STRATEGIC OUTSOURCING OF e-BUSINESS VENTURES*

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This paper derives a conceptual framework on the virtual value web extending the existing literature on strategic alliances and partnership outsourcing to the Internet business. An empirical test on Internet ventures is presented next. The empirical study analyzes the determinants of the outsourcing level for Internet ventures. The survey data was collected from 80 Korean e-business startups having various business models such as click-and-mortar, intermediary/auction, and portal/information services. The results show that the outsourcing level is significantly influenced by strategic goals, outside financing (negative), product innovations, and supplier competition.

I. INTRODUCTION

With the rapid advancement of information technology, especially the Internet, digital economy is taking shape throughout our daily lives, corporate activities and culture (Negroponte, 1995). As companies like Amazon.com and eBay.com have shown, the Internet and electronic commerce are making it possible for new venture firms to establish their niches in the market in a short period of time with reduced entry barriers in the marketspace and better access to customers.

Under the digital environment, startup firms with limited resources and capabilities try to capitalize on new wealth-creating opportunities by forming strategic outsourcing arrangements with outside partners. These networking activities as market transactions outside organization perfectly conform to what Ronald Coase observed in 1937, but only in the reverse direction. That is, firms will outsource key business activities and functions in the market as information technology is making it less and less expensive in transaction cost terms (Coase, 1937).

Outsourcing activities in the global economy

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are estimated to increase up to $ 319 billion in 2001 (Outsourcing Institute, 1999). Traditionally, outsourcing, for example, in operating information systems or in hiring temporary workers, was considered to have simple cost-saving benefits. These days, however, firms are actively seeking outsourcing possibilities from the strategic perspective in order to concentrate on their core competencies and to increase their organizational flexibility. By exercising a strategic perspective in outsourcing, firms can enhance their capabilities in productivity, speed, quality, and even technological development. This strategic form of outsourcing can take many forms such as strategic alliances, joint ventures, long-term contracts, or implicit collaborative arrangements.

In these contexts, after developing a theoretical framework on the virtual value web in e-business and outsourcing strategy, this study presents an empirical study in the emerging Korean e-commerce industry to analyze the determinants of outsourcing activities. This theme considers two substantial issues simultaneously, i.e., the issue of strategic outsourcing for startup ventures and the issue of outsourcing in the e-business. So, in the next theory development part, we will discuss both of these issues.

Our empirical test is based on survey data collected from 80 Korean e-commerce startups. Their business models include intermediary, manufacturer, auction, and portal or information services. In the earlier stage of the digital economy, the results of our study may provide for a test ground of classical economic and strategic perspectives for emerging business models of competition.

II. THEORY DEVELOPMENT

These days, companies, either in online or offline businesses, are increasingly adopting an outsourcing strategy. The systematic use of outsourcing, particularly in information technology (IT), dates back to 1963 when EDS began to operate the computer systems and data processing of Frito-Lay and Blue Cross. A more dramatic event happened in 1989 when Eastman Kodak under corporate restructuring sold its mainframe computers to IBM and contracted with IBM to do most of Kodak's data processing for the next ten years (Kirkpatrick, 1991). With this outsourcing decision, Kodak downsized its computer personnel, and saved more than 40 % of IT investments. After this event, other large companies such as Continental, Freeport MacMoran, National Car Rental seriously engaged in similar outsourcing contracts.

Outsourcing, however, has not been limited

to computer systems. Firms continued to search for outsourcing possibilities in various business functions (Brickley et al., 1997). For the introduction of Apple II, Apple Computer outsourced 70 % of its manufacturing costs and critical components like design (to Frogdesign), printers (to Tokyo Electric), and key marketing elements (to Regis McKenna) (Moritz, 1984). In 1992, Du Pont sold its copy machines to Lanier, which then provided it with copying services. Chrysler Motors buys around 70 % of its parts from outsourcing partners. Reebok or Nike do not have their own plants for manufacturing. With many large firms actively adopting outsourcing strategies, we are observing more and more smaller-sized firms in virtual organizational networks either as a provider of outsourcing products/services or as a user of outside resources imitating larger firms.

It is generally understood that this trend is influenced by such factors as rapid developments in information technology, globalization of markets and competition, corporate search for flexibility under heightened business risks, and focus on core competencies. First, the advancement in information technology removes concerns of transaction costs coming from market transactions by reducing information asymmetry and monitoring costs through the instantaneous exchange and sharing of information between parties. Electronic data interchange (EDI) allows firms, for example, to automatically order inventory from a supplier with little human intervention. Actually, firms actively utilizing information technology are reported to have been downsized by around 20 % since 1970s.

Second, with a dramatic increase in worldwide competition, firms tried to reduce costs and get more efficient. Many firms in the developed countries began to outsource manufacturing activities to low-cost developing countries (Economist, 1996). Third, as firms search for greater agility based on new flexible production systems, assets became less firm-specific, favoring contracting instead of vertical integration. This flexible contracting system also reduced business risks under rapidly developing technology.

