

Performance Effects of Knowledge Management: Corporate Management Characteristics and Competitive Strategy Enablers

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ABSTRACT

The knowledge management literature suggests that various enablers play critical roles in determining the activity of knowledge management. However, there is little empirical research on the characteristics of corporate management and their competitive strategy enablers. This study proposes that knowledge management is a critical organizational capability through which enablers influence the performance of the corporation. Specifically, the characteristics of corporate management, competitive strategy, knowledge management, and corporate performance are the four research constructs analyzed. An in-depth interviews were conducted to explore the differences between theory and practice. From a literature review and in-depth interview results, researchers developed formal questionnaire for quantitative analysis. Through analysis of data collected from 135 valid samples, this research empirically models and uncovers the key aspects of these constructs. The results provide a basic understanding of the superior performance as it enters a program of knowledge management.

Key words: knowledge management, characteristics of corporate management, corporate competitive strategy.

1. INTRODUCTION

Tanriverdi and Venkatraman (2005) indicate that knowledge has become the key economic resource and the dominant and perhaps even the only source of comparative advantage. The twenty-first century is the era of knowledge economy, in which most firms possess knowledge that enables them to improve corporate performance. How the corporation enhances organization value to boost internal performance and external competitiveness through the creation of effective knowledge management is a critical task. Therefore, how to manage corporate knowledge is important for organizations (Davenport & Prusak, 1998). Some enterprises emphasize organizational culture to build a supportive knowledge sharing structure (Grant, 1996). Other firms improve the access to knowledge access to make the collection, storage and exchange of knowledge more accessible (Lee & Choi, 2003) and to integrate fragmented flows of knowledge (Gold, Malhotra & Segars, 2001). With recent improvements in science and technology, the techniques of information systems have become more and more important, thus information systems can be used to support and promote knowledge management

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activities. The organization management characteristics, such as organization culture, organizational structure and information technology, are the key factors for companies to implement knowledge management activities. Thus, while understanding the influence of corporate management characters and knowledge management activity, we should further investigate the impact of corporate competitive strategy on knowledge management activity.

In recent years, knowledge management implementation has become popular among companies. Organizational knowledge is considered a highly valuable strategic asset which mainly includes tangible and intangible organization assets. Furthermore, with the good use of information technology, it is likely to result in effective management. The purpose is to stimulate organizational creativity and to increase company competitiveness. Hansen, Nohria and Tierney (1999) note that the strategies companies have applied are determined by key factors such as; types of customers, corporate character and employee attributes. Other key determinants include human resources, information technology and competitive strategy integrated to elicit the greatest efficiency. Knowledge management must be a reflection of the competitive strategy in order to create customers' value, earn profit for the organization and manage employees.

Many prominent technology firms now depend upon knowledge-work processes to compete through innovation more than production and services (McCartney, 1998). Drucker (1978) asserts that increasing knowledge-work productivity represents a great management task of this century, on a par with the innovation and productivity improvements made through the manual-work processes of industrialization. Thurow (1999) argues that there are three stages in the evolution of economic development. The first stage is resource utilization including natural resources and labor. The second stage is capital utilization through large amounts of money being invested in facility and equipment to stimulate economic growth. The third stage is knowledge utilization, which has become the successful factor of many enterprises nowadays and a new milestone of fortune creation. Knowledge makes technology more advanced and provides the power to increase productivity and eventually to create a high economic growth rate. Thus, the relationship between knowledge management activity and corporate performance is highly connected. In conclusion, the operation of knowledge management activity will influence corporate performance. When firms perform knowledge management activity with higher effectiveness, the performance of the firms will be increased as well.

The research of enterprise internal knowledge management also focuses on the connection of knowledge management and organization performance or the introduction through the effectiveness of knowledge management organization innovation (Andrew, Arvind & Albert, 2001). Previously, less attention was paid to the companies' implementation of the strategy of knowledge management within the company and to the influence of its related activities. On the other hand, the importance and the value of enterprise competitive strategy are highly valued. In contrast fewer studies focus on knowledge management activity. Thus, this research hopes, through the exploration of the characteristics of corporate management and competitive strategy, to understand more deeply these two factors influencing performance. The research process is listed as: (1) to discuss the fact

that the characteristics of corporate management can be influenced by knowledge management activity and can influence corporate performance; (2) to discuss enterprise competitive strategy through the understanding of knowledge management; (3) to analyze, organize and summarize, and carry out a research model to build research assumptions and compare with historical data through in-depth case study; and (4) to summarize a model from the result of this in-depth case study, and to understand that the next step is to combine the characteristics of corporate management and competitive strategy in order to offer many industries the opportunity to utilize knowledge management activities to increase their competitiveness.

