

An empirical study on the correlation between knowledge management capability and competitiveness in Taiwan's industries

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Abstract

There have been dramatic changes in business enterprise management since Internet technology has been widely applied. World-wide network users can share all kinds of knowledge through the Internet. Knowledge has currently become a main part of manufacturing resources and a prerequisite for success in the production environment. Competitiveness and the resulting rewards can be obtained by taking advantage of knowledge management (KM) and intensive learning. This empirical study validates the relationship between knowledge management capability and competitiveness in Taiwan's industries. This research shows the impact of knowledge management capability on competitiveness. A hypothesis test and theoretical model are proposed in this study.

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1. Introduction

Over the past 12 years science and technology, trade and business management have created tremendous knowledge and wealth. Land and natural resources have become less important in this period. A country and its enterprises must survive and succeed in the midst of these dramatic and accelerating changes. All rely on knowledge. Since the input and output of enterprises is knowledge, obtaining, refining, storing and sharing knowledge has become the main part of an enterprise's activities. As we enter the new millennium, we find that cash, raw materials and land, which were crucial factors for enterprise development in the past are now no longer the most important factors. Knowledge management (KM) collects all information that flows around enterprises. By systematically rearranging and analyzing data and information, knowledge management is now becoming richer in content. The applications for conducting business are more inclusive. Moreover, knowledge management combines each individual and group. Therefore, knowledge manage-

ment not only groups individual knowledge, but also solidifies and enriches tacit knowledge. Strengthening knowledge management and increasing the company's competitiveness is a long-term strategy a company must face. Industry infrastructure is now reaching a transition and the various knowledge fields for obtaining knowledge, refining knowledge, storing knowledge, and applying knowledge must be evaluated. The destination is to create wealth.

The purpose of this study is to verify the correlation between knowledge management capability and competitiveness for an organization. The influence of knowledge management capability on competitiveness can be obtained using a theoretical foundation. In other words, knowledge management capability is more than a catch-all for information and knowledge. It is a tool for maintaining information that will help us to work more efficiently.

2. Literature review

There has been much research dealing with knowledge management capability and competitiveness. You (1997) proposed a performance measurement method for companies to justify their researches and development

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projects meeting the market's needs. In the paper, he adopted a competitiveness function curve to describe various expected competitive values. In another reference, Chen (1997) pointed out that the Taiwanese Government adopted an economic policy to increase nationwide competitiveness when Taiwan's industries were in a labor-intensive to technology-intensive transition. These two papers concentrated on competitiveness issues. Few papers dealt with the correlation between knowledge management capability and competitiveness. Lin (1999a) suggested that establishing a knowledge management database could lead to benefits from data sharing and knowledge creating. This could also increase competitiveness. Moreover, Liu et al. (2001) suggested that taking advantage of the knowledge management could excite employee potential and accelerate the integration of employee knowledge. Knowledge management has become one of the necessary conditions for enterprises to survive in a competitive environment. Davenport and Prusak (1998) produced a definition for knowledge management in their book entitled 'The Digital Nervous System'. They stated that knowledge management involves collecting and organizing information and transferring information to those that need it. The founder of Matsushita said, 'Current marketing is very complicated and competitive'. The respect and adoption of each employee's intelligence is the key to continuous company management (Davenport and Prusak, 1998). Drucker (2000) stated that 'for each type of organization, transformation into an information-oriented organization is the best'. Polanyi (1958) divided knowledge into tacit knowledge and explicit knowledge based on the degree of expression. Nonaka and Takeuchi (1995) defined tacit knowledge as a kind of personal characteristic that is too abstract to transfer or even express using words. Howells (1996) thought that tacit knowledge is a kind of expertise that is not editable. This knowledge is obtained through informal learning behavior and a sequence process. Leonard-Barton (1995) defined knowledge as core endurance. It consists of four factors: solid system, management system, employee skill and knowledge, and value/specification. According to the professional level, Quinn et al. (1996) categorized knowledge into know-what, know-how, know-why and care-why. Grant and Gordey-Hayes (1996) further pointed out that the integration of knowledge relies on a form of common knowledge. He then divided the common knowledge into five groups: language, symbolic communication, common expertise, the meaning of sharing, and recognizing the individual field of knowledge.

Chang (1999) classified knowledge management tools into four groups. These were the application of information technology/tools for knowledge retrieving, information technology/tool applications for knowledge creation, applications for information technology/tool accumulation, and information technology/tool

applications for knowledge diffusion and transfer. Tsai (2000) defined knowledge management as knowledge obtaining, knowledge refining, knowledge storing and knowledge sharing. Lin (1999b) noted that product life cycles are becoming shorter. He emphasized that the only way for an enterprise to win this battle is to cultivate core capabilities and convert this into a sharp weapon. Porter (1990) presented in his book entitled 'The National Competitive Advantage'. He proposed a diamond model representing a nation's competitiveness. Chi (1999) defined a measurement index for competitiveness as follows: (1) Forecasting capability: an organization can adapt itself to the changes in the environment and have the capability to plan strategies against change. (2) Innovation capability: having strong research and development capability, continuous improvements in the business management and product processes. (3) Marketing capability: the ability to open new markets, increase sales and create profits. (4) Quality in product and service: to fulfill customers' needs. (5) Enterprise image and responsibility: enterprises must fulfill their social responsibilities, and develop a good image. (6) The capability to cultivate talent: develop the employee's maximum potential to achieve the enterprise's goals. (7) The capability to make use of information technology: whether an enterprise can effectively use information technology to increase efficiency. (8) Financial affairs: whether an enterprise can effectively use cash to increase efficiency. (9) The capability to manage international business: the ability to maximize profits through mastering global resources and business internationalization.

3. Methodology

This research centers on the four main functions of knowledge management capability. Obtaining, refining, storing and sharing knowledge are the measurement factors (independent variables). The enterprise characteristics, technology advantages and scale of the enterprise are the dependent variables. The conceptual and theoretical structure is shown in Fig. 1.

3.1. Assumptions

The following assumptions were used in this study:

1. The relationship between knowledge management capability and competitiveness
 - H1 The difference in knowledge management capability for various organizations will result in significant differences in competitiveness.
 - H1-1 The capability for obtaining knowledge is different in competitiveness.

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