Organisational knowledge creation strategies: A conceptual framework

Chen-Wei Yang\textsuperscript{a,\ast}, Shih-Chieh Fang\textsuperscript{b}, Julia L. Lin\textsuperscript{c}

\textsuperscript{a} School of Humanities and Management, Fooyin University, Taiwan
\textsuperscript{b} Department of Business Administration, National Cheng Kung University, Taiwan
\textsuperscript{c} Graduate School of Management, I-Shou University, Taiwan

\textbf{A R T I C L E \ I N F O}

\textbf{Article history:}

Keywords:
Knowledge-based view
Organisational knowledge
Knowledge creation strategy

\textbf{A B S T R A C T}

The main purposes of this article are to identify the dimensions of organisational knowledge creation strategies (EICE model: exploration, institutional entrepreneurship, combination, exploitation) and to clarify the relationship between the organisational knowledge creation strategies and its knowledge asset. For these purposes, guided by knowledge-based view and knowledge creation theory, we propose an EICE model and explore its effect on the knowledge asset. We further suggest the managerial implications and theoretical implications. The main managerial implication is that the knowledge creation strategies model may help manager to make effective strategies for knowledge creation within the organisation. The main contributions to organisation theory are extending Nonaka’s knowledge creation theory to form a new strategic model for knowledge creation.

1. Introduction

Organisations are facing surprisingly complex challenges for operation, including new technologies, ongoing pressures for institutional reform, and the emergence of new organisational governance structure and knowledge creation (Galvin, 2002; Grant, 1996; Nonaka & Takeuchi, 1995; Smith, Collins, & Clark, 2005). Under such a situation, understanding the determinants of the organisation’s performance is a critical concern for scholars and managers. The field of knowledge-based view provides theory that is useful for addressing this concern. The importance of knowledge as a key source of competitive advantage is now well established in management studies, as suggested by the growing literature focusing on knowledge creation (Kogut & Zander, 1992; Nonaka & Takeuchi, 1995). Accordingly, if knowledge and its creation process is so important a determinant of organisational performance, then knowledge creation strategies are likely to be a key area of strategic choice for the organisation. An organisation’s strategic context helps to identify knowledge creation initiatives that strengthen its competitive position, support its mission, and create value. The organisation that knows more about its customers, services, technologies, markets, and their linkages should perform better. However, the link between knowledge creation and business strategy has been widely ignored in organisational learning research. Thus, many executives are stressed to articulate the relationship between their firm’s competitive strategy and its intellectual resources and capabilities. They do not have well-developed strategic models that help them to link knowledge creation processes to business strategy, and they are not sure of the way to translate the goal of making their organisations more intellectual into a strategic action. They need a theoretically sound model of what we call organisational knowledge creation strategy.

In order to constitute the constructs of organisational knowledge creation strategy, we improve and extend the current theoretical gaps of knowledge creation theory in this article. Although Nonaka’s theory has been described as one of the most influential model in knowledge strategy literature (Choo & Bontis, 2002), Nahapiet and Ghoshal (1998) argue that all knowledge processes have a tacit dimension rather than using different terms for those forms of knowledge conversion involving tacit or explicit knowledge.

