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Trade Offs in Alliance Capabilities:

Case Studies of Pharmaceutical Firms in Japan

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ABSTRACT

Organizational capability is an important factor in sustaining competitive advantage. As yet, there have been no studies comparing organizational capabilities. This paper will examine the relationship between two capabilities: alliance partner selection and alliance implementation capabilities. Field research was conducted to examine the process of alliance partner selection and implementation with six pharmaceutical companies in Japan. This paper focuses on two companies reputed to have high alliance capabilities. One had a reputation for good partner selection, but a below-average capability for implementation. The other had the opposite - a below-average partner selection capability, with strong implementation capabilities. Based on a series of extensive interviews, it may be posited that there is an inverse relationship between partner selection and alliance implementation capabilities, involving a trade off of sorts.

Keywords:
Alliance capability, Partner selection capability, Implementation capability

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INTRODUCTION

Nowadays, strategic alliances are common as business practices. However, the goals of strategic alliances are notoriously difficult to achieve. The evidence accordingly reveals that the success rate of strategic alliances is only about fifty percent (Kogut, 1988). Many alliances are terminated before they reach their goal (Doz & Hamel, 1998 ; Draulans et al., 2003).

Over the years, research studies regarding the practice of strategic alliances have been divided into two tracks. The first group claims that alliance performance is determined by the alliance's preconditions, i.e. research in the field of game theory (Parkhe, 1993), the transaction cost theory (Balakrishnan & Koza, 1993) and the resource-based view (Das & Teng, 2000; Ireland et al., 2002).

In contrast, the second group emphasizes the importance of alliance implementation. Examples would be those relying on the inter-organizational learning theory (Hamel and Doz, 1998; Ingram, 2002), and the social network theory (Gulati, 1995; Lee & Cavusgil, 2006). In other words, the former perspective values pre-contract conditions, while the latter perspective values post-contract interaction as a source to achieve a successful alliance outcome. Thus, there are conflicting perspectives on the factors which affect alliance performance.

Recently, researchers have come to consider alliance capability as an important success factor in alliance involvement (Heimeriks & Duysters, 2007; Kale & Singh, 2007; Simonin, 1997). This is because some firms are more successful in alliances than others. For example, HP, Cisco, and Eli Lilly are good at managing alliances. In order to pinpoint the factors which enable alliance goal realization, many scholars have

been paying attention not only to a particular alliance but also to the firm's alliance management processes and its alliance capabilities (Draulans et al., 2003).

Strategic alliance is defined as "the development, manufacture, and/or distribution of new products (Zollo et al., 2002). " Alliance capability refers to a firm's ability to manage the alliance process as a whole. According to this definition, alliance capability covers both the capability to optimize pre-contract conditions and post-contract interactions. Given that a firm is able to select an appropriate partner, it does not necessarily mean that it can successfully carry out the alliance implementation process.

The question then lies on the relationship between two capabilities. Previous studies did not pay attention to the relationship between capabilities. Most researchers described primarily the process or routine specific to the focal company. For example, Clark & Fujimoto (1991) and Fujimoto (1997) revealed the routines of high performance automobile firms. Whereas Hargadon & Sutton (1997) described a design firm`s innovation capabilities in detail. These studies, however, did not touch on capability comparison. This paper attempts to find out an answer to this question.

THEORY AND HYPOTHESES

Strategic alliance process

The strategic alliance process is divided into five stages (Kale et al., 2002); alliance strategy, alliance partner selection, negotiation, alliance implementation, and alliance termination. While we should note that the attainment of each stage requires different capabilities (Kale et al., 2002; Simonin, 1997), previous studies did not attempt to

explain the capabilities necessary to achieve the goal of these alliance processes.

Because they are crucial to the success of a strategic alliance, this study focuses on the alliance partner selection and implementation stages. The capabilities of alliance partner selection and alliance implementation will be carefully examined since it is believed that the firm must develop partner selection capability during the alliance partner selection stage and implementation capability in the alliance implementation stage.

Alliance capability theory

Alliance capability is an important factor in determining alliance performance. Most researchers agree on the point that the origin of organizational capability is experience (Hoang & Rothaermel, 2005; Teece et al., 1997). Researchers in organizational learning theory (Ingram, 2002), evolutionary economics (Nelson & Winter, 1982), and the resource based view (Ireland et al., 2002) believe that accumulated experience leads to capability (Shulz, 2002). However, there are various opinions regarding the meaning of alliance capability and the level of analysis.

