THE EFFECT OF MARKET KNOWLEDGE MANAGEMENT COMPETENCE ON BUSINESS PERFORMANCE: A DYNAMIC CAPABILITIES PERSPECTIVE

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ABSTRACT

Market knowledge has become the major asset of modern businesses and the key to retain their competitiveness. This research attempts to explore the impact of market knowledge management competence on performance via the "dynamic capabilities" perspective. 192 Taiwan companies were selected for the survey setting. The major findings are summarized as following: 1. this empirical result supports the relationships among dynamic capability, market knowledge management competence and business performance; namely, the model fit is acceptable. 2. Dynamic capability has a positive impact on market knowledge management competence. 3. Both Market knowledge management competence and Dynamic capability have positive influence on business performance. 4. We can find mediation effect from market knowledge management competence on the relationship between dynamic capability and financial performance. This research is valuable for assessing key organizational capabilities that directly impact an organization's drive toward successful knowledge management.

Keywords: Dynamic Capabilities, Market Knowledge Management, Market Knowledge Management Competence, Performance

1. INTRODUCTION

In the last decade, the notion of dynamic capabilities as the ultimate source of competitive advantage [51] has catapulted these concepts to the forefront of strategy research. Rudimentary efforts have made to identify the dimensions of firm-specific capabilities that be sources of advantage, and to explain how combinations of competences and resources can be developed, and protected.

Teece, Pisano and Shuen [51] referred to this as the dynamic capabilities approach in order to stress exploiting internal and external firm-specific competences to address changing environments. Because this approach emphasizes the development of management capabilities, and difficult-to-imitate combinations of organizational, functional and technological skills, it integrates and draws upon research in such areas as management of R&D, product and process development, technology transfer, intellectual property, manufacturing, human resources, and organizational learning. Because these fields are often viewed as outside the traditional boundaries of strategy, much of this research has not been incorporated into existing economic approaches to strategy issues. As a result, dynamic capabilities can be seen as an emerging and potentially integrative approach to understanding the newer sources of competitive advantage [3,8,10,12,18,19, 32,40,41,45,52,60,61].

The most dramatic evolution in business over the past decade is the dawn of the new economy. The velocity and dynamic nature of the new marketplace has created a competitive incentive among many companies to consolidate and reconcile their knowledge assets as a means of creating value that is sustainable over time. In order to achieve competitive sustainability, many firms are launching extensive knowledge management efforts. Unfortunately, many knowledge management projects are, in reality, information projects. When these projects yield some consolidation of data but little innovation in products and services, the concept of knowledge management (KM) is cast in doubt. Clearly, the quest to move beyond information management and into the realm of knowledge management is a complex undertaking involving the development of structures that allow the firm to recognize, create, transform, and distribute knowledge.

Importantly, organizations may not be equally predisposed for successful launch and maintenance of knowledge management initiatives. Therefore, a key

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to understanding the success and failure of knowledge management within organizations is the identification and assessment of preconditions that are necessary for the effort to flourish. These preconditions are described broadly as "capabilities" or "resources" within the organizational behavior literature [31]. The study makes two major empirical contributions to the strategic management field. The first one is related to the introduction of the "dynamic capabilities" perspective to the research framework for capturing the performance implications of market knowledge management competence. Second, we examine the market knowledge management competence mediate effect between dynamic capabilities and business performance furthermore. Therefore, this research is valuable for assessing key organizational capabilities that directly impact an organization's drive toward successful knowledge management.

2. LITERATURE REVIEW

2.1 Critical Review of Dynamic Capabilities Perspective

The concept of dynamic capabilities was introduced by [51] who asserted that in a dynamic environment a firm's competitive advantage will rest on the firm's internal processes and routines that enable the firm to renew and change its stock of organizational capabilities thereby making it possible to deliver a constant stream of new and innovative products and services to customers. Dynamic capabilities can therefore be perceived as the routines in a firm that guide and facilitate the development of the firm's organizational capabilities by changing the underlying resource base in the firm [10]. Both dynamic and organizational capabilities can be seen as organizational routines, but their outcomes are different. Organizational capabilities enable the firm to produce goods and services whereas the dynamic capabilities ensure the renewal and development of the organizational capabilities. The interest in dynamic capabilities has created focus on the processes in a firm aimed at developing and renewing the resource bases of the firm [51,56]. Market orientation and marketing capabilities are complementary assets that contribute to superior firm performance. Hou [20] proposed a research model to show how market orientation can be transformed into dynamic capabilities and the competitive value of market orientation is positively mediated by dynamic capabilities. The key implication of dynamic capabilities is that firms not only are competing on their ability to activate and exploit their existing resources and organizational capabilities, firms are also competing on their ability to renew and develop these [34].

In the dynamic markets of today competitive advantage rest on the ability to constantly develop organizational capabilities that form the basis for products and services offered by the firm, thereby constantly renewing the competitive advantages of the firm. Building on previous research on the resource based view of the firm the dynamic capabilities concept has added to our understanding of the challenges involved in following a resource based approach to strategy. Strategy should also be a battle for sustained development of the firm's organizational capabilities [51] and not just a battle for strong market positions. In the long run it is insufficient to have strong resources and organizational capabilities, the firm must also possess strong organizational routines for developing and renewing these resources and organizational capabilities. This is especially true for companies competing in dynamic markets [56]. Dynamic capabilities can be seen as an extension of resource based view where the firm is conceived as a collection of resources, e.g. technologies, skills, and knowledge-based resources. Competitive advantage originates from the creative integration and subsequent exploitation of these resources in the market place [50,51]. Furthermore, it has, within the resource based view, been emphasized that the key to achieving a sustainable competitive advantage from the firm's stock of resources lies in the ability to integrate different resources to form strong organizational capabilities [16,54,60].