2. LITERATURE REVIEW

2.1 The Characteristics of Corporate Management

This research with a focuses on the characteristics of corporate management based on three aspects: organizational culture, organizational structure, and information technology. From these three aspects it is possible to understand the characteristics and to understand the definition of corporate management is possible. After that Following this, the characteristics of corporate management and the definition of corporate management and irrelativeness of knowledge management are revealed.

Dension (1990) defines that a set of values, beliefs and behavior models can be called a corporate culture. This corporate culture can be built on a the core value of the firm. Schein (1985) also mentions that corporate culture is not fixed and or unchangeable, but it will change through the transformation of that organization. Within this group, the change process goes through a series of group developments, maintenance and the evolution of the influential culture. After this process, a set of common values and a set of common rules can be built afterwards.

Corporate culture is initiated originally by the founders (Schein, 1985). Also, the rules of high level management have a great impact on this initiation process. Many recent studies and researches have shown that corporate culture influences the performance of knowledge management and it has become the major factor to in forming internal corporate knowledge management. Alavi and Leidner's study (1999) focuses on the application of knowledge management. The result shows that within companies, the experience of sharing knowledge and the success of knowledge management is highly connected with the corporate culture. Successful knowledge management must rely on the cooperation of culture, management and organization.

Economically speaking, organization structure should be designed according to the consideration of knowledge as a core resource. Organizations should understand the difference of essential knowledge and their characteristics. As a result, the design method of centralization of that organization structure strategy can be determined. The creation and the utilization of knowledge of this organization can be fully supported (Grant, 1996). Also, while companies execute

the internal knowledge management, there should be a fully devoted staff in a designated department within the organization structure, whose sole responsibility is to be the planning and be the execution of this corporate knowledge management. Hidding and Catterall (1998) point out that, organizations should hold a new position and new role to administer knowledge management activities. In addition, Puccinelli (1998) asserts that in the coming era of knowledge management, organizations should designate an most properappropriate person, usually a chief knowledge office (CKO), to handle internal knowledge management affairs.

Greengard (1998) proposes that information technology has can provide a great contribution to the promotion of knowledge management because information technology makes pushes knowledge management go through the boundary of space and time. The influence of information technology on knowledge management, it is the critical tool for organization to achieve knowledge management. Technology meets the demand of for different aspect of knowledge in different aspects and it can also control, store and broadcast knowledge o. On the condition that organizations adapts suitable information technology tools to enable knowledge management to generate effectiveness and to increase productivity. Alavi and Leidner (1999) holds the point that information technology is to offers a desirable environment in whichto boost knowledge management can be boosted. Therefore, information technology is a tool within an organization to achieve knowledge management because technology fulfills different aspects of demands in knowledge management. It can control, store, and broadcast knowledge. If firms adapt the proper tools of information technology, knowledge management can also enables a more adequate performance.

2.2 Competitive Strategy

The objective of competitive strategy is to create competitive advantages in the industry in which a firm operates with a strategy which represents a technique by which a firm arrives at a decision (Porter, 1985). Generic competitive strategies, that is, differentiation, focus and cost, have been actively addressed in strategic management studies (Spanos & Lioukas, 2001; Rivard, Raymond & Verreault, 2006). For the difference between the businesses of the corporation itself, competitive strategy is due to the difference in relation with knowledge management activity. Grant (1996) believes that corporation is the convergence of individual and organizational knowledge. Knowledge is a fundamental factor in the creation of competitive advantages. Zack (1999) mentions that in order for the sole knowledge performance of an organization to be increased, the application of information technology in knowledge management and corporate competitive strategy should be used imperceptibly. Competitive strategy should effectively be used as a unique knowledge resource so that the relationship between knowledge and strategy can be mutually connected.

Davenport and Prusak (1998) believe that knowledge management should combine internal corporate administrative strategy and competitive advantages. As a result, the competitive strategy will enable knowledge management activity to be the definition of knowledge management strategy in order to support corporate

goals and the missions to secure the status of competition (Gronhaug & Nordhaug, 1992).

2.3 Knowledge Management Activity

Knowledge management can simultaneously increase creativeness of knowledge in both quality and in quantity. It can also boost the value of validation in knowledge. Spek and Spijkervet (1997) consider that major knowledge management lies in the flow of the organization, including the development of innovative knowledge, the distribution of knowledge when needed, the storage of knowledge for the future and the field of application and the integration of knowledge within the entire organization.

Beckman (1997) considers that there are eight steps within knowledge management activities including the definition, the access to knowledge, the selection of knowledge, the storage of knowledge, the sharing of knowledge, the application of knowledge, the creation of knowledge and the selling of knowledge. This study is based on Beckman's (1997) research to define knowledge management activities. The definitions of different steps are given as follows: (1) the selection of knowledge: based on the value of gaining appropriate access to knowledge and filtering out knowledge based on the value. (2) The access to knowledge can be defined through internal working experience in the firm, external information such as market, technology and products etc... (3) The storage of knowledge can be extracted into different categories with proper methods. (4) The sharing of knowledge can be understood through internal organization users and information should be able to be exchanged in a regular place with contexts not only limited by internal corporate best practice, but also by the suppliers', the employees' and customers' interactions.