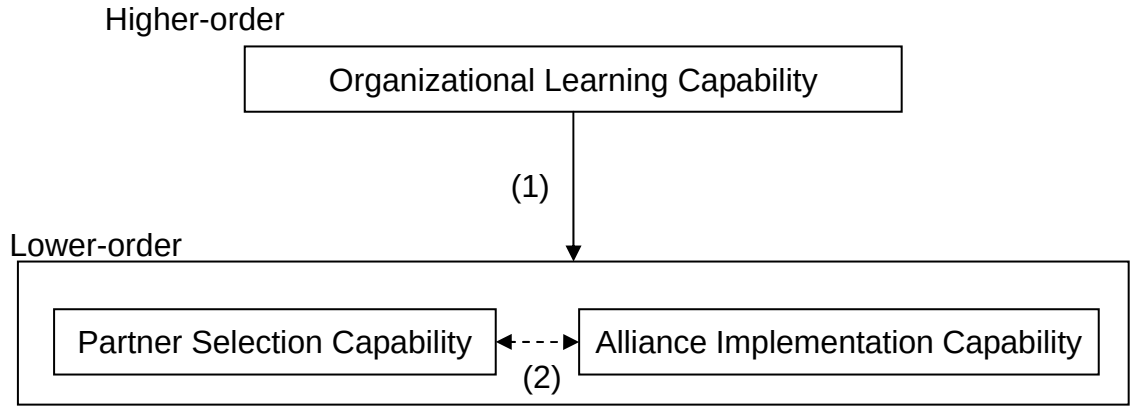
In general, alliance capability is defined as the ability to manage the alliance process as a whole. Some researchers define alliance capability as a learning capability of alliance management. For example, Draulans et al., (2003), Kale et al., (2002) and Kale & Singh (2007) defined alliance capability as being the mechanisms and routines that are purposefully designed to accumulate, store, integrate, and diffuse relevant organizational knowledge about alliance management. Existing research on organizational learning has revealed that learning capability basically has positive effects on operating capability (Heimeriks & Duysters, 2007; Rothaemel & Deeds,

2006), i.e., a company's learning capability supports its operating capability. In this way, the definition corresponds to a higherorder capability emphasizing the organizational learning mechanisms, or the viewing of learning capability at a meta-level (Winter, 2003).

Other researchers look at alliance capability at the operating level. For example, Simonin (1997) classifies "collaborate know-how" into five parts: collaborative management know-how, negotiation know-how, partner-searching know-how, knowledge skills, and existing skills. This definition implies a lower order capability which emphasizes each organizational operating procedure. This study follows the latter definition, viewing alliance capability at the operating level.

The relationship of different levels of organizational capabilities can be summarized as in Figure 1. The organizational learning capability is referred to as a high-order capability, while the more specific operational capabilities such as partner selection and alliance implementation are classified as lower-order capabilities. Previous studies dealt with relationships between higher-order capability and lower-order capability, corresponding to the arrow (1) in Figure 1 (eg. Fujimoto, 1997). However, no relationships between operational capabilities (illustrated with arrow (2)) were examined. This paper attempts to study the relationships of organizational capabilities at the operational level.

FIGURE 1: Levels of Organizational Capabilities



Relationship between two capabilities

As mentioned earlier, the alliance capability includes two conflicting perspectives; the pre- and post- alliance capabilities. It is therefore appropriate to take a closer look into the relationship between the two operating capabilities.

A firm which is known to be capable of selecting its partner is believed to be able to select a partner that will have the necessary characteristics to make the alliance work well. Parallel to some perspectives like game theory, transaction cost theory and the resource-based view, the success of this kind of alliance is based merely on a pre-conditional level of resource complementarities, cultural fits, and level of transaction costs between the two parties in the partner selection process, and is less involved with how the firm can operate its alliance relationship (Ireland et al., 2002). Thus, it can be surmised that a firm with a high capability for partner selection will tend to have a lower capability in alliance implementation.

Proposition 1: *If a firm has high selection capability, its implementation capability tends to be low.*

On the other hand, if a firm has high implementation capability, the success of the alliance is usually the result of post-contract activities, and is less dependent on the pre-contract condition of the alliance partner. According to some perspectives like organizational learning (Doz & Hamel, 1998) and the social network perspective (Goerzen, 2007), the success factors of collaboration are the post-contract interactions, such as the inter-organizational routines and development of communication networks between partners (Dyer & Kale, 2007). Consequently, it can be assumed that because good implementation capability makes an alliance work well, a firm with a high level of implementation capability does not tend to have a high partner selection capability.