Empirical research on dynamic capabilities has begun to fill the vacuum area of the transformational mechanisms. According to literature review, the study points out five important research agenda. They are nature and component factors of dynamic capabiliites [10,50,51,55], formation process of dynamic capabilities [36,60], influential factors of dynamic capabilities [17,18,27,41], the impact of dynamic capabilities on performance [43,44,61], and other applications [4,32].

In summary, the emergence of dynamic capabilities has enhanced the resource-based view by addressing the evolutionary nature of firm resources and capabilities in relation to environmental changes and enabling identification of firm- or industry-specific processes that are critical to firm evolution.

2.2 Market Knowledge Market Competence

Market knowledge has become the major asset of modern businesses and the key to retain their competitiveness. To compete effectively, firms must leverage their existing knowledge and create new knowledge that favorably positions them in their chosen markets. In order to accomplish this, firms must develop an "absorptive capacity"-the ability to use prior knowledge to recognize the value of new information, assimilates it, and apply it to create new knowledge and capabilities. In essence, all new

resources, including knowledge, are created through two generic processes, combination and exchange [37]. Combination and exchange of knowledge for creation of new knowledge requires the presence of social capital [35].

In order to leverage knowledge infrastructure, knowledge management processes must also be present in order to store, transform, and transport knowledge throughout the organization [1,2,38,42, 47]. These processes enable the organization to capture, reconcile, and transfer knowledge in an efficient manner. Su and Lin [48] demonstrated customer knowledge can be enhanced through resource provision and knowledge management process. Grant [15,16] provides a framework for defining the process aspects of knowledge integration. According to this framework, integration of knowledge is dependent upon three aspects: efficiency of integration, scope of integration, and flexibility of integration. The frequency and variability of processes are key determinants of efficiency of integration. The more frequently a company carries out its knowledge management processes, the more routine the norms and more efficient the integration process. The more variable the knowledge management processes, the more a company must handle exceptions, and. consequently, the less efficient the integration of knowledge. The variety of knowledge that is integrated through the presence of requisite processes defines the scope of integration. Finally, flexibility of integration refers to the manner in which an organization can combine its knowledge. Together, the perspectives of infrastructure and process provide a useful theoretical foundation for defining important aspects of organizational capability.

Although it is important for an organization to manage knowledge internally, it is equally important to effectively manage external knowledge as well [11]. Researchers have identified many key aspects to this knowledge management process: capture, transfer, and use, acquire, collaborate, integrate, experiment; create, transfer, assemble, integrate, and exploit [49]; create, transfer, use [47]; and create, process [25].

In order to examination of these various characteristics of knowledge management process, the research adopts the arguments of Gold, Malhotra, and Segars [14]. They grouped knowledge management process into four broad dimensions of—acquiring knowledge, converting it into useful form, applying or using it, and protecting it. We future describe them as market knowledge management competence (MKMC).

2.2.1 Acquisition of Market Knowledge

Acquisition-oriented knowledge management processes are those oriented toward obtaining knowledge. The creation of organizational knowledge requires the sharing and dissemination of personal experiences [24]. Collaboration takes place at two levels within the organization; between individuals and between the organization and its network of business partners. Collaboration between individuals brings together individual differences (e.g., cognitive style, preferred tools, backgrounds, experiences) and can be used to create knowledge [32]. This assumes that interaction between the individuals will promote learning [49]. Collaboration between individuals is also the basis for the socialization of knowledge. Collaboration between organizations is also a potential source of knowledge [9,22,23,24]. Core capabilities are increasingly based on an organization's ability to find and create knowledge. Collaboration with other firms is critical to knowledge acquisition [15,16,33]. Technology sharing, personnel movement, and linkages between the organization and alliance partners or joint venture partners have all been shown to assist with the accumulation of knowledge [22,24]. However, the ability to acquire knowledge is partly based on an organization's absorptive capacity. This is because all the necessary skills for innovation may not be found within a single organization [23].

2.2.2 Conversion of Market Knowledge

Conversion-oriented knowledge management processes are those oriented toward making existing knowledge useful. Some of the processes that enable knowledge conversion are a firm's ability to organize [39], integrate [16], combine, structure, coordinate [46], or distribute knowledge [6,7,59]. An organization must develop a framework for organizing or structuring its knowledge [39]. Without common representation standards, no consistency or common dialogue of knowledge would exist. This would make the asset difficult to effectively manage. Knowledge about a particular subject may reside in different pans of the organization or in different systems within the organization.

Combining or integrating this knowledge reduces redundancy, enhances consistent representation, and improves efficiency by eliminating excess volume [16]. These processes also enable the organization to replace knowledge that has become outdated. The different knowledge of many individuals must be integrated to maximize efficiency. Thus, a primary goal of any organization should be to integrate the specialized knowledge of many individuals [16]. Four commonly cited mechanisms for facilitating integration are rules and directives, sequencing, routines, and group problem solving and decision-making.

2.2.3 Application of Market Knowledge

Application-based processes are those oriented

toward the actual use of the knowledge. Interestingly, little discussion has been devoted to the outcomes of the effective application of knowledge. Effective application seems to be largely assumed or implied as opposed to treated explicitly. Process characteristics that have been associated with the application of knowledge within the literature include storage, retrieval, application, contribution, and sharing [2]. Effective storage and retrieval mechanisms enable the organization to quickly access knowledge. To remain competitive, organizations must create, capture, and locate organizational knowledge.

In addition, organizational knowledge and expertise must be shared [26,28,29]. As a result of this sharing of knowledge, product development times have accelerated, functionality has increased rapidly, and its adoption has become widespread. In a discussion of customer support knowledge, Fathian, Sotoudehriazi, Akhavan, and Moghaddam [13] note that the effective application of knowledge has helped companies improve their efficiency and reduce costs. Systematic management for enterprise knowledge as a critical and strategic resource has a great impact on business sustainability and growth.

