Knowledge domains and knowledge conversion: an empirical investigation

Philippe Byosiere and Denise J. Luethge

Abstract

Purpose – The purpose of this paper is to present evidence of how different domains of knowledge (basic, experiential, emotional and innovative knowledge) relate to knowledge conversion processes (socialization, externalization, combination and internalization) in the firm.

Design/methodology/approach – Confirmatory principal component analyses were performed on knowledge domain and knowledge conversion variables. Path analyses, based on stepwise multiple regressions, were performed in order to determine the strength and directionality of the relationships between the four processes of knowledge conversion and the four knowledge domains.

Findings – The results indicate that knowledge based on experience impacts the conversion of tacit knowledge within an organization, leading to innovative knowledge and competitive advantage. Emotional knowledge impacts the knowledge conversion process similarly. Only basic knowledge impacts the explicit components of combination.

Research limitations/implications – First, the results of this study are drawn from a fairly large sample in only one firm, and hence, one industry. Not all of the middle managers who participated in this study are equally familiar with knowledge creation and dissemination within their organization.

Practical implications – The results suggest that investing in basic training of employees and managers in order to reach a basal level of knowledge can act as a precursor to fuel other types of knowledge conversion as well as the innovative and experiential knowledge domains.

Originality/value – Past research has not examined how the domains of knowledge (the content) are related to the conversion of knowledge. In addition, little research in the area of knowledge conversion has taken place in a European setting. This paper addresses the deficits.

Keywords Knowledge management, Learning organizations, Knowledge creation, Europe

Paper type Research paper

Where does knowledge reside in organizations and how do organizations best leverage their knowledge base? In the knowledge management literature much attention has been paid to different modes of knowledge conversion following the development of organizational knowledge creation theory (Nonaka et al., 2001; Nonaka and Takeuchi, 1995; Nonaka, 1994). The focus in this approach is clearly on the conversion process or the “how” question. On the other hand, knowledge researchers also have focused on identifying domains of knowledge responsible for competitive advantage, focusing on the content or the “what” question (Davenport and Prusak, 1998; Nahapiet and Ghoshal, 1998). Both approaches have proven to be valid contributors in determining competitive advantage, but it is hard to imagine that knowledge conversion and knowledge domains act independently from one another. Despite Pettigrew’s (1985) seminal triangular approach to strategy by identifying content, process and context, knowledge researchers have not considered the intersection between the conversion processes of knowledge and the domains of knowledge. This research fills this void and contributes to the understanding of how the content of knowledge domains and the process of knowledge conversion interact within a given organizational context. It examines how specific knowledge domains...
influence different knowledge conversion processes in organizations as a precursor to developing competitive advantage.

Organizational knowledge

The theoretical foundation in this area lies in the concept of organizational knowledge, which has been recognized as the most valuable strategic resource that organizations possess (Civi, 2000; Corno et al., 1999; Grant, 1996; Kogut and Zander, 1996; Nonaka et al., 2001, Nonaka and Takeuchi, 1995; Prahalad and Hamel, 1990). Knowledge theories identify and recognize two major types of knowledge: explicit and tacit (Polanyi, 1966). Explicit knowledge refers to knowledge that can be translated into formal, systematic language, and as such, it is relatively easy to recognize and to transfer. Tacit knowledge, on the other hand, has a personalized quality that makes it hard to formalize, and is, therefore, deeply rooted in action and commitment in a very specific context. Tacit knowledge is like trying to explain how to ride a bicycle (Kakabadse et al., 2001). It is difficult to articulate the concept of balance, which is also context specific; riding a bicycle and unicycle both require balance, but the two are different because the context is different (Kakabadse et al., 2001). Tacit knowledge also has two dimensions (Nonaka et al., 2001; Nonaka and Takeuchi, 1995). One dimension is the technical or skill dimension, which embodies the types of crafts or individual skills which are commonly called “know how”. The other dimension is the cognitive dimension, which consists of mental models, schemata, beliefs, and values which are embedded in our persona. Taken together, these two aspects of tacit knowledge impact how we see and interpret the world around us (Nonaka et al., 2001; Kakabadse et al., 2001).