\* Corresponding author at: 151 Chin-Hsueh Rd., Ta-Liao Hsiang, Kaohsiung County 831, Taiwan. Tel.: +886 9 929780787; fax: +886 7 7161768.
E-mail addresses: xx709@mail.fy.edu.tw (C.-W. Yang), fangsc@mail.ncku.edu.tw (S.-C. Fang), julia@mail.isu.edu.tw (J.L. Lin).
proposed by Nonaka’s SECI model (socialization, externalization, combination and internalization). Therefore, we improve this critique on Nonaka’s idea and extend his knowledge conversion idea by using private and public knowledge developed by Matusik’s research (Matusik, 2002a). The idea of public and private knowledge embracing tacit and explicit knowledge (see Fig. 1) seems to be more suitable in organisational setting than tacit and explicit originating from individuals. Matusik’s idea explains the relative roles of public and private knowledge on innovative output (Matusik, 2002a). She clarifies the definition and separable constructs of public and private knowledge empirically. She also provides an example to demonstrate the way that public and private knowledge dissimilarly affect the product development process. However, there are two issues still open to question. First, how is the existing organisational knowledge created through private and public knowledge? Second, what are the interactive roles between private and public knowledge. In order to answer those questions, we draw the idea of “knowledge conversion” from Nonaka’s SECI model (Nonaka, 1994) to form an innovative strategic model. Instead of the conversion between tacit and explicit knowledge in individual level, our assumption that organisational knowledge is created through conversion between organisational level constructs: private and public knowledge allows us to postulate four different strategic modes of organisational knowledge conversion. Thus, this article provides a conceptual model for describing and evaluating an organisation’s knowledge creation strategies and its relationship to knowledge asset. We argue that the organisation’s knowledge creation strategies are made up of four dimensions, and distinguishing between them can yield important insights. Specifically, we call these four dimensions that comprise the organisational knowledge creation strategies construct as EICE model (see Fig. 2): (a) exploration strategies: from private knowledge to private knowledge, (b) institutional entrepreneurship strategies: from private knowledge to public knowledge, (c) combination strategies: from public knowledge to public knowledge, and (d) exploitation strategies: from public knowledge to private knowledge. The category of knowledge creation strategies is decided by different type of the knowledge conversion process.

The goal of this article is to identify the dimensions of knowledge creation strategies in the organisational setting and to clarify the relationship between the organisation’s knowledge creation strategies and its knowledge asset. To achieve this goal, there are two specific research questions need to be answered in this article: (1) what are the dimensions of the organisational knowledge creation strategies that may impact its knowledge asset? (2) What is the relationship between the dimensions of the organisational knowledge creation strategies and its knowledge asset?

2. Theoretical background

2.1. Information, knowledge and organisational knowledge

Information is a flow of messages; it is also commodity capable of yielding knowledge. Anchored on the commitment and beliefs of its holders, knowledge is created by the very flow of information (Dretske, 1981; Machlup, 1983). Although knowledge is multifaceted concept with multilayered meanings, the traditional epistemology defines it as “justified truth belief.” According to Nonaka (1994), knowledge embraces a continual dialogue between explicit and tacit knowledge which drives the creation of new concepts and ideas that are formed in the minds of individuals.

Organisations can accomplish things that individuals cannot. Organisational knowledge represents a firm’s ability to take action that can distinguish it from competitors and afford competitive advantage (Leonard-Barton, 1992). Accordingly, a firm’s knowledge may be the key resource that distinguishes a firm. However, a knowledge-based theory of a firm requires resources that are “defined precisely enough to let us see which firm has the more significant knowledge and explain how that leads to competitive advantage” (Spender, 1992). Matusik and Hill (1998) summarize these four dimensions and their relationships to each other in Fig. 1. Organisational knowledge is composed of both public and private knowledge. Private knowledge is composed of both component and architectural knowledge, whereas public knowledge is composed of only component knowledge. Both categories of knowledge are valuable if they can be successful applied to value-creating tasks (Ichijo, 2002).

Private knowledge is distinctive to organisation. The theoretical background of private, or firm-specific, knowledge comes from the resource-based view (Barney, 1991). It is a valuable, rare, inimitable and non-substitutable resource and a source of competitive advantage for organisations. Private knowledge includes both component and architectural knowledge. Component elements are those developed internally and not yet to leak out to public domain. Architectural knowledge is organisation-wide knowledge that is collectively held, tacit and private. No two organisations have the same architectural knowledge. Private knowledge includes an organisation’s unique routines, process, documentation, or trade secrets (Matusik, 2002a; Matusik & Hill, 1998).

