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行政院國家科學委員會專題研究計畫成果報告

資源槓桿,廠商動態能力與 ODM 策略

Resource Leveraging, Dynamic Capabilities and Managing ODM Strategies

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主持人：李吉仁 國立臺灣大學國際企業學系

e-mail: jiren@ccms.ntu.edu.tw

I、中文摘要

當產業的競爭型態逐漸由垂直整合式轉變為水平式時，廠商對於業務範圍定位與上下游合作聯結關係之決策，成為其經營獲利與成長的關鍵。本研究以動態能力的理論觀點，針對國內電子資訊業廠商在全球產業分工的架構中，如何運用不同分工業務類型中所存在的資源更新與資源槓桿的機會，以建立己身之競爭能力與成長空間，提出一套動態觀點的經營模式，並以此為基礎，提出對於以 OEM/ODM 業務為重心的廠商經營決策的具體建議。

關鍵詞：動態能力、資源槓桿、ODM 策略

Abstract

We propose that decisions concerning boundary selection and inter-firm linkages are vital to the formation of competitiveness and the achievement of business growth of a firm competing in so called the horizontally configured industries. Based on the dynamic capability perspective, this research postulate a business model characterized by self-reinforcing cycles of upgrading and leveraging resources through delicately engaging multiple business activities. Implications for developing growth strategies for an OEM/ODM-based company and for future research endeavors are discussed.

Keywords: Dynamic Capability, Resource

Leveraging, ODM Strategy.

II、Motivation and Objectives

In response to increasing competitive pressure from the end-product markets in the early 1980s, the outsourcing of critical components or even entire systems to Asian partner firms has a dominant practice of Western firms in the computer and related industries. Driven by factors of scale economies and fast changing technology development, these typical industry sectors become horizontally configured, which means competition occurs between firms in each horizontal stage and thus efficient linkages between stages become critical to success. This produces various contractual-based business operation options for Asian suppliers linking with their Western partner firms, notably in the form of original equipment manufacturing (OEM, hereafter).

Compared with its Western counterpart which normally is an innovative firm, an Asian OEM supplier faces a difficult process of growth, especially in the creation and development of rent-generating competencies. This is not only because of the supplier's relatively poor resource endowments but is also due to the potential structural impediments resulting from engaging in OEM businesses. Buyer normally will terminate an OEM supply contract and switch to an alternative supplying source should they detect a direct or potential threat of substitution by the OEM partner. Regardless of the threat of buyer instability, many

Taiwanese firms not only achieve substantial growth by serving different buyers' needs but also gain a significant share of influence in their respective industries. Taking three computer peripherals industries in which our research is based, monitor, notebook PC, and PC scanner, as examples, the aggregated output shares of Taiwanese firms in global market are 53.4%, 32%, and 61.3%, respectively. The purpose of this research is to explore the underlying rationale of the strategy undertaken by the OEM firms in the computer peripherals industries in Taiwan.

III · Formation of Contractual Relationship

We identify two major types of contractual arrangements adopted between an outsourcing firm and its supplying partner, and analyze the rationale under which respective type of arrangement will be chosen. First of all, an **OEM supply** relationship refers to a contractual arrangement in which the supplying firm provides manufacturing services based on the product design, specification, quality standard, and designated components furnished by the outsourcing firm. The second type of outsourcing arrangement involves a supplier which, based upon the buyer's requirements on product features, holds the advantageous position of being able to provide integrated services from product design and development to manufacturing. We categorize this type of contractual arrangement as **ODM supply**.

Based on a transaction cost logic and manufacturing strategy literature, we argued that it is the existence of a high degree of reciprocal type of interdependence between design/development and manufacturing activities that makes an ODM be a relatively cost-effective contractual arrangement. Given the existence of a high degree of interdependence between stages, the supplier's capability of internalizing the product design and development activities will make an ODM supply more mutually beneficial than a pure OEM operation. From

a resource-based angle, OEM and ODM supply arrangements differ relative competence position between cooperative partners and different ways of linking respective competencies to achieve common strategic goals. The transition from OEM to ODM, however, is a critical yet challenging step for the growth of a supplying firm. Such an evolutionary process involves both a supplier's internal learning-by-doing activities and mutual adjustment of cooperative relationship. In addition to OEM and ODM supply, from a value-chain point of view, a supplying firm which is capable of providing services covering product design/development and manufacturing activities creates an option of pursuing its **own-brand business** if the supplier is willing to dedicate resources for building competence in handling brand marketing and after-sales service activities. This may, however, potentially create tension or even conflict within the existing contractual relationship.

