

**Discussion on Study of Knowledge Creation, Innovation  
Ability and Organizational Performance for High-Tech  
Industries in Taiwan**

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## **ABSTRACT**

Taiwan's high-tech industry face intense global competitive environment, strengthening the capacity of its own through the creation of high-quality organizational performance has been the key focus of many studies. This study investigated the creation of knowledge and organizational performance. Information and communication, and electronic products within the high-tech knowledge-intensive industries were selected for this study. The overall effect is concerned, is not knowledge creation, innovation and organizational performance individually influence means that high-tech industries, organizations. Whether knowledge creation, innovation and organizational performance influence means that high-tech industries, organizations to enhance business performance created by knowledge began its maximum effectiveness.

**Keywords :** Knowledge creation, knowledge management, innovation capability, organization performance

## **INTRODUCTION**

Knowledge has been considered the most important competitive resource (Demsetz, 1991; Grant, 1996; Nonaka, Reinmoller, & Toyoama, 2001). Analysis of competitive advantage should initially focused on competitors, and gradually transformed into reflection and internal resources within the organization, the "product" steering control scarce, rare, unique, cannot be replaced, you cannot fully mimic the "core resources and talents" (Barney, 1991). Sources of competitive advantage are no longer limited to traditional physical capital assets, plants and lands, instead businesses must have some special resources to be able to gain a competitive advantage, and the knowledge within the company can be regarded as a valuable resource that can bring a competitive advantage for the company (Nonaka & Takeuchi, 1995).

According to the research motivation and by actual validation study hypothesis will provide technology-related industries in the management of reference, by enhancing knowledge management, and thus a positive impact on organizational performance. The structure of this study is proposed as follow:

1. Explore the theoretical connotation of knowledge creation, innovation and organizational performance.
2. Discussion on the innovation capability of knowledge creation relations.
3. Explore the knowledge creation on organizational performance relationship.
4. Explore knowledge creation and innovation capability on organizational performance relationship.
5. According to the study results, the technology industry strategies and recommendations put forward practical.

## **LITERATURE REVIEW**

### **2.1 Knowledge creation**

Nonaka and Takeuchi (1995) suggested that knowledge is a sufficient basis which has real faith. Through diverse arrangements, such as: their experience, abstract concepts, standard operating procedures, systematic documentation and the specific techniques presented. Knowledge through the personal interpretation of kinetic behavior can promote effective force. Explicit knowledge sharing through a variety of communications media, but it can not pass tacit knowledge; while tacit knowledge must pass through knowledge sharing mechanism between individuals.

Therefore, under other circumstances, subject to tacit knowledge into explicit form, in order to pass the knowledge to the public through various communication media, but in the process of transformation, there will be substantial wastage (Polanyi, 1996). Therefore describes knowledge is dynamic; like Davenport and Prusak (1998) said that knowledge is the concept of a flow (flow), insights experience the value of knowledge includes structured, text-based information or expert knowledge not only text in the organization and memory system, but also will carry on their daily routine work being executed and norms. Knowledge from information and information into knowledge to participate in the process must be organized members to compare information, explore information, analytical information, information into knowledge are able to, thereby creating knowledge. The so-called "Knowledge Management (Knowledge management)" means "in a timely manner will be given the right knowledge required members to help members take corrective action to enhance the continuity of the process of organizational performance" (O'Dell and Grayson, 1998). Papows (1999) considered the organization's knowledge management is the information stored in each of the memory of the removal became clear that useful knowledge, so that it can be shared to all, and can be put into action, and the third-cooperation is its foundation. Different knowledge management and general management activities will focus primarily on the knowledge on the viewpoint; the ultimate goal is a systematic, organized

application of knowledge, but only to create knowledge (Drucker, 1993). Papows (1993) pointed out that the main purpose of knowledge management is to stimulate knowledge creation, sharing and reuse, organizational learning has been reached and the continuation of the organization's life.

Polanyi (1967) first proposed the tacit knowledge (tacit), which can be categorized into implicit and explicit knowledge, he believes that tacit knowledge is personal and special situations related and difficult to formalize and communicate; outside explicit knowledge can be formalized, can be institutionalized, speech to convey knowledge.

Nonaka and Takeuchi (1995) believe that knowledge creation is usually made up of four different modes, so that the role and convert tacit and explicit knowledge interact, while not breaking the repeated conduct to achieve knowledge of the purpose of creation, it means that their knowledge of the dynamic range of the conversion process of holding performance. The implicit and explicit knowledge, and knowledge of the outflow and liquidity to investigate the knowledge conversion and creation process (SECI) to the socialization process (Socialization), externalization process (Externalization), combination of process (Combination), and the process (Internalization) to represent.

