

Correlations among Brand Image, Dynamic Capability, Knowledge Management Capability and Competitive Advantage

Gao-Liang Wang¹, Yu-Je Lee², Jin-Wei Chang³

¹(Dept. of Marketing Management, Takming University of Science and Technology, Taiwan)

²(Dept. of Marketing Management, Takming University of Science and Technology, Taiwan)

³(Dept. of Marketing Management, Takming University of Science and Technology, Taiwan)

ABSTRACT: *This study aims to explore the relations among the brand image, dynamic capability, knowledge management capability of listed Taiwan semiconductor companies and their competitive advantage. The subject population in this study is department supervisors at listed Taiwan semiconductor companies. Convenience sampling is used to conduct sampling of the population. The results show that: (1) the brand image of listed Taiwan semiconductor companies (functionality/symbolism /experience) has a positive and significant effect on dynamic abilities; (2) dynamic capability (process/position/path) has a positive and significant effect on competitive advantage; (3) brand image (functionality/symbolic/experience) has a positive and significant effect on competitive advantage; (4) knowledge management capability (internal abilities/external abilities) has a positive and significant effect on dynamic capability; and (5) knowledge management capability (internal abilities/external abilities) has a positive and significant effect on competitive advantage. The results can serve as a reference for relevant operators when making operating policies.*

KEYWORDS: *brand image, knowledge management, dynamic capabilities, competitive advantage*

I. INTRODUCTION

Corporations are encountering ultra-competitive environments and the advent of the knowledge era. Industries are facing rapid market changes, blurred customer demands, short product life cycle, and an era where product technology can be easily replaced. This makes corporate competitive advantage fleeting (Bongner& Barr, 2000; Huang, 2011). Corporations must continuously innovate and improve their product technology to be able to maintain their position and competitive advantage in the market. According to the perspectives of resource-based theory, corporations obtain competitive advantage by accumulating internal and external resource, and converting them into unique abilities. Unique abilities have special characteristics that cannot be easily replaced. This is how corporations create competitive advantage. However, in a dynamic environment, resource-based theory does not clarify the process of how corporations obtain competitive advantage (Barney, 1986, 1991; Peteraf, 1993). This is reflected by some corporations having rich resources and core ability, yet cannot maintain competitive power on the market and adapt to a dynamic environment. This is why the dynamic capability theory was developed.

The clear definition of dynamic capability by Teece, Pisano and Shuen (1997) resulted in discussions by various schools in the academic world (Zollo& Winter, 2002; Rindova&Kotha, 2001). This dynamic capability was developed from the perspectives of resource-based theory and further explores the dynamic capabilities required by corporations to convert their existing resources into competitive advantage (Liu, 2004). During the process of adapting to the environment, a crucial key in corporations developing internal organization capability is the capability to receive, learn, and manage new knowledge (Peteraf, 1993; Helfat&Peteraf, 2003). The topic of exploration in this study is how to effectively adjust and integrate internal and external resources and extending them to affect a corporation's external brand image.

With the influence of many environment factors, what corporations encounter is how to change existing management methods and create a unique organization capability and irreplaceability to obtain competitive advantage. Market environment changes and market trends are dynamic. Therefore, one of the motivations for this study is how corporations respond to environment change and utilize integration of dynamic capabilities to further improve corporate competitive advantage.

The advent of the knowledge era means that corporations are faced with knowledge battles. A second motivation of this study is how corporations can effectively use dynamic capability to learn and effectively manage internal and external resource, and integrate these resources to give organization superior knowledge management abilities, which in turn improves the corporation's competitive advantage.

However, a corporation's brand image cannot be overlooked. The brand is the consumers' first perceived image of a corporation. Thus, how corporations provide good dynamic capabilities and knowledge management abilities to create competitive advantage, thereby, improve customers' brand image toward the company and obtaining profit is the third motivation for this study.

Based on the aforementioned motivations, we wish to understand the correlation between the brand image, dynamic capability, and knowledge management capability of listed Taiwan semiconductor companies with their competitive advantage. The study population is department supervisors at listed Taiwan semiconductor companies. Thus, the primary objectives of this study are as follows:

(1) To understand whether the brand image of listed Taiwan semiconductor companies has a positive and significant effect on dynamic capability.

(2) To understand whether the dynamic capability of listed Taiwan semiconductor companies has a positive and significant effect on competitive advantage.