2.2.4 Protection of Market Knowledge

Security-oriented knowledge management processes are those designed to protect the knowledge within an organization from illegal or inappropriate use or theft. For a firm to generate and preserve a competitive advantage, it is vital that its knowledge be protected [42]. Similar to application-oriented processes, this has also received little attention in the literature. Many may assume that a firm can protect its knowledge via patents, trademarks, copyrights, and so on. However, not all knowledge can he define according to property laws and property rights [42].

Because protecting knowledge is inherently difficult, it should not be abandoned or marginalized. Steps can be taken to protect the asset, such as incentive alignment, employee conduct rules, or job designs. In addition, an organization can develop technology that restricts or tracks access to vital knowledge. Irrespective of the difficulty in protecting knowledge, it is a process that is important for an organization. For an asset to be the source of a competitive advantage, it needs to be rare and inimitable. Without security-oriented processes, knowledge loses these important qualities. Synthesis of the prior discussion suggests that organizational capability to effectively initiate and maintain programs of knowledge management can be framed along broad dimensions of infrastructure and process. Infrastructure capability can be further subdivided along definitional lines of technical, structural, and cultural capability. Process capability can be further subdivided along definitional lines of acquisition, conversion, application, and protection capability.

3. METHODOLOGY

3.1 Research Framework and Hypothesis Development

Wang and Ahmed [55] indicated that research on dynamic capabilities has been conducted on a piecemeal basis and issues surrounding its conceptualization remain ambivalent. It is important to synthesize the conceptual debates and diverse empirical findings towards a more integrated understanding of dynamic capabilities. This research thus conceptualized and tested a model of how the dynamic capabilities affected the MKMC and how these two factors associated with performance. Figure 1 presents a theoretical model overview (refer to appendix).

Conceptually, we considered that sensing capability, absorptive capability and learning capability are the most important component factors of dynamic capabilities and the base of a firm's ability to create or response market and capabilities in line with external changes. Therefore, dynamic capabilities should facilitate the market knowledge; namely, component factors of dynamic capabilities are positively related to market knowledge management competence.

H1 *Dynamic capabilities are positively related to market knowledge management competence.*

- H1-1 *The sensing capability dimension for dynamic capabilities is positively related to MKMC.*
- H1-2 *The absorptive capability dimension for dynamic capabilities is positively related to MKMC.*
- H1-3 *The learning capability dimension for dynamic capabilities is positively related to MKMC.*

It is an important issue for firms to manage internal and external knowledge for better organization performance. Poter-Liebskind [42] argued that market knowledge management competence may influence the firm performance. Thus, better management in MKMC should be associated with higher market and financial performance. More formally:

H2-1 *Market knowledge management competence is positively related to market performance.*

- H2-1-1 *The acquisition of market knowledge dimension for MKMC is positively related to market performance.*
- H2-1-2 *The conversion of market knowledge dimension for MKMC is positively related to market performance.*
- H2-1-3 *The application of market knowledge dimension for MKMC is positively related to market performance.*

H2-1-4 *The protection of market knowledge dimension for MKMC is positively related to market performance.*

H2-2 *Market knowledge management competence is positively related to financial performance.*

H2-2-1 *The acquisition of market knowledge dimension for MKMC is positively related to financial performance.*

H2-2-2 *The conversion of market knowledge dimension for MKMC is positively related to financial performance.*

H2-2-3 *The application of market knowledge dimension for MKMC is positively related to financial performance.*

H2-2-4 *The protection of market knowledge dimension for MKMC is positively related to financial performance.*

Empirical evidence supported that dynamic capabilities plays an important role in firms' survival and success [55]. Given the related literature [9], we argued that dynamic capabilities are conducive to firm performance. Thus, this study proposed the hypothesis is below:

H3-1 *Dynamic capabilities are positively related to market performance.*

H3-1-1 *The sensing capability dimension for dynamic capabilities is positively related to market performance.*

H3-1-2 *The absorptive capability dimension for dynamic capabilities is positively related to market performance.*

H3-1-3 *The learning capability dimension for dynamic capabilities is positively related to market performance.*

H3-2 *Dynamic capabilities are positively related to financial performance.*

H3-2-1 *The sensing capability dimension for dynamic capabilities is positively related to financial performance.*

H3-2-2 *The absorptive capability dimension for dynamic capabilities is positively related to financial performance.*

H3-2-3 *The learning capability dimension for dynamic capabilities is positively related to financial performance.*

As proposed by Wang and Ahmed [55], firm assets have an indirect effect on market performance mediated by firm strategy. Dynamic capabilities are conducive to firm performance, but the relationship is an indirect one mediated by capability development. Hence, we propose:

H4-1 *Market knowledge management competence mediates the relationship of dynamic capabilities on market performance.*

H4-2 *Market knowledge management competence mediates the relationship of dynamic capabilities on financial performance.*

3.2 Operational Definitions and Measures

Based on dynamic capabilities view [32,51,55] and theoretical grounding [5,9,53,57], we identified three component factors related dynamic capabilities and MKMC as independent variables, i.e. sensing capability, absorptive capability and learning capability. For mediate variables part, as proposed by Gold et al. [14], the study conceptualized MKMC to include acquisition of market knowledge, conversion of market knowledge, application of market knowledge, and protection of market knowledge four dimensions.

As proposed by Venkatraman and Ramanujam [54], the business performance should include financial and non-financial indicators. Therefore, this study measured market performance by market shares, sales growth rates, customer satisfaction, and the success rate of new product. Financial performance was measured by return on investment and profitability.

3.3 Sampling and Data Collection

Data collection proceeded through mail survey questionnaires, sent to NCYU EMBA students and senior executives from the major companies in Taiwan. This study carried out two-wave mailings with follow-up telephone calls, producing an effective response rate. Responses two weeks later increased to a total of 225 responses. Among the returned surveys, 33 were incomplete and therefore discarded, reducing the sample size to 192, with an effective response rate of 13.9%.

