World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:7, No:8, 2013

Do Firms Need Strategic Alliances?

Yun Mi, Ko and Hye Jung, Joo

***Abstract*—**This study develops a relation to explore the factors influencing management and technology capabilities in strategic alliances. Alliances between firms are recognizing increasingly popular as a vehicle to create and extract greater value from the market. Firm's alliance can be described as the collaborative problem solving process to solve problems jointly. This study starts from research questions what factors of firm's management and technology characteristics affect performance of firms which are formed alliances. In this study, we investigated the effect of strategic alliances on company performance. That is, we try to identify whether firms made an alliance with other organizations are differed by characteristics of management and technology. And we test that alliance type and alliance experiences moderate the relationship between firm's capabilities and its performance. We employ problem-solving perspective and resource-based view perspective to shed light on this research questions. The empirical work is based on the Survey of Business Activities conducted from2006 to 2008 by Statistics Korea. We verify correlations between to point out that these results contribute new empirical evidence on the effect of strategic alliances on company performance.

***Keywords*—**Problem solving process, strategic alliance.

I. Introduction

WITH the rapid changing technical and management environment, establishing relations between businesses is perceived as one of the key strategies for organizations. Strategic alliance can be considered as a leading method of forming a relationship between business entities. The term "strategic alliance" is used to express ties between different types of companies. Although the definition slightly varies among scholars, mutual collaborative relationship between corporate entities with an agreed goal can be deduced as the common attribute. Discovering new knowledge, learning by absorbing the knowledge transferred by the partner, or utilizing the complementary intellectual property of the partner—these are the strongest motives for joining technical alliances [3]. In particular, research and development cooperation allows the entities to share the risk and cost of R&D while promptly responding to market changes. It is also an important way of contributing to the spreading and utilization of developed technologies. Accordingly, collaborative research is emphasized in the aspects of increasing the efficiency of R&D investment and human resources and minimizing the risk to overcome the R&D resources that are becoming increasingly limited due to rapidly changing and diversifying technology. This study sees technical cooperation of companies as collaborative problem-solving process and intends to analyze the relationship between the capability and performance of businesses based on the views of problem-solving that is proposed by [17]. Observation has been made on whether the technical cooperation among companies has led to actual technical and economic achievements. The study is expected to shed light on the strategic aspects of how alliance and other processes of problem-solving in businesses help build corporate capability and ultimately function as a foundation for value creation. Existing studies have mostly examined the number and types of alliances that companies joined to compare its influence on the innovative performance of companies. This paper plans to analyze the influence of corporate alliance focusing on the capabilities of companies seeking to enter partnerships. Companies that entered technical alliance between 2006 and 2008 were analyzed for the purpose.

Yun Mi Ko is with the Korea Institute of S&T Evaluation and Planning, Seoul, Korea (phone: 02-589-2982; fax: 02-589-2280; e-mail: ymko1010@gmail.com).

Hye Jung Joo is with the Institute of S&T Evaluation and Planning, Seoul, Korea (phone: 02-589-2933; fax: 02-589-2280; e-mail: hjoo@kistep.re.kr)

II. Theoretical Background

A. Transaction Cost Theory

According to the transaction theory proposed by [23], a company's decision to develop technology internally or to purchase from an external entity is determined by the transaction cost. Williamson argues that when a company intends to achieve a certain goal, it chooses to cooperate with other companies if the transaction cost is low. Transaction cost is determined by uncertainty and transaction-specific assets. According to the theory, when a company faces difficulty acquiring resources through internal development or market purchase, it can quickly secure the resource at a low transaction cost by establishing a partnership with an entity that has complementary resources [7].

