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Linkage between strategic alliances and firm's business strategy: the case of semiconductor industry

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Abstract

We have investigated the linkage between a firm's business strategy and its selection of alliance activities. Referring to two economic theories, resource-based theory and social exchange theory, we propose an analytical framework of alliance activities with attention to two factors: "resources to be exchanged" and "partners to exchange such resources". The alliance matrix is proposed as a tool to analyze strategic alliances, as it depicts the two factors defined above on the two-dimensional axes of the matrix. A firm's business strategy is categorized according to its growth strategy and propositions are defined to explain how firms undertake strategic alliances for the purpose of executing such business strategies. These propositions have been tested using the empirical data from the semiconductor industry. Our results indicate that firms are trying to utilize strategic alliances in order to execute specific business strategies.

Keywords: Strategic alliances; Resource-based theory; Semiconductor

1. Introduction

This paper investigates the linkage between strategic alliances undertaken by firms and the characteristics of their business strategy. Strategic alliances have become central to competitive success in the fast changing global markets (Doz and Hamel, 1998). With tens of thousands of alliances reported worldwide in recent years, they are clearly one of the most important organizational forms to emerge in the past decade (Anand and Khanna, 2000). The dramatic increase of strategic alliance has been attributed to the strategic responses firms have made to various environmental changes, including accelerating technological innovation, increasing capital requirements, globalization of markets and the importance of customer relationships. Strategic alliances appear to have become indispensable measures for firms to carry out business strategy and may even determine a firm's potential for future growth. In analyzing alliance activities, it is important to take a view that focuses on the linkage between the alliance and the business strategies of the firms involved, as such strategies are distinctly reflected in alliance activities.

The many papers investigating strategic alliances published during the past several years have categorized research in this area into several streams such as:

- Formation of strategic alliances, which includes motivation, identification of inducing factors, and modeling of formation process (Das and Teng, 1998; Mahoney, 2001; Ahuja, 2001).
- Structure of strategic alliances, which includes comparisons of governance structures in equity-based and contract-based alliances, analysis of environmental effects of its preferable structure, and the correlation between structure and technology phases in alliance life cycles (Das and Teng, 2001; Roberts and Lu, 2001; Chen, 2003).
- Alliance management, which includes its learning effect, the role of alliance managers, and implication for effective alliance management (Spekman et al., 1996; Kumar and Andersen, 2000; Anand and Khanna, 2000).
- Factors contributing to the success of alliances, which include analyzing successful alliance, developing guidelines for success, and examining reasons for failure (Bleeke and Ernst, 1993; Douma et al., 2000; Hoffmann and Schlosser, 2001; Chen and Chen, 2002a).
- Performance of strategic alliances, which includes valuation using share price response, the process of performance evaluation, and analysis of the determinants of alliance

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performance (Gersonys, 1996; Chan et al., 1997; Cravens et al., 2000; Gulati et al., 2000).
- Learning dynamism in strategic alliances, which includes inter-firm knowledge transfer, learning procedures, and knowledge protection in alliances (Mowery et al., 1996; Khanna et al., 1998; Norman, 2002).

In addition, there are studies on various aspects of strategic alliances, including motivation, formation, structure, performance, and management in a comprehensive manner. In analyzing such aspects, they apply certain theoretical frameworks, such as resource-based theory and social network theory (Gulati, 1998; Das and Teng, 2000; Ireland et al., 2002).

Although various aspects of strategic alliances have been studied in depth, as we have seen, the research approaches on strategic alliances in terms of linkage to a firm's business strategy are limited. Analysis of strategic alliances from this viewpoint is desirable, considering the increasing importance of utilizing other firm's resources in the current business environment. This paper attempts to study strategic alliances from this aspect, and proposes an analytical framework appropriate for that purpose. It also defines several propositions regarding the linkage between alliance activities and the firm's business strategy, categorizing such alliance activities on the basis of the proposed analytical framework. The propositions defined here have been tested by empirical research in the semiconductor industry.

Including this introduction, this paper has six sections. The second section proposes the analytical framework utilized in this study. Certain related theories are referred to, such as resource-based theory and social exchange theory. The third section provides propositions that are defined in accordance with the proposed analytical framework. The fourth section describes the research method to test the propositions. The fifth section discusses the research results and managerial implications of this study. The paper ends with some general conclusions and suggestions for future research.

2. Analytical framework

This section provides the analytical framework used in this study with reference to related economics theories. In analyzing strategic alliances from the aspect of linkage with firm's business strategy, resource-based theory provides useful insights. Resource-based theory views a firm as equivalent to the broad set of resources that it owns, with its competitive position being defined by its bundle of unique resources (Das and Teng, 2000). Resource-based theory has been used to analyze various aspects of corporate activities, such as developing new capabilities (Alvarez and Busenitz, 2001), creating competitive advantage (Tyler, 2001), and aiming for international growth (Andersen and Kheam, 1998). Resource-based theory is also utilized for the analysis of strategic alliances. It sees them as strategies used to access other firm's resources, for the purpose of garnering otherwise unavailable competitive advantages and values. Based on this view, Das and Teng (2000) discuss four major aspects of strategic alliances, which are rationale, formation, structural preferences and performance. Peng (2001) also uses resource-based theory to discuss the primary motivation for firms to enter alliances. Because resource-based theory posits that a firm would select the strategy that best exploits their resources and capabilities relative to external opportunities (Grant, 1991), it is the most suitable means for considering alliance activities in terms of linkage with business strategy.

A strategic alliance is defined in the literature as "independently initiated inter-firm link that involves exchange, sharing or co-development": (Gulati, 1995), or "purposive strategic relationship between independent firms that share compatible goals, strive for mutual benefits, and acknowledge a high level of mutual dependence" (Mohr and Spekman, 1994). In accordance with the perspective of resource-based theory, strategic alliances can be viewed as exchange of resources between firms (Perks and Easton, 2000). Chen and Chen (2002b) distinguish between two kinds of strategic alliances: 'exchange alliances' and 'integration alliances'. They argue that the resources are exchanged and utilized independently by each partner in "exchange alliances", while "integration alliances" bring united resources in an organization designed by the partners to perform prescribed functions and to serve a common purpose understood by the partners. In this case, a firm expects to access resources from the other firm through creation of such an organization, and also provides the organization with its resources, as expected by the other firm. Accordingly, "integration alliances" can also be interpreted as exchange of resources between partners.

In viewing strategic alliances as an "exchange of resources" between partners, it would be useful to study the nature of the exchange by referring to social exchange theory. Social exchange theory was developed by Blau (1964) to explain social relations and forecast the outcome of their interactions with others. The theory is also applied to social networks, paying attention to the power of actors involved as the key feature of exchange relations and networks (Grembowski et al., 2002). For example, Chetty and Holm (2000) studied the dynamics of how firms develop networks and internationalize by reference to social exchange theory. Zhao and Reddy (1993) view technology transfers as an inter-organizational exchange and apply social exchange theory to show that both social and economic processes exert influences on eventual outcomes.

In social exchange theory, exchange phenomena can be categorized according to multiple dimensions. One categorization pays attention to the nature of subjects to be exchanged, such as exchange between homogeneous subjects or exchange between heterogeneous subjects. Another categorization pays attention to the people making