Several theories of organizational knowledge build on the interaction between tacit and explicit knowledge that occurs at the individual, the group, the organization, and the inter-organization level. Indeed, theories of organizational knowledge creation (OKC) are based on the belief that individuals, groups and organizations can create knowledge together (Nonaka et al., 2000). This interaction has been described in Nonaka’s seminal work on the SECI model of knowledge conversion and the spiralling process of knowledge creation (Nonaka, 1994; Nonaka and Konno, 1998; Nonaka and Takeuchi, 1995).

Knowledge conversion

The SECI model of knowledge conversion illustrates four modes in the knowledge conversion process (Nonaka, 1994; Nonaka and Takeuchi, 1995): the conversion of tacit knowledge to tacit knowledge (socialization), tacit knowledge to explicit knowledge (externalization), explicit knowledge to tacit knowledge (internalization) and explicit knowledge to explicit knowledge (combination). Each of the four modes is characterized by different activities within an organization. The conversion of tacit knowledge to tacit knowledge is characterized by joint activities, or face-to-face interactions over time. MBWA, or managing by walking around, long term interactions with suppliers or extended shadowing would be examples of these types of activities. Externalization, on the other hand, requires that one translate what is known intuitively into a form that can be understood by others. This is often done through the use of metaphors, dialogues or analogies that allow others to more easily understand what may be difficult to translate (Nonaka and Konno, 1998). Internalization is the conversion of explicit knowledge into tacit knowledge. This requires that one learn the knowledge to the point where it becomes second nature, or learning by continually doing (Nonaka, 1994; Nonaka and Konno, 1998), such as in training programs or simulations. Finally, combination refers to
conversion of explicit knowledge to explicit knowledge, where knowledge is coded and
classified for better retrieval and easier sharing in the future (Kakabadse et al., 2001). The list
below shows the modes associated with each of these conversion processes as described in

Modes of knowledge conversion (adapted from Nonaka et al., 1994):
1. Socialization:
   - wandering inside;
   - wandering outside;
   - tacit knowledge transfer; and
   - tacit knowledge accumulation.
2. Externalization:
   - dialogue; and
   - metaphor.
3. Combination:
   - collecting data and acquisition;
   - disseminating data and information; and
   - editing and synthesizing data and information.
4. Internalization:
   - personal experience; and
   - simulation.

Knowledge domains
Nonaka’s theory on Organizational Knowledge Creation is widely acclaimed at addressing
“how” knowledge is converted within organizations. A separate area of work has been
undertaken with regard to “what” kinds of knowledge are converted or the specific domains of
knowledge that are converted. As noted earlier, Polanyi (1966) identified two types of
knowledge, tacit and explicit. Zander and Kogut (1995) add another dimension to this
classification and distinguish between individual knowledge and collective knowledge, where
individual knowledge refers to all of the knowledge residing in the minds of an organization’s
individuals, while collective knowledge refers to the organizational routines, norms, schemes
and past experiences common to the members of the organization (Matusik and Hill, 1998;
Zander and Kogut, 1995). Matusik and Hill (1998) add yet two additional dimensions; public vs
private knowledge, or knowledge in the public domain and knowledge that is proprietary,
respectively; and component vs architectural knowledge, or knowledge relating to a particular
part or component of a firm and knowledge relating to the firm as a whole. While these
taxonomies are interesting, they are very general classifications and do not delve into the
specific “whats”, or knowledge content areas of organizational knowledge.