B. Resource-Based View

Resource-based view considers companies as aggregates with unique capabilities and assumes that all of competitive powers and capabilities of companies are created from the resources they own [2], [10], [19]. For businesses to maintain their competitive advantage and gain above-average profit in the market, the resources should be unique and difficult to imitate by the competition [11]. Consequently, companies should focus on strengthening internal abilities that distinguish themselves from the competition and in this respect, strategic alliance can function as a method of enhancing internal capability by acquiring external resources. According to the view, merging and utilizing the resources owned by the parties to maximize enterprise value is the purpose of forming alliances [5]. Through alliances, companies can access resources such as information, knowledge, and technology of partners and utilize the resources to improve corporate abilities [18]. As argued by [10], companies can continue to secure competitive advantage if their resources are valuable, rare, inimitable, and non-substitutable.

C. Knowledge-Based View

Knowledge-based view is an expanded theory that is based on resource-based view. It focuses on corporate knowledge and considers knowledge as the most important resource [9], [12], [14]. Also, it is argued that since corporate knowledge-based resource is mostly complex and difficult to imitate, the heterogeneity of knowledge and ability among business entities is an important factor in corporate performance and maintenance of corporate competitive advantage [1], [19]. The knowledge is considered to be inherent within the enterprise's managerial resources in the form of either tangible or intangible knowledge and transferred through interaction among its members [15]. According to the knowledge-based view, organizational study opportunity among enterprises increases in the process of carrying out strategic alliances. Enterprises get to organize their valuable resources by harmonizing and utilizing the knowledge base acquired from an outside entity with existing internal knowledge. Also, technology and R&D activities to absorb and manage the knowledge of both related and unrelated industries are required at the corporate-level [19].

D. Knowledge-Based View

Reference [17] considered enterprises as optimal organizations for knowledge transfer. The researchers mainly focused on how companies should be structured so that knowledge and ability within the entity is created efficiently. They also paid attention on organizing knowledge of individuals to create knowledge that the company needs. Accordingly, this perspective considers forming new knowledge or ability for creating profit as the ultimate goal of enterprises [21].

Then what is the relationship between forming capabilities and problem-solving? Corporate knowledge or ability is the combination and level of all possible activities known to the enterprise and can be viewed as the union of input and output that can be achieved [16]. Accordingly, knowledge and ability could be advanced by absorbing existing knowledge of outside entities or identifying the problem for the first time and developing new solutions and knowledge. When the issue is perceived as a problem, an efficient search process takes place to solve the complication. Through the process, corporate knowledge or ability that has been produced, accumulated, and reinterpreted increases or advances service/product productivity and later functions as a base for creating corporate value. Therefore, discovery, perception, and selection of the problem act as the most important stage and element. Identifying knowledge and technology that exists inside or outside the enterprise and accurately assessing corporate ability based on experiences and a series of knowledge is an important element at this point.

Value creation of organization—the ultimate goal of an enterprise—can be explained effectively through the problem-solving perspective. Problem is set as the unit of analysis, and for adequate development of strategy, challenges in management aspects are analyzed as problems. So the practice of forming an alliance between enterprises can be recognized as problem-solving process that overcomes organizational barriers.

III. Research Model and Hypothesis

A. Benefits of Strategic Alliances

Many previous studies have suggested evidence that strategic alliances can affect management performance of enterprises with insufficient resources. In particular, venture businesses that are small in size or with weak financial foundation could acquire the resources they lack, secure competitive advantage, and increase environment adaptability through a strategic alliance. Reference [20] suggested that innovative performance increases with the rise of alliances between small start-ups and large corporations for product commercialization. The process of seeking and selecting an adequate partner to solve an internal problem is connected to the capabilities owned by the enterprise. If the business has numerous alliances, a more diverse and wider range of search method and channel could be considered. So the following hypothesis can be deduced:

H1. Management performance will be more positive in enterprises with more strategic alliances.

B. Experience of Strategic Alliances

By repeatedly implementing alliance patterns, the enterprise increases its ability to develop partnerships [13]. Alliance capability increases partnership efficiency and resource accumulation while reducing each party's cost of managing the relationship [18]. Corporate alliance capability not only helps operation of existing strategic alliance, but it also enables the entity to select adequate partners and develop efficient operation method for future alliances [8]. Alliance capability of a company can be developed more effectively with the existence of a stable and repetitive routine. Organizational routine enables consolidation and sharing of knowledge inside the company through the overall process of selecting the partner and carrying out the alliance. From a corporate viewpoint, the routine can be utilized variously according to the company's situation [1]. With more experience in strategic alliance, stable and repetitive routine is formed from past alliance experiences and alliance capability is strengthened. Since increased alliance capability influences alliance output and corporate performance, the following hypothesis can be deduced:

H2. Company's management performance will be more positive with more strategic alliances.