Public knowledge resides in public domain. It includes knowledge not unique to any one firm. It is also a kind of public goods. Public knowledge contain component that is held individually. It also represents industry and occupational best practice. Since it is not unique or proprietary to any one firm and easily available, public knowledge cannot be a source of competitive advantage. But
the failure to apply public knowledge within the organisation can be a disadvantage to the organisation’s competitive position. The application of public knowledge relating to best practice will not promise competitive advantage, but it is necessary for survival in competitive environment (Matusik, 2002a, 2002b; Matusik & Hill, 1998).

In summary, within the organisation, the fusion of new public knowledge with existing private knowledge can stimulate new private knowledge creation. One form of private knowledge may be an organisation’s idiosyncratic ability to successfully absorb knowledge. In addition, at one point in time, much public knowledge started out as private knowledge. For example, total quality management (TQM), and quality control circle (QCC) are ‘best practices’ now in public domain of the manufacture sector, managers either establish better use of public knowledge that is generally available to their environment and competitors or ensure the creation of private knowledge that can be applied in value-creating activity in their organisation.

2.2. Organisational knowledge and knowledge creation theory

Organisations possess various resources, but knowledge-based resource is one of the key resources that are central to competitive advantage (Barney, 1991; Prahalad & Hamel, 1990). Firms gradually more depend on creating and building knowledge as a necessary condition to survive in their respective competitive marketplace (Nonaka, 1994). Therefore, in organisational setting, rapid imitation by competitors and quickly changing environmental demands make it necessary for even leading firms to continually build new knowledge. In practical implications about knowledge creation, Leonard-Barton (1992) argue that organisations create new knowledge not only within their boundaries, but also from outside for the impact of new idea in order to encourage inventive serendipity, to prevent rigidity, and to check their technological developments against those of competitors. In addition, in the trend of theory building about knowledge creation, Nonaka (1994) proposes a dynamic theory of organisational knowledge that focuses on a continuous dialogue between tacit and explicit knowledge to create organisational knowledge. He also argues that while individual as a basic level to develop new knowledge, organisations play a critical role in amplifying and articulate that knowledge. Nonaka, Toyama, and Konno (2000) further propose a unified model of dynamic knowledge creation consisting of three elements: (1) the SECI process (socialization, externalization, combination, internalization), knowledge creation through the conversion of tacit and explicit knowledge; (2) ‘ba’, the shared context for knowledge creation; and (3) knowledge assets, the inputs, outputs, and moderators of the knowledge-creating process. A knowledge spiral grows out based on these three elements to form the knowledge creation process. Hence, based on Nonaka and his colleagues’ effort, this paper creates a new strategic action model for conversion. Consequently, there are four new strategic actions (EICE model) of knowledge creation are developed through the conversion of private knowledge and public knowledge. The circulation of these four knowledge conversion modes constitutes the organisational knowledge creation strategies in this article.

According to the notes above, we create four modes of organisational knowledge creation strategies to explicate the phenomenon of knowledge creation process in the organisational setting. More details about the strategic choices of knowledge conversion are discussed as follows.

2.3. Organisational knowledge creation strategies: exploration, institutional entrepreneurship, combination, and exploitation (EICE model)

In the combination of the epistemological and ontological dimensions of knowledge creation, this section develops a new model of organisational knowledge creation strategies. This section involves the identification of four different patterns of conversion between private knowledge and public knowledge. These modes demonstrate ways to convert existing knowledge into new knowledge. The social interaction between organisations and their environment then provides an ontological dimension to knowledge expansion. However, the basic assumption of knowledge conversion between private and public knowledge resulting in organisational knowledge creation allows this paper to develop EICE modes of organisational strategies for knowledge creation.