4. DATA ANALYSIS AND DISCUSSIONS

4.1 Reliability and Validity Tests

Cronbach's α is used in this research to measure the reliability of data collected. The Cronbach's α value is 0.963 for the whole Dynamic Capabilities. The Cronbach's α value for its factors are sensing capability = 0.868, absorptive capability = 0.949, and learning capability = 0.922. The Cronbach's α value is 0.930 for the whole market knowledge management competence (MKMC), and the value for its factors are acquisition of market knowledge = 0.864, conversion of market knowledge = 0.890, application of market knowledge = 0.894, and protection of market knowledge = 0.839. The Cronbach's α value is 0.943 for the whole performance, and the Cronbach's α value for its factors are market performance = 0.837, and financial performance = 0.943. As a whole, the Cronbach's α value for predictor variables and criterion variables are both higher than required 0.7. This research is hence of reliability.

As to the validity, the measurement scales used

for predictor variables and criterion variables in this research are developed based on research theories done by domestic and national scholars. The required content validity is fulfilled. Also, after being analyzed by factor analysis, it was found that except Application of market knowledge, market performance, and the whole performance, the KMO sampling adequacy are all higher than 0.8. The Bartlett's test of Sphericity is also significant and conforms to the requirement of construct validity.

4.2 Relationships of Dynamic Capabilities and MKMC

Regression analysis was used to examine the relationship of dynamic capabilities and MKMC in this research. From Table 1 (refer to appendix), it is clear that dynamic capabilities and its factors, sensing, absorptive, and learning capability, all reflect MKMC because the F value is significant. It means that the regression effect is meaningful statistically. The adjusted R^2 value is 0.583, which means that the dynamic capabilities can explain 58.3% variables of MKMC. Among the factors in dynamic capabilities, the absorptive capability (β=0.508, $p<0.001$), learning capability (β=0.474, $p<0.001$), and sensing capability (β=0.328, $p<0.001$) are all explanatory to MKMC. To view as a whole, the absorptive capability can explain the best, learning capability the second, and sensing capability the least. The VIF value is below 10 so the collinearity is quite low. The H1, H1-1, H1-2, and H1-3 of the research are supported.

4.3 Relationships of MKMC and Performance

4.3.1 MKMC and Market Performance

Table 2 (refer to appendix) shows that MKMC can explain market performance because the F value is significant, which means the regression effect is meaningful statistically. The adjusted R^2 value of MKMC is 0.102. This means that MKMC can explain 10.2 % variables of market performance. The factor application of knowledge in MKMC (β=0.296, $p<0.001$) is explanatory to market performance. The factors acquisition of knowledge (β=0.046, $p>0.05$), conversion of knowledge (β=0.116, $p>0.05$), and protection of knowledge (β=0.132, $p>0.05$)are not significant to market performance. Besides, The VIF value is below 10 so the collinearity is quite low. As a result, the H2-1, and H2-1-3 of this research are supported. But the H2-1-1, 2-1-2, and 2-1-4 are not supported.

4.3.2 MKMC and Financial Performance

From Table 3 (refer to appendix), it is known that MKMC is explanatory to financial performance because the F value is significant, and the regression effect is meaningful statistically. The adjusted R^2 of MKMC is 0.247. This means that MKMC can explain 24.7% variables of financial performance. The factors acquisition of market knowledge (β=0.376, $p<0.001$), conversion of market knowledge (β=0.232, $p<0.001$), and protection of market knowledge (β=0.247, $p<0.001$) are significant to financial performance. But application of knowledge (β=0.081, $p>0.05$) isn't significant to financial performance. Beside, the VIF value is below 10 so the collinearity is quite low. As a result, the H2-2, H2-2-1, H2-2-2, and H2-2-4 of this research are supported. But the H2-1-3 isn't supported.

4.4 Relationships of Dynamic Capabilities and Performance

4.4.1 Dynamic Capabilities and Market Performance

Regression analysis was used to explain the relationship of variables dynamic capabilities and performance. From Table 4 (refer to appendix), it is clear that the factors of dynamic capabilities, sensing capability, absorptive capability, and learning capability, all can explain market performance because the F value is significant and the regression effect is meaningful statistically. The adjusted R^2 of dynamic capabilities is 0.096. This means that dynamic capabilities can explain 9.6% variables of market performance. The two factors absorptive capability (β=0.284, $p<0.001$), and learning capability (β=0.154, $p<0.005$)are significant to market performance. To view as a whole, the absorptive capability can explain market performance the most, and learning capability the second. The sensing capability (β=0.078, $p>0.05$) shows no significant positive effect to market performance. Beside, the VIF value is below 10 so the collinearity is quite low. As a result, the H3-1, H3-1-2, and H3-1-3 of this research are supported. But the H3-1-1 isn't supported.

4.4.2 Dynamic Capabilities and Financial Performance

Table 5 (refer to appendix) tells that the dynamic capabilities and its factors, sensing capability, absorptive capability, and learning capability, all can explain financial performance because the F value is significant. This means that the regression effect is meaningful statistically. The adjusted R^2 value is 0.250. This means that dynamic capabilities can explain 25% variables of financial performance. The three factors of dynamic capabilities, sensing capability (β=0.245, $p<0.001$), absorptive capability (β=0.337, $p<0.001$), and learning capability (β=0.296, $p<0.001$), are all explanatory to financial performance. As a whole, the absorptive capability can explain financial performance the most, learning capability the second, and sensing capability the least. Beside, the VIF value is below 10 so the collinearity is quite low. As a result, the H3-2, H3-2-1, H3-2-2,

and H3-2-3 of this research are all supported.

4.5 Mediate Effect Analysis

4.5.1 The mediate effect that MKMC has between Dynamic Capabilities and Market Performance

Table 6 (refer to appendix) shows that dynamic capabilities has significant partial positive effect on MKMC (β=0.756, p<0.001). It's shown in model 2 that dynamic capabilities has significant positive effect on market performance (β=0.298, p<0.001). With mediate variables being added to model 3, it shows that dynamic capabilities has no significant effect on performance (β=0.174, p>0.05). After the factor MKMC is added, MKMC also has no significant effect on market performance (β=0.163, p>0.05). This shows that MKMC has no mediate effect between dynamic capabilities and market performance. H4-1 is refused.