2.4 Corporate Performance

Ruekert, Walker and Roering (1985) divide performance into three categories; effectiveness, efficiency and adaptation. First, effectiveness is the ratio of output to input resource as a rate of investment to performance. Next, efficiency is the product or the service provided by the rate of sales growth or the rate of market share. Finally, adaptation is the responsive ability when firms face an environmental threat or opportunity and is measured as sales number or sales rate during the first period in which the product enters the market successfully. Corporate performance is the performance of the corporation towards specific and preset goals. The business performance measurement and business evaluation can help corporations to understand the trends of the environment and the industry. In other words, they can provide the enterprise a measure with a related standard for them to work specifically on achieving the goal successfully.

In general, the method of measurement of corporate performance is mainly divided into financial indicators and non-financial indicators. Financial indicators are the fundamental measurement of organization performance. The general uses are profit ratio, revenue growth rate, investment output ratio and capital return ratio.

(Dess & Robinson, 1984; Venkatraman & Ramanujam, 1986). When corporate organizations adapt knowledge management knowledge utilization and knowledge sharing will be speeded up and, overall, competitive advantage will be enhanced. Kirsch (1997) also has the impression that knowledge management has gone through the steps of knowledge creation, knowledge acquirement and knowledge utilization. Knowledge management has become a corporation's non-neglectable development tool of the new century. Regardless of industrial characteristics, a corporation should possess the characteristics of knowledge and should be able to quickly find the core knowledge management method that matches the corporation's needs. According to different industrial characteristics, firms should develop a proper knowledge management purpose. Through an effective way to promote knowledge management, a company can benefit from long term competitiveness.

3. RESEARCH HYPOTHESES

To face the coming era of knowledge economy, companies have to realize that they will need to maintain an ongoing competitive advantage that is no longer related to tangible land, labor and capital. But, with intelligence and innovation of knowledge capital, these differences can be easily copied and learned. Therefore, gradually, more and more firms have come to realize that the utmost value of a firm is its knowledge capital, which is acquired through internal accumulation over a long period of time. Ahn and Chang (2004) maintain that among knowledge management, organization management traits, professional staff core abilities, simulation factors and working performance are obviously positively correlated. Also, the capabilities of core professional staff and the reaction of knowledge management interaction have a positive impact. Thus, this research proposes that corporate management traits have a positive influence towards knowledge management activity. The preceding develops hypothesis one of this study.

H1: The characteristics of corporate management have a positive influence on knowledge management activity.

According to research, there are direct relationships (Hansen et al., 1999; Zack, 1999) or indirect relationships (Davenport & Prusak, 1998) between knowledge management and competitive strategy on enhancing companies' better opportunities to create and maintain competitive advantages. Through knowledge management activity to achieve strategic goals, corporations will possess unique advantages on cost, speed and efficiency. Therefore, corporate competitive strategy will also directly influence knowledge management activity. This leads to the second hypothesis.

H2: Corporate competitive strategy has a positive influence on knowledge management activity.

In the past, a lot of research has addressed knowledge management activity

and corporate performance. Sharp (2003) considers that knowledge is the key factor in corporate competition and corporate future value. To invest in knowledge management, companies usually realize the great benefits involved. Thus, this research proposes that knowledge management activity has a direct influence on business performance. This statement leads to hypothesis three.

H3: Knowledge management activity is positively correlated with corporate performance.

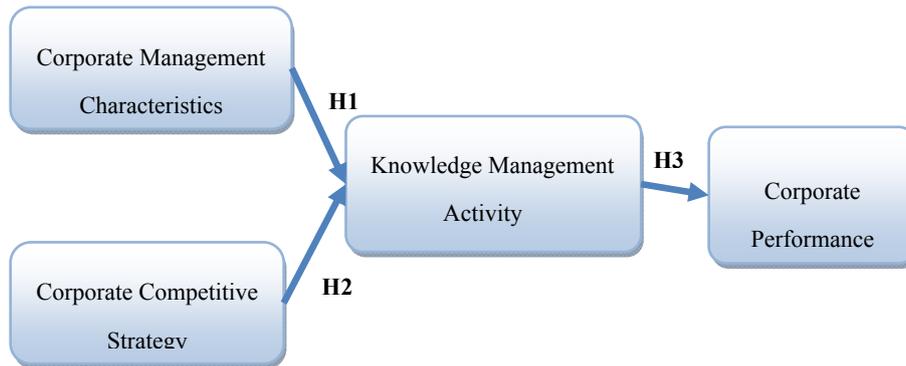


Figure 1. Research Model.