(3) To understand whether the brand image of listed Taiwan semiconductor companies has a positive and significant effect on competitive advantage.

(4) To understand whether the knowledge management capability of listed Taiwan semiconductor companies has a positive and significant effect on dynamic capability.

(5) To understand whether the knowledge management capability of listed Taiwan semiconductor companies has a positive and significant effect on competitive advantage.

II. LITERATURE REVIEW

Primary dimensions in this study include literature reviews on brand image, dynamic capability, knowledge management ability, and competitive advantage, which are separately discussed in the following:

2.1. Conceptual Definition of Main Dimensions

2.1.1 Definition of dynamic capability

Not much literature related to dynamic capability exists. The conceptual definition of dynamic capability in this study refers to the capability of an organization to internally update its own abilities in response to a dynamic environment. This capability includes process, position, and path, and addition of competitive advantages to adapt to a rapidly changing environment. This conceptual definition was summarized from the following literature, which is briefly described below:

Teece et al. (1997) proposed that the "dynamic" in dynamic capability refers to the capability of an organization to update its own abilities internally in response to a dynamic environment. The "ability" refers to the capability to integrate, build, and reconstruct internal and external abilities. That is, to establish a competitive advantage in response to a rapidly changing environment (Teece et al., 1997; Petroni, 1998; Luo, 2000; Eisenhardt & Martin, 2000; Zollo & Winter, 2002; Lopez, 2005; Wu, 2006). Dynamic capability has been widely applied in recent years by scholars to explain the capability of corporations to change when facing high levels of changes in the environment (Eisenhardt and Martin, 2000). The clear definition of dynamic capability by Teece et al. (1997) resulted in discussions by various schools in the academic world (Zollo and Winter, 2002; Rindova and Kotha, 2001).

Teece (2007) indicated that dynamic capability is composed of three following types of capabilities: (1) awareness and create opportunity and threat; (2) grasp opportunities; and (3) use the corporation's tangible and intangible assets to increase, integrate, protect, and when necessary rebuild, to maintain competitiveness.

Teece et al. (1997) proposed that dynamic capability is formed from process, position, and path dimensions. They asserted that an organization's dynamic capability is embedded in the organization's process. And the organization's process is formed from a combination of the organization's position and path.

Based on the extension of the contents of these three elements of dynamic capability, this study applies the elements to the development of listed Taiwan semiconductor companies. This study explores how the strategy and product position of listed Taiwan semiconductor companies change and how they rapidly adjust their own structure to gain competitive advantage.

2.1.2 Definition of knowledge management capability

Not much literature exists on knowledge management capability. The conceptual definition of knowledge management capability in this study refers to the "an organization retaining valuable knowledge and encourage employees to create new knowledge, thereby, allowing the organization to sustain itself and survive in a competitive environment." This conceptual definition was summarized from the following literature, which is briefly described below:

Nonaka (1995) proposed that in knowledge spiral, implicit knowledge and explicit knowledge are combined and used to explain knowledge management activities and clarify knowledge transfer. Nonaka's knowledge creation theory includes three dimensions (epistemology, ontology, time and activity), and a scenario

beneficial to the organization. Epistemology is based on a combination of implicit and explicit knowledge; that is, socialization (implicit - implicit), externalization (implicit - explicit), combination (explicit - explicit), and internalization (explicit - implicit). Their descriptions are as follows:

- (1) Socialization – socializing, such as experience sharing, to achieve implicit experience inheritance;
- (2) Externalization: the process of using language and text to convert implicit knowledge into explicit knowledge;
- (3) Combination: knowledge system that systemizes concepts into the explicit, and involves the combination of different explicit knowledge systems to produce new knowledge; and
- (4) Internalization: converting explicit and systemized knowledge into individual implicit knowledge through learning.

Nonaka (1994) asserted that all organizations need to interact with the environment. Dynamic interaction includes effective processing of information and creating new knowledge. Laurie (1997) maintained that a series of knowledge creation, obtaining knowledge, and use of knowledge can improve an organization's performance. Papows (1999) proposed that an organization's knowledge management capability can achieve organization learning and extend an organization's life by stimulating knowledge creation, sharing, and repeated use. If an organization has knowledge management capability, they can increase the quantity and quality of creative knowledge within the organization and increase the feasibility and value of knowledge (Nonaka and Takeuchi, 1995; Teece, 2000).