Last, but most importantly, firms began to emphasize concentrating on their core competencies. Excess capacity in many industries caused by a worldwide recession during the early 1990s increased the pressure to sell non-core assets. Outsourcing is the flip side of a coin under a core competency strategy. It must also be strategically managed around the boundary of core assets and competencies (Bettis et al., 1992). Thus there emerges an issue of strategic outsourcing as we will discuss further in the following section.

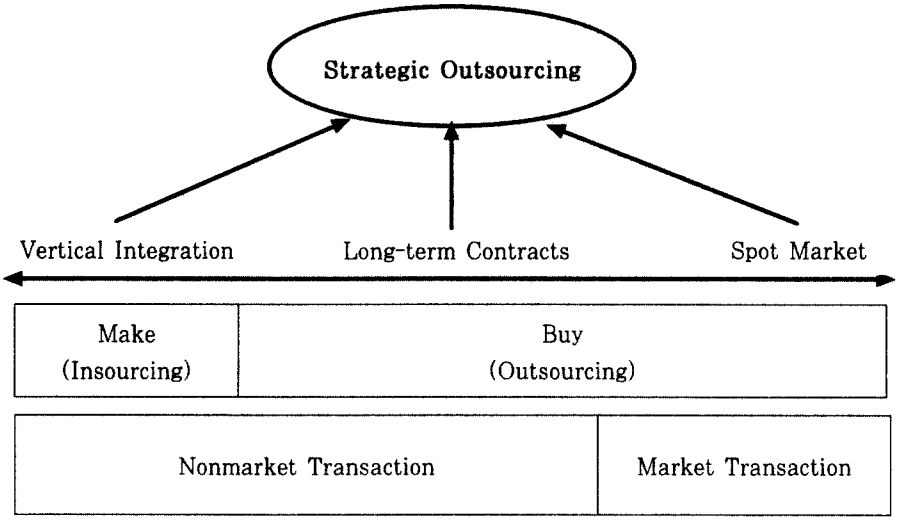
STRATEGIC OUTSOURCING

Currently companies design their outsourcing activities from the strategic perspective to maximize the development and utilization of their core competencies. Unlike previous outsourcing activities simply pursuing cost efficient short-term subcontractors, strategic outsourcing actively searches for ways to increase the corporate value-added through the long-term external partner relationships. Figure 1 presents contexts of currently developing strategic outsourcing moving away from both short-term spot market transactions and inflexible vertical integration.

As outsourcing inherently entails market transaction costs such as searching, contracting, controlling, evaluating, and re-contracting, however, managers should rigorously assess the potential benefits of outsourcing in enhancing their competitive advantage against this vulnerability of market relationships. In a typical make-or-buy decision from an economic point of view, we may want to judge relative sizes of benefits of outsourcing such as (1) economies of scale of market firms and (2) the discipline of market efficiency, against the costs such as (1) the lack of vertical coordination, (2) the leakage of private information, and (3) various transaction costs dealing with independent market firms (Besanko et al., 2000).

In addition to these classical economic factors, managers considering strategic outsourcing have to evaluate risks and benefits coming from the long-term non-market relationships with outsourcing partners (Quinn

FIGURE 1. Contextual Meanings of Outsourcing



and Hilmer, 1994). On the risk side, by contracting out, a company may lose its critical skills and cross-functional skills they have developed under previous in-house production, or may develop wrong skills with the misjudgment of their core com- petencies.

On the benefit side, however, outsourcing strategically can provide a company with enhanced innovation capabilities and flexibility beyond market efficiency. That is, it may tap into each supplier's technical knowledge, and innovative products and processes as smaller specialized suppliers often offer greater responsiveness and new technologies. In this way, the company does not have to undertake all the risks of developing each component system by itself. It lets others do what they can do best.

One of the most significant tradeoffs of this flexibility is the potential loss of control and coordination under outsourcing contracts as suggested by classic economic theory on vertical integration. So, companies strategically outsourcing key components and processes have developed their distinctive ways of managing long-term relationships with their outsourcing partners even in the absence of formal contracts. For instance, in contrast to most western companies taking a piecemeal approach in outsourcing to save on overhead or short-term costs, the Japanese companies as in the auto industry have traditionally maintained a long-term relational contracting system with their limited number of outsourcing partners to improve the quality of their own processes. This long-term collaboration is made possible through their efforts to build close inter-dependent relationships and to hold on tightly to value creating activities in product and process R&D (Dyer, 1997). These efforts cover potentially increasing transaction costs in outsourcing with a heightened level of transaction value (Zajac and Olsen, 1993). Therefore, strategic outsourcing naturally leads to the issue of partnership outsourcing as we will discuss below.

