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The Role of Strategic Alliances in Gaining Sustainable Competitive Advantage for Firms**

This article offers a critical assessment of the role of strategic alliances in gaining sustainable competitive advantage through building knowledge assets. To do so, it develops a conceptual model, in which three key concepts: the role of “*knowledge assets*” in gaining “*sustainable competitive advantage*” via “*strategic alliances*” between firms are defined and related to each other. It argues core competencies and dynamic capabilities of firms depend on knowledge assets of the firm. In turn, knowledge assets of the firm determine its sustainable competitive advantage. Furthermore, it explicates how knowledge assets can be exploited or explored in a strategic alliance context. In addition, by offering a new conceptual model, this article contributes to our understanding of the linkages among knowledge building and collaborative ventures between firms and stimulates further research on strategic alliances.

Key words: strategic alliances, sustainable competitive advantage,
knowledge assets, components of knowledge,
knowledge exploitation and exploration

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Introduction

The last two decades have witnessed an increasing number of inter-firm partnerships, as firms have had to deal with rapidly changing environments while competing effectively in the global market place. Pressure from globalization, technological advancements, customer expectations, and changes in regulations have led firms seeking partners with complementary resources and capabilities. Consequently, strategic alliances between business firms have been a focus of attention of both scholars and managers. They have been viewed as powerful instruments for competitive advantage of firms. However, it can be argued that, in the long run, not only obtaining competitive advantage, but also gaining sustainable advantage is crucial for the success of firms. In addition, Resource-Based View (RBV) of the firms suggests that only firms with valuable, rare, imitable, and non-substitutable resources and capabilities achieve sustainable competitive advantages (Barney 1991; Peteraf 1993). In fact, prior to RBV, resource dependence approach explain some network relationships between organizations and embeddedness in networks (Peffer/Salancik 1978; Granovetter 1985). However, RBV pronounced these firm resources and their relationships to sustainable competitive advantage clearly. In this context, of the most critical resources of firms, its knowledge assets establish the firm's competitive base and distinguish the firm from others. Thus, I will offer a critical assessment of the role of strategic alliances in gaining sustainable competitive advantage through building knowledge assets. In other words, I will attempt to define and analyze three key concepts: the role of "*knowledge assets*" in gaining "*sustainable competitive advantage*" via "*strategic alliances*" between firms. Central to my argument is the notion that core competencies and dynamic capabilities of firms depend on knowledge assets of the firm. In turn, knowledge assets of the firm determine its sustainable competitive advantage. I will also explain how knowledge assets can be exploited or explored in a strategic alliance context. Furthermore, I will illustrate the components and dynamics of gaining sustainable competitive advantage through inter-firm partnerships. Finally, I will conclude with closing remarks and key factors that need to be considered in knowledge development and creation in an alliance context. Thus, this article contributes to our understanding of the linkages among knowledge building and development in gaining sustainable competitive advantage through collaborative ventures between firms.

Knowledge-gaining model through strategic alliances

My explanation is based on a conceptual model, which consists of three pillars, namely, knowledge assets, strategic alliances, and sustainable competitive advantage of the firm. Figure 1 represents these three components and their associations. Next, I will elaborate each components of the model and then discuss the relationships among them.

Figure 1: A model for knowledge gaining through strategic alliances leading to sustainable competitive advantage

Knowledge assets of the firm

In the last two decades, the knowledge-based view (KBV) of the firm became a popular explanation in understanding the relationship between firm capabilities and competitive advantage and performance of the firm (Capasso, et al. 2005). Specifically, this thinking suggests that knowledge generation, accumulation and application are the sources of superior performance (DeCarolis/Deeds 1999). Other research has conceptualized organizational knowledge in terms of stocks of accumulated knowledge in the firm and flows of knowledge into the firm. The seminal work of Nonaka/Takeuchi (1995) contributed to the development of this theory. After studying Japanese companies, the authors contented that the success of Japanese companies can be attributed to their skills and expertise at “organizational knowledge creation,” which refers to the “capability of a company as a whole create new knowledge, disseminate it throughout the organization, and embody it in products, services, and systems” (viii).

Furthermore, Kogut and Zander (1992) argued that what firms do better than markets is the sharing and transfer of the knowledge of individuals and groups within an organization. This knowledge consists of information (e.g., who knows what) and of know-how (e.g., how to organize a research team). What is central to their argument is that knowledge is held by individuals, but is also expressed in routines by members who cooperate in a social community (i.e., group, organization, or network). By considering how firms can deter imitation by innovation, Kogut and Zander (1992) developed a more dynamic view of how firms create new knowledge. Within this dynamic perspective, they suggested that firms learn new skills by recombining their current capabilities. Because new ways of cooperating cannot easily be acquired, growth occurs by building on the social relationships that currently exist in a firm. What a firm has done before tends to predict what it can do in the future. In this sense, the cumulative knowledge of the firm provides options to expand in new but uncertain markets in the future.