2.1.3 Definition of brand image

Much literature exists on brand image. The conceptual definition of brand image in this study refers to "consumers' memory structure in their mind regarding brands. That is, the consumers' rational or emotional recognition toward specific brands. At the same time, it is linking thoughts toward brands in their memories." This conceptual definition was summarized from the following literature, which is briefly described below:

Dobni and Zinkhan (1990) asserted that brand image is the consumers' projected mental picture of the provided product or service. These mental pictures are linked to specific characteristics of the product or service, and have a symbolic meaning (Padgett & Allen, 1997). Keller (1993) maintained that brand image is a set of linking thoughts toward a brand in the consumers' memory. From a memory network perspective, this definition indicates that brand image is a memory structure in the consumers' mind regarding brands. Keller (2009) proposed that brand image often play a key role in the competitive advantage of luxury item brands, and can bring significant value and wealth to an organization. Corporations apply brand image as important factors in marketing activities, and can bring a premium to a luxury item (Ait-Sahalia, Parker, and Yogo, 2004). In business, brand image often play an important role that affect consumers' recognition toward product and service quality (Cretu&Brodie, 2007). Thus, brand image can be defined as consumers' rational or emotional recognition toward specific brands (Low & Lamb, 2000).

2.1.4 Definition of competitive advantage

Much literature exists on competitive advantage. The conceptual definition of competitive advantage in this study refers to "an organization's competitive advantage primarily comes from an organization's accumulated labor and social capital that is superior to that in the industry. The better the characteristic of the capital, the greater the competitive advantage obtained by the organization." This conceptual definition was summarized from the following literature, which is briefly described below:

Successful knowledge concentrated companies obtain their competitive advantage from their internal and external advantage (Alvesson, 2000; Lei, 1999; Newell, 2001; Purvis, 2001; Swart &Kinnie, 2003). Internal advantage that can give an organization competitive advantage generally means that the organization has superior talents compared with other companies in the industry. External advantage generally refers to a company possessing better customer relationships and higher market share than other companies in the same industry (Swart, 2000). Grant (1996) indicated that the primary source of a company's competitive advantage is knowledge possessed by the company. An organization's knowledge mostly exists in the organization's human capital, which increases the value of the organization. Human capital includes several aspects. From an individual perspective, capital refers to the knowledge possessed by an individual. The source of this type of knowledge mainly comes from the individual's education, and from continuous updates and long-term accumulation (Becker, 1975). From an organization perspective, human capital is the knowledge and ability that the organization uses to produce professional products or service, and these knowledge and ability comes from organization personnel.

An organization's external competitive advantage primarily comes from the organization's social capital that is superior to other companies in the industry. Among the many definitions of social capital, the only similarity is the stored social relationship in society (Hitt, Lee, &Yucel, 2002). These activities include resource exchange within the organization's internal departments, resource exchange between organizations, production

of intelligent capital, learning between organizations, supplier relationship, product innovation, and the spirit of entrepreneurs. Organization level social capital refers to the sum of connectedness between members of the organization and potential customers (Pennings, Lee, & Wiffelosstuijn, 1998). This type of connection is one of the most valuable capitals of the organization because, all other conditions being equal, potential customers will choose companies that they have professional links with to provide services. Organization members with high value social relationship are the source of organization competitive advantage (Uzzi, 1996).

2.2 The Relationship between Various Dimensions

The following is a brief description of the relationship between dynamic capability, knowledge management, brand image and competitive advantage.

2.2.1 Brand image and dynamic capability

To date, we have not discovered any literature on the correlation between brand image and dynamic capability. However, we believe subjectively that there is a correlation between brand image and dynamic capability. Thus, we proposed the following hypothesis (H₁): brand image has a positive a significant effect on dynamic capability.

Although we proposed the aforementioned hypothesis in this study, we needed to use interview questionnaire data and statistical methods to verify whether the hypothesis can be established and to achieve the objective standards required for this study.

2.2.2 Dynamic capability and competitive advantage

Hypothesis two (H₂) in this study states the following: the organization dynamic capability of listed Taiwan semiconductor companies has a positive and significant effect on competitive advantage. H₂ was obtained by reviewing the following literature.