2.3.1. Mode one: exploration strategies

Exploration strategies are the process of converting new private knowledge through firm-specific unique knowledge. It is also a strategy for an organisation to increase its intellectual capital by creating its unique private knowledge within its organisational boundary (Ichijo, 2002). Since the unique private knowledge must be valuable, rare, difficult for competitor to imitate, and difficult to imitate (Barney, 1991), new private knowledge can be acquired through discover and research existing private knowledge by the organisations themselves. Exploration includes knowledge created by terms such as search, innovation, discovery, flexibility, play, experimentation, and risk taking (March, 1991). By exploration,
firms use formal or informal integrating mechanisms to stimulate the creation of new private firm-specific knowledge and to facilitate the transfer existing private knowledge to different areas of the firm (Szlanski, 1995). For example, exploration occurs in innovation research that emphasizes on the importance of integration for disseminating knowledge within the health care organisation’s boundaries (Lemieux-Charles, McGuire, & Blidner, 2002). Exploration also may occur in innovation that is full up with new private knowledge, which is created by fusing together previously separate private knowledge.

2.3.2. Mode two: institutional entrepreneurship strategies

Institutional entrepreneurship strategies are the process of articulating private knowledge into public knowledge. It also represents the activities of actors who have an interest in particular institutional arrangement and who leverage resource to transform existing institution or to create new ones (DiMaggio, 1988; McGuire, Hardy, & Lawrence, 2004; Rao, Morrill, & Zald, 2000). When private knowledge is transformed publicly, knowledge is institutionalized, thus allowing it to be exploited by members in organisational field, and it becomes the basis of new private knowledge creation. While organisational fields are structured systems of social positions within which struggles occur over stakes, access, and knowledge resources (Bourdieu, 1986), institutional entrepreneurship emphasize on these struggles and the manner in which firm-specific private knowledge possessed by interested actors publicized to influence the institutional contexts (DiMaggio, 1991; Lawrence, 1999). Examples of these publicized struggles include moves by professional associations to persuade members to standardize new practices (Greenwood, Suddaby, & Hinings, 2002), and software manufacturers supporting new technological standards (Garud, Jain, & Kumaraswamy, 2002). The successful conversion of private knowledge into public knowledge depends on three sets of critical activities: (1) the occupation of ‘subject position’ that bridge diverse stakeholders and have wide legitimacy, (2) the theorization of new practices through discursive and political means, (3) the institutionalization of these new private knowledge by connecting them to stakeholders’ routine and values (McGuire et al., 2004).

2.3.3. Mode three: combination strategies

Combination strategies are the process of converting public knowledge into more complex and advanced sets of public knowledge. It also represents the synthesis and application of current and acquired public knowledge (Kogut & Zander, 1992; Nahapiet & Ghoshal, 1998). While public knowledge includes knowledge not unique to any one firm and it also exists in outside environment, combination occurs in the integration and configuration of public knowledge collected from outside or inside the organisations to form new public knowledge. In Harper and Georgiou (2005), the city region of Manchester develop a shared vision of the future of business-university linkages to create public own ‘Knowledge Capital’ is one example. Furthermore, the health policy is public knowledge for the hospitals. The hospital associations or the hospitals’ representatives may propose new proposal by combining the health policy from different nations to lobby the government for the health care reform that can benefit the hospitals’ survival. Other examples include the training program of computer software skill for the employee may increase the efficiency of organisational routines; however, those computer software packages are not unique to any one firm. Therefore, the firms may have the most unique application of public knowledge, in order to use the public knowledge correctly, they need to learn and synthesize the public knowledge through formal education or articles, conference in public domain in advance.