PARTNERSHIP OUTSOURCING

From 1980s on, manufacturers needed more and more innovations with rapid technological changes, decreasing barriers in trade and telecommunication, and intensifying global competition. Since highly sophisticated innovations often depend on works across several areas of science and technology, few manufacturers have the complete breadth of knowledge and resources required to cope with these circumstances (Hagedoorn, 1993). Manufacturers in such industries as automobile, electronics, aerospace, and information technology, where rapid and continual product developments are strategically essential, develop new products

by combining knowledge from various sources. The importance of interactions in this process put them in great need of acquiring new scientific and technical knowledge from outside organizations (Mowery et al., 1996; Shenas and Derakhshan, 1992).

Partnership outsourcing, i.e., pulling suppliers into a manufacturer's workplace was one of the big tools to solve these challenges. Since suppliers in cutting edge industries are the hotbed of innovation, manufacturers can create stronger competitive synergies by combining suppliers' technical knowhow and supplementing their weak points with their suppliers' capabilities, sharing a common cooperative goal (Nishiguchi and Ikeda, 1996). Even without formal or legal contracts governing their relationships, manufacturers and suppliers can develop healthy long-term value-adding relationships under partnership outsourcing practices. This means that implicit institutionalized understandings between partners have an on-going impact on their collaborative coordination.

A study of rail freight contracting illustrates the power of this implicit long-term relationship (Palay, 1984; Besanko et al., 2000). To give a brief explanation, one railroad company purchased specially designed auto-rack railcars to move a particular make of automobile of a major automaker. Soon after the investment, the automaker changed the design of the car, making the special auto racks obsolete. Even in the absence of a formal contract, the automaker compensated the railroad for more than $ 1 million to cover the investment. The auto maker had to keep the railroad as an outsourcing partner viable and happy to guarantee that they get the equipment they need, when they need it.

Various benefits of partnership outsourcing based on the value of long-term relational contracting have been reported. For example, by combining complementary expertises of partner firms, it reduces the lead time (Clark, 1989) and risks of product development (Bidault et al., 1998). It can also improve product quality (Fujimoto et al., 1996), flexibility (Clark and Fujimoto, 1991; Imai et al. 1985; Nishguchi, 1994), and market adaptability (Song and Parry, 1997) while reducing development costs (Dyer, 1997; Lamming, 1993). Previous research on partnership outsourcing, in a sense, reflects a collective wish to find out the factors that drove performance gaps between Western and Japanese firms, especially in automaking (Bidaults et al., 1998). Many of researchers on this issue have reported that Japanese automakers were more productive than their Western competitors in the area of new product development thanks to their extensive use

of suppliers' expertise in developing new products than did their Western competitors (Liker et al., 1996; Martin et al., 1995; Womack et al., 1991).

Understanding the necessity and benefits of partnership outsourcing, an increasing number of manufacturers across geographic boundaries and industry sectors have begun to involve their suppliers from an earlier stage of new product development when a product is being conceptualized, giving suppliers a significant responsibility for the design of the related parts and modules. By involving suppliers in new product development, manufacturers get a chance for their engineers to have direct and extensive communications with suppliers' engineers whose input is important in product development efforts (Clark, 1989; Dyer and Ouchi, 1993). In addition, manufacturer and supplier can have intense and frequent sharing of knowledge on products and customer responses. This is contrasting to the traditional practice of keeping product information secret, and providing suppliers with only what they need to know at a minimum (Bidault et al., 1998).

Partnership outsourcing has been expanding from upstream production processes, to information systems support, and to many other non-core, but critical business functions including human resources and distribution. So practical literatures on systematically managing partnership outsourcing are also increasing. One of these literatures, for example, suggests ways to treat vendors like a virtual department, getting away from the traditional buyer-supplier mentality (Harvard Business School, 2000). Information sharing, monitoring and performance management between partners are also getting important as vendor relationships evolve from a simple commodity-like service toward a process improvement arrangement or a value-added agreement. From the viewpoint of a manager, systematic outsourcing based on the long-term partnership means a completely new form of organization where he/she must learn to exercise lateral leadership working outward instead of the traditional downward leadership working inside (Useem and Harder, 2000). Strategic thinking, deal making, partnership governing, and change management capabilities are the fundamental bases of this lateral leadership.

e-BUSINESS AND THE VIRTUAL VALUE WEB

What does the trend toward strategic outsourcing mean for e-business? Strategic outsourcing lays the foundation for creating a virtual business enterprise, which is the core of the e-business concept (Kalakota and Robinson, 2001). The Internet promises

a friction-free arena where millions of buyers and sellers complete their transactions instantaneously (Spar and Bussgang, 1996). Accepting this promise, people and businesses are just waiting for the more secure and widespread infrastructure such as the Net's rules of exchange, new concepts of property rights, new means of exchange (e.g., E-cash), and security. Companies on the Net can conduct their businesses around the clock and around the world with reduced sales space for product display, marketing, and customer interface. They are in a better position to collect up-to-date customer information through the computer. This customer database makes one-on-one custom-tailored marketing possible for each customer. Companies can act speedily on changing customer needs and demands on a real-time basis.