4.5.2 The mediate effect that MKMC has between Dynamic Capabilities and Financial Performance

The model in Table 7 (refer to appendix) shows that dynamic capabilities has significant partial positive effect on MKMC (β=0.756, p<0.001). It's shown in model 2 that dynamic capabilities has significant positive effect on financial performance (β=0.507, p<0.001). With mediate variables being added to model 3, it shows that dynamic capabilities has significant positive effect on financial performance (β=0.358, p<0.001). After the factor MKMC is added, MKMC also has significant positive effect on financial performance (β=0.197, p<0.05). However, the β value drops from 0.507 to 0.358 shows the explanatory power that dynamic capabilities has on financial performance comes partially from MKMC, which means that MKMC has mediate effect. Hence, H4-2 is supported.

5. CONCLUSIONS AND SUGGESTIONS

5.1 Conclusions

5.1.1 The Relationship of Dynamic Capabilities and Market Knowledge Management Competence.

Inspected by regression analysis, it is found that H1 is obvious. This means that dynamic capabilities have partial positive effect on MKMC. It tells us that if a corporation can raise its dynamic capabilities, the development of MKMC will also be bettered. This conforms to the theories proposed by Wang and Ahmed [55] that the development of MKMC comes from dynamic capabilities.

Sensing capability, absorptive capability, and learning capability have positive effect on development of MKMC. As Wang and Ahmed [55] addressed, the better the dynamic capabilities is, the more possible that a better MKMC will be developed. The result that the effect sensing capability has on MKMC reveals that the stronger the sensing capability a firm has, the better its acquisition of market knowledge and conversion of market knowledge will be. The result differs from the conclusion what Gold et al. [14] proposed, which said that firms in Taiwan lack external detecting mechanism. The result that good absorptive capability helps improve MKMC comes out the same as research result of Gold et al. [14]. The learning capability has obvious positive effect on MKMC supports the research of Gold et al. [14].

5.1.2 The Relationship of MKMC and Performance.

The result shows that MKMC has partial positive effect on market performance and financial performance. The more efficient the MKMC is, the better the performance will be. The same conclusion is shown by the research of Gold et al. [14]. As to market performance, good application of market knowledge has significant positive effect on market performance, and this will effectively raise selling growth rate and customer's satisfaction. However, if financial performance is to be effectively raised, the importance of applying market knowledge is less important than the process of acquisition of market knowledge, conversion of market knowledge, and protection of market knowledge. In comparison with application of market knowledge, the processes of "quality of knowledge acquired", "the knowledge quality control during conversion process", and "the protection of knowledge for later usage of estimating and predicting market demand" have a relatively long-term meaning and the meaning whether the knowledge can be applied to correctly.

5.1.3 The Relationship of Dynamic Capabilities and Performance.

To view the whole construct framework, it is found that dynamic capabilities have direct effect on performance. But the sensing capability has no significant effect on market performance. The result could be an outcome of failing to clarify the relationship between sensing capability and market performance because there are too many factors interfering amid. Among the findings, that the conclusion of absorptive capability will become a competitive advantage of a firm and brings good performance echoes Zahra and George's conclusion [57]. The finding that learning capability has direct effect on performance also has the same outcome as the research of Gold et al. [14] about learning and performance.

5.1.4 The Mediate Effect that MKMC has on Dynamic Capabilities and Performance

It is found that the mediate variable MKMC has significant mediate effect between dynamic capabilities and financial performance. This finding is similar to what Wang and Ahmed [55] proposed, which says that the outcome of dynamic capabilities is the development of MKMC, and MKMC will affect performance. The conclusion is the same as research conclusion of Zahra, Sppienza, and Daviddson [57]. MKMC has no significant mediate effect between dynamic capabilities and market performance. The reason why it doesn't might be that the meaning of dynamic capabilities and MKMC is a procedural concept, and market performance, the market possessive rate and customer's satisfaction, could be affected by factors such as marketing method or product price set by competitive trades. Therefore, mediate effect that dynamic capabilities have on market performance could be interfered by many factors.

5.2 Managerial Implications

5.2.1 Import New Leading Way of Thinking.

According to the research findings, managers should be able to sense, absorb, and learn market knowledge from outside the firm. Therefore at the thought of decision-making, besides the past method of considering from internal procedure angles, knowledge acquired from external environment should also be considered. It can be the groundwork of internal adjustment and innovation. Also, it can be used to respond to the fast change at the market. Therefore, managers should get to learn clearly the market trend, and encourage their employees to travel and see more, be brave to give suggestions, and share with each other what they've learned, instead of implementing supreme management control. It is believed that this will help raise performance.

5.2.2 Construct Market Knowledge Management Mechanism

It is found that the acquisition, conversion, and protection of market knowledge in MKMC have no significant effect on market performance. The reason why it is so was speculated that there isn't a clear measurement norm for them. Their relationship isn't as clear as what application of market knowledge has on market performance. Though acquisition, conversion, and protection of knowledge have effect on financial performance, they are not as clear as what application of knowledge showed in the samples of this research. In addition, when MKMC was compared to financial performance, application of knowledge then isn't as valuable as acquisition, conversion, and protection of knowledge. Therefore, at the MKMC, firms might construct a management mechanism to weigh against how much benefit market knowledge creates and where MKMC is insufficient enough. Even, the mechanism can be effectively used to discriminate and find out what relationship the process of acquisition, conversion, application, and protection of knowledge respectively has with market performance and financial Performance.

5.3 Future Research Suggestions

5.3.1 Consider other Factors of Dynamic Capabilities

New dynamic capability factors were developed in this research base on the rationale proposed by Wang and Ahmed [55] to precede examination and analysis. However, the constituent structure of this new Dynamic Capabilities is not as flawless as the three factors that proposed by Teece et al. [51] and Teece [50]. Therefore, in the future research, other weighing norms can be used for re-examination in regard to the constituents of dynamic capabilities to analyze whether dynamic capabilities can be constituted by different factors and seek for a more perfect weighing norm for dynamic capabilities.