Byosiere and Ingham (2002) identify 40 different types of knowledge and categorize them
into a broad typology of knowledge content areas or domains of knowledge that relate to the
specific content areas noted above. The four areas they identify are basic knowledge,
experiential knowledge, creative/emotional knowledge and innovative knowledge. They also
demonstrate these four types of knowledge to be positively and significantly related to
managerial perceptions of competitive advantage. The basic premise of organizational
knowledge creation is that the continuous, ongoing creation of new knowledge is what
enables a firm to recreate itself, and in the process, renew its competitive advantage
(Barney, 1991; Grant, 1996; Lei et al., 1996; Nonaka et al., 2000; Teece et al., 1990). As such,
Byosiere and Ingham’s (2002) knowledge domain classification is very specific and
appropriate for further analysis investigating the relationship between knowledge creation
and knowledge domains.
Knowledge conversion – knowledge domain interaction

We propose expanding this area by not only considering the relationship between tacit knowledge, explicit knowledge and the knowledge conversion process made by knowledge management scholars, but also to show that the content within each of the knowledge domains is inherently related to the conversion of tacit and explicit knowledge as well. Figure 1 identifies the theoretical relationship between the four major domains of knowledge in organizations and the four processes of knowledge conversion. The four knowledge domains, as described earlier, are basic knowledge, experiential knowledge, innovative knowledge an emotional knowledge (Byosiere and Ingham, 2002). The assumption is that there are significant relationships between knowledge domains and knowledge conversion processes, and that these relationships are bi-directional. The key questions, therefore, are which specific knowledge domains impact which specific knowledge conversions processes and vice-versa?

Although the knowledge spiral is defined as an amplification of organizational knowledge that results from the interaction of explicit and tacit knowledge (Nonaka, 1994), the question remains of what is necessary to fuel this knowledge conversion process? For example, what types of knowledge are within a manager’s mind that makes him/her to decide to wander around inside the organization and visit a colleague in another department (socialization)? Is it knowledge that pertains to his/her theoretical baggage, is it knowledge that pertains to his/her experience, or is it knowledge that pertains to his/her innovative nature to address or solve a problem with which he/she is confronted (knowledge domains)? Or is it pure emotional knowledge that drives him or her to wander? In other words, how do knowledge domains affect knowledge processes?

In previous research, significant relationships were found between knowledge conversion and competitive advantage factors (Byosiere et al., 1997) as well as between knowledge domains and competitive advantage factors (Byosiere and Ingham, 2002). However, there has been little investigation into the relationship between knowledge domains and knowledge conversion, nor has the impact of that relationship as a precursor to maintaining competitive advantage been examined. The important role of organizational knowledge processes and domains in maintaining and sustaining competitive advantage has been demonstrated by the surge of publications and conference presentations starting with the special issue of SMJ on “Knowledge and the Firm”, and the establishment of the “Knowledge and Innovation” track at the Annual SMS conference. Both initiatives led to many publications focusing on the increased importance of knowledge in organizations (Galunic and Rodan, 1998; Grant, 1996; Kotha, 1995; Lei et al., 1996; Liebeskind, 1996;
In addition, increased attention has been paid to cognitive representations held by the firm's constituents in strategic formulation and decision making (Rindova and Fombrun, 1999; Miller et al., 1993; Chattopadhay et al., 1999; Ginsburg, 1994; Gioia, 1986; Hall, 1992; Porac and Thomas, 1990; Reger and Huff, 1993; Schwenk, 1984). Given the tremendous emphasis on the interrelationships between knowledge domains and knowledge conversion, and their impact on competitive advantage, it seems a logical next step to examine the interaction between domains and conversion.

Clearly, knowledge contributes greatly to competitive advantage (Grant, 1996; Kogut and Zander, 1996). The questions that come to mind here are: Do knowledge domains impact knowledge conversion processes or vice versa? How does the relationship between knowledge domains and knowledge conversion affect the competitive advantage of the firm or is competitive advantage simply a facet of the uniqueness of certain knowledge domains in a particular organization? These questions can be answered only by first examining the relationship between knowledge domains and knowledge conversion.

