

Uncertainty avoidance is defined as “the extent to which the members of a culture feel threatened by uncertain or unknown situations. This feeling is, among other things, expressed through nervous stress and in a need for predictability: a need for written and unwritten rules”³⁰ It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Unstructured situations are novel, unknown, surprising, and different from usual. Uncertainty-avoiding cultures try to minimize the possibility of such situations by laws and rules, safety and security measures, and on the philosophical and religious level by a belief in an absolute Truth. People in uncertainty-accepting cultures are more tolerant of opinions different from what they are used to; they minimize the need for rules, and they allow many philosophical and religious currents to co-exist. People within these cultures are more phlegmatic and contemplative, and not expected by their environment to express emotions. Uncertainty avoidance scores are higher in Latin countries, in Japan, and in German speaking countries, lower in Anglo, Nordic, and Chinese culture countries.

As noted earlier, Nonaka and Takeuchi recommend that organizations stimulate the knowledge creation process by deliberately introducing tension and

chaos. This can be done by, for example, inducing breakdowns of set routines or habitual frameworks, evoking a sense of crisis, and stating ambiguous visions and goals. Organizations should also recognize the inherent complexity and uncertainty of the external environment they are operating in, and develop structures and information resources internally so that their internal information diversity matches the external complexity of the environment (the principle of “requisite variety” in systems theory). Compared with Nonaka and Takeuchi, Davenport and Prusak do not emphasize as much the chaotic or uncertainty aspects of knowledge-based initiatives. The general tone of their discussion is that while knowledge management is a major change effort, it can be planned and managed as with other organizational change activities.

Long-term versus short-term orientation. Cultural values associated with long-term orientation are thrift and perseverance. Values associated with short-term orientation are respect for tradition, fulfilling social obligations, and protecting one’s “face.” Although the values of this dimension are based on the teachings of Confucius, Hofstede believes that the dimension also applies to countries without a Confucian heritage. A long-term orientation is mostly found in East Asian countries, in China, Hong Kong, Taiwan, Japan, and South Korea.

Both Nonaka and Takeuchi and Davenport and Prusak recognize that knowledge creation and generation are closer to R&D activities than production activities. They require a long-term perspective in which appropriate kinds and levels of resources can be invested and nurtured. In today’s business environment, where firms are pressured to deliver financial returns on a quarterly cycle, adopting a long-term orientation for activities whose value is intangible, or not easily measured, poses a huge challenge.

There is a danger of applying Hofstede’s polarized cultural dimensions a little too rigidly. Cultural values that are regarded as opposites in one country may be perceived as complementary in another. Nonaka and Takeuchi argue that the two Japanese intellectual traditions of “the oneness of humanity and nature” and “the oneness of body and mind” have led the Japanese to value the interaction between self and other. It is within this context that “the Japanese emphasize subjective knowledge and intuitive intelligence.”³¹ They conclude that:

Western management practice is still dominated by the Cartesian dualism between subject and object, mind and body, or mind and matter. Following the Japanese intellectual tradition, however, we do not see these distinctions as an either-or dichotomy, but as mutually complementary.³²

Our attempts to relate knowledge management concepts and practices to national cultures remain largely speculative until we see more empirical studies of cultural effects on knowledge management. One recent study is by Yoo and Torrey³³ who explore the effects of national cultures on knowledge management practices in a global organization. In a field study at Accenture (then known as Andersen Consulting) in Korea and the U.S., interviews with 53 consultants provided critical incidents of how the consultants create, seek, and share knowledge. In knowledge creation, two common forms were observed in both countries: invention and integration. The Korean consultants emphasized integration: many respondents had difficulty finding an example of creating new knowledge. In contrast, the U.S. consultants believed more frequently that they were inventing new knowledge as a result of their activities. In knowledge seeking, the Korean consultants focused on finding best practices in the online knowledge repository. A primary motivation for using the repository was to affirm the authority and quality of their solutions. The U.S. consultants seldom mentioned the term “best practices” in their accounts, and some were, in fact, skeptical about the notion of best practices. There were also differences in evaluating results from searching the repository. Several Korean consultants developed a preferred list of authors and sorted search results by these authors first. None of the U.S. consultants said they paid attention to authors’ names. Instead, they used the synopses accompanying search results to assess the usefulness of documents. Korean consultants also felt that posting contributions into the repository and contacting foreign “experts” were the responsibilities of their superiors. In knowledge sharing, few of the Korean consultants contributed to the repository system, whereas the U.S. consultants saw the repository as their primary vehicle for preserving and sharing knowledge. The authors offered explanations for these patterns based on differences in the national cultures of the two countries. They suggest that national cultural differences may be managed to enhance knowledge creation and sharing within multinational firms.

CONCLUSION

In the influential models developed by Nonaka and Takeuchi, and Davenport and Prusak, many of the theoretical concepts appeared to have grown naturally out of the cultural and intellectual traditions of the authors. Nonaka and Takeuchi made it clear that their notions of tacit knowledge, embracing opposites, and recognizing the oneness of body and mind, are all based on Japanese cultural and intellectual traditions. The ideas in Davenport and Prusak’s book evolved from discussions with mainly U.S. corporate managers about how knowledge functions in organizations. The work grew out of a research pro-

gram on new approaches in information management that brought together executives from about 25 client companies.

On the other hand, some of the principles and practices presented in the models appear initially to be incompatible with the expected national cultural dimensions. These exceptions may be an attempt to balance or compensate for tendencies in the national cultures that might impede knowledge creation and transfer. For example, in the Japanese culture that is generally thought to be averse to uncertainty, Nonaka and Takeuchi propose that organizations introduce a sense of chaos and crisis to inspire new knowledge creation.

Both models recognize that knowledge creation, sharing and use are inherently social activities that are embedded in a web of cultural norms and human relationships. The creation and utilization of knowledge takes place most effectively in groups and teams that share common purpose and beliefs. Thus, Davenport and Prusak write about the importance of “communities of practice,” while Nonaka introduces the idea of “ba” or shared contexts for creating and sharing knowledge.

In today’s global environment where knowledge has to cross national boundaries, there is an urgent need to understand the influence of cultures in different countries on the organizational processes of knowledge creation and transfer.

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