2.3.4. Mode four: exploitation strategies

Exploitation strategies are the process of transforming public knowledge into firm-specific private knowledge. It also means enhancing the intellectual capital of a firm with existing public knowledge (Ichijo, 2002). Public knowledge is the technical sort shared in engineering drawings, research reports, conference publications, consulting manuals, textbooks, and classroom; it generally represents easily available technical solutions in the market. It is also tacit knowledge or social explicit knowledge with the potential of becoming social in easily documented forms (Matusik & Hill, 1998). For example, lean manufacturing, just-in-time inventory, total quality management, and team-based incentives are ‘best practices’ now in the public domain. Exploitation occurs when an organisation accumulates knowledge from outside its boundaries and integrates this knowledge into organisation-specific private knowledge. For example, exploitation happening in cooperative organisational arrangements, such as strategic alliances, focuses on integrating knowledge gaining from their partners and transforms them into firm-specific idiosyncratic knowledge resource (Mothe, 1999). Formal strategy toward knowledge acquisition rewards for gaining knowledge, boundary-spanning positions, and resource committed to acquiring knowledge are examples of exploitation strategies for organisations to convert public knowledge into private knowledge (Chua & Goh, 2008; Hamel, 1991; Simonin, 1991).

Exploitation does not mean the firm using existing knowledge just as it is. It is based on how to make better of use of existing knowledge and the analysis in which we examine this public knowledge (Ichijo, 2002). It also differs from mimicking that means imitation without doubt, and is an organisational learning strategy. When public knowledge is exploited to become part of firm’s private in the form of a firm’s unique routines, documentation or trade secrets, it becomes a valuable asset and a source of competitive advantage.

As the note above, in summary, organisational knowledge creation strategies are continuous process of dynamic conversions between private and public knowledge. These conversions are formed between different modes of knowledge transformation, not just through one single mode of conversion. Each of the four modes of organisational knowledge creation strategies creates knowledge and the knowledge (private and public knowledge) interacts in the circulation of knowledge creation. Fig. 2 depicts the four modes of organisational knowledge creation strategies for knowledge conversion and the evolving circular movement of knowledge through the EICE process. Besides, according to Kogut and Zander (1992) and Nahapiet and Ghoshal (1998), they assumed that organisations create more organisational knowledge (intellectual capital) through knowledge exchange and combination. Therefore, this paper will take the implementation of these four knowledge creation strategies as the indices. Table 1 summarizes the manipulated definitions and measurement of proposed four organisational knowledge creation strategies (Ichijo, 2002; Kogut & Zander, 1992; McGuire et al., 2004; Nahapiet & Ghoshal, 1998; Szulanski, 1995).

2.4. Organisational knowledge asset

As to the meaning of the organisational knowledge creation, it indicates that to transform the organisation’s intellectual resource or competence into knowledge embedded in industry context via appropriate transformation mechanisms like EICE model proposed in this paper. Besides, Grant (1996), Kogut and Zander (1992) pointed out that organisation could recombine existing knowledge or new knowledge to be knowledgeable asset of organisation through integration and learning. Therefore, the final outcome of the organisational knowledge creation process contributes to the increase of both quality and quantity of organisation’s existing knowledge base—the knowledge asset.
Table 1
The strategies constituting the knowledge conversion process in organisational knowledge creation.

<table>
<thead>
<tr>
<th>Constructs of strategies</th>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exploration strategies</strong>: from private knowledge to private knowledge</td>
<td>Strategies that firms using formal or informal integrating mechanisms to stimulate the creation of new private firm-specific knowledge and to facilitate the transfer existing private knowledge to different areas of the firm</td>
<td>The frequency of formal intra-firm meeting for innovation</td>
</tr>
<tr>
<td><strong>Institutional entrepreneurship strategies</strong>: from private knowledge to public knowledge</td>
<td>The strategic activities of actors who have an interest in particular institutional arrangement and who leverage resource to transform existing institution or to create new ones</td>
<td>The degree of struggles for theorization of new practices into market</td>
</tr>
<tr>
<td><strong>Combination strategies</strong>: from public knowledge to public knowledge</td>
<td>The strategic activities of the integration and configuration of public knowledge collected from outside or inside the organisations to form new public knowledge</td>
<td>The frequency of synthesis of existing public knowledge (like books, tutorials, and formal education) to form new public knowledge</td>
</tr>
<tr>
<td><strong>Exploitation strategies</strong>: from public knowledge to private knowledge</td>
<td>The strategic activities for enhancing the intellectual capital of a firm with existing public knowledge</td>
<td>The frequency of integration of ‘best practices’ now in the public domain for innovation</td>
</tr>
<tr>
<td><strong>Organisational knowledge asset</strong></td>
<td>Private knowledge and creative routine</td>
<td>Number of organisation-specific unique know-how Number of organisation-specific effective routine for innovation</td>
</tr>
</tbody>
</table>