According to the dynamic capability perspective, an organization needs to initiate cross individual, cross time, and cross time knowledge conversion mechanism. Most importantly, an organization must be able to effectively design various procedures to convert explicit or implicit knowledge of individuals or teams in the organization into organization knowledge and making the organization the biggest beneficiary (Dyer & Nobeoka, 2000; Galunic&Eisenhardt, 2001). The dynamic capability perspective focuses on exploring topics related to the organization itself in organization theory, especially organization's ability to build, integrate, and redistribute resources (Teece et al., 1997). Dynamic capability perspectives value the ability of a company to convert resource and ability to maintainable competitive advantage (Afuah , 2001).

2.2.3 Brand image and competitive advantage

To date, this study has not discovered any literature on correlation between brand image and competitive advantage. This study only finds Keller (2009), and this study's hypothesis three (H₃), the brand image of listed Taiwan semiconductor companies has a positive and significant effect on brand image, is based on perspective from Keller. (2009). That is, brands and brand image often play a key role in competitive advantage and can bring significant value and profit to an organization, thereby, increasing competitive advantage.”

2.2.4 Knowledge management capability and dynamic capability

Research hypothesis four (H₄): the knowledge management capability of listed Taiwan semiconductor companies has a positive and significant effect on dynamic capability. H₄ was obtained by combining the following literature.

The organization dynamic capability proposed by Teece et al. (1997) can make organization work hard to analyze where the resource that can create profit is located, and conduct further building, integration, and redistribution of this type of resource. This type of dynamic capability is an important source of competitive advantage for organizations in a highly competitive environment. This capability can effectively combine organization internal and external resources, and is the only way for companies to obtain and maintain competitive advantage (Griffith & Harvey, 2001). Thus, the dynamic capability perspective can be said to explore the where about of knowledge management capability and how it can become the main source of competitive advantage. The dynamic capability perspective focuses on exploring topics in organization theory that is related to the organization itself, especially the ability of an organization to build, integrate, and redistribute resources ability (Teece et. al, 1997). Dynamic capability perspective values the ability of a company to convert resources and ability to maintainable competitive advantage (Afuah et al., 2001).

2.2.5 Knowledge management capability and competitive advantage

Research hypothesis five (H₅): the knowledge management capability of listed Taiwan semiconductor companies has a positive and significant effect on competitive advantage. H₅ was obtained by combining the following literature.

Nonaka et al. (1994) asserted that every organization must interact with the environment, and this dynamic interaction includes effective processing of information and creation of new knowledge. Grant (1996) maintained that knowledge possessed by the company is the main source of competitive advantage. If an organization possesses knowledge management capability, it can improve the quality and quantity of internal creative knowledge, increase knowledge feasibility, and add value (Nonaka et al., 1995; Teece, 2000). In an era where knowledge is the core competitive ability, a corporation’s dynamic capability is an important factor that affects competitiveness. In an often changing environment, whether a corporation can use dynamic capability to convert knowledge management capability into competitive advantage is a key to corporate success.

According to the dynamic capability perspective, organizations have different performances because they have different environment response abilities (Afuah et al., 2001). As for knowledge characteristics, implicit knowledge possesses these characteristics. This implicit knowledge is stored in an organization’s professional talents (Mowery, Oxley, & Silverman, 1996). The obtainment of human capital by corporations is their source of competitive strength. The foundation of an organization is not only in capital, asset, or technology, but more importantly, its human capital (Drucker, 2000). Corporations that can recruit, encourage, and retain these knowledge professionals can obtain the greatest competitive advantage.

III. RESEARCH METHOD

3.1 Research Framework

Based on the above research objectives, hypothesis, and literature review, the following research structure can be obtained, as shown in Fig. 1:

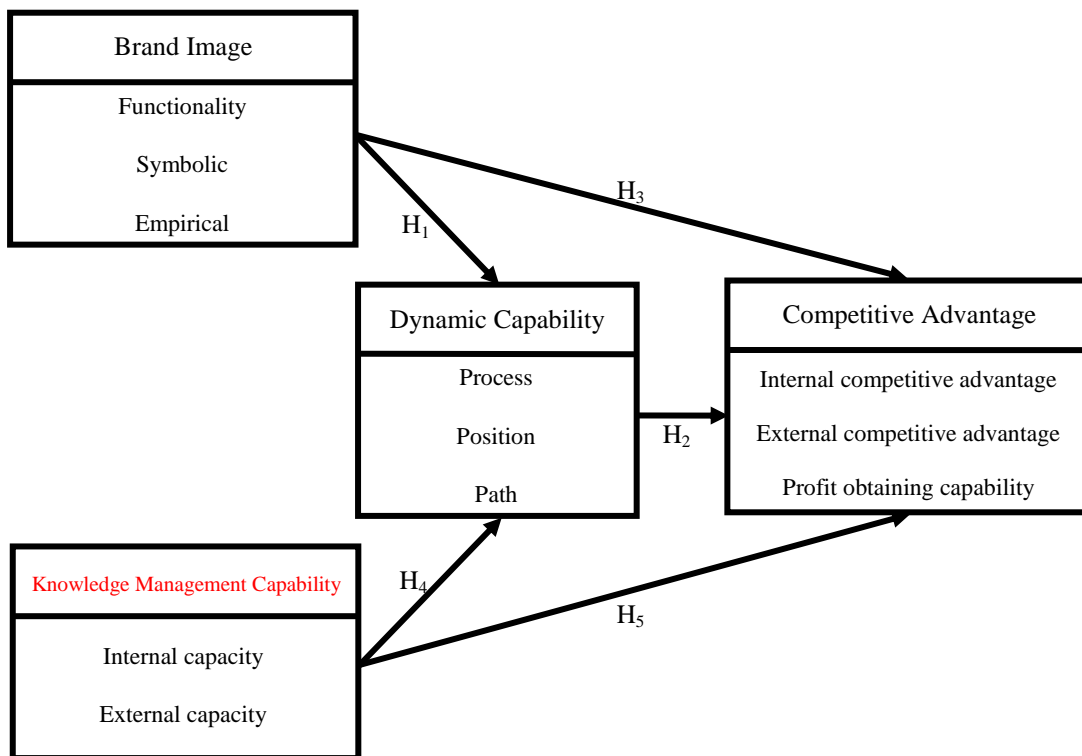


Figure 1. Research framework

3.2 Research Subject and Questionnaire Design

In this study, department supervisors from listed Taiwan semiconductor companies are the subjects for the questionnaire. Convenience sampling was used to implement the questionnaire. To improve the content validity and reliability of the questionnaire, we conducted an expert questionnaire after completing the questionnaire design, and then implemented a pilot test. Inappropriate questionnaire items were revised or eliminated. A post-test was conducted. A total of 300 questionnaires were distributed and 280 valid questionnaires were returned. This is an effective return rate of 0.93%. The questionnaire item and structure for variables in primary dimensions (conceptual dimension) and secondary dimensions (operational measuring dimension) are shown in Table 1.

Table 1: Questionnaire question structure

Main dimensions	Number of questions	Source of reference for the questionnaire
Dynamic capability	4	Teece et al., 1997 Eisenhardt et al., 2000
Knowledge management capability	6	Griffith et al., 2001 Roth and Styhre, 2002 Teigland, Fey, and Shaw, 2000
Brand image	4	Keller, 1993
Competitive advantage	4	Swart et al., 2003 Pennings et al., 1998

3.3 Statistical Methods and Tools

This study is an exploratory study. First, we must conduct questionnaire reliability and validity analysis. Next, we used descriptive statistical analysis to understand the distribution of various samples and used t-test to compare whether different consumer genders and marital status resulted in significant differences in each dimension. One-way ANOVA was used to test whether different ages, education, and monthly income showed a significant difference in dynamic capability, knowledge management, brand image, and competitive advantage. Furthermore, we used Pearson product correlation in this study to analyze the correlation between dynamic capability, knowledge management, and brand image and competitive advantage. Finally, regression analysis was used to determine the effects of independent variables on dependent variable in various dimension factors, and to test whether dynamic capability, knowledge management, and brand image affected competitive advantage. The questionnaire data was organized and analyzed in this study. SPSS statistical analysis software was utilized to obtain the research statistic report, which was used as supporting data for analysis.

IV. ANALYSIS AND RESULTS

As previously described, the primary objectives of this study are to explore the correlation between dynamic capability, knowledge management, and brand image and competitive advantage. Questionnaire survey was used as a research tool. Data collected with the questionnaire was processed and underwent statistical analysis.

4.1 Questionnaire Reliability and Validity Analysis

The convergence validity, discriminate validity, and average variance extracted (AVE) in this study are briefly described below.