5.3.2 Research on Different Industries' Market Knowledge Characteristics

Environment of different industries differs so the market knowledge differs, too. Therefore, future research can probe deeply into how different industries control market knowledge management and what's the relationship between MKMC and performance that exist in different industries.

REFERENCES

1. Almeida, P., 1996, "Knowledge .sourcing by foreign multinationals: Patent citation analysis in the U.S. semiconductor industry," Strategic Management Journal, Vol. 17, No. Winter, pp. 155-165.
2. Appleyard, M. M., 1996, "How does knowledge flow? Interfirm patterns in the semiconductor industry," *Strategic Management Journal*, Vol. 17, No. Winter, pp. 137-154.
3. Blyler, M. and Coff, R. W., 2003, "Dynamic capabilities, social capital, and rent appropriation: Ties that split pies," *Strategic Management Journal*, Vol. 24, No. 7, pp. 677-686.
4. Chang, H. J. and Hou, J. J., 2007, "Organizational change and dynamic capability: A case study of SP Company," *Industry and Management Forum*, Vol. 9, No. 1, pp. 1-15.
5. Chen, C. J, 2004, "The effect of knowledge attribute, alliance characteristics, and absorptive capacity on knowledge transfer performance," *R and D Management*, Vol, 34,

No. 3, pp. 311-324.
6. Davenport, T, DcLong, D. and Beers, M., 1998, "Successful knowledge management projects," *Sloan Management Review*, Vol., 39, No Winter, pp. 43-57.
7. Davenport, T. and Klahr, P., 1998, "Managing customer support knowledge," *California Management Review*, Vol. 40, No, 3, pp. 195-208.
8. Dutta, S., Narasimhan, O. and Rajiv, S., 2005, "Conceptualization and measuring capability: Methodology and empirical application," *Strategic Management Journal*, Vol. 24, No. 7, pp. 667-686.
9. Dyer, J. H. and Nobeoka, K, 2000, "Creating and managing a high-performance knowledge-sharing network: The Toyota case," *Strategic Management Journal*, Vol. 21, No.3, pp. 345.
10. Eisenhardt, K. and Martin, J., 2000, "Dynamic Capability: What are they?" *Strategic Management Journal*, Vol. 21, No.10-11, pp. 1105-1121.
11. El Sawy, O. A., Malhotra, A., Gosain, S. and Young, K., 2000, "IT-enabled value innovation in the electronic economy: Insights from Marshall industry," *MIS Quarterly*, Vol. 23, No. 3, pp. 305-335.
12. Ethiraj, S. K., Kale, P., Krishnan, M. S. and Singh, J. V., 2005, "Where do capabilities come from and how do they matter? A study in the software service industry," *Strategic Management Journal*, Vol. 26, No. 1, pp. 25-45.
13. Fathian, M., Sotoudehriazi, M., Akhavan, P. and Moghaddam A. A., 2008, "Building customer knowledge base through knowledge management: A missionary and visionary perspective," *International Journal of Electronic Business Management*, Vol. 6, No. 1, pp. 10-20.
14. Gold, A. H., Malhotra, A. and Segars, A. H., 2001, "Knowledge management: An organizational capabilities perspective," *Journal of Management Information System*, Vol. 18, No. 1, pp. 185-214.
15. Grant, R., 1995, "A knowledge-based theory of inter-firm collaboration," *Academy of Management Best Paper Proceedings*, pp. 17-21.
16. Grant. R., 1996, "Toward a knowledge based theory of the firm," *Strategic Management Journal*, Vol. 17, No. Winter, pp. 109-122.
17. Griffith, D. A. and Harvey, M. G., 2001, "A resource perspective of global dynamic capabilities," *Journal of International Business Studies*, Vol. 32, No. 3, pp. 597-606.
18. Helfat, C. E., 1997, "Know-how and asset complementarily and dynamic capability accumulation: The case of R&D," *Strategic Management Journal*, Vol. 18, No. 5, pp. 339-360.
19. Helfat, C. E. and Peteraf, M. A., 2003, "The dynamic resource-based view: Capability lifecycles," *Strategic Management Journal*, Vol. 24, No. 4, pp. 997-1010.
20. Hou, J. J., 2008, "Toward a research model of market orientation and dynamic capabilities," *Social Behavior & Personality: An International Journal*, Vol. 36, No. 9, pp. 1251-1268.
21. Iansiti, M. and Clark, K. B., 1994, "Integration and dynamics capability: Evidence from product development in automobiles and mainframe computers," *Industrial and Corporate Change*, Vol. 3, No. 3, pp. 557-605.
22. Inkpen, A., 1996, "Creating knowledge through collaboration," *California Management Review*, Vol. 39, No. 1, pp. 123-141.
23. Inkpen, A. and Beamish, P., 1997, "Knowledge, bargaining power, and the instability of international joint ventures," *Academy of Management Review*, Vol. 22, No. 1, pp. 177-202.
24. Inkpen, A. and Dinur, A., 1998, "Knowledge management processes and international joint ventures," *Organization Science*, Vol. 9, No. 4, pp. 454-468.
25. Ivers, J., 1998, "Bringing out brilliance: Enabling knowledge creation in the Notes/ Domino environment," *Enterprise Solutions*, November/December, pp. 24-27.
26. Johannessen, J., Olsen, B. and Olaisen, J., 1999, "Aspects of innovation theory based on knowledge management," *International Journal of Innovation Management*, Vol. 19, No. 2, pp. 121-139.
27. King, A. A. and Tucci, C. L., 2002, "Incumbent entry into new market niches: The role of experience and managerial choice in the creation of dynamic capabilities," *Management Science*, Vol. 48, No. 2, pp. 171-186.
28. Kogut, B. and Zander, U., 1992, "Knowledge of the firm, combinative capabilities, and the replication of technology," *Organization Science*, Vol. 3, No. 3, pp. 383-397.
29. Kraatz, M., 1998, "Learning by association? Interorganizational networks and adaptation to environmental change," *Academy of Management Journal*, Vol. 41, No. 6, pp. 621-643.
30. Lane, P. J. and Lubatkin, M, 1998, "Relative absorptive capability and interorganization learning," *Strategic Management Journal*, Vol. 19, No. 6, pp. 461-477.
31. Law, K. S., Wong, C. and Mobley, W. H., 1998,