IV · Variations of ODM Business

Since a buyer's development of product competence is not a one-step process, there exist different types of ODM supply. The first type of ODM supply occurs when the outsourcing firm attempts to rationalize the interdependence between product and production activities by contracting both value-added activities to the supplier, but request this supply be on an exclusive basis in order to prevent its proprietary knowledge transferred to the supplier from spillover. We called this kind of supply as **Learning-oriented ODM**.

Once the supplying firm gains product competence through learning, it can leverage its learned product competence by applying a design proliferation concept based on the capability of product modularization. The supplying firm can then provide ODM services pertaining to the low-end product categories and on a non-exclusive basis. We may label these non-exclusive services as

Product-proliferating ODM.

Once the supplier has established a relatively strong position in product design/development competence and a solid ODM customer basis, it may participate in the buyer's product design processes for new product architectures by providing competencies in its specialized area. The purpose of this shift from a unilateral design to bilateral design for the buyer include cost reduction and product quality enhancement. Such a collaboration normally requires the supplier's possession of product competence, or even the capability of engaging supplier-driven innovation, and certain asset-specific investment. As a consequent of high involvement and commitment between both parties, subsequent outsourcing arrangements will be set on an exclusive basis. We may term this sort of close linkage as **Design-in ODM** operations.

V · A Business Model for OEM Suppliers

Based on our field investigation of the growth processes of Taiwanese firm in the computer monitor, notebook PC and PC scanner industries, we found that successful firms not only evolve from a pure OEM supplier to an ODM supplier but also concurrently engage in both own-brand and subcontracting businesses. We propose a business model that encompasses all three types of business activities and postulate that a supplier's growth can be understood as a process of resource upgrading and resource leveraging in which synergistic dynamics are generated through a self-reinforcing cycle containing multiple business activities. [1]

In essence, this model pinpoints a strategic positioning decision faced by a typical OEM-based company and suggests a performance-enhancing strategy the OEM firm can undertake. Considering its future growth, an OEM-based company can choose to stay in its manufacturing competence area, or invest in upgrading its resource

configuration to reap ODM business opportunities, or commence its own-brand business. Either strategic choice entails different business and financial risks. Responding to such a trade-off, the central notion of the business model implies that business success of an OEM firm is contingent upon a delicate balance between internal and external resource management. To pursue better performance, an OEM firm has to internally commit resources in enhancing product design and development competence and externally manage the interplay of multiple business opportunities. In other words, an OEM firm's effort in innovative activities and the resulting effects in business structure may have consequences for its business performance. Hence, simply following the logic of resource leveraging, our arguments shall lead to the following hypotheses:

H1: For an OEM firm, relying on subcontracting business will have a negative impact on the firm's business performance, ceteris paribus.

H2: For an OEM firm, concurrently engaging in own-brand and subcontracting business provides opportunities for leveraging resources, hence yielding higher performance.

Our model also clearly suggests that the realization of resource leveraging should be accompanied by resource upgrading efforts. Hence, we can establish the following hypothesis:

H3: For an OEM firm, the performance impact of leveraging resources across multiple business activities will be contingent upon the level of resource upgrading effort the firm undertakes.

Based on a sample set containing 3-year operational data pertaining to 32 computer

peripherals companies in Taiwan, our empirical evidence provides significant support for the hypotheses stated above.[2] In other words, the real world data indicates that a firm's business performance could be significantly enhanced by utilizing the resource leveraging concept in managing the interplay of multiple business activities. Our results also show that a successful resource leveraging effect is contingent upon a firm's commitment in upgrading its product capability. Combining with the supportive empirical evidence, our model may contribute to the scope of the theoretical application and hence generalization of the resource-based theory of strategy.

Business Model for OEM Suppliers in Horizontally Configured Industries," paper presented at the 1998 SMS Annual International Conference held in Orlando, Florida, November.

VI · Self-Evaluation

This research project addresses an important strategic issue for many Taiwanese firms concerning their competition in respective global industries. With NCS's supports, we are able to establish these preliminary findings, which suggests great potentials for future exploration. Our efforts made so far have resulted in two presentations for two major international conferences. Several post-conference and journal publication opportunities are also pursuing.

VII · Reference

The following two papers are direct outputs of this research project. Readers can find detail elaboration on both conceptual and empirical parts as well as a full list of reference from these two papers. Please address any inquiry directly to the project leader.

- [1] Lee, J. R. and Chen, J. S. (1998) "Dynamic Synergy Creation with Multiple Business Activities: Toward a Competence-based Business Model for OEM Suppliers," paper presented at the *4th International Conference on Competence-based Conference* held in Oslo, Norway, June.
- [2] Chen, J. S. and Lee, J. R. (1998) "Leveraging Resources across Multiple Business Activities: A