Hypotheses

As noted earlier, tacit knowledge is difficult to formalize, intuitive, highly personal and embedded in the mind of the possessor. The process of transferring this knowledge through socialization has been likened to that of an apprentice, learning a skill under the care and guidance of a master. The process is one where the master shows the apprentice the skill, over and over, while the apprentice then tries to imitate the skill that he sees (citation withheld). Given that this type of knowledge is grounded in experience, it is likely that experiential knowledge will be positively related to the knowledge conversion processes with a tacit knowledge component (socialization, externalization and internalization).

\[ H1a. \] Experiential knowledge will be positively related to socialization.

\[ H1b. \] Experiential knowledge will be positively related to externalization.

\[ H1c. \] Experiential knowledge will be positively related to internalization.

In a similar vein, creative/emotional knowledge refers to that knowledge associated with intuition or technical knack. This type of knowledge seems to have a “tacitness” associated with it, and as such, it seems likely that it will be positively related to the three types of conversion involving tacit knowledge.

\[ H2a. \] Creative/emotional knowledge will be positively related to socialization.

\[ H2b. \] Creative/emotional knowledge will be positively related to externalization.

\[ H2c. \] Creative/emotional knowledge will be positively related to internalization.

Basic knowledge, on the other hand, refers to the type of knowledge that one can learn readily from a textbook, such as discipline specific knowledge, IT knowledge or macroeconomic knowledge. Since this type of knowledge can be written in explicit form, basic knowledge would be more likely to undergo the process of combination, or conversion from explicit to explicit knowledge or internalization, the conversion of explicit knowledge to tacit knowledge. It is unlikely that basic knowledge will be related to externalization as it

“The key questions, therefore, are which specific knowledge domains impact which specific knowledge conversion processes and vice-versa?”
seems unlikely that basic knowledge would assist as tacit knowledge is converted into explicit knowledge. Given this rationale, the following hypotheses are proposed.

\[ H3a. \] Basic knowledge will be positively related to internalization.

\[ H3b. \] Basic knowledge will be positively related to combination.

Innovative knowledge is a bit more complicated. The concepts of strategic business, problem solving and process knowledge integrate the areas of tacit and explicit knowledge. Thus, the application of both tacit and explicit knowledge is what gives managers the perspective to process a variety of knowledge, both tacit and explicit, in order to solve problems or to think strategically. As a result, the following hypotheses are proposed.

\[ H4a. \] Socialization will be positively related to innovative knowledge.

\[ H4b. \] Externalization will be positively related to innovative knowledge.

\[ H4c. \] Combination will be positively related to innovative knowledge.

\[ H4d. \] Internalization will be positively related to innovative knowledge.

Figure 2 summarizes the hypothesized relationships and directionality based on the rationale provided above.

**Methodology**

Until now, the major focus in the research on knowledge has been primarily theoretical and case study based in nature. There are very few studies that have attempted to approach the field of knowledge in organizations from a quantitative, empirical perspective. In addition, limited attention has been paid to the practical application of the theoretical propositions, while the knowledge transfer of the case studies has been cut short because of specific organizational context variables that were not easy transferable. In this paper, the focus is on how theoretical developments and empirical research of knowledge in organizations can lead to real-life strategic initiatives and implementation in organizations. The research reported here is both empirical and experiential in nature and serves as a testimonial to how a large multinational organization coped with the duality of ever-increasing external environmental business changes with equally increased internal organizational flexibility. The common denominator in this balancing act is based on the identification of specific domains of knowledge residing in individuals, groups and departments throughout the organization in a historical, actual and prospective context.
In order to seek an answer to these questions a specific group of managers is identified within one organization (one layer of top middle management), recognized by top management as knowledge creators or knowledge engineers. By doing this the specific relationships between the four knowledge domains and the knowledge conversion modes are identified.

The majority of empirical research conducted on the issues of knowledge is based upon USA and Japanese organizations. Very few efforts have taken place in a Pan-European context. Since these data are collected in a European organization, this research is complementary, enriching and adding to the theoretical and empirical contributions published earlier about USA and Japanese organizations. In addition, this research contributes to the difficult translation of knowledge into practical implications for strategic intentions of an organization.