4. RESEARCH METHOD

4.1 Research Constructs

To test the hypotheses, this study relies on four constructs. The first construct measures the extent to which firms use the multiple characteristics of corporate management: corporate culture, corporate structure and information technology. The second construct measures the extent to which firms employ a corporate competitive strategy such as low-cost strategy, differentiation strategy and focus strategy. Next, we will measure the extent to which the firms are involved in knowledge management activities, such as the choice of knowledge, the storage of knowledge and the sharing of knowledge. The last construct is built to measure corporate performance.

4.2 Research Method

In this research, we adopt empirical studies to analyze the impact of corporate management characteristics and corporate competitive strategy on knowledge management activities and in turn to improve the firm performance. The empirical

analysis focuses on the manufacturing industry in Taiwan. The sample frame consists of a relatively homogenous sample of larger manufacturing firms in order to reach a higher degree of internal validity. These firms maintain similar applications and organizational resources, alleviating the moderating effects of the economy and industry.

In order to better understand knowledge management activities and the characteristics of a firm in this industry, researchers interviewed senior managers the various industries using an in-depth case study method. The scope of the case studies was defined to avoid irrelevant data collection. In this paper, only data in the area of our research constructs were collected. This study has case studies listed as case A, B, C, and D. Company A was founded in 1980 and is a professional optical lenses manufacturer. Company B was founded in 1997 and is a professional optical disc manufacturer. Company C is a global research firm in industrial computer accessories and was founded in 1995. It is the only firm to implement six sigmas and pass international corporate professional audit in the production process. Company D was founded in 1995 and focuses on communication, motion, wireless and broadband, and core communication technologies.

According to the results of the interviews and analysis of the cases, the researchers revised the research model and developed a survey instrument to solicit quantitative assessments of the variables in the study. The research hypotheses were then tested by a formal questionnaire survey of senior managers in manufacturing firms.

5. CASE STUDY

In order to create measurable questions and to investigate the compatibility of the research constructs, researchers interviewed senior managers from the various industries using an in-depth case study method. Appendix A shows the content of the in-depth interview.

(1) Knowledge Management Activities

The choice of Knowledge: these four companies are from domestic or global areas. The employees and managers are from domestic areas. The firms are both from local and foreign areas. These two aspects are to promote choices of corporate knowledge in order to enhance knowledge broadness. As a result, a choice of knowledge can be offered. Among four cases, only company D has set up an organization to administer knowledge management activity to enhance the choice of knowledge.

The access of Knowledge: The four individual companies implement database systems for access of knowledge, including employees' knowledge/experience, supplier knowledge, and customer knowledge. The employees of these companies can access knowledge to help their decision making.

The storage of knowledge: These four companies utilize knowledge platforms

to filter and store their knowledge. Company D differs from the other three firms in having set up a designated department to utilize management information systems as a means of storing their knowledge. Also, it fosters knowledge transfer to enhance educational training as a method of storing knowledge.

The sharing of knowledge: These four companies use knowledge platforms such as exhibition seminars, focus groups and organization structures to offer internal corporate knowledge sharing and to promote learning among members. Knowledge flows between upstream and downstream and thus increases the interaction between the two parties and therefore the purpose of knowledge sharing is achieved.

(2) Individual Study of the Characteristics of Corporate Management and Competitive Strategy towards Knowledge Management Activity

According to these four cases, this study found that there is a direct connection between corporate culture and knowledge management activity in that knowledge management activity implied that value is also part of the organization. These four individual companies use information technology systems to execute the access, selection, storage and sharing in knowledge management activity. To divide organization structure, they all undertake internal knowledge sharing to help each department to overcome obstacles through knowledge sharing mechanisms that expand their experience. Therefore, this research hypothesizes that: (1) characteristics of corporate management can positively influence knowledge management activity. This also reflects on the individual interview.

In the competitive market, companies can only lower their cost to compete with rivals in order to increase their profits. Also, in the long term, they can work together with the suppliers to lower their costs and lower the likelihood of fixed inventory. These four firms all focus partial influence on strategy and strategic differences. Currently, due to the popularity of the internet, placing orders can be done through the use of the internet. There is no need for market segmentation. Instead, internal knowledge management can be used as a knowledge management platform and an external strategy, such as supplier selection, utilized. These all belong to strategic applications to promote accurate company knowledge and precise access to knowledge. Based on the content of interviews, the H2 provides that the corporate competitive strategy has a desirable influence on knowledge management activity in a unique fashion.