Proposition 2: *If a firm has high implementation capability, its selection capability tends to be low.*

Keeping in mind the two propositions above, this study will examine the relationship between the alliance partner selection and implementation capabilities through an empirical analysis. The following section describes the methodology used to examine the proposed inverse relationship between the two capabilities (Figure. 1 arrow. (2)).

METHODOLOGY

The pharmaceutical industry was selected for the empirical study. The logical explanation of case selection is described in the following section.

This empirical study is based on an analysis of the data collected through interview

surveys. The surveys were conducted from May 2007 through May 2008. First, an interview was conducted with a representative from the Japan Pharmaceutical Manufacturers Association (JPMA). Next, six out of the 70 JPMA affiliated leading pharmaceutical firms were selected for further interviews. The interviews were conducted with the managers heading the alliances and with other representatives familiar with the alliance function for each of the selected firms.. The analysis was based on the data taken from two out of the six firms interviewed, referred to herein as Firm A and Firm B. These firms are markedly known for their high alliance capability.

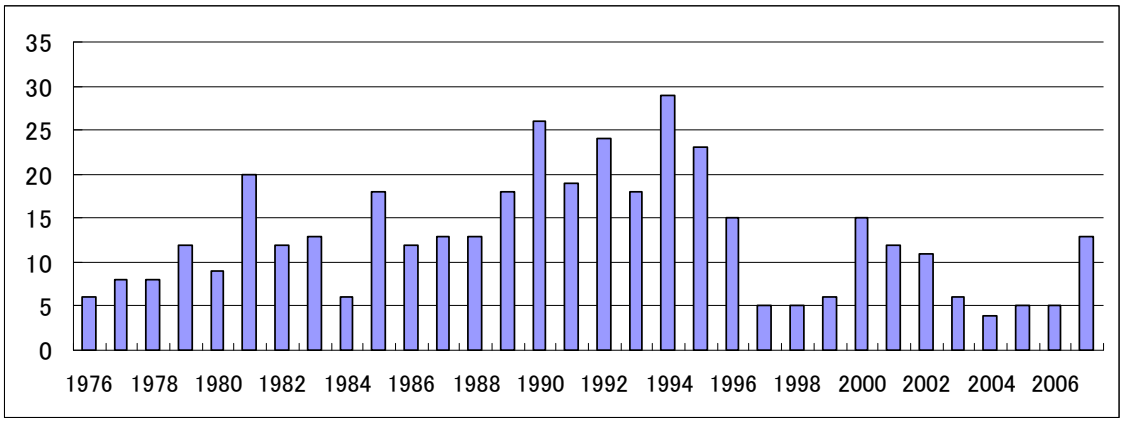
A third party was invited to audit the interviews and take notes at four of the interviews in order to provide post-interview cross-references to ensure the impartiality of the information.

Research Setting

This study focuses on a drug development alliance. As used herein, a "drug" means a prescription pharmaceutical product. Firms form alliances to share the risk of drug development as it costs over a billion yen to develop one kind of drug with the chance of a drug still in basic research reaching commercial production being extremely low at a chance of 1/19817 (JPMA, 2007).

Drug development alliances have long been common in Japan (See Figure 2). Pharmaceutical firms in Japan depend considerably on drugs which are introduced through alliances as the evidence shows that 30~60% of sales are from introduced drugs (so-called "In-licensing drugs").

FIGURE 2: Number of development alliances in Japan



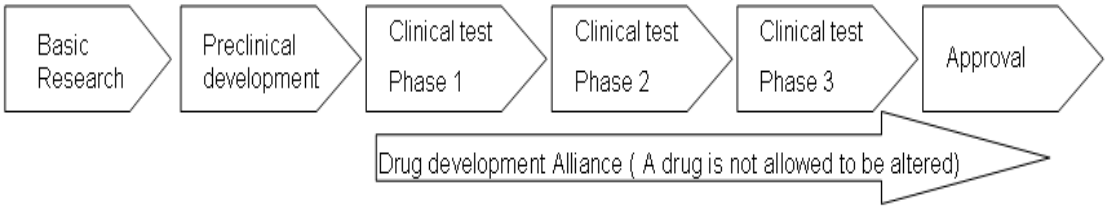
SOURCE: Ministry of Health, Labour and Welfare, 2007

The reason why the pharmaceutical industry was chosen for this study is because alliance partner selection is thought to be as important as alliance implementation in this industry as compared to other industries. This is because the basic compound of the drug is decided prior to preclinical trials (JPMA, 2007; Kuwashima, 1999). Once the preclinical trails begin, this compound is not allowed to be altered due to the obvious health risks involved. However, in other industries, the planned design, materials or other components can be modified during any process of the research and development. This explains why the selection process of an alliance for drug development is just as important as the implementation process in the pharmaceutical industry. Alliances in the pharmaceutical industry tend to be formed for each compound (Pisano, 2007). In other words, comprehensive alliances between firms are rare in the pharmaceutical industry and firms search for an alliance partner with each alliance.