C. Partners of Strategic Alliances

Selecting an adequate partner is the most important issue after making the decision to establish a strategic alliance. Because of its importance, a large number of studies among the papers on strategic alliances focus on the significance of partners. The partner selection process is not only difficult but also the essential core that determines the success of the alliance [4]. In the process of establishing a strategic alliance, a routine is formed while collecting information, communicating, and collaborating to solve problems. Through the course of undergoing trial and error, the alliance-related routine becomes more elaborate and contributes to the unique resources of the enterprise. Studies have confirmed that parties with prior strategic alliance experiences can reduce conflict when a problem occurs between partners because they can put the past experience into use and promptly handle the situation [22]. Also, experience with more partners enables the creation and possession of more knowledge which in turn leads to the acquirement of alliance capability that cannot be imitated by the competition. Experience with many partners enhances the relational capability of the parties involved in the strategic alliances [6]. Various experiences with partners allow alliance knowledge and experience to be accumulated throughout the enterprise thereby influencing the company's collection of knowledge and capability. Since problem-solving is the purpose of strategic alliance, enterprises need to find partners that have the ability to come up with the optimal solution for their problems. Ability to code the knowledge in possession and share it with outside parties is required, and the ability to select strategic partner acts as an important factor. In the process, alliance experience with many partners is an important aspect in accurately presenting and solving the problem. Consequently, the following hypothesis is deduced:

H3. Corporate management performance will be positive if the company has more strategic alliance partners.

TABLE I
VARIABLES INFORMATION AND MEASUREMENT

Variable	Definition	Measurement
Dependent	ROA	return on assets(t+1)
Independent	Number of alliances	Number of alliances during the period of 2006-2008
	Prior alliance experience	Number of prior alliance
	Partners	Number of alliance partners
Control	Firm size	LN(number of employees)
	R&D expense	R&D expense(t+1)
	Classification of industry	Coded as 1 agriculture 2 mining 3 manufacturing 4 electricity, gas & water supply 5 construction 6 service sector

IV. RESEARCH METHOD

A. Data Collection and Subject Selection

To analyze strategic alliances and corporate performance, the study utilized the survey of business activities, which is data compiled by the National Statistical Office for the general understanding of various management activities of corporations. Among the entities that entered into at least one strategic alliance from 2006 to 2008, 154 companies were selected.

B. Method of Analysis

STATA 10.1 was used for the study's empirical analysis and panel data analysis was implemented since the analyzed data was in the form a panel database. Although fixed-effect model is usually preferred to the random-effect model in the panel data analysis [24], the study chose to apply the random-effect model because of its suitability. Industry dummy should be included in the control variable since corporate performance may vary by industry, but industry dummy cannot be included in the fixed-effect model. Also, the Hauseman test revealed that the random-effect model is more adequate than the fixed-effect model. Thus, the random-effect model was chosen. Negative binomial regression was applied to analyze corporate performance. Frequently used along with Poisson distribution, the model is applied when the frequency of occurrence, a dependent variable, is expressed in positive integers including 0. If the distribution of the dependent variable is large, negative binomial regression, rather than Poisson distribution is used as a more suitable tool.

V. CONCLUSION AND IMPLICATIONS

Unlikely the hypothesis set there is no relationship between the dependent and independent variables. It comes from insufficient sample and variable set. Therefore, research on the alliances and performance of company is required to confirm again.