"Toward a taxonomy of multidimensional constructs," *Academy of Management Review*, Vol. 23, No. 4, pp.741-753.
32. Luo, Y, 2000, "Dynamic capabilities in international expansion," *Journal of World Business*, Vol. 35, No. 4, pp. 355-378.
33. Matusik, S. and Hill, C., 1998, "The utilization of contingent work, knowledge creation, and competitive advantage," *Academy of Management Review*, Vol. 23, No. 4, pp. 680-697.
34. Morgan, N. A., Vorhies, D. W. and Mason, C. H., 2009, "Market orientation, marketing capabilities, and firm performance", *Strategic Management Journal*, Vol. 30, No. 8, pp. 909-920.
35. Nahapiet, J. and Ghoshal, S., 1998, "Social capital, intellectual capital, and the organizational advantage," *Academy of Management Review*, Vol. 23, No. 2, pp. 242-258.
36. Newbert, S. L., 2005, "New firm formation: A dynamic capability perspective," *Journal of Small Business Management*, Vol. 43, No. 1, pp. 55-77.
37. Nonaka, I., 1994, "A dynamic theory of organizational knowledge creation," *Organization Science*, Vol. 5, No. 10, pp. 14-37.
38. Nonaka, I. and Konno, N., 1998, "The concept of "ba": Building a foundation of knowledge creation," *California Management Review*, Vol. 40, No. 3, pp. 40-54.
39. O'Dell, C and Grayson, C., 1998, "If only we knew what we know: Identification and transfer of internal best practices," *California Management Review*, Vol. 40, No. 3, pp. 154-174.
40. Pan, S., Pan, G. and Hsieh, M. H., 2006,"A dual-level analysis of the capability development process: A case study of TT&T," *Journal of the American Society for Information Science and Technology*, Vol. 57, No. 13, pp. 1814-1829.
41. Petroni, A., 1998, "The analysis of dynamic capabilities in a competence-oriented organization," *Technovation*, Vol. 18, No. 3, pp. 179-189.
42. Porter-Liebskind, J., 1996, "Knowledge, strategy, and the theory of the firm", *Strategic Management Journal*, Vol. 17, No. Winter, pp. 93-107.
43. Priem, R. L. and Butler, J. E., 2001, "Is the resource-based "view" a useful perspective for strategic management research?" *Academy of Management Review*, Vol. 26, No. 1, pp. 22-40.
44. Roy, P. and Roy, P., 2004, "The Hewlett Packard–Compaq computers merger: Insight from the resource-based view and the dynamic capabilities perspective," *Journal of American Academy of Business*, Vol. 5 No. 1/2, pp. 7-14.
45. Sanchez, R., 2004, "Understanding competence-based management: Identifying and managing five modes of competence," *Journal of Business Research*, Vol. 57, No. 5, pp. 518-532.
46. Sanchez. R. and Mahoney, J. T., 1996, "Modularity, flexibility and knowledge management in product and organization design," *Strategic Management Journal*, Vol. 17, No. Winter, pp. 63-76.
47. Spender, J. C., 1996, "Making knowledge the basis of a dynamic theory of the firm," *Strategic Management Journal*, Vol. 17, No. Winter, pp. 45-62.
48. Su, H. Y. and Lin, Y., 2005, "Building customer knowledge base through knowledge management: A missionary and visionary perspective," *International Journal of Electronic Business Management*, Vol. 3, No. 2, pp. 140-150.
49. Teece, D., 1998, "Capturing value from knowledge assets: The new economy, markets for knowhow and intangible assets," *California Management Review*, Vol. 40, No. 3, pp. 55-79.
50. Teece, D. J., 2007, "Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance", *Strategic Management Journal*, Vol. 28, No. 13, pp. 1319-1350.
51. Teece, D. J., Pisano, G. and Shuen, A., 1997, "Dynamic capabilities and strategic management," *Strategic Management Journal*, Vol. 18, No. 7, pp. 509-533.
52. Tripsas, M., 1997, "Surviving radical technological change through dynamic capability: Evidence from the typesetter industry," *Industrial and Corporate Change*, Vol. 6, No. 2, pp. 341-377.
53. Tsai, W., 2001," Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance," *Academy of Management Journal*, Vol. 44, No. 5, pp. 996-1005.
54. Venkatraman N. and Ramanujam, V., 1986, "Measurement of business performance in strategy research: A comparison of approaches," *The Academy of Management Review*, Vol. 11, pp. 801-814.
55. Wang, C. L. and Ahmed, P. K., 2007, "Dynamic capabilities: A review and research agenda," *The International Journal of Management Reviews*, Vol. 9, No. 1, pp. 31-51.
56. Wheeler, B. C., 2002, "NEBIC: A dynamic capabilities theory for assessing

net-enablement," *Information Systems Research*, Vol. 13, No. 2, pp. 125-146.
57. Zahra, S. A. and George, G., 2002, "Absorptive capacity: A review, reconceptualization, and extension," *Academy of Management Review*, Vol. 27, No. 2, pp. 185-203.
58. Zahra, S. A., Sppienza, H. J. and Davidsson, P., 2006, "Entrepreneurship and dynamic capabilities: A review, model and research agenda," *Journal of Management Studies*, Vol. 43, No. 4, pp. 917-955.
59. Zander, U. and Kogut, B., 1995, "Knowledge and the .speed of the transfer and imitation of organizational capabilities: An empirical test," *Organization Science*, Vol. 6, No. 1, pp. 76-92.
60. Zollo, M. and Winter, S. G., 2002, "Deliberate learning and the evolution of dynamic capabilities," *Organization Science*, Vol. 13, No. 3, pp. 339-351.
61. Zott, C., 2003, "Dynamic capabilities and the emergence of intra-industry differential firm performance: Insights from a simulation study," *Strategic Management Journal*, Vol. 24, No. Winter, pp. 97-125.