The drug development process can be described as follows. Each drug needs the approval of the Ministry of Health, Labour and Welfare, which only reviews a drug for such approval after the successful completion of its 3-phase clinical tests. After

preclinical development, the drug is then subjected to strict trials to determine its safety and efficiency. Phase 1 of the clinical test involves 20-30 healthy volunteers with the purpose of evaluating drug dosage and safety. The side effects and the drugs efficiency are assessed with up to over one hundred patient volunteers in phase 2. In phase 3 over one hundred patient volunteers are administered the drug and are monitored to evaluate long term usage. See figure. 3. The regularity authorities in other countries such as the FDA (Food and Drug Administration) and the EMEA (European Medicines Agency) also use approximately the same process.

FIGURE 3: Drug Development Process



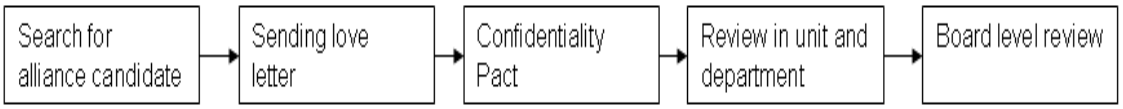
SOURCE: JPMA, 2007

ALLIANCE CAPABILITY OF PHARMACEUTICAL FIRMS: DATA FINDINGS

(1) Partner Selection Capability

The alliance for drug development begins after preclinical development (see figure 3). According to the interviews, the standard partner selection process can be summarized as shown in figure 4.

FIGURE 4: Partner Selection Process



SOURCE: Takaya (1992) and Rogers & Maranas (2005)

In general, officers in the department of licensing or business development take charge of alliance partner selection. First, a firm conducts searches and compiles a profile of possible alliance candidates. This information about candidate compounds is not disseminated, hence, personal connections among the representatives of each firm play a key role in collecting such information. These personal networks are developed by visiting each others' firms and participating in "the pharmaceutical licensing association." Through networks, the firms can access the drug-related information of their alliance candidates.

When the firm finds a potential candidate, they send an "invitation" to such a candidate. If a candidate is interested in forming an alliance, the candidate will provide more drug information after both have established a confidential agreement. After that, the firm proposing the alliance reviews the information at the unit and department levels, before the board members decide whether to form alliance at the final selection stage.

The drug profile information is quite important because it is not allowed to be changed once the clinical test starts. Firms advance clinical trials with the proposed compound right after the alliance is formed. However, two thirds of the drugs that go through clinical trials fail to be commercialized (JPMA, 2007). If a firm can acquire

the drug profile information correctly at a faster pace than other firms, it can speed up the review process and alliance negotiations. This proves that capabilities in searching for drug information speedily and correctly are critical to the success of a drug development alliance.

According to the interviews, partner selection capability differs among firms. According to the interviews, partner selection capability differs among firms. The fact that representatives in a particular firm are targeted and are held in high regard by other firms is evidence of this.

(2) Alliance Implementation Capability

Kuwashima (1999) points out that drug development capability is a “go or no-go”decision making capability (hereinafter referred as “go or no-go capability”) and this capability differs among firms. In the drug development process, this go or no-go capability is important as it defines the firm’s ability to decide whether to go on to the next phase based on the data of each clinical trial.

In the drug development process, once a clinical trial starts, a compound cannot be changed. When side effects are evident, firms have to discontinue the clinical trial. This means that the drug development is abandoned. Firms are not able to make incremental changes in the structural formula because it is not easy to find a new compound. In addition, due to stringent health and safety regulations, incremental structural changes in the drug formula are prohibited.

If a drug has no prospect of being commercialized, the firms should decide to stop the drug development as early as possible, because development costs increase rapidly in the later phases (Kuwashima, 1999).

However, it is basically difficult to make a decision as to whether to stop or to go on to the next phase judging only from available data. According to the interviews, there are firms which insist on moving on to the next phase although the clinical data may indicate safety concerns. On the other hand, there are also firms which are reluctant to go on to the next phase even though the risk is rather small. This proves that the implementation capability to match the firms' decision is important.

According to the interviews, each firm reveals a different level of this implementation capability. There is evidence that a firm established its alliance management process based on a U. S. firm's high-performing process and reputation among other firms.