The significance of this paper lies on the fact that the study was conducted from the problem-solving perspective, which was expanded from the existing resource-based view and knowledge-based view. Strategic alliance was considered as a collaborative process of the involved parties solving the problem at hand. Among the corporate attributes that affect the problem-solving process, the influence of alliance experience and partner attributes in business performance was analyzed. The results of further study is expected to have a strategic significance by showing how strategic alliance and other corporate problem-solving processes lead to corporate capability and ultimately strengthens the enterprise's value creation foundation.

REFERENCES

[1] B. Levitt and J. G. March (1988), Organizational Learning, *Annual Review of Sociology*, 14, pp.319-340.

[2] B. Wernerfelt (1984), A resource-based view of the firm, *Strategic Management Journal*, 5, pp.171-181.

[3] Choi (2011), How does knowledge breadth moderates alliance intensity on innovation performance? *Master's Thesis in Seoul National University.*

[4] C.R. Yun (2002), A study of partner characteristics and governance structure in a strategic alliance on performance: focusing on venture firms in IT industry, *Master's Thesis, Ewha Womens University*.

[5] Das. T. & Tang, B. (2000), A resource-based theory of strategic alliances, *Journal of Management*, 26. pp. 31-61.

[6] Dyer, J., & Singh, H. (1998), The rational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, .23. pp.660-679.

[7] Gulati, R., Nohria, N. & Zaheer, A. (2000), Strategic networks, *Strategic Management Journal*, 21(3), 203-217.

[8] Heimeriks, K., & Duysters, G. (2007), Alliance capability as a mediator between experience and alliance performance: An empirical investigation into the alliance capability development process. *Journal of Management Studies*. 44(1).25-49.

[9] I. Nonaka, C.C. Borucki, P. Byosiere, N. Konno, Organizational knowledge creation theory: A first comprehensive test, *International Business Review*, 3, pp.337-351.

[10] J. Barney (1986), Strategic Factor Markets: Expectations, Luck, and Business Strategy, *Management Science*, 32(10), pp.1231-1241.
[11] J. Barney (1991), Firm Resources and Sustained Competitive Advantage, *Journal of Management*, 17(1), pp.99-120.
[12] J.C. Spender (1989), Industry Recipes, UK. Basil Blackwell.
[13] Kale, P., Dyer, J., & Singh, H. (2002), Alliance capability, stock market responses and long-term alliance success: The role of the alliance function. *Strategic Management Journal*, 23.217-237.
[14] K. R. Conner and C. K. Prahalad, A Resource-Based Theory of the Firm: Knowledge versus Opportunism, *Organization Science*, 7(5), pp.477-501.
[15] Lee, C., Lee, K. and Pennings, J. M. (2001), Internal capabilities, external networks and performance: A study on technology-based ventures, *Strategic Management Journal*, 22. 615-640.
[16] Nelson, R. R. and Winter, S. G. (1982), "An evolutionary theory of economic change", Cambridge, MA: The Belknap Press of Harvard University Press.
[17] Nickerson and Zenger (2004), " A knowledge-based theory of the firm - the problem-solving perspective", *Organization Science*, 15(6).pp. 617-632.
[18] P. Porrini (2004), Can a previous alliance between an acquirer and a target affect acquisition performance?*Journal of Management*, 30(4). pp. 545-562.
[19] R. M. Grant (1986), Toward a Knowledge-Based Theory of the Firm, 17, *Strategic Management Journal*, pp.109-122.
[20] Shan, W. G. Walker and B. Kougut (1994), Interfirm cooperation and startup innovation in the biotechnology industry, *Strategic Management Journal*, 15. pp. 627-642.
[21] Y.M. Ko and S.J. Bae (2013), Categorization of R&D Collaboration Based on Problem-Solving Perspective and its Implication, *Korean Production and Operations Management*, 24(2). pp. 149-171.
[22] Y.S. Park, Y.R. Park and J.M. Son (2006), Determinants of International Joint Venture`s Performance - An Organizational Learning Perspective -, *International Business Journal*, 17(2). pp.39-64.
[23] Williamson, O. (1987), The economic institutions of capitalism, Free press, New York.
[24] W.H. Greene (1997), Econometric analysis, New York: Macmillan, Third Edition.