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A Resource-based View of Strategic Alliances and Firm Value in the Electronic Marketplace

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This study relies on the resource-based view to examine how alliances of e-commerce firms affect firm value in an emerging business sector. Using an event study method, we investigate 272 alliances of 69 e-commerce firms. Our findings show that alliances of e-commerce firms in general have a positive effect on firm value. Unlike previous studies of alliances, we find that marketing alliances generate significantly greater firm value than technology alliances. Our results also show that alliances with other e-commerce partners do not have a significantly different effect on firm value than alliances with bricks-and-mortar partners. Implications and avenues for future research are discussed.

Establishing strategic alliances is a critical strategy for most contemporary firms (e.g., Gulati, 1998; Harrigan, 1988; Kale, Dyer & Singh, 2002; Parkhe, 1993). Such cooperative relationships can help firms conserve resources (Eisenhardt & Schoonhoven, 1996), share risks (Kogut, 1988), obtain information (Gulati, 1995; Koka & Prescott, 2002), access complementary resources (Henderson & Cockburn, 1994), reduce product development costs (Henderson & Cockburn, 1994), improve technological capabilities (Powell, Koput & Smith-Doerr, 1996), and enhance reliability (Singh & Mitchell, 1996). These benefits of alliances have been examined in a broad range of industries including aerospace (Garrette

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& Dussauge, 1995), airline (Park & Cho, 1997), automobile (Nohria & Garcia-Pont, 1991), biotechnology (Arora & Gambardella, 1990; Powell et al., 1996), and semiconductor (Eisenhardt & Schoonhoven, 1996).

The recent development of Internet technology provided enormous potential for business opportunities, which eventually created the new business sector of electronic commerce (e-commerce). This emerging e-commerce sector has provided scholars an opportunity to investigate if existing theories can explain value creation mechanisms or whether there are alternative routes to competitive advantage in this context (e.g., Evans & Wurster, 1999). Despite rapidly growing Internet usage and the importance of e-commerce to the economy, academic research has not sufficiently developed and tested theories to explain this new phenomenon (Amit & Zott, 2001). While the newness of e-commerce partially explains the sparse research attention, the lack of theoretical investigations and empirical tests raises questions as to whether traditional theories sufficiently explain strategic actions of e-commerce firms.

Contributing to this uncertainty about the applicability of traditional theories is a lively debate about whether the Internet and e-commerce represent a "new economy" not bound by traditional economic principles (Arthur, 1994; Porter, 2001). Despite research opportunities, there is a paucity of studies investigating value creation mechanisms in the e-commerce sector. In particular, there is a lack of research examining alliances of e-commerce firms and their outcomes. This study extends existing alliance literature beyond traditional bricks-and-mortar industries by investigating alliances of entrepreneurial firms in the emerging e-commerce sector. Since forming alliances can significantly change the pool of available resources, we draw on the resource-based view (RBV) to examine how alliance strategies of e-commerce firms, including alliance type and partner selection, affect firm value. The RBV (Barney, 1986, 1991; Cohen & Levinthal, 1990; Prahalad & Hamel, 1990; Teece, Pisano & Shuen, 1997) allows us to focus on exchanged resources, their characteristics, and their roles in value creation in the e-commerce sector. We define strategic alliances as voluntary arrangements between firms to share resources, coordinate joint promotions, share production facilities, or develop new products or technologies (e.g., Gulati, 1998). While there are various definitions of e-commerce firms, we define e-commerce firms as companies selling products or services exclusively through websites. This strict definition provides an opportunity to investigate possible distinctions between traditional industrial sectors and the emerging e-commerce sector (e.g., Afuah & Tucci, 2001; Rayport, 1999). We employ the event study method to investigate a sample of 272 alliances made by 69 e-commerce firms from January 2000 to September 2001. The next section discusses the theoretical perspective and hypotheses to predict how alliances affect the value of e-commerce firms.

Strategic Resources and E-commerce Alliances

The RBV of the firm, which builds on Penrose's (1959) pioneering work, considers firms bundles of resources and capabilities. The RBV argues that variance in firm performance can be explained by strategic resources, such as core competence (Prahalad & Hamel, 1990), dynamic capability (Amit & Schoemaker, 1993; Teece et al., 1997), and absorptive capacity (Cohen & Levinthal, 1990). While prior RBV research has typically tested

the effects of organizational resources on firm performance, RBV arguments imply that firms also create competitive advantage from resources of alliance partners (Eisenhardt & Schoonhoven, 1996; Park & Martin, 2002). For example, Wernerfelt (1984) argued that a firm may derive competitive advantage from resources that are semi-permanently tied to the firm. Montgomery and Wernerfelt (1988) suggested that a firm may appropriate substantial rents as trading partners of resource owners, provided that relationship-specific investments tie the parties together. Along the same lines, Henderson and Cockburn (1994) showed that the ability to access new knowledge outside organizational boundaries is a particularly important source of enduring competitive advantage in research and development (R&D) productivity.

Firms can access external resources via market exchanges, strategic alliances, mergers, and/or acquisitions. Prior research suggested that strategic alliances are a popular way to obtain critical resources for most firms (e.g., Eisenhardt & Schoonhoven, 1996). Since firm-specific resources are often based on tacit knowledge and subject to considerable uncertainty concerning their characteristics and performance, it is more difficult to draft simple market transaction contracts governing the exchange of such capabilities (Chi, 1994; Mowery, 1983; Pisano, 1990). Conner and Prahalad (1996) argued that the renegotiation costs of market transactions, compared to other transaction modes, are likely to significantly increase when conditions of market contracts for resource exchanges are subject to frequent, important, and complex changes. Other avenues for attaining critical resources are mergers or acquisitions. Although alliances provide only partial access to resources of partner firms, merging with or acquiring an entire firm is complicated and may require significant regulatory approval.

Characteristics of business sectors usually determine which resources become critical to create competitive advantage and firm value. In the international airline industry, for example, high product homogeneity, resource similarity, and government regulations are industry characteristics that make both service route networks and airport landing slots the most critical resources (Holloway, 1997; Oum & Yu, 1998). In the electronic