To promote knowledge management activity, using databases and experienced employees, organization structure enables the firms to store knowledge and use message communications to achieve knowledge sharing objectives. It has a great impact on allowing the employees to understand knowledge selection, the access to knowledge, the storage of knowledge and the sharing of knowledge for the entire corporate performance. These four individual companies all use activities related to knowledge management to offer outstanding assistance and to control corporate performance. The third hypothesis of this study has been carried out: knowledge management activities have a positive influence on corporate performance.

(3) Comparison of the Past study and Four Research Cases to Explain Similarities and Differences

Flattened organization structure, distinct corporate culture and higher employees' loyalty make the sharing of knowledge easier. To build a set of information systems and to store knowledge effectively, when companies adapt different competitive strategies, there will be different ways to execute knowledge management internally. Through effective knowledge management, a firm can enhance the efficiency of corporate decisions and increase company performance. To relate knowledge management activity and corporate performance, these cases and past studies all lead to the same conclusion: it is indisputable. We can learn from the above cases about the characteristics of corporate management and competitive strategy toward knowledge management activities' performance from individual cases. According to an analysis of individual case results, this research models the evidence of the theoretical results and the three assumptions from this research matched. Therefore, there was no need to modify the content of the questionnaire.

6. DATA ANALYSIS

The intention of our study is to prove the relationship among corporate management characteristics, corporate competitive strategy, knowledge management activities and corporate performance. The hypotheses are tested by regression analysis. Table 1 summarizes our regression results. In order to provide a better presentation of significant relationships, Fig. 2 has been provided.

Hypothesis 1 examines the effects of characteristics of corporate management—corporate culture, corporate structure and information technology; and the effects on knowledge management activities—the choice of knowledge, the access to knowledge, the storage of knowledge and the sharing of knowledge. Results show that 79.3 percent of the variance of knowledge choice is explained by corporate culture, corporate structure and information technology. Corporate culture has a significantly strong and positive influence on knowledge choice ($\beta = 0.453$, $p < 0.001$). Information technology also has a significant effect on knowledge choice ($\beta = 0.222$, $p < 0.01$). Results show that 53.5 percent of the variance of knowledge access is explained by corporate culture, corporate structure and information technology. Corporate structure has a significantly strong and positive influence on knowledge access ($\beta = 0.493$, $p < 0.01$). Results show that 43.7 percent of the variance of knowledge storage is explained by corporate culture, corporate structure and information technology. Information technology has a significantly strong and positive influence on knowledge storage ($\beta = 0.456$, $p < 0.01$). Therefore, hypothesis 1 is partially supported.

Hypotheses 2 examines the effects of corporate competitive strategy—low-cost strategy, differentiation strategy and focus strategy; and the effects on knowledge management activities—knowledge choice, knowledge access, knowledge storage and knowledge sharing. Results show that 45.2 percent

of the variance of knowledge choice is explained by corporate culture, corporate structure and information technology. Low-cost strategy has a significant effect on knowledge choice ($\beta = 0.171, p < 0.05$). Focus strategy has a significantly strong and positive influence on knowledge choice ($\beta = 0.584, p < 0.001$) and a significant positive influence on knowledge access ($\beta = 0.482, p < 0.001$). Results show that 34 percent of the variance of knowledge storage is explained by corporate culture, corporate structure and information technology. Low-cost strategy has a significant effect on knowledge sharing ($\beta = 0.171, p < 0.05$). Focus strategy has a significantly strong and positive influence on knowledge sharing ($\beta = 0.490, p < 0.001$). Therefore, hypothesis 2 is partially supported.

Hypothesis 3 examines the effects of knowledge management activities—knowledge choice, knowledge access, knowledge storage and knowledge sharing; and on corporate performance. To investigate the hypothesis, entering all variables in a single block, researchers found that the proposed model explains a significant percentage of variance in corporate performance ($R^2 = 38.9\%$, $F\text{-value} = 2.227$). Specifically, the study results show that knowledge choice has a significant positive influence on corporate performance ($\beta = 0.891, p < 0.05$). Furthermore, knowledge access ($\beta = 0.625, p < 0.05$), knowledge storage ($\beta = 0.621, p < 0.05$), and knowledge sharing ($\beta = 0.688, p < 0.05$) variables are all found to be essential for corporate performance. Therefore hypothesis 3 is supported.

Table 1. Relationship of the characteristics of management and knowledge management activities

Indep.	Dep.	Knowledge choice	Knowledge access	Knowledge storage	Knowledge sharing
Corporate culture		0.453***	-0.123	0.123	0.177
Corporate structure		0.486	0.493**	0.118	0.007
Information technology		0.222**	0.114	0.456**	0.281
R-square		0.793	0.535	0.437	0.169
F-value		19.162	5.75	3.886	1.016

Note. *: $P < 0.05$; **: $P < 0.01$; ***: $P < 0.001$.