Subjects

The data used in this investigation are collected from 159 middle managers of a large European telecommunications multinational via paper and pencil questionnaire. The questionnaire consists of several sections addressing “Organizational Knowledge” theory. However, for the purposes of this paper, this research focuses on only two sections: the first section containing 40 items concerning the types of knowledge deemed indispensable in performing their roles (Byosiere and Ingham, 2002). The second section includes 48 items measuring the time spent in specific knowledge conversion behaviors. The knowledge domain questions represent the content dimension in the theory of organizational knowledge creation as opposed to the process questions of knowledge creating behaviors. The questions were operationalized and validated in Nonaka et al., 1994.

The company

The results reported are based on a four year strategic effort in a large multinational corporation which builds next generation networks and delivers integrated end-to-end voice and data communications solutions to carriers. This European company employs over 100,000 people, has annual revenues of $25 billion, and operates in more than 130 countries. The company invests more than $3 billion per year in research and development and adds more than 800 innovations to its patent portfolio each year. Worldwide, the research and development organization employs about 23,500 people. This strategic exercise of examining the relationship between the processes of knowledge conversion with knowledge domains took place in the largest R&D division of the parent company. This corporate research center employs 9,000 engineers, scientists and support staff. The center specializes in advanced research into network architecture, network access and software. More specifically, this research center plays a key role in developing the Internet product strategy, multimedia mobile communications, and optical access networks. Given the above information, the managers in this particular part of the firm seem most likely to be able to respond to questions on knowledge conversion and knowledge domains.

Analyses

Confirmatory principal component analyses were performed on the 48 knowledge conversion questions resulting in the four factors identified from previous research: socialization, externalization, combination and internalization (Nonaka, 1994; Nonaka and Takeuchi, 1995). Confirmatory principal component analyses also were performed on the 40 knowledge content questions resulting in four knowledge domains: basic knowledge, experiential knowledge, emotional knowledge and innovative knowledge. Path analyses, based on stepwise multiple regressions, were performed in order to determine the strength and directionality of the relationships between the four processes of knowledge conversion and the four knowledge domains.

Results

The results of the confirmatory principal component analysis using Varimax rotation with Kaiser normalization on the 48 knowledge conversion questions show four factors with
conversion in seven iterations (see Table I). Both the KMO statistic and Bartlett’s test of sphericity indicate that the data are sufficient for the application of factor analysis. The factors identified correspond with only minor differences to those found in Nonaka et al. (1994); namely socialization, externalization, combination and internalization. Exploratory principal component analysis using the same technique as above also was completed on the 40 knowledge content questions (see Table II), yielding four knowledge domains in six iterations: basic knowledge, experiential knowledge, emotional knowledge and innovative knowledge.

The results of the path analyses are presented in Figure 3, showing only the significant paths. Experiential knowledge impacts knowledge conversion in all of the tacit dimensions: 0.29 (p < 0.01) for socialization, 0.30 (p < 0.01) for externalization and have the strongest impact on internalization 0.32 (p < 0.01). These findings support H1a, H1b and H1c. In addition, creative/emotional knowledge also impacts all of the tacit components of knowledge conversion, 0.19 (p < 0.05) for socialization and internalization, and 0.23 (p < 0.01) for externalization, supporting H2a, H2b and H2c. Basic knowledge, on the other hand, impacts only combination 0.27 (p < 0.01) supporting H3b, but not supporting H3a.