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(Received December 2008, revised March 2009, accepted August 2009)

APPENDIX

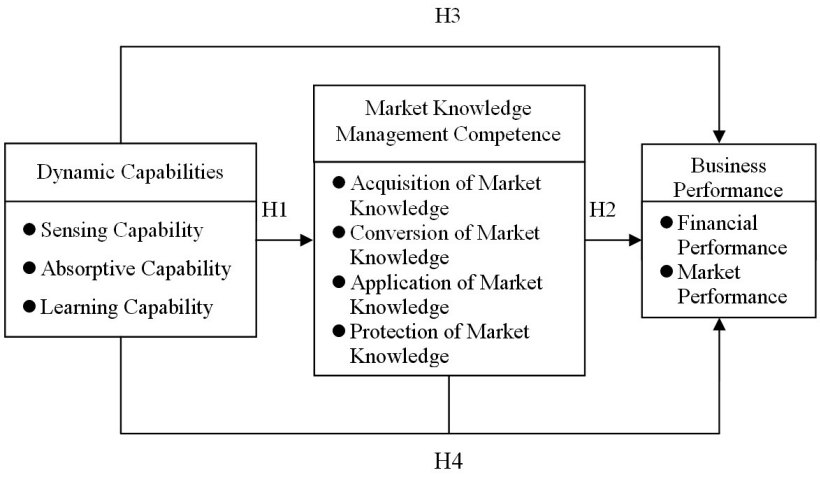

Figure 1: Research framework

Table 1: Multiple Regression Analysis: Dynamic Capabilities and MKMC

Criterion Variable	Predictor Variables	Beta	F	Adjusted R^2	VIF
Market Knowledge Management Competence	Sensing Capability	0.328***	90.085***	0.583	1.000
	Absorptive Capability	0.508***			1.000
	Learning Capability	0.474***			1.000

*p<0.05, **p<0.01, ***p<0.001

Table 2: Multiple regression analysis: MKMC and market performance

Criterion Variable	Predictor Variables	Beta	F	Adjusted R^2	VIF
Market Performance	Acquisition of Market Knowledge	0.046	6.427***	0.102	1.000
	Conversion of Market Knowledge	0.116			1.000
	Application of Market Knowledge	0.296***			1.000
	Protection of Market Knowledge	0.132			1.000

*p<0.05, **p<0.01, ***p<0.001

Table 3: Multiple regression analysis: MKMC and financial performance

Criterion Variable	predictor variables	Beta	F	Adjusted R^2	VIF
Financial Performance	Acquisition of Market Knowledge	0.376***	16.623***	0.247	1.000
	Conversion of Market Knowledge	0.232***			1.000
	Application of Market Knowledge	0.081			1.000
	Protection of Market Knowledge	0.247***			1.000

*p<0.05, **p<0.01, ***p<0.001

Table 4: Multiple regression analysis: Dynamic capabilities and market performance

Criterion Variable	Predictor Variables	Beta	F	Adjusted R^2	VIF
Market Performance	Sensing Capability	0.078	7.773***	0.096	1.000
	Absorptive Capability	0.284***			1.000
	Learning Capability	0.154*			1.000

*p<0.05, **p<0.01, ***p<0.001

Table 5: Multiple regression analysis: Dynamic capabilities and financial performance

Criterion Variable	Predictor Variables	Beta	F	Adjusted R^2	VIF
Financial Performance	Sensing Capability	0.245***	22.182***	0.250	1.000
	Absorptive Capability	0.337***			1.000
	Learning Capability	0.296***			1.000

*p<0.05, **p<0.01, ***p<0.001

Table 6: The mediate effect of MKMC to dynamic capabilities and market performance

Independent Variables	MKMC	Market Performance	
	Model 1	Model 2	Model 3
Main Effect:			
Dynamic Capabilities	0.756***	0.298***	0.174
Mediate Effect:			
Market Knowledge Management Competence			0.163
F value	253.403***	18.487***	10.513***
Adjusted R^2	0.569	0.084	0.091

*p<0.05, **p<0.01, ***p<0.001

Table 7: The mediate effect of MKMC to dynamic capabilities and financial performance

Independent Variables	MKMC	Financial Performance	
	Model 1	Model 2	Model 3
Main Effect:			
Dynamic Capabilities	0.756***	0.507***	0.358***
Mediate Effect:			
Market Knowledge Management Competence			0.197*
F value	253.403***	65.802***	35.637***
Adjusted R^2	0.569	0.253	0.266

*p<0.05, **p<0.01, ***p<0.001

市場知識管理能力對經營績效影響之研究：動態能力觀點

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摘要

市場知識已是當代企業維持競爭力的主要資產，本研究以動態能力觀點為理論基礎，探討企業之市場知識管理能力對經營績效之影響，並以台灣企業為研究對象進行實證分析。經過192份有效樣本的統計分析後，本研究結果發現：1.本研究所建構的「動態能力—市場知識管理—經營績效」理論模式有良好的模型適合度；2.動態能力對市場知識管理能力有顯著正向影響；3.市場知識管理能力與動態能力兩者對於經營績效有顯著正向影響；4.市場知識管理能力對動態能力與經營績效之財務績效構面有顯著的中介效果。本研究結果有助於企業評估其影響知識管理成敗之關鍵能力。

關鍵詞：動態能力、市場知識管理、市場知識管理能力、績效
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