In this new world of electronic commerce, there would be less need for the traditional roles of wholesalers and retailers in the distribution channel with a more direct linkage between company and customer. Companies using new Internet technologies can give customers more personalized services inexpensively, building customer loyalty effectively. In establishing electronic channels, therefore, companies in search of new business opportunities can pirate existing physical value chains by consolidating parts of the value chain, create digital value chains with new products and services, and create customer magnet portal sites (Ghosh, 1998).

These new electronic channels are made possible just because the Internet acts as a distribution channel for informational products such as software, music, video, airline tickets, research data, etc. The Internet has two kinds of effects on existing distribution channels, i.e., replacement and extension effects (Afuah and Tucci, 2000). A replacement effect means serving the same customers that were served by the old distribution channel as in distributing airline tickets substituting travel agencies. On the other hand, an extension effect involves bringing in new customers as in providing the online service for trading stocks at an affordable brokerage fee to those who ordinarily could not go to stock brokers.

In the markets being accessed through electronic channels, profits are created by clickstream processes going through new forms of intermediary because manufacturers cannot sell products on the Web all by themselves unlike a typical imagination (Slywotzky et al., 2000). New forms of intermediary engaged in this hypermediation process include contents providers, community sites, search engines, portals, and Internet service providers, etc. Given this variety of intermediaries, a customer's mouse clicks generate business deals, creating value-added throughout the deal completion process,

especially more in the intermediary stages. These digital value creation processes are deconstructing the existing value chains and other traditional business structures in many industries including retail banking, automotive retailing, and newspapers (Evans and Wurster, 2000).

The deconstruction of value chains results essentially from the economic separation of information and things. The separation of information economics from things is accelerated through three rules of the digital economy (Downes and Mui, 1998). First, hardware in information technology will develop exponentially as Moore's Law says that the speed of a microprocessor increases twice every 18 months. Second, as Metcalfe's Law suggests, the utility of networks is a function of the number of users squared, not the number of users itself. The diffusion and expansion of Internet users will thus increase the potential of value creation almost without a limit. Third, Coase's Law on transaction costs economizing predicts that various virtual forms of enterprise and organization will dominate the e-business markets.

Rayport and Sviokla (1994) adequately depict this movement to the information economy as the transition from the marketplace defined by physical places to the marketspace defined by information space. Simply stated, a marketspace transaction has a different content, context and infrastructure in comparison to a marketplace transaction. That is, in a marketspace transaction, we focus on information on a product rather than on the product itself (content), engage in an on-screen transaction rather than in a face-to-face deal (context), and use computers and networks rather than physical space and buildings (infrastructure).

Companies operating with the marketspace perspective are threatening marketplace companies. Amazon.com, having shares of Drugstore.com, HomeGrocer.com, Pets.com, and Gear.com, is not any more competing only with Barnes & Noble, but may threaten Wal-Mart in the long run. The deconstruction of real value chains brings along with it the creation of new virtual value chains under rapidly changing market competition with unexpected competitors from other business domains.

The development of the virtual value chain requires developing e-businesses, deriving new business domains, and transforming old businesses (Porter and Millar, 1995). These new business developments may evolve in three stages (Rayport and Sviokla, 1995). First, in the visibility stage, companies acquire an ability to see existing physical operations more effectively through richer information. Next, in the stage of mirroring capability, companies substitute

virtual activities for physical ones, creating a parallel value chain in the marketspace. In the third stage of establishing new customer relationships, companies draw on the information from the virtual value chain to deliver additional value to customers in innovative ways.

Therefore, companies in the information economy are in a position to constantly reconstruct their value chains managing the value matrix (i.e., the combination of both the physical value chain and the virtual value chain) in a balanced and innovative way. This means that the infrastructure of the information economy gets translated into the networked economy for the business world. Considering its complexity, flexibility, and multi-directionality, we can term these new value chains as the virtual value web. In managing the value web, companies apply value-adding steps of the information world (i.e., information gathering, organizing, selecting, synthesizing, and distributing) to each activity in the parallel real and virtual value chains (Rayport and Sviokla, 1995). In this way, companies can create new markets and new relationships on the basis of their existing markets.

The value web entails a new broadened management framework for companies making virtual products as suggested by Davidow and Malone (1992). With the deconstruction of the vertical value chain, managers have to orchestrate all the activities going through the value web. For example, Michael Dell of Dell Computer coordinates the total business processes of their value chains with their own focus on the brand and R&D. This pattern of business extends to many other brand owning companies with less physical assets than before in a variety of industries including automobile, chemical, retailing, entertainment, and financial services. They fully utilize external networks with outsourcing partners, forming value-added communities in a flexible way (Means and Schneider, 2000).

Initially, the virtual corporation was considered a flexible, but temporary form of production organization driven by market opportunities (Goldman et al., 1995). However, with the rapid adoption of the Internet technology, the virtualized enterprise became a long-term mechanism of information and knowledge sharing among interconnected companies in the value web as we observe in emerging business-to-business alliances such as AutoXchange between Ford and Oracle, or Marketsite between GM and Commerce One. This virtualized enterprise system changes the competitive terrain from enter- prise vs. enterprise competition to virtual enterprise vs. virtual enterprise competition (Gomes-Casseres, 1994). That is, competitive advantage is ultimately based

on the re- sources and knowledge of the value web a company is located in.