Table 2: The convergence validity, discriminate validity, and AVE of this study questionnaire

	AVE	Composite Reliability	Cronbach's α	(1)	(2)	(3)	(4)
(1) DC	0.631	0.843	0.812	0.794			
(2) KM	0.673	0.882	0.853	0.712	0.820		
(3) BI	0.653	0.861	0.823	0.643	0.654	0.808	
(4) CA	0.682	0.893	0.863	0.723	0.713	0.623	0.825

Table 2 shows that this study questionnaire not only had superior reliability (Cronbach's $\alpha > 0.7$), but also possess discriminate validity and convergence validity (AVE > 0.5; CR > 0.7).

4.2 Pearson Product Correlation Analysis between Various Constructs in this Study

To explore the correlation between dynamic capability, knowledge management, and brand image and competitive advantage, the Pearson product correlation analysis was used in this study to discuss the level of correlation between various variable, as shown in Table 3.

Table 3: Pearson product correlation analysis of primary (and secondary) constructs in this study (n=280)

Variable	Brand image (1)	Knowledge management capability (2)	Dynamic capability motivation (3)	Competitive advantage (4)
(1)	1			
(2)	.433***	1		
(3)	.487***	.524***	1	
(4)	.437***	.597***	.532***	1

Note: * represents $p < 0.05$, ** represents $p < 0.01$, *** represents $p < 0.001$

4.3 Regression Analysis of Various Constructs

This section used linear regression analysis to test whether dynamic capability, knowledge management, and brand image had a positive and significant effect on competitive advantage.

Table 4: Regression analysis coefficients

Model	Non-standardized coefficient		Standardized coefficient	t	Significance	Collinearity statistics		Label
	Estimate of B	Standard error	Beta distribution			Tolerance	VIF	
(Constant)	.897	.328		2.785	.064			
Brand image (BI)→dynamic capability (DC)	.956	.144	.652	6.639	.000	.750	1.411	H ₁
Dynamic capability (DC)→competitive advantage (CA)	.968	.151	.632	6.411	.000	.752	1.421	H ₂
Brand image (BI)→competitive advantage (CA)	.807	.153	.531	5.274	.001	.963	1.639	H ₃
Knowledge management capability (KM)→dynamic capability (DC)	1.01	.153	.660	6.601	.000	.761	1.542	H ₄
Knowledge management capability (KM)→competitive advantage (CA)	1.03	.184	.622	0.598	.000	.733	1.362	H ₅

a. Dependent variable: dynamic capability and competitive advantage

Table 5: Summary of regression analysis models

Model	R	R square	Adjusted R square	Estimated standard error	Statistical change				
					R squared change	F change	df1	df2	Significant F change
1	.695 ^b	.483	.469	.36017	.476	179.452	1	195	.000
2	.721 ^c	.519	.504	.34803	.037	14.840	1	194	.000
3	.738 ^d	.545	.529	.33935	.026	11.041	1	193	.001

Tables 4 and 5 show that the data for research hypothesis inference results listed in Table 6.

Table 6: Research hypothesis and verification results

	Research hypothesis	Verification results
H ₁	brand image has a positive and significant effect on dynamic capability	Established
H ₂	dynamic capability has a positive and significant effect on competitive advantage	Established
H ₃	brand image has a positive and significant effect on competitive advantage	Established
H ₄	knowledge management capability has a positive and significant effect on dynamic capability	Established
H ₅	knowledge management capability has a positive and significant effect on competitive advantage	Established

V. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions can be obtained from the aforementioned data analysis and results.

5.1 Conclusions

The following conclusions can be obtained from the aforementioned data analysis and results:

(1) Brand image of listed Taiwan semiconductor companies has a positive and significant effect on dynamic capability (path coefficient = .652).

(2) Dynamic capability of listed Taiwan semiconductor companies has a positive and significant effect on competitive advantage (path coefficient = .632).

(3) Brand image of listed Taiwan semiconductor companies has a positive and significant effect on competitive advantage (path coefficient = .531).

(4) Knowledge management capability of listed Taiwan semiconductor companies has a positive and significant effect on dynamic capability (path coefficient = .660).

(5) The knowledge management capability of listed Taiwan semiconductor companies has a positive and significant effect on competitive advantage (path coefficient = .622).

These conclusions show that dynamic capability has a dimension twofold mediating effect.

5.2 Implications for Management

According to the hypothesis and analysis results of this study and analysis of interviews with people familiar with company operations, we discovered that dynamic capability significantly improves the competitive abilities of organizations. Corporations not only can use dynamic capability to improve consumers' recognition of corporate brand image, dynamic capability can also strengthen the corporation's own knowledge management capability, thereby, increasing competitive advantage. Thus, this study recommends that corporations should view dynamic capability as a strategic tool and as a source of competitive advantage for corporations.