The organisational knowledge asset means the increment of knowledge storage through recombination of existing knowledge (Nonaka et al., 2000). Based on King and Zeithaml’s (2003), Matusik and Heeley (2005) and Nonaka and Toyama (2007), knowledge asset in the organisation include the personnel’s know-how, and organisational routines that have evolved uniquely in each organisation. Thus, we take the private knowledge and creative routine as the indices of measurement of the organisational knowledge asset. Fig. 3 “Conceptual Framework” summarizes the relationships proposed here between the organisational knowledge creation strategies and its knowledge asset within the organisation setting.

3. The development of propositions

According to Nonaka and Toyama’s (2007) suggestion which argue that knowledge creation are synthesized through dynamic interactions among individual, the organisation, and the environment, this article emphasize social interaction between
organisations and their environment that knowledge conversions are based on, instead of the idea of knowledge spiral that focuses on the individual level that starting the knowledge conversion process then amplified to higher level in Nonaka’s knowledge creation theory (Nonaka et al., 2000). In order to explain organisational knowledge in epistemological dimension, rather than tacit knowledge and explicit knowledge in Nonaka’s thinking, this paper adopts a distinction between two types of knowledge—“private knowledge” and “public knowledge” that act as the basis of our organisational knowledge creation process. The relationship between tacit/explicit knowledge and private/public knowledge have been discussed and summarized as the literature review above. Drawn on these discussions, private and public knowledge are organisational level in their nature. The idea of tacit and explicit knowledge is embedded in the concept of private and public knowledge. Accordingly, the organisational knowledge is the validated beliefs and understanding in an organisation about the relationship between the organisation and its environment. This viewpoint indicates that organisational knowledge is static, reflecting how existing knowledge should be exploited and configured for advantage (Robertson, Scarbrough, & Swan, 2003; Smith et al., 2005).

In the trend of the application of knowledge creation theory in management learning study, Nonaka’s theory of collective knowledge creation provided a useful framework for researchers to explore knowledge creation process within the organisation. In this study, we provide not only an alternative view by extending Nonaka’s knowledge creation theory to identify the dimensions of knowledge creation strategies (EICE model) for the organisation, but also argue that these strategies are positively related to its knowledge asset.

3.1. Exploration and knowledge asset

Exploration strategies are the way of transforming new private knowledge through organisation-specific unique knowledge. It is also a strategy for an organisation to increase its intellectual capital by creating its unique private knowledge within its organisational boundary (Ichijo, 2002). For example, the high-tech firms use seminar or private meeting to stimulate the creation of new product and to facilitate the transfer existing private routine to different areas of the R&D. Exploration occurs in new services or technique that emphasizes on the importance of integration for disseminating knowledge or routines within the firm’s boundaries. In management learning literature, Salisbury (2001) introduces an example project to describe a knowledge creation process and a practical mechanism for capturing and disseminating knowledge in a small working group. The finding suggests that the knowledge base grows (new private knowledge) as members of the group solve new problems and enter that expertise (private knowledge) into the knowledge base. Productivity increases as members consult the knowledge base, adapt and use solutions that were developed by other members of the group. Hence, exploration may also occur in innovation that is full up with new private knowledge, which is created by fusing together previously separate private knowledge. Therefore, we propose the Proposition 1:

**Proposition 1a.** The degree of implementation of the organisation’s exploration strategies is positively related to its private knowledge.