OUTSOURCING STRATEGY FOR STARTUPS

Outsourcing and e-business environments provide startup companies with good entry opportunities. There appear to be three aspects in new business creation in these environments. First, given the situation that many existing companies are willing to focus on their core competencies and to outsource non-core activities, there exist many niche market opportunities that allow startups to serve those outsourcing needs. This aspect applies to both offline and online ventures. Second, there may emerge new online business niches that we could not expect before e-business such as reverse auction and portal information services. Startup ventures tend to be speedy and flexible to take these online business opportunities earlier than existing companies. Last, but most importantly, it became easier to set up a new business firm with more differentiated external outsourcing networks that help complete the whole business processes. Taking advantage of the virtual value web, even new startups with limited resources can get an instant access to global markets with well-conceived product ideas.

Outsourcing strategy for new startups conforms to one of the classical perspectives on entrepreneurship that new ventures pursuing business opportunities by controlling outside resources can perform better with easier access to market information and customer base (Brush, 1992: Ostgarrd and Birley, 1994). Under rapidly changing economic and institutional environments, startups have a liability of newness in resolving complex managerial and practical issues such as supply chains, employment policies, competitive incentive systems, or tax issues to name a few. Well-known successful high-tech companies like Microsoft, Dell Computer, and Cisco Systems had effectively utilized outside resources with outsourcing strategy from their early startup years through rapid growth periods.

In this sense, the largest beneficiaries of outsourcing are smaller startup firms rather than large existing firms because smaller firms can achieve their competitiveness in a short period of time in competing with their existing competitors. Thus, Chesbrough and Teece (1996) suggest that large companies should ally with caution or bring in-house for needed business capabilities for the systemic type of innovation rather than the autonomous type of innovation. They attribute IBM's lack of success in IBM-compatible PC markets to its initial strategy of going virtual in the development of the PC hardware, operating system,

and application software. Even though IBM initiated the PC business, other companies had no need to do business with IBM any more once they achieved IBM-compatibility in their products and systems. Startup companies like Dell could purchase the same Intel chips, Microsoft operating systems, and Lotus software in order to conduct their own businesses outside IBM's umbrella.

In the Internet world, smaller entrepreneurial firms have more incentive to utilize the information highway in establishing supplier relationships and distribution channels. They have to focus on their core competencies inside the firm under a higher level of resource constraints while outsourcing related business activities with strategic partnerships (Huttig, 1994). They can fully utilize electronic data interchange (EDI) systems to conduct purchasing and marketing activities flexibly along with their strategic alliance partners.

In terms of capitalizing on the information highway, Internet ventures are in a better position to utilize the benefits of outsourcing strategy with a computerized system of managing their value web. Competitive advantages of Internet ventures over existing firms and offline ventures may arise from their resource utilization capabilities outside organization. Thus, many Internet ventures began to systematically approach external partnerships with the strategic outsourcing perspective.

RealNetworks, a pioneer of online music delivery, provides a good example. It systematically develops and maintains the RealPartnership program at four levels depending on annual fee, product/service delivery, and training, and so on. The partnership program gives partner companies access to the RealNetworks resources for their streaming media businesses and other online services based on its application software. In addition to this program, RealNetworks formed an alliance, called MusicNet, with EMI, AOL Time Warner's Warner Music, and Bertelsmann's BMG for jointly marketing their digital music to online companies (Tedeschi, 2001; Peers and Wingfield, 2001). This virtual value web will directly compete with another virtual value web, called Duet, which is a music licensing operation formed by Sony Music Entertainment and Vivendi Universal's Universal Music Group.

Outsourcing strategy for a startup is consistent with the resource-based view on competitive strategy (Barney, 1991; Cooper et al., 1994; Oliver, 1997). That is, acquiring, accumulating, and capitalizing on valuable, rare, non-imitable, and non-transferable resources are also keys to the survival and growth of startup ventures. The point is that, in the absence of the critical mass of business resources like financial, management

system, physical, and human resources, those startups have to find out key resources in and out of the organization in a unique and creative way. For example, Red Hat, a Linux company, formed a multivendor partnership program with Oracle, Computer Associates and RealNetworks for new business customers in order to enhance its support services and integration with critical business applications (Jacobs, 2000). Obviously, the lack of their capabilities in getting access to critical business resources seriously hampers their business performance (Bamford et al., 1996). So, startup firms typically exercise an outsourcing strategy by which they use their core product development capabilities or business model as a stepping-stone toward acquiring additional business resources (Tyebjee and Bruno, 1984; Bachher and Guilder, 1996).

III. EMPIRICAL STUDY

HYPOTHESES

Focusing on Internet startups, we distinguish three different groups of factors influencing their outsourcing activities, i.e., (1) strategic factors; (2) resource factors; and (3) context factors.