<table>
<thead>
<tr>
<th>Table I</th>
<th>Confirmatory factor analysis for knowledge conversion factors (principal component)</th>
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</thead>
<tbody>
<tr>
<td>Hypothesized first order factor</td>
<td>Number of items</td>
</tr>
<tr>
<td>Socialization (α = 0.85)</td>
<td>10</td>
</tr>
<tr>
<td>Wandering inside</td>
<td>4</td>
</tr>
<tr>
<td>Wandering outside</td>
<td>2</td>
</tr>
<tr>
<td>Tacit knowledge transfer</td>
<td>2</td>
</tr>
<tr>
<td>Tacit knowledge accumulation</td>
<td>4</td>
</tr>
<tr>
<td>Externalization (α = 0.88)</td>
<td>10</td>
</tr>
<tr>
<td>Dialogue</td>
<td>6</td>
</tr>
<tr>
<td>Metaphoric thinking</td>
<td>4</td>
</tr>
<tr>
<td>Combination (α = 0.82)</td>
<td>10</td>
</tr>
<tr>
<td>Collecting data and information</td>
<td>5</td>
</tr>
<tr>
<td>Disseminating data and information</td>
<td>3</td>
</tr>
<tr>
<td>Editing data and information</td>
<td>4</td>
</tr>
<tr>
<td>Internalization (α = 0.89)</td>
<td>10</td>
</tr>
<tr>
<td>Personal experience</td>
<td>6</td>
</tr>
<tr>
<td>Experimentation</td>
<td>3</td>
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<tr>
<td>Simulation</td>
<td>3</td>
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<tr>
<td>KMO = 0.843; Bartlett’s = 3546.29, &lt;0.000</td>
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<table>
<thead>
<tr>
<th>Table II</th>
<th>Exploratory factor analysis for knowledge domain factors (principal component)</th>
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<tbody>
<tr>
<td>Hypothesized first order factor</td>
<td>Number of items</td>
</tr>
<tr>
<td>Basic knowledge (α = 0.70)</td>
<td>10</td>
</tr>
<tr>
<td>Macro-economic knowledge</td>
<td>3</td>
</tr>
<tr>
<td>Discipline-specific knowledge</td>
<td>2</td>
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<tr>
<td>General education</td>
<td>2</td>
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<tr>
<td>Information technology knowledge</td>
<td>3</td>
</tr>
<tr>
<td>Experiential knowledge (α = 0.69)</td>
<td>10</td>
</tr>
<tr>
<td>People knowledge</td>
<td>4</td>
</tr>
<tr>
<td>Leadership knowledge</td>
<td>3</td>
</tr>
<tr>
<td>Organizational knowledge</td>
<td>3</td>
</tr>
<tr>
<td>Creative/Emotional knowledge (α = 0.80)</td>
<td>10</td>
</tr>
<tr>
<td>Intuitive knowledge</td>
<td>5</td>
</tr>
<tr>
<td>Technical knack</td>
<td>5</td>
</tr>
<tr>
<td>Innovative knowledge (α = 0.73)</td>
<td>10</td>
</tr>
<tr>
<td>Methods/process knowledge</td>
<td>4</td>
</tr>
<tr>
<td>Problem-solving knowledge</td>
<td>4</td>
</tr>
<tr>
<td>Strategic business knowledge</td>
<td>2</td>
</tr>
<tr>
<td>KMO = 0.719; Bartlett’s = 2355.21 &lt;0.000</td>
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Finally, only internalization impacts innovative knowledge 0.38 (p < 0.01), supporting H4a, but not supporting H4b, H4c and H4d.

Discussion

The path analyses between the knowledge conversion processes and the knowledge domains reveal several interesting results. Basic knowledge yields a positive coefficient on the process of combination. This could be explained by the fact that basic knowledge primarily covers various explicit components of knowledge (such as discipline specific knowledge and IT knowledge), and hence, influences only the process of combination. Both experiential and emotional knowledge influence three knowledge conversion processes, all of which contain a tacit component: socialization, externalization and internalization. The content of experiential and emotional knowledge is highly unique and personal, and consequently, it contains a number of tacit components. The impact of these two types of knowledge is not limited to the process of socialization alone but stretches into the bi-directional process of tacit-explicit conversion. It also should be noted that since both the emotional and experiential domains of knowledge impact three of the four knowledge conversion processes, they would seem to have a significant impact on the knowledge process spiral described by Nonaka (1994) and Nonaka and Takeuchi (1995). In fact, the data here indicate that the knowledge conversion spiral impacts the content of knowledge through a single but strong relationship via internalization. Specifically, as explicit knowledge is converted into tacit knowledge through internalization, individuals are able to use that tacit knowledge to innovate. Only innovation knowledge reveals no impact on the knowledge conversion process, however, innovation knowledge is highly impacted by internalization. This makes intuitive sense as the content areas in the innovative knowledge domain, such as strategic knowledge and problem solving knowledge, seem to require the higher order integration of both tacit and explicit knowledge and is characteristic of internalization.