5.3 Research Limitations and Recommendations

Because of resource limitations, this study had the following limitations:

(1) Convenience sampling was used for sampling in this study. This resulted in high sample return rate, but there is a risk of insufficient representative population. So this study recommends follow-up researchers to use other sampling methods such as simple random sampling or stratified sampling.

(2) Research results show that Bootstrap and Sobel test was not used to test the mediating effects of the dynamic capability dimension. Thus, this inference may be a bit subjective. Hence, this study recommends follow-up researchers to consider using Bootstrap and Sobel test to verify whether different dimensions have a mediating effect.

(3) Because of resource limitations, this study can only conduct a cross-section research and not a longitudinal research. Therefore, the result is only appropriate for initial stages. Therefore, this study recommends that follow-up research can use longitudinal research thinking to view the effects of organization dynamic capability. This may provide insight into its effects.

REFERENCES

- [1] Afuah, A., Dynamic Boundaries Of The Firm: Are Firms Better Off Being Vertically Integrated In The Face Of A Technological Change? *Academy of Management Journal*, 44(6), 2001, 1211-1228.
- [2] Ait-Sahalia, Y., and Parker, J. A., and Yogo, M., Luxury goods and the equity premium. *Journal of Finance*, 59(6), 2004, 2959-3004.
- [3] Alvesson, M., Social Identity and The Problem of Loyalty In Knowledge-intensive Companies. *Journal of Management Studies*, 37(8), 2000, 1101-1123.
- [4] Barney, J., Strategic Factor Markets: Expectations, Luck, and Business Strategy. *Management Science*, 42, 1986, 1231-1241.
- [5] Barney, J., Firm resource and sustained competitive advantage. *Journal of Management*, 17, 1991, 92-120.
- [6] Becker, G. B., Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education, Chicago, University of Chicago Press, 1975.
- [7] Bongner W. C., and Barr, P. S., Making Sense in Hypercompetitive Environments: A Cognitive Explanation for the Persistence of High Velocity Competition. *Journal Organization Science*, 11(2), March 2000, 212-226.
- [8] Cretu, A. E., and Brodie, R. J., The influence of brand image and company reputation where manufacturers market to small firms: A customer value perspective. *Industrial Marketing Management*, 36(2), 2007, 230-240.
- [9] Dobni, D., and Zinkhan, G. M., In search of brand image: A foundation analysis. *Advances for Consumer Research*, 17(1), 1990, 110-118.
- [10] Drucker, P., Knowledge work. *Executive Excellence*, 17(4), 2000, 11-13.
- [11] Eisenhardt, K. M., and Martin, J. A., Dynamic Capabilities: What are they? *Strategic Management Journal*, 42, 2000, 372-389.
- [12] Galunic, D. C., and Eisenhardt, K. M., Architectural Innovation and Modular Corporate Forms. *Academy of Management Journal*, 44(6), 2001, 1229-1249.
- [13] Grant, R. M., Toward a Knowledge-Based Theory of the Firm. *Strategic Management Journal*, 17, 1996, 109-122.
- [14] Griffith, D. A., and Harvey, M. G., A resource Perspective of Global Dynamic Capabilities. *Journal of International Business Studies*, 32(3), 2001, 597-606.