**Proposition 1b.** The degree of implementation of the organisation’s exploration strategies is positively related to its creative routine.

3.2. Institutional entrepreneurship and knowledge asset

Institutional entrepreneurship strategies are the way of converting private knowledge into public knowledge. It also indicates the activities of actors who have an interest in particular institutional arrangement and who leverage resource to transform existing institution or to create new ones (DiMaggio, 1988; McGuire et al., 2004; Rao et al., 2000). For examples, Microsoft, the leading firms in high-tech industry, persuade industry members to standardize new practices or routines (such as window system and internet explorer) proposed by Microsoft. In organisational learning literature, Tsui-Auch (2003) argues that the global technology leading corporations organize their suppliers in networks and exert state-driven institutional isomorphism on technological upgrading and quality control for their suppliers. These suppliers have engaged in the learning of technology and management control procedures regardless of firm size, financial capability or industrial position. Henderson and Cockburn (1994) argue that the importance of the reputation of the firm’s scientists in the larger academic communities is positively associated with patenting at the firm. These results suggest that the firm’s contributions to knowledge in public field are important for its knowledge creation. Thus, we suggest Proposition 2:

**Proposition 2a.** The degree of implementation of the organisation’s institutional entrepreneurship strategies is positively related to its private knowledge.

**Proposition 2b.** The degree of implementation of the organisation’s institutional entrepreneurship strategies is positively related to its creative routine.

3.3. Combination and knowledge asset

Combination strategies are the process of converting public knowledge into more complex and advanced sets of public knowledge. It also represents the synthesis and application of current and acquired public knowledge (Kogut & Zander, 1992; Nahapiet & Ghoshal, 1998). For examples, public knowledge includes such items as industry best practices, just-in-time inventory (JIT) is one example of best practices now in public domain. For mobile firms, in order to make the best use of JIT, they need to combine the different JIT experiences that are available in public domain such as school, conference, books or even contingent workers (Matusik & Hill, 1998). In organisational learning literature, Giroux and Taylor (2002) argues that firms keep on the process of the justification of knowledge by tracking the translations of quality, and then the quality management progressively became accepted as a solution to the economic problems encountered by enterprise during the decade of the, 1980. Matusik (2002b) also argue that firm’s public knowledge stock is significantly related to product development quality. The findings suggest that the firm’s effort to create the pool of public knowledge is important for its knowledge creation. Therefore, Proposition 3 is suggested as follows:

**Proposition 3a.** The degree of the implementation of the organisation’s combination strategies is positively related to its private knowledge.

3.4. Exploitation and knowledge asset

Exploitation strategies are the way of converting public knowledge into organisation-specific private knowledge. It also means enhancing the intellectual capital of a firm with existing public knowledge (Ichijo, 2002). For example, total quality management, and team-based incentives are ‘best practices’ now in the public domain. Exploitation occurs when a firm builds up knowledge or routine from outside and integrates this knowledge into firm-specific private knowledge or routine. In organisational learning literature, Kidd (1998) discusses the issues pertaining to the creation of knowledge in the Italian firms, which is often based on the
adaptation of the technical knowledge brought to the alliance by the Japanese partner. He argues that the ‘best’ firms appeared to be those which were firmly managed by Italian CEOs. They possessed a good understanding of Japanese techniques, know-how and financing (public knowledge) adopting to fit within the Italian management style (private knowledge). Hence, exploitation also happens in strategic alliances, focus on integrating partners’ techniques or routines gaining from their partners and transform them into firm-specific idiosyncratic knowledge resource. It also differs from mimicking that means imitation without doubt, and is an organisational learning strategy. Thus, we propose Proposition 4:

Proposition 4a. The degree of the implementation of the organisation’s exploitation strategies is positively related to its private knowledge.

Proposition 4b. The degree of the implementation of the organisation’s exploitation strategies is positively related to its creative routine.