It also is interesting that the relationships vary for specific types of knowledge domains and specific conversion processes, and many are bi-directional in nature. In other words, some knowledge domains impact specific knowledge conversion processes and some knowledge conversion processes impact specific knowledge domains. For example, in analyzing the impact of knowledge domains on knowledge conversion, this research finds that experiential and emotional knowledge have the strongest direct impact on the knowledge process spiral in that both impact the three conversion processes that contain a tacit component: socialization, externalization and internalization. Experiential and emotional knowledge do not affect the explicit conversion process of combination,
however, basic knowledge, yields a significant effect on combination although not on any of the other conversion modes.

The managerial implications of this research are quite interesting. First, it is essential that managers understand the prevailing domains of knowledge and how that knowledge impacts the conversion and growth of knowledge within an organization. This is especially important since knowledge has been acknowledged as the single most important resource leading to an organization’s competitive advantage (Grant, 1996). Second, identification of knowledge gaps can assist managers as they try to enhance knowledge growth by acquiring knowledge from outside of the organization or by gradually developing that knowledge internally. Identification of specific gaps in individual knowledge domains may lead managers to favor one type of knowledge acquisition over another. Third, knowledge based on experience is the key to developing tacit knowledge which drives innovative knowledge and leads to competitive advantage. With so much focus upon development and transfer of knowledge within an organization, understanding this key pathway is vital as firms seek to out-maneuvre their competitors.

There are a number of limitations about which the reader should be cautioned. First, the results of this study are drawn from a fairly large sample in only one firm. As a result, it is difficult to generalize the results across firms or industries. Second, the respondents in this research are drawn from a group of middle managers who have been identified as having familiarity with knowledge creation within the organization. Not all of these managers are equally familiar with knowledge creation and dissemination within their organization. It is possible that some of the managers may not have been the appropriate choice. As such, the reader is cautioned not to generalize the results beyond this study. In the future, the knowledge creation literature would benefit from studies that examine both the knowledge conversion process and various domains of knowledge across levels of the organization as well as across industries. Future studies examining cross-cultural differences within a number of industries also would be warranted. Finally, additional studies examining the above two constructs in conjunction with both competitive advantage and performance would enhance our understanding of this area.

Conclusion

In this paper, evidence is provided showing how different domains of knowledge relate to knowledge conversion processes. This typology of knowledge in organizations can serve an effective basis for the understanding and construction of specific knowledge strategies that the organization could emphasize. It is further suggested that this typology of knowledge can provide a viable alternative to today’s management in order to stand up to the challenge of handling the duality of acquiring knowledge from outside or gradually growing knowledge within the organization. The results of this study clearly indicate that knowledge based on experience develops tacit knowledge within an organization, which leads to innovative knowledge and competitive advantage (Byosiere and Ingham, 2002). In addition, emotional knowledge also impacts the knowledge conversion process in a similar vein. Only basic knowledge impacts the explicit components of combination, which is the type of knowledge conversion most readily acquired quickly from outside of the firm.

Organizations that do not find significant impact of experiential and/or innovative domains of knowledge on competitive advantage should be encouraged to build their basic and emotional knowledge base, thus directly and indirectly building tacit knowledge components. This means investing in basic training of employees and managers in order to reach a basal level of knowledge that can then fuel the innovative and experiential knowledge domains.

References


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