- [15] Helfat, C. E., and Peteraf, M. A., The Dynamic resource-based view: Capability Lifecycles. *Strategic Management Journal*, 24, 2003, 997–1010.
- [16] Hitt, M. A., and Lee, H. U., and Yucel, E., The Importance of Social Capital to The Management of Multinational Enterprises: Relational Networks Among Asian and Western Firms. *Asia Pacific Journal of Management*, 19(23), 2002, 353-372.
- [17] Huang, Use of Dynamic Capability Perspective to Build Patent Layout Model, Taiwan: doctorate thesis, National Chiayi University Department of Business Administration, 2011.
- [18] Keller, K. L., Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1993,1-22.
- [19] Keller, K. L., Building Strong brands in a mod-ern marketing communications environment. *Journal of Marketing Communications*. 15(2/3), 2009, 139-155. doi:10.1080/13527260902757530.
- [20] Laurie, J., Harnessing the Power of Intellectual Capital. *Training and Development*, 51(12), 1997, 25-30.
- [21] Lei, D., and Slocum, J. W., and Pitts, R. A., Designing Organizations For Competitive Advantage: The Power Of Learning and Unlearning. *Organizational Dynamics*, Winter, 1999, 24-38.
- [22] Liu, Correlation between Capabilities of Global Knowledge Management, Corporate Dynamic Capability, and Competitive Advantage, Taiwan: doctorate thesis, National Sun Yat-sen University Institute of Human Resource Management, 2004.
- [23] Lopez, C., La EIB en Bolivia: unmodeloparaarmar. La Paz: PINSEIB. PROEIB Andes, Plural Editores (In France), 2005.
- [24] Low, G. S., and Lamb, C. W. J., The measurement and dimensionality of brand associations. *The Journal of Product andBrand Management*,9(6), 2000, 350-368.
- [25] Luo, Y., Dynamic capabilities in international expansion. *Journal of World Business*, 35(4), 2000, 355-378.
- [26] Mowery, D. C, and Oxley, J. E., and Silverman, B. S., Strategic alliances and interfirm knowledge transfer. *Strategic Management Journal*, 17, 1996, 77.
- [27] Newell, S., and Scarbrough, H., and Swan, J., From Global Knowledge Management to Internal Electronic Fences: Contradictory Outcomes of Intranet Development. *British Journal of Management*, 12(2), 2001, 97-112.
- [28] Nonaka, Ikujiro., A Dynamic Theory of Organizational Knowledge Creation. *Organizational Science*, 5(1), 1994, 14–37.
- [29] Nonaka, Ikujiro., and Hirotaka, Takeuchi., The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation. Oxford University Press, 1995.
- [30] Padgett, D., and Allen, D., Communicating experiences: A narrative approach to creating service brand image. *Journal of Advertising*, 26(4), 1997, 49-62.
- [31] Papows, J., Enterprise.com. Massachusetts: Perseus Publishing, 1999.
- [32] Pennings, J. M., and Lee, K., and Witteloostuijn, A. V., Human capital, Social Capital, and Firm Dissolution. *Academy of management Journal*, 41(4), 1998, 425-440.
- [33] Peteraf, M.A., The Cornerstones of Competitive Advantage: A Resource-Based View. *Strategic Management Journal*, 14(3), March 1993, 179-191.
- [34] Petroni, A., The analysis of dynamic capabilities in a *competence-oriented organization*. *Tech-novation*, 18(3), 1998, 179-189.
- [35] Purvis, R. L., and Sambamurthy, V., and Zmud, R. W., The Assimilation of Knowledge Platforms in Organization: An Empirical Investigation.*Organization Science*, 12(2), 2001, 117-135.
- [36] Rindova, V., and Kotha, S. (2001). Continuous Morphing: Competing through dynamic capabilities. *Academy of Management Journal*, 44(6), 2001, 1263-1280.
- [37] Roth, J and Styhre., A. Knowledge facilitation at AstraZeneca. *European Academy of Management Conference Stockholm*, Sweden, May 9-11, 2002.
- [38] Swart, J., Collective Tacit Knowledge and Self-awareness: An Exploratory Study. Unpublished doctorate, University of Bath, 2000.
- [39] Swart, J., and Kinnie, N., Sharing Knowledge In Knowledge-intensive Firms. *Human Resource Management Journal*, 13(2), 2003, 60-75.
- [40] Teece, D. J., Managing intellectual capital: Organizational, strategic, and policy dimensions. Oxford: Oxford University Press, 2000.
- [41] Teece, D. J., Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 2007, 1319–1350.
- [42] Teece, D., Pisano, G., and Shuen, A., Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7), 1997, 509-533.
- [43] Teigland, R., and Fey, C. F., and Birkinshaw, J., Knowledge Dissemination in Global R&D Operations : An Empirical Study of Multinationals in the High Technology Electronics Industry. *Management International Journal. Special Issue*, 40, 2000, 49-77.
- [44] Uzzi, B., The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *AmericanSociological Review*, 61(4), 1996, 674 -699.
- [45] Wu, W. S., and Li, W. H., and Chen, B. S., Computational reconstruction of transcriptional regulatory modules of the yeast cell cycle. *BMC Bioinformatics*, 7, 2006, 421.
- [46] Zollo, M., and Winter, S. G., Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science*, 13(3), 2002, 339-351.