First, we can consider strategic factors such as organizational goal achievement, and costs of entry and operations. Firms adopting outsourcing strategy are required to clarify their organizational goals more specifically as they have to make a judgment on whether or not outsourcing can contribute to strategic goal achievement (Corbett, 1996). Generally, firms pursuing new business models have to clearly define their business concept especially in an early stage of the business life cycle when it is not necessarily clear to outsiders and potential competitors. Thus, Internet ventures trying various new business models for effective market entry have more incentive to search for ways to achieve their strategic goals better by outsourcing through this decision process.

Costs of market entry and early business operations for new ventures with limited resources can also positively influence their outsourcing activities (Klass et al., 1999). Especially in e-business, outsourcing high-quality business services and human resources allows new ventures to focus on their core competencies in online business with less costs and to get over their limitations in offline business infrastructure (Lever, 1997). Getting into the markets as early as possible is typically considered an effective strategy in online markets where establishing brand names and communities is an essential first step toward extending business

horizons later on. These strategic considerations lead to our first hypothesis:

Hypothesis 1. *An Internet venture is more likely to pursue an outsourcing strategy if it can contribute more to achieving its strategic goals.*

Hypothesis 2. *An Internet venture will outsource business activities more actively when outsourcing can reduce costs of market entry and operations.*

Secondly, we can consider resource and capability factors. New ventures that can attract equity capital from external sources tend to perform better in survival and growth (Bachher and Guild, 1996; Bruno and Tyebjee, 1984; Timmons and Bygrave, 1986). Ventures with ample resources from external investors will have less incentive to rely on outsourcing partners for corporate development (Timmons and Bygrave, 1986). Ventures lacking external capital sources will, on the other hand, be motivated to pursue external partnerships more actively for faster growth. Also, Internet ventures with innovative technology (Tyebjee and Bruno, 1984; Bachher and Guild, 1996) and innovative product ideas (MacMillan and Day, 1987; Gartner et al., 1994) may easily attract outsourcing partners in diverse areas such as supply chain, distribution networks, and product development. Therefore, we can derive:

Hypothesis 3. *An Internet venture capable of attracting outside capital is less likely to pursue an outsourcing strategy.*

Hypothesis 4. *An Internet venture with innovative technology will pursue an outsourcing strategy more actively.*

Third, context factors such as supply chain and corporate life cycle can influence the level of outsourcing activities. If new ventures have more choices in selecting supplying partners, they can have more negotiation power and reduce opportunistic behaviors from the supply side (Pisano, 1990). With key suppliers well locked in the corporate value chain, new ventures pursuing an outsourcing strategy may exercise good control over important business resources without necessarily owning them (Ang and Cummings, 1997; Ang and Straub, 1998). Thus high competition among suppliers for providing products or services will increase new ventures' leeway for controlling key resources from the outside.

In terms of corporate life cycle, on the other hand, Internet ventures in the earlier stage of development will have more incentive to outsource business services and resources.

Outsourcing helps keep their flexibility in business deals considering the lack of resources and uncertainties in technology, markets and management systems (Churchill and Lewis, 1992). Thus, we derive:

Hypothesis 5. *The level of competition among suppliers will increase outsourcing activities of an Internet venture.*

Hypothesis 6. *An Internet venture in an earlier stage of corporate development is more likely to pursue an outsourcing strategy.*

METHODS

The Research Setting and Data Collection

This empirical study part gives attention to the rapidly emerging Korean e-business industry in general. Specifically, we focus on new market opportunities caused by this digital economy sector as exploited by Internet startups, and their resource mobilizing processes through strategic outsourcing. Compared to other countries, Korea has experienced more dramatic developments in the Internet environment. According to the National Computerization Agency in Korea, the number of Internet domains has increased from only 2,666 in 1996 to 159,252 in 1999. In parallel, the number of Internet users has increased to over 11 million people by the end of 2000, which is about one quarter of the national population. This dramatic expansion of Internet access provided dot-coms, either domestic or international, with good potential market opportunities in Korea. For example, in the mid-1999, there existed over 500 Internet shopping mall companies, which was 100% increase over a half a year.

On the other hand, the Korean companies are also trending toward outsourcing business activities, especially after experiencing a dramatic economic downturn since the 1997 foreign exchange crisis and the following corporate restructuring. According to some reports by the Korean National Statistical Office, the number of companies providing outsourcing services has increased from 24,000 in 1990 to 92,000 in 2001 whereas their total sales increased from 3.2 billion in U.S. dollars in 1990 to 80 billion in U.S. dollars in 2001.

Previously, companies tended to outsource business services based on less skilled labor, simple overhead expenses, or less critical OEM components. They now outsource various key business activities and processes such as maintenance, information systems, logistics, manufacturing, R&D, human re- sources, and other supporting services, some- times on a global scale. A report by Hyundai Research Institute in 1998 based on 177 companies

outsourcing key business activities indicates that their main reasons for outsourcing are cost saving (59.1% of the total respondents), access to external expertise (21.3%), focus on core businesses (6.3%), avoiding managerial complexity (5.5%), downsizing (4.7%), and entry into new businesses (3.1%).