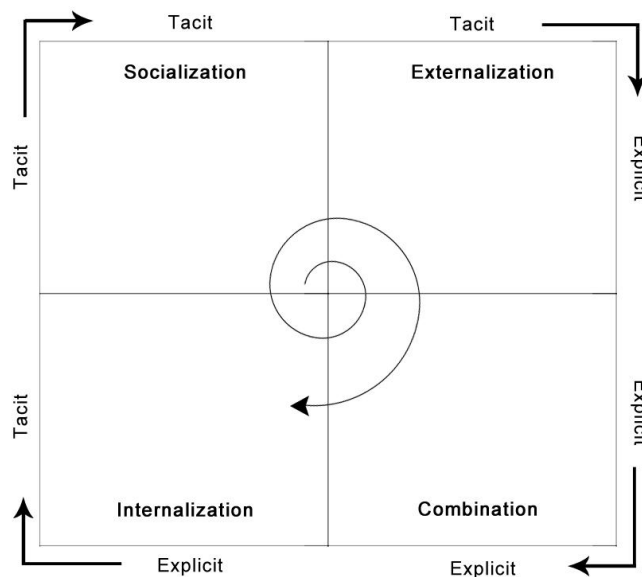


Fig.2.1 Nonaka, I., Toyama, R. and Konno, N. (2000). 'SECI

Know the content creation process knowledge socialization process (Socialization), externalization process (Externalization), combined with process (Combination), and the process (Internalization) hereby were described as follows:

*Socialization* refers to the organization of knowledge among its members implicit

conversion share. By sociability (common) activities and experience sharing, so as to achieve the creation of implicit knowledge process. The mental models and technical skills are also sharing the same class. Such as management philosophy, corporate culture, understanding of the customer, users feel (Nonaka, 1994).

*Externalization* refers to the transformation of an individual's implicit knowledge into explicit knowledge of the new process, which is the tacit knowledge such as experience, mental models, transformed into a definable, can be put into words, and is handling the process easier solution form. Implicit to explicit, such as technical guidance manuals, market specific information. The interpretation of the induction process is also a kind of externalization. Thus, outside of the process is to make tacit knowledge can be as dominant as has the characteristics of heritage knowledge and communication.

*Combination* means through merger, compiled record, classify, and reassembled to create new information that some explicit knowledge, explicit knowledge is transformed into a more complex process of explicit knowledge. That is the dominant piece of information in the knowledge integrated into a whole new knowledge. For example, the formal education and training, such as the market in general intelligence, national political and economic situation. In the organizational environment, the most common in middle-level managers will be passed to the new concepts throughout the organization. Therefore, the combination of the process is to make explicit the relevant knowledge to become relevant systematic knowledge of the other categories.

*Internalization* refers to explicit knowledge to tacit knowledge conversion process. Including of course the dominant knowledge may be included in the activities and practices among so individuals can repeat the experience of others to acquire knowledge. Such as management courses, education and training. So when the entire organization can share the new dominant knowledge, the rest of the staff to bring new knowledge to be expanded, while the extension and application, can become employees own implicit knowledge, and this new knowledge has become the organization's most valuable asset.

Based on Nonaka and Takeuchi (1995) four knowledge creation process, the goal is to assist companies to understand the knowledge, each process may affect the knowledge within the organization knowledge asset creation, which in turn could affect the organization cumulative effect of performance. Therefore, the present study is to investigate to know whether that knowledge creation will generate innovation capability and organizational knowledge creation to influence organizational performance

## 2.2 Innovation capability

Abernathy and Utterback (1978) had defined innovation changes the focus of the company's mature, usually based on the innovative technology-based small companies

through product improvement and become a process of large companies, innovation is a successful strategy decision variables. After countless innovations are usually the product or technology to improve and enhance innovation obviously depends on many successful marketing and economic size range.

Drucker (1985) believed that innovation is the specific tool of entrepreneurs, the ability to change as an opportunity to develop into different careers or provide different services. Therefore, as long as the value of the existing resources to create a way to change, you can call it innovation. So, innovation is an area you can learn and practice.

Holt (1985) that innovation activity is a process of applying new knowledge or knowledge related to the concerted efforts and activities and the formation of a new product or a new program through the individuals, groups and organizations. Tushman and Nadler (1986) believed that all manufacturers created their own products, services or processes, can be called innovation. According to Frankle (1990), innovation is an amended or invented new concept, in order to make them consistent with current or future potential demand, and it can be improved with the development of the original functional reach commercial purposes. Damanpour and Evan (1984) innovation capacity will affect organizational performance and innovation capability into management innovation (Administrative Innovation) and technological innovation (Technical Innovation) are two, and think through the actual verification that technological innovation is faster than the speed of innovation management. Roberts (1988) provides the customer requirements for new products and services, and to make commercial description.