Table 2. Relationship of corporate competitive strategy and knowledge management activities

Indep.	Dep.	Knowledge choice	Knowledge access	Knowledge storage	Knowledge sharing
Low-cost strategy		0.171*	0.045	0.132	0.169*
Differentiation		0.071	-0.108	0.383**	0.073
Focus strategy		0.584***	0.482***	0.016	0.490***
R-square		0.452	0.195	0.176	0.340
F-value		20.105	5.886	5.189	12.536***

Note. *: $P < 0.05$; **: $P < 0.01$; ***: $P < 0.001$.

Table 3. Relationship of corporate performance and knowledge management activities

	Dependent	Corporate performance
Independent	Knowledge choice	0.891*
	Knowledge access	0.625*
	Knowledge storage	0.621*
	Knowledge sharing	0.688*
	R-square	0.389
	F-value	2.227

Note. *: $P < 0.05$; **: $P < 0.01$; ***: $P < 0.001$.

7. RESEARCH DISCUSSION

Robbins (1998) urges that strong culture has a great and far reaching influence on organizational commitment. The stronger the culture is, the more members adopt organizational core values and therefore, the more commitment they have to core value. In addition, members of organizations with a strong culture have a greater sense of belonging. This creates employees with a high loyalty and thus it becomes easier to achieve the goal of sharing of knowledge. In organization structure and information technology, and in a flattened corporate organization structure, a set of information technology builds to store knowledge effectively. Knowledge management execution makes companies fully utilize their resources to a responsive capability which in turn increases the competitiveness of the organization.

Knowledge is the basis of advantage in organizational competition. Not all companies have the same ability in knowledge management (Winter, 1988). Companies can strictly control the variety of manufacturing costs in management and lower the operational costs so that companies can utilize cost strategy to beat their counterparts in the early stages. The differences in which companies run their businesses is derived from cost control strategy. Only the possession of an outstanding ability in knowledge management can support the companies in achieving continuing competitive advantages (Liebeskind, 1996). Corporate organization exists not only for the sake of their existence. More important goals are those of gaining profit, growing and developing through competitive strategic advantages. Focus strategy can obtain, through market segmentation concentrating on targeted customers, targeted geographic range and targeted channels to build market survival advantages. Thus, focus strategy is one important task. Also, by the execution of knowledge management activities combining with corporate competitive strategy, companies can enhance their performance efficiency.

To build trust and an open environment among cooperating partners, employees can freely access their knowledge, interact, communicate and share so that organizational problems can be solved instantly and knowledge management activity efficiency can be enhanced. Through knowledge management activities, companies can have more related information to provide a high level of management to select and compare, and come out with a more effective strategy to

gain the utmost benefits for companies themselves. Furthermore, a flattened organization structure will contribute more in knowledge accumulation and sharing, and make organizations more flexible to adapt to all kinds of different environments. In the process of knowledge integration, it will increase organizational efficiency and eventually increase corporate value and competitiveness, so helping to improve corporate performance.

8. CONCLUSION AND SUGGESTIONS

This research is designed mainly to discuss the impact and the determining factors of the characteristics of corporate management, competitive strategy and knowledge management activities of corporate performance. To achieve the research purpose, first of all, this research investigated and summarized previous studies by the means of three aspects including corporate culture, organizational structure and information technology in the characteristics of corporate management. Corporate competitive strategy is based on Porter's (1980) cost strategy, differentiation strategy and focus strategy and discusses the relations between knowledge management activities. Through individual case interviews the structure of knowledge management activities were summarized to establish the basis of the research aspects. The questionnaire method was the research method chosen and was used to investigate the relation of each research aspect individually. Regression analysis was used to study the relationships between each research aspect to point out and prove previously built assumptions.

Among those aspects, the more flattened the organization is, the higher employees' loyalty is, which in turn helps to speed up the process of knowledge sharing. Furthermore, it helps to build a set of information systems to store knowledge more effectively. Knowledge management has an advantage in establishing knowledge management activities of greater flexibility through the utilization of information technology which in turn generates stronger competitive advantages for the firms. Also it will increase the gap between the nearest competitors. There is partial proof in the influence of the characteristics of corporate management on knowledge management activities. Companies use different competitive strategies internally to execute knowledge management and to exhibit a partial influence of the corporate competitive strategy on knowledge management activities. Companies obtain effective management systems through the use of knowledge. In turn, the companies will benefit from the increase of effectiveness in competitive strategy and therefore a greater and more desirable performance can be gained. It is obvious that knowledge management activities have a positive and outstanding influence on corporate performance.

This research, which investigates from a corporate perspective, offers suggestions, points out limitations and references for further research. These suggestions and limitations are listed below. The major purpose of the interviewers is to investigate relations within knowledge management activities through the analysis of the characteristics of corporate management and their adopted competitive strategy. Future researchers could investigate the key factors in

determining the different aspects of various type of knowledge management.