Sampling Internet ventures is not an easy task as it seems though the population are all accessible online. Thus we tried to locate reliable sources of information listing those companies. Through some trial-and-error search processes, we finally identified 620 Internet ventures as the initial research target, based on the venture registration database of the Korean Small and Medium Business Administration (225 firms), e-commerce yellow pages (200 firms), newspaper publications (45 firms), and published research samples (150 firms). A survey questionnaire designed to measure the research variables as explained below was distributed to these firms through various methods including mail, fax, email, and homepage in order to maximize the returns. 80 firms (13 % response rate) returned the completed questionnaire. Every respondent was a member of the top management team. Our analysis was based on these firms' responses.

Variables

We constructed a survey questionnaire composed mainly of seven-point Likert scales on both objective and judgmental factors to test the above hypotheses based on previous research on outsourcing. We measured the outsourcing level with the percentage of outsourcing expenses in the total operational budget as well as the range of outsourced business functions (Sharpe, 1997). The functional range covers funding, human resources, program development, homepage design and management, Web site management, server and equipment, market research, contents planning, and facility maintenance.

For strategic factors as one group of explanatory variables, we included outsourcing as a potential contributor to (1) achieving corporate goals, (2) savings in fixed costs, variable costs, and payroll costs (Klass et al., 1999), and (3) potential to reduce costs of entry and knowledge disparity.

With regards to resource and capability factors, we additively combined (1) the proportion of outsiders' equity capital out of the total owner's equity with (2) the debt-to-asset ratio to measure external financing capability (Timmons and Bygrave, 1986). For the ownership of innovative technology, we used excellence, specialization and market potential of owned technology (Tyebjee and Bruno, 1984; Bachher and Guild, 1996) as well as innovativeness of products developed in terms of non-

imitability and market acceptance (MacMillan and Day, 1987; Gartner et al., 1994).

The level of competition among suppliers as a context factor is measured by the number of substitutable suppliers as well as capability disparity among potential suppliers (Ang and Cummings, 1997; Ang and Straub, 1998). We used a simplified version of corporate life cycle such as emergence, growth or stagnation based on a typical five-stage model of corporate development (Churchill and Lewis, 1992).

We controlled for firm size using capital size. Also, Internet ventures were categorized into manufacturer type, intermediary/auction type, and portal/information services type to control for potential business model effects (Jutla et al., 1999).

RESULTS AND DISCUSSION

Most of the sample Internet ventures (55%) operate on a small scale with capital size between 50,000 and 500,000 in U.S. dollars. They are also quite young. 57 firms (71.3 %) were started up in 1996 or after. The manufacturer type has the largest number of firms (35 %) followed by the portal/information service type (31.3 %). Manufacturers are obviously trying to extend the existing offline business into the electronic commerce area. In terms of business functions outsourced, the largest number of firms are engaged in outsourcing arrangements for program development (46.25 %), server and equipment (40.0 %), human resources (26.25 %), and Website design and maintenance (18.75 %). Table 1 shows a detailed cross-tabulation of business models and outsourcing functions.

Table 2 shows the descriptive statistics and correlations among explanatory variables. General correlation patterns indicate that the outsourcing level is significantly correlated with strategic goal, cost saving, outside capital (negative), and product innovation and supplier competition. ($p < .01$), but not with easiness in market entry and technology level. We established the reliability of the Likert scale measures of the variables, using the Cronbach's test. The Cronbach's values of all the relevant measures are in the range of .6472 to .9198, which is above the .60 threshold.

Table 3 shows the results of regression analysis on the first dependent variable, i.e., outsourcing level. The results wholly support Hypothesis 3 on financing capability as well as Hypothesis 5 on supplier competition ($p < .01$ for both). They also partly support Hypothesis 1 on strategic goal ($p < .10$) and Hypothesis 4 on innovative technology ($p < .01$ for product innovation). However, the technology level, one of the measures of innovative technology, is not significantly related to the outsourcing level though the

Table 1. Distributions of Business Models and Outsourcing Functions

Ousourcing Function	Business Model			Total NO. of Outsourcing	Percentage (%)	Ranking
	Manufacturer (%)	Intermediary /Auction (%)	Portal/ Information Services			
Finding	8 (29)	6 (25)	5 (20)	19	23.75	4
Human Resources	7 (25)	5 (19)	9 (36)	21	26.25	3
Program Development	14 (50)	14 (52)	10 (40)	38	47.50	1
Website Management	10 (36)	3 (11)	2 (8)	15	18.75	6
Server and Equipment	13 (46)	11 (41)	9 (36)	33	41.25	2
Market Research	2 (7)	4 (15)	4 (16)	10	12.50	7
Contents Planning	2 (7)	2 (7)	- (0)	4	5.00	9
Facility Maintenance	3 (11)	- (0)	2 (8)	5	6.25	8
Others	5 (18)	8 (30)	5 (20)	18	22.50	5
Total No. of Companies	28	27	25	80		