Brown (1992) believes that the only advantage to create a completely different way is to innovate. Innovation is a new product, process or a system has the potential to create a new market, or to change the behavior patterns of competitors or customers. Thomas (1993) found that organizational innovation rate to reflect market changes. Ajero (2002) pointed out that in order to maintain customer loyalty, businesses not only need to have vibrant and innovative products, but also having the ability to design and service innovations.

Therefore, the level of innovation capability of enterprises will affect the future development of an enterprise, so how to create a good performance against the competition through innovation.

### 2.3 Organization performance

Geogropoulos and Janneubaum (1957) considered organizational performance means to achieve their goals. Kassem and Moursi (1971) considered organizational performance refers to the extent to achieve various objectives of their duties. Szilagy and Wallar (1980) pointed out that the performance of the organization is to assess, whether the efficiency of resource utilization or performance of the instrument, but also can be used to reflect the performance of

individual behavior in order to achieve organizational goals taken, to guide the allocation of resources in the future organization (Campbell, 1990). Hall (1991) indicated that for the organization to achieve their goals, attainment or maintenance of the function of the surrounding environment for the development of rare or valuable resource capabilities.

Venkatraman and Ramanujam (1986) considered a measure of organizational performance, presented three projects: (1) Financial Performance: cause economic objectives, such as profitability, EPS, etc., the traditional measure of performance. (2) Business performance: Performance contains financial and operating performance (business traits performance). Job performance indicators are the market share, new products, product quality, marketing and other non-financial performance indicators. (3) Organizational Effectiveness: To define the most extensive organizational performance, in addition to including the aforementioned two, but still achieve their goals together to resolve various conflicts process, as well as to meet the various stakeholders of the target account. Hatten (1987) pointed out that the performance of the organization's goals is to reach a level of measurement. Silverman and Menessa (1976) also stated that employees must strive to achieve organizational performance goals, objectives and organizational performance are often jointly by employers and employees to set. Robbins (1990) thought the organization to achieve its short-term and long-term goals of attainment, this target reaction order to assess the various stages of the organization's own interests and life-cycle. Grice (1992) pointed out that even through employee performance appraisal (Employee Performance Appraisal), will enhance the efficiency and productivity of employees, and the organization to achieve common goals. For the evaluation of the performance of various scholars have proposed different assessment dimensions, there is considered a measure of performance can be divided into subjective or objective (Powell and Dent-Micallef, 1997), quantitative or qualitative, financial, non-financial performance (Venkatraman and Ramanujam, 1986) and other means. Dess and Robinson (1986) considered the most commonly used indicator of economic rate of return on the assets side is the sales growth rate. Theodoras, Laios and Moschuris (2005) pointed out that improving customer service performance requirements include service order integrity, invoice no mistake, on-time delivery, product delivery flawless, efficient handling of product returns, notification of the shortage of orders, providing technical information and efficient handling of customer requests, such as eight. Kaplan and Norton (1992) considered organizational performance from the financial side, the four dimensions of customer, internal business processes, learning and growth, and to measure.

## **METHODOLOGY**

This section will describe the methods used in this study and outline the research framework, research hypotheses and operational definitions and measurement.

### 3.1 Research framework

Explore research purposes and literature, presented research framework shown in Figure 3.1. This study will explore the structure of knowledge creation, has connected between innovation and organizational performance; therefore propose the following points assumptions:

H1 : Knowledge creation will positively affect innovation capability.

H2 : Knowledge creation will positively affect organizational performance.

H3 : Innovation capacity will positively affect organizational performance.

H4 : Knowledge creation affects organizational performance through innovation capability.

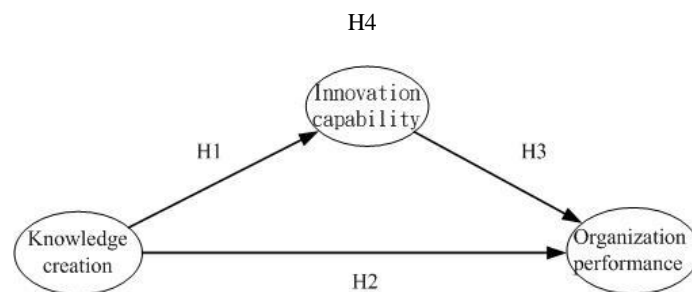


Figure 3.1 The proposed framework of this study

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