This study's purpose is to investigate the influences of knowledge management activity on corporate performance through the examination of the characteristics of corporate management and corporate competitive strategy. The relations are clearly presented and the conclusions are drawn thereafter. However, due to the limitations of sampling and the number of individual cases, the main focus is solely on the manufacturing industry. The questionnaires were sent out and collected as data to investigate and summarize and draw conclusions accordingly. This research's interview cases were three computer companies and one optical lenses manufacturing firm. To other industries, this research's results are not sufficient and therefore, not representative. Therefore, it leaves some room for future researchers to conduct future studies with subjects from different industries. This research only divides knowledge management activities into selection, acquisition, sharing and storage and the investigations are made through those aspects. As to other knowledge management activities, this study does not dig deeply. Thus researchers recommend that further research will have a focus on other activities and investigate accordingly.

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Appendix A. Individual interview content

	Company A	Company B	Company C	Company D
1. What is your corporate culture and internal member's core value?	We value people orientation, mutual trust, business long term running, organizational rules and strengthening procedures, good care of employees, leading company <i>pursuits</i> , <i>globalization</i> . <i>Internal core value is mainly to define clear appraisal and working environment to stimulate creativity among employees, service quality and team work spirit.</i>	Team work, innovation oriented, outstanding quality, hearty service and environmental concerned are five main items. These also provide the faith to offer good manufactured quality through each department, mutual support and corporation to create good business performance.	Company internally defines core corporate culture including continue study, innovation, team work and knowledge management. They are strongly related because knowledge sharing is outcome of continue studying, team work is mutual growth in knowledge broadcasting. Thus, knowledge management activities are implied in the corporate value which is part of the organization.	Conceptually honest devotion, outstanding technology and professionalism, happy work with defined role and responsibilities. Internal members' core value is to possess strategic thinking, innovation, risk taking, focus on work quality etc.
2. What is your organizational structure?	Divided into design, development, raw material, production four departments along with high level management department to offer proposals to let members select	System product , R&D, production resources, management and sales department	Organization structure is divided into six business groups: wireless communication, wireless, video, audio, storage and multimedia.	Divide into product R&D, technology, operations, and product marketing.
3. What kind of information technologies does your company use to promote knowledge management activities?	Our company uses tools such as search engine, database, cross platform functions.	Currently, our firm does not officially implement sound knowledge management system, only uses Internet, Intranet, Email and website to allow employees to search for information and communicate information.	Our firm has computer network, knowledge database system and Intranet. Among these, knowledge database and Intranet include many tools and mechanisms.	Our firm has knowledge platform to store much information and knowledge. As to projects and internal operations flow improvement, the platform will keep records and all the internal activities are also through this platform to communicate and promote.
4. Does your company utilize any related knowledge management activities?	Currently we only proceed partial knowledge management such as internal portal website, internal employees' file server, unified video conference equipment.	Currently we do not yet completely implement knowledge, but there are some proceeding knowledge management activities such as routine meetings, data, reports to build up files and then store and backup these data. These data will go through an Intranet and every employee can receive this information.	Knowledge management activity is always the thing we are doing. Currently our firm uses some incentives to make our employees interested in knowledge creation. The employees then create knowledge and, through different methods, store knowledge.	In Taiwan, we only do knowledge management. The corporate research center sets up knowledge management system but, due to geography limitations, there are still some areas without research centers. Thus these areas cannot include more solid knowledge management system.
5. Does your company have any connection to local or foreign firms to observe and learn new knowledge to select correct knowledge for your firm's adoption?	Although our company mainly wants to keep our roots in Taiwan, we have not yet reached the level of globalization business. However, our firm also notices the importance of connections. Now we have connections with Chinese, Japanese and other foreign firms, but only limited to Asian. To make correct knowledge selection is now one of our firm's management activities.	Currently we do not have any connection with foreign firms about knowledge selection. Due to our team originally from Material Research Department in Industrial Technology Research Institute, the team did optical disk storage and multimedia search jobs many years. They have strong R&D capability and Taiwan has the leading advantages in these areas. Domestically we do technical exchange mutual benefits activities.	Current knowledge management activities are only internal, among every business unit. In the future our firm should use cooperative methods to exchange technology knowledge with foreign network information companies. At the same time, we can have deeper information sharing regarding production technology, R&D technology. Our firm will surely support and share knowledge.	Our firm believes that having connections with other related firms is a good way to promote ourselves so our firm has contact with related companies and has the latest information about the current market. As for the Taiwan division, there are regular gatherings for management level from Taiwan and other countries to promote knowledge sharing and to select the proper knowledge to offer to other team members.