(3) Comparison of Firm A and Firm B

The analysis was based on two firms: Firm A and Firm B. Both are large Japanese pharmaceutical firms. Based on the data from the interviews, these two firms were reputed to have higher alliance capabilities than other firms in the industry.

Extensive interviews revealed that Firm A had a high partner selection capability but a low implementation capability, and Firm B had a high implementation capability but a low partner selection capability.

Firstly, Firm A is reputed to have high alliance capability, especially alliance partner selection capability. Firm A is known to have highly trained representatives who take charge of partner selection. They have a vast inter-firm network and are able to gather drug information quickly. Their operation procedures and skills are shared among colleagues. Firm A tries to transform individual know-how into organizational capability.

Also, to review the alliance candidate faster, Firm A established a standard operating procedure. In this way, it supports the partner selection process as a whole. In addition, to prevent its capability from being imitated, Firm A does not use a consulting firm. However, Firm A does not have higher implementation capability. Because of its large scale, it has not depended on alliances. Firm A admitted that it is behind other firms. It has not established the special position of an alliance manager and standard operation procedures.

Firm B is reputed to have high alliance capability, especially alliance implementation capability. Firm B learned alliance implementation management from its foreign partner. The partner is reputed to have high alliance capability.

Firm B establishes similar procedures for its partners. It sets up dedicated alliance management functions and established alliance management positions. Other firms have not yet established such procedures. An alliance manager solves conflicts in drug development. It has already established alliance implementation capability. However, Firm B does not have higher partner selection capability. It depends mainly on the drug database in order to search alliance candidate information. As a result, Firm B lacks personal networks for search information.

Although this study used subjective indices to access capability and performance, such as reputation and the firms' subjective self-evaluations, due to the high level of transparency in the industry, the conclusion is confirmed. In addition, there is some collateral evidence. According to the project data from 1980-2008 (Technomic, 2008), the co-development project failure rate of Firm A was 54% and that of Firm B was 48%. Also, the number of solo development projects and the co-development of the two firms is also nearly identical. Firm B, however, stopped drugs which could have been

commercialized at an earlier stage. In particular, 33% of the cancellations of co-development projects of Firm B are concentrated in the time before phase2, as compared to only 8 % for Firm A. Therefore, Firm B distinguishes a promising drug (co-development alliance) and a hopeless drug at an earlier stage, in other words, it is better at managing alliance implementation.

DISCUSSION

Firm A has high partner selection capability, but is lower than average in implementation capability and Firm B is vice versa.

Let us consider the reasons for these capabilities' trade off. In drug development, if a firm selects good drugs, data from clinical trials tends to be easier to interpret and judge. It restrains conflicts of interpretation between allied firms. Thus, a firm may not make efforts to establish implementation capability because they can possibly reach an agreement goal with the alliance partner. On the other hand, if a firm selects a more subtle drug, the data from clinical trials tends to be difficult to understand. In this situation, a firm has to make efforts to accumulate implementation capability to be able to make good "go or no-go" decisions.

This paper concludes that the findings support two propositions.

CONCLUSION

This paper begins with the introduction of related literature on alliance capability and alliance management. It then presents an actual empirical case of pharmaceutical

firms in Japan, to investigate the relationship of two alliance capabilities known to be crucial to alliance management.

This study reveals the relationship between partner selection and implementation capabilities in a strategic alliance. The results suggest a trade off in the relationship between the two capabilities. The findings support the propositions that when a company has a high level of partner selection capability, it tends to have a lower ability to manage the alliance activities, and vice versa.

The findings of this paper can be applied to other kinds of organizational capabilities. For example, organizational learning theory suggests there are three phases in organizational memory (Huber, 1991); Acquisition, Storage and Retrieval. The storage phase must constrain the retrieval phase.

The findings also give an insight into an evolutionary perspective, i.e. there is a potential that one capability can be possibly substituted by another capability. In this vein, one capability may possibly harm another capability in the process of institutional evolution (Nelson & Winter, 1982). However, the limitation of this conclusion prompts future research. First, the unit of analysis for this paper is the firm-level; however, to look more into the detailed relationship between these capabilities, it is necessary to further conduct an analysis at the individual alliance level. Also, further in-depth quantitative research can possibly provide a more concrete conclusion to the study.

Also, to expound upon this trade off, many other factors must be taken into account. For example, the type of drug being developed, potential for success, research and development cost, clinical trial length and perceived benefits to society.

Finally, this finding has deep managerial implications. A firm should decide

whether to invest in potential conflicting capabilities. The trade off in capabilities may also be prevalent among other capabilities. More research needs to be conducted in this matter with a view to establishing optimum capabilities in all areas.

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