4. Discussion

The main purposes of this article are to identify the dimensions of organisational knowledge creation strategies and to clarify the relationship between the organisational knowledge creation strategies and its knowledge asset. For these purposes, guided by knowledge-based view and knowledge creation theory, we propose an EICE model and examine its effect on knowledge asset. Specifically, we propose four dimensions of knowledge creation strategies (EICE model: exploration, institutional entrepreneurship, combination, exploitation) as the determinants of knowledge asset in organisation setting. The objectives of this paper are to enhance our understanding of the dimensions of the organisational knowledge creation strategies and to clarify the influence of knowledge creation strategies on its knowledge asset.

4.1. Theoretical implications

The importance of this paper is to contribute to management learning research by providing a conceptual model for describing and evaluating an organisational knowledge creation strategies and its relationship to organisational knowledge asset. Organisational learning researchers have begun to explore knowledge creation theory in the organisation setting, and provided significant evidence as to the importance of new knowledge, little is known about how new knowledge is created within the organisation setting, and empirical effort is particularly lacking. Therefore, theoretically, it is important to develop an organisational knowledge creation strategies model to understand the process of knowledge creation by integrating strategic management theory and organisational theory. Furthermore, this paper also contributes to organisation theory by extending Nonaka’s knowledge creation theory that focus on transforming individual skill into organisational knowledge to form the strategic model of EICE that emphasize organisation basis rather than individual one. This strategic model indicates that to transform the organisation’s intellectual resource or competence into knowledge embedded in industry context via appropriate transformation mechanisms like EICE model proposed in this article. Finally, for future empirical study, this article also provides manipulation definitions and measurement indices of organisational knowledge creation strategies (see Table 1). Future research into how to bring together the epistemological and ontological dimensions of organisational knowledge creation to form a “spiral” model for EICE processes involved in this article may provide interesting insights.

4.2. Managerial implications

There are two managerial implications for the organisation that view its competitive advantage in terms of knowledge. First, managers should have the responsibility to unleash the potential represented by an organisation's knowledge into value-creating actions. The identification of what the organisation knows and in what form it knows it, and to make private knowledge accessible and usable becomes managers’ main tasks. Second, the extent to which managers can generate knowledge assets more effectively than their competitors is related to an organisation’s competitive situation. That is, managers either need to ensure the creation of unique private knowledge that can be unleashed in value-creating activity, or to establish better use of public knowledge that is generally available to the organisation. In summary, the proposed well-developed strategic models may help managers to link knowledge creation processes to business strategy, and make sure of the way to translate the goal of making their organisation more intellectual into a strategic action.

This article highlights the value of extending the knowledge-based view with the knowledge creation theory in the study of organisational learning strategies. Furthermore, the organisational knowledge conversion approach may be helpful to conceptualize and identify the organisational knowledge creation strategies and their consequence will further enhance the organisational knowledge asset. However, in order to provide a constructive explanation for knowledge creation issue of the organisation's strategic behavior, further empirical research and literature review are required.

Acknowledgements

We are grateful to three anonymous reviewers, whose constructive comments and suggestions were very valuable in shaping this paper. The research on which this paper is based was supported by the National Science Council (NSC 97-2410-H-242-001-MY2).

References


Chen-Wei Yang is an assistant professor in the School of Humanities and Management at Fooyin University. He received his Ph.D from graduate school of management, I-Shou University. His research interests are concerned with knowledge creation, strategy management, the institutional effects on the health care management and the theory of the hospital.

Shih-Chieh Fang is a professor in the department of Business Administration, National Cheng Kung University. He received his Ph.D from National Taiwan University. His current research interests include knowledge governance, organizational learning, and strategy management.

Julia L. Lin is a professor in Department of International Business and Department of Healthcare Administration, I-Shou University. She received her Ph.D from National Chengchi University. Her current research interests focus on strategy management, knowledge management, international business, and healthcare administration.