Appendix A. Individual interview content (cont'd)

	Company A	Company B	Company C	Company D
6. Does your company have a designated organization or staff to be responsible for the introduction and management of knowledge management activities and to keep knowledge sources closely connected?	In Taiwan headquarters, there are some staff responsible for managing knowledge management system issues, especially regional research centers. They store, share and create important research knowledge into knowledge management system. But other regions do not have staff specialized in managing knowledge issues.	Currently there is no special staff to be responsible for knowledge management and no specific database building to store knowledge. This will be future project for our firm to execute.	Through a specialized department to be responsible for collecting and integrating new knowledge from knowledge officers in each division. Broadcasting knowledge information to every knowledge officer through platform designed by the information system and to ask officers to teach other division staff to search specific knowledge with his/her own demand and to refer a variety of knowledge.	There is one organization to take care of management system issues especially in research centers. They store important research knowledge in a knowledge management system for storage, sharing and innovation purposes. Other knowledge sharing is automatic so employees will have a close interaction with the information.
7. What is your Taiwanese employees' perspective toward knowledge management activities in the firm?	Employees often use knowledge systems to access required knowledge and most employees just use what they need, but seldom add more value and feedback to the system, or to others.	I think knowledge management related activities could be strange. In our firm, there is no one to instruct employees to do such kinds of tasks. But there is a growing need for knowledge management activities and employees should have a deeper understanding in this area.	Around 50% of employees have heard the term 'knowledge management'. But only about 20% of people really know its activities. Few people really have a profound experience or knowledge about knowledge management.	Most employees do not truly understand knowledge management activities. But there are still some members who really understand. In contrast, some people do not even know they are involved with knowledge management activities.
8. Does your firm send out experienced members to store new knowledge, to offer learning and sharing?	We will offer organization members the opportunity to take the related new knowledge management training and foster experienced employees to store knowledge and promote sharing of the information platform.	We will consider this after enough future knowledge accumulates.	The head of knowledge management activity department utilizes education training to communicate the knowledge sharing concept among employees, to solve employees' technical problems and to come out with a system to evaluate performance and job promotion. In the end the employees will highly value knowledge sharing and take knowledge sharing as one of their duties.	Yes. Because our firm is aggressively promoting knowledge management activities, each department will provide useful classes and related activities which help to promote corporate knowledge from experienced members to effectively be stored and shared among employees.

Appendix A. Individual interview content (cont'd)

	Company A	Company B	Company C	Company D
9. Does your firm have a related system for knowledge management activities to index data and through a network to share knowledge among members?	Our firm doesn't fully implement the system. However we started related knowledge management activities early. Though our information system is not sound yet, but there is an early set information platform to allow internal members to absorb knowledge and to offer internal corporate knowledge sharing.	That employees acquire needed information all depends on internal network. But this is not a whole and sound information database system to answer if employees inquiry about data existence or not. There is no wonder employees think it is not user friendly enough. In the future, we will build a more sound information database system to solve this problem.	Knowledge storage, knowledge search and knowledge broadcast are three tools and system management mechanisms to build an information system environment. They will help the knowledge sharing process to become more convenient and efficient. Internally, as well as the previously mentioned knowledge officers to communicate, corporate internal information system in electronic database can search, upload, download various kind of new information and knowledge from every department.	Our firm has built a knowledge sharing platform within the past few years. Because of the need for work, repair and supporting staff, they will automatically upload job related information into the system, to be shared with related groups. When there is a need for knowledge or information, they will know where to search in this system and other regions do not need constantly to call to request headquarters to provide information.
10. What is your firm's performance?	<p>Profit capability Operation Margin = 20.11% Operation Net Profit = 16.72% Earning before tax margin = 39.64% ROA = 6.77% Estimated profit = 2,051 million NT Estimated profit before tax = 600 million Estimated profit after tax = 519 million NT Estimated Earnings per share = 7.73 NT Estimated Net profit per share = 6.68 NT</p>	<p>Profit capability Operation Margin = 7.52% Operation Net Profit = -13.11% Earning before tax margin = -16.38% ROA = -1.04% Estimated profit = 2,344 million NT Estimated profit before tax = 203 million NT Estimated profit after tax = 205 million NT Estimated Earnings per share = .70 NT Estimated Net profit per share = .70 NT</p>	<p>Profit capability Operation Margin = 6.36% Operation Net Profit = -8.95% Earning before tax margin = -15.79% ROA = -3.19% ROE = -8.58%</p>	<p>Profit capability Operation Margin = 37.89% Operation Net Profit = 13.69% Earning before tax margin = 16.31% ROA = 2.96% Estimated profit = 1,647 million NT Estimated profit before tax = 275 million NT Estimated profit after tax = 244 million NT Estimated Earnings per share = 4.37 NT Estimated Net profit per share = .88 NT</p>