Along these lines, Grant (1996) advocated the knowledge-based view of the firm by stating that “this approach identifies knowledge as the central source of the firm, not only because of its quantitative importance to value added, but also because of its strategic importance. It embodies many characteristics relevant to establishing sustainable competitive advantage: knowledge is scarce, it is costly to imitate, it is often difficult to transfer, and it gives rise to complex appropriability issue” (1996: 433). All these writings confirm that “Knowledge is Power” and firms which can acquire and/or develop this power will be able to use it for their long lasting competitive advantages.

The KBV, however, rests on two fundamental assumptions about knowledge assets that firms possess and utilize. First, knowledge assets of firms are heterogeneous, meaning no firm has the same kind of knowledge. Barney and Hesterly (2006) claimed that “resource heterogeneity implies that for a given business activity, some firms may be more skilled in accomplishing this activity than other firms.” I can extend this argument by stating that no firm holds all the necessary knowledge resources to produce goods or services regardless of its size and financial capabilities. This implies there is knowledge dependency between firms to exploit and/or explore still more or new knowledge. The joint venture between two giant and resourceful companies like General Motors and Toyota illustrates this point. Second, knowledge assets are embedded in the firm; therefore, they are rather immobile. It is impossible or very difficult to transfer them from one firm to another. Some of these knowledge assets (especially tacit, complex, and specific ones explained below) may be very costly or difficult for other firms to acquire without major resource commitments. For example, Intel Corporation has enjoyed its sustainable competitive advantage for a long time because of its knowledge and expertise in developing microchips.

The late management guru, Drucker (1993) argued that in the modern economy, knowledge is not just another resource among other traditional resources – land, capital and labor – but the only meaningful resource. Similarly, Quinn (1992) claimed that the economic and production capability of a modern corporation lies in more in its intellectual and service capabilities than its hard assets. He further asserted that the value of most products and services depends primarily on how “knowledge-based intangibles” – like technological know-how, product design, marketing presentation, understanding of the customer, personal creativity, and innovation – can be developed.

Drawing on Reed and DeFillippi (1990) definitions, I would like to identify three characteristics of knowledge assets: *tacitness*, *complexity*, and *specificity*. Together, they all create *causal ambiguity* as a source of sustainable competitive advantage. The first characteristic, *tacitness* of knowledge as defined by Polanyi (1967), refers to skill-based competencies, which are built on learning-by-doing accumulated through experience and refined by practice. It means tacit knowledge is implicit and non-codified while explicit knowledge is coded. Toyota’s efficient production system and Apple’s innovation with iPod and iPhone are good examples of the role of tacit knowledge for sustainable competitive advantage. The second characteristic, *complexity*, arises from a large number of technologies, organization routines, and individual- or team-based experience (Reed/De Fillippi 1990). Barney (1985: 12) pointed out that “in complex and highly interdependent human or technological systems, the causes of success and

failure are often difficult to assign ... [and]...the establishment of cause and effect relationships can very difficult, and the concomitant assessment of performance may be highly ambiguous.” The third characteristic, knowledge *specificity*, means the firm’s allocation of knowledge in creating value in its relationships with each customer. It refers to durable investments that are undertaken in support of particular transactions. For example, the long business conduct of FAG, the German ball-bearings manufacturer, with Daimler reflects its close-knit relationship with its customer; how specific knowledge enabled FAG to continue its relationship with Daimler. These companies have develop a knowledge linkage to foster their relationships over the years. Accordingly, Capasso and his colleagues (2005: 1) note that “strategic capabilities intended to facilitate mechanisms of knowledge transfer and key processes for knowledge generation and organizational learning and evolution”. Of course, firms can develop, generate, and transfer knowledge for new technologies, products, and business models in a number of ways (e.g., in house R&D, imitation to the first mover). Nonetheless, as the model in figure 1 depicts, my focus in this article is strategic alliances as vehicles in knowledge exploitation and exploration. Thus, next I will look at strategic alliance briefly.

Strategic alliances

New competitive dynamics such as increasing globalization, rapid change and dispersion of technology, emergence of hybrid industries and consolidation of industries, and liberalization of economies in today’s ever-changing market place require continuous innovations and improvements from business firms in every facet of their value-chain activities while seeking opportunities worldwide. In response to these competitive dynamics, business firms need to engage in unorthodox strategies and approaches to gain and sustain their competitive advantages against rival firms. Consequently, strategic alliances between firms have become a popular mode in addition to their traditional unitary strategies. Dyer and Kale (2007: 65) claimed, “pressures from globalization along with changes in regulations and technological factors have resulted in firms reaching out to partners to access their complementary capabilities.” For example, it is not incidental that General Motors and Toyota, two giant automobile manufacturers, established a 50-50 joint venture to cooperate and learn from each other.

I define strategic alliances as a variety of long-term both-equity or non-equity collaboration between firms established to gain a competitive edge for the partners. This general definition captures a variety of inter-firm collaborations including joint ventures, business networks, subcontracting agreements, R&D partnerships, co-production, and marketing partnerships (Culpan 2001). Strategic alliances between firms may take several forms, but for the sake of simplicity, I will categorize them in two: equity alliances and non-equity alliances. The former refers to joint ventures and equity participation by one firm into another. Joint ventures refer to at least two companies building a new business entity by allocating some equity into this new venture. They have been around for many years and extensively covered in literature (Beamish 1993; Geringer/Hebert 1991). The latter, equity participation, means one company buying substantial shares of another company so that an organic tie is built between

the investor and target companies (e.g. Renault's equity ownership in Nissan). In finance literature, this arrangement is called "block ownership." I believe that a strategic collaboration between investing and target companies develop because of this equity relationship as many practical examples demonstrated. It is believed that an ownership of substantial equity in another company provides opportunity to influence the formation and implementation of the target company's strategies (Culpan, 2001) or collaborate on some projects between the equity holder and the target company.

Figure 2: Strategic alliances

Non-equity alliances involve a variety of inter-firm partnerships without investment of equity by any partners. They include licensing, franchising, networks, R&D partnership, joint production, and joint marketing. I must note that this list is not inclusive; there might be some other forms as well. Despite their variety, all non-equity alliances present two distinct common characteristics: none involves equity investments, but all require tangible or intangible resource commitments for mutual benefits from the partnership.

The extant literature on strategic alliances often refers to the RBV or KBV in explaining competitive advantages of firms (Inkpen 1998; Lyle/Salk 1998). Consequently, the basic premise of strategic alliances lies in building competitive or sustainable advantages for partners. However, a strategic alliance between rival firms conflicts with this conception. As we have witnessed today, companies can establish partnerships with even their competitors. Then, how can we explain this phenomenon of strategic alliance between competing firms? It is probably that not only competition, but also cooperation between firms that contributes to their superior performance in the global market place. Albeit a traditional view, the industrial organization theory suggests that only competition determines the winners in a given industry, firms today have realized the strategic benefits of interfirm partnership as well. Probably we need new theoretical perspectives and lenses to explain these cooperative ventures. Toward this end, Brandenbruger and Nalebuff (1996) coined the term "co-opetition" to reflect

the duality of competition and cooperation. They identified four types of players in the market place: customers, suppliers, competitors, and complementors. They further argued that a player could be a competitor as well a complementor.

Next, I will elaborate on sustainable competitive advantage by describing its requirements and difference from simple competitive advantage.

Sustainable competitive advantage

While traditional economic theory predicts that competitive advantages of firms should be short-lived in highly competitive markets, the proponents of sustainable competitive advantage claim the firm's competitive advantage should last longer, ensuring above average returns over its rivals (Barney/Hesterly 2006; Mueller 1977). Barney (1985) asserted that firms hold sustainable competitive advantage as long as they possess resources or capabilities with valuable, rare, costly to imitate qualities that are exploited by the organization. Similarly, Grant (1998) suggested that sustainability of competitive advantage depends upon the durability, difficulty in their transferability and replicability of the resources and capabilities of the firms. On the applied side, researchers studied the firm's lasting competitive advantage in certain industries. Waring (1996), for example, after investigating the industry characteristics for lasting competitive advantage in some industries, found out that among other factors, firms that operate in industries that (1) are informationally complex; (2) require customers to know a great deal in order to use the industry's product, (3) require a great deal of research and development; and (4) have significant economies of scale are more likely to have sustainable competitive advantage compared to firms that operate in industries without such attributes. Moreover, Roberts (1996) after studying the U.S. pharmaceutical industry found that the ability of firms to obtain sustainable competitive advantage in this industry almost entirely depends upon the firms' capacity to innovate by bringing out new and powerful drugs. Furthermore, Gulati (1999) assesses the importance of firms' capabilities with alliance formation and material resources as determinants of their alliance decisions. He tested this dynamic framework and the hypotheses about the role of time-varying network resources and firm capabilities with comprehensive longitudinal multi-industry data on the formation of strategic alliances by a panel of firms between 1970 and 1989. The results confirm field observations that accumulated network resources arising from firm participation in the network of accumulated prior alliances are influential in firms' decisions to enter into new alliances. This study highlights the importance of network resources that firms derive from their embeddedness in networks for explaining their strategic behavior (Gulati 1999).

From these theoretical and empirical arguments, I can conclude that the sustainable competitive advantage of firms is closely associated with their resources and capabilities, in particular with their knowledge assets, at least in technology intensive and emerging (i.e., high-tech) industries. Overall, I believe strategic alliances provide a useful platform to exchange and share knowledge assets between collaborating firms. One firm's knowledge can be transmitted to another firm through an alliance. Inkpen (1998, 2000) asserted that strategic alliances provide firms with a unique opportunity to leverage their strengths with the help of partners. In bringing together firms with different skills and knowledge bases, alliances create unique learning opportunities for

the partner firms. One immediate question can be raised: why should a firm give away or share its proprietary knowledge with another firm that it probably developed after investing countless resources in several years. This is a legitimate question, but let us not forget that no firm is capable of all the necessary knowledge for innovative products and efficient and effective production and marketing activities. Furthermore, because of changing environmental and technological developments, there might be advantages of sharing firm technology and knowledge with others at early stages of product development then going their own ways alter. Culpán (2002) called it “first cooperate then compete mode.” Moreover, firms do not necessarily share their proprietary or cutting-edge knowledge, but those kinds of knowledge that would not necessarily hurt their core competencies.

The link between knowledge assets, strategic alliances, and sustainable competitive advantage

After above explanations on the knowledge assets and sustainable competitive advantage, there is still a need to clearly link strategic alliances to the knowledge assets. To demonstrate this link, I will elaborate on the role of strategic alliances in obtaining sustainable competitive advantages through obtaining and creating knowledge assets. Knowledge can be gained through either exploitation or exploration. Baum and his colleagues suggested that “exploitation refers to learning gained via local search, experiential refinement, and selection and reuse of existing routines. Exploration refers to learning gained through process of concerted variations, planned experimentation, and play” (2000: 768). According to Benner and Tushman (2002: 679), “Exploitative innovation involves improvements in existing components and build on the existing technological trajectory, whereas exploratory innovation involves a shift to a different technological trajectory”. As March (1991: 85) noted, “the essence of exploitation is the refinement and extension of existing competencies, technologies, and paradigms...The essence of exploration is experimentation with new alternatives”. I think these definitions provide enough understanding of both types of learning or knowledge gaining processes. An introduction of a new version of Microsoft Windows Operating Systems could be an example of exploitation while launching the new operating system Vista illustrates an example of exploration. I must note, however, that exploitation is more related with explicit knowledge, whereas exploration is based mostly on tacit knowledge.

On the other hand, as I mentioned above, strategic alliances may be categorized as equity alliances and non-equity alliances. To display the interplay between these two knowledge gaining methods and alliance forms, the matrix in figure 2 is presented. As can be seen in this matrix, joint ventures and equity participation types of alliances established for production and marketing of existing products and services and improvements in existing technologies of partners are considered exploitation of knowledge. In other words, exploitation of knowledge is conceivable for existing products/services and technologies through inter-firm partnerships. In addition, a number of partnerships in the form of non-equity alliances provide an opportunity for knowledge exploitation. Gualti (1998), for example, provided a social network perspective to the strategic alliances by extending prior research, which has primarily focused on dy-

adic exchanges and paid less attention to the fact that key precursors, processes, and outcomes associated with alliances can be defined and shaped in important ways by the social networks within which most firms are embedded. On the other hand, for knowledge exploration in an alliance context, firms need joint ventures and equity participations or R&D partnerships in creation of new products and technologies. This framework and analysis enable scholars and managers to understand and assess the affect of strategic alliances in knowledge development and creation. These knowledge assets would, in turn, lead to superior performance and sustainable competitive advantage of partner firms.

Figure 3: Strategic alliances and knowledge acquisition

Type of Strategic Alliances	Equity A.	Joint venture & Equity participation for existing products and technologies	Joint venture & Equity participation for new products and technologies
	Non-Equity A.	Licensing Franchising Joint marketing Joint production Networks	R & D partnership for new products and technologies
		Exploitation	Exploration
Knowledge Acquisition Methods			

One can still question how knowledge transfer and creation occur in practice. An increasing number of empirical studies addressed this question with empirical findings. For example, Lyles and Salk (1996) examined knowledge acquisition from foreign parents in international joint ventures (IJVs) in Hungary. They related assessment of knowledge acquisition to IJVs performance. “Adaptation mechanisms, such as capacity to learn, articulated goals, and structural mechanisms, such as the provision of training, technology and managerial assistance by foreign parents, all were positively associated with the degree to which IJVs reported acquiring knowledge from foreign parents” (Lyles/Salk, 1996: 877). The relationship between knowledge acquisition and performance was also significant.

In another study of 346 USA, European, and Japanese companies, Hagedoorn and Shankenraad (1994) reported that there is evidence that the content and direction of strategic linkages do significantly influence profitability in several industrial branches. Their results indicate that companies attracting technology through their alliances and companies concentrating on R&D cooperation have significantly higher rates of profitability.

Furthermore, Pak and Park (2004) examined the determinants of cross-border knowledge transfer from multinational enterprises to local firms in Korea. They considered different interactions between the relation- and knowledge specific variables with two types of knowledge as new product development and manufacturing process skills/techniques.

On the practical side, I can list numerous companies engaged in strategic alliances with an intentions of gaining sustainable competitive edge in the global competition (see table 1).

Table 1: A sample of strategic alliances in the global market

Firms / Country	Firms /Country	Type of Partnerships
General Motors (GM) U.S	Toyota Japan	A 50-50 joint venture to manufacture compact cars on the same plant
Sony Japan	Ericsson Sweden	Development and marketing new cellular phones
Renault France	Nissan Japan	Renault purchased of 44 % equity in Nissan
Siemens AG Germany	Corning Glass Works USA	A joint venture to produce fiber-optics
GM US	Fijutsi Fanuc Japan	A joint venture in robotics
Nike USA	A number of Asian mfg's	Outsourcing manufacturing of sneakers
Hershey US	Maribu Sweden	A cross-licensing in chocolate manufacturing and marketing
Dell Computers USA	A number of suppliers worldwide	Networking
Microsoft USA	Lenova Group PRC	A joint venture to set a research center in Beijing
Dana Corporation USA	Spicer S.A. Mexico	Outsourcing an axle-component manufacturing
ExxonMobil USA	Syntroleum Corp. USA	Licensed to use gas to liquids patents

Concluding remarks

There are number of issues researchers and managers need to address to understand knowledge exchanges through strategic alliance and their impact on the firms' sustainable advantage. I must admit that it is not an easy task. However, the difficulty in grasping and solving some issues in this area should not deter us to tackle them and draw value from such arrangements. The issue of measuring knowledge and its value for firm performance still remains evasive and intellectually challenging for strategy researchers. Nevertheless, to measure knowledge development and creation, I can name numerous metrics: patents, copyrights, trademarks, product development, product innovations, new market entries, expansion in a given market through strategic alliances.

In addition, a number of other factors influence knowledge transfer in strategic alliances. They include the complexity of knowledge, trust between partners, willingness of donor, absorptive capacity of the learner, and knowledge flow processes.

Some learning can be accomplished by personnel transfers, technology sharing, partner interactions including visits and tours of alliance facility and expertise exchanges.

Furthermore, I would like to conclude that not all strategic alliances provide equal opportunities for inter-partner learning and knowledge transfers. Certain types of alliances could be more suitable for certain types of knowledge gains (see figure 3). Gaining knowledge through alliances could be more possible in certain industries (e.g., technology-intensive industries like pharmaceuticals, biotechnologies, and electronics).

In summary, my purpose here was to illustrate that alliances can provide an effective platform for valuable learning and knowledge gaining, which could lead to sustainable advantages for partners. I hope that I served this purpose by offering a model and some insights into knowledge assets of partners and knowledge gaining methods through various inter-firm partnership patterns. An increasing number of strategic alliances confirm the fact that firms need each others' resources and capabilities, in particular, knowledge assets that can be shared or developed jointly. Long-lasting competitive advantages can be achieved by forming and managing knowledge-based strategic alliances. In other words, in an alliance context, partners benefit from each others' knowledge assets through exploitation and/or exploration of knowledge by partners as explained above. Strategic alliances could facilitate to gain knowledge from partners, even when that knowledge is tacit, complex, and difficult to imitate. To this end, I hope this article would help to enhance our understanding and utilization of knowledge assets in strategic alliances for sustainable competitive advantage and stimulate further conceptualization and research on the subject.

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