Table 2. Descriptive Statistics and Correlations

Variable	Mean	Standard Deviation	1	2	3	4	5	6	7
1. Strategic goal	3.675	1.613							
2. Cost saving	3.8916	1.7484	.279*						
3. Easiness in entry	4.475	1.215	0.145	.323**					
4. Outside capital	2.6375	1.601	0.113	0.032	-0.098				
5. Technology level	4.7335	1.5158	0.081	-0.07	- .222*	0.16			
6. Product innovation	4.9063	1.2706	0.108	.265*	0.159	0.011	0.169		
7. Supplier competition	4.0375	1.2598	.221*	-0.035	-0.161	-0.012	0.119	.245*	
8. Outsourcing level	2.9004	1.2493	.344**	.332**	0.209	- .305**	0.066	.486**	.417**

Note: N=80
* p< .05
**p< .01

Table 3. Results of Regression Analysis on Outsourcing Level

Variable	Coefficient	Standard Error	Expected Value
Constant	-3.118	1.290	
Strategic Goal	.196 +	.114	+
Cost Saving	0.158	.113	+
Easiness in Market Entry	0.179	.162	+
Outside Capital	- .325 **	.108	-
Technology Level	.133	.136	+
Product Innovation	.397 **	.145	+
Supplier Competition	.576 **	.150	+
Growth Stage	.284	.574	-
Stagnation Stage	-.003219	.424	-
Capital Size	-.01239	.133	
Intermediary/Auction	.07008	.413	
Portal/Information Services	.121	.448	

direction of the coefficient is as expected. In combination with the result on Hypothesis 1, this may mean that it is strategic thinking and market-focused products that drive Internet companies' outsourcing decision rather than the specialized technology itself. This interpretation is consistent with the strategic outsourcing perspective.

On the other hand, the cost of market entry and operations was not a significant predictor of outsourcing level. This may be caused by relatively easier market entry for Internet ventures and prevailing practices of logistics arrangements with outside parties. The corporate life cycle as suggested by Hypothesis 6 did not have any positive effect on outsourcing level, either. It may be less sensible to make a distinction in life cycle among Internet ventures in this research, given the fact that they are all relatively young.

Ⅳ. CONCLUSIONS

As the digital economy expands its horizon continuously, virtual corporate networks and communities will rely more and more on external partners for key resources, ideas, and offline activities. In this study, we tried to extend prevailing models of strategic alliances and outsourcing into the Internet business ventures. Generally speaking, Internet ventures have more incentive to actively search for diverse

outsourcing partnerships with rapid technological and market developments.

As the theoretical model and empirical results suggest, strategic, resource and context factors in combination will influence outsourcing activities of Internet companies as well as offline businesses. Since the current state of e-business is only at the emerging stage of the fully digitized network economy, however, it is too early to draw some conclusions on the exploitation of the virtual value web by both offline and online companies even though Korean markets as our research focus are one of the fastest developing hot spots in Internet competition. Thus, its seems very natural for us to observe some mixed results in our data.

Only partial support of the theoretical derivations might be caused by the two factors, i.e., either (1) non-strategic approaches to outsourcing on the part of Internet ventures at the practical level, or (2) potential problems in extending our thinking based on our offline business knowledge at the theoretical level. But, as Internet companies begin to approach outsourcing from a more strategic point of view, we positively expect that their patterns of external partnerships will evolve into what we can generally expect from the virtual value web.

Second, paradoxically, our strategic thinking on outsourcing at the conceptual level is based partly on the rational transaction costs logic, and partly on the Japanese-style partnership outsourcing practices pursuing the long-term relational contracting. The essence of strategic outsourcing in the e-business era is that the paradoxical combination of heterogeneous business practices is made possible by rapidly changing Internet infrastructure and corporate adaptations to it.

Further studies would have to continuously give attention to brand-new business practices developing around the virtual value web. We focused our attention to Internet startups because they have higher chances of engaging in creative and combinatorial business practices with less obsession on the traditional administrative heritage in managing key business functions. Just like the e-business system was not the output of theoretical endeavors, but of the practical search for market opportunities, the real driver of the changing virtual value web will be also market-driven dot-coms in search of new business solutions. The one thing that is clear is that it has become much more easier to form and rearrange business organization not at the level of a firm, but at the level of the virtual value web.

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STRATEGIC OUTSOURCING OF e-BUSINESS VENTURES

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Abstract

This paper derives a conceptual framework on the virtual value web extending the existing literature on strategic alliances and partnership outsourcing to the Internet business. An empirical test on Internet ventures is presented next. The empirical study analyzes the determinants of the outsourcing level for Internet ventures. The survey data was collected from 80 Korean e-business startups having various business models such as click-and-mortar, intermediary/auction, and portal/information services. The results show that the outsourcing level is significantly influenced by strategic goals, outside financing (negative), product innovations, and supplier competition.

Key Words : strategic outsourcing, core competency, Internet venture, e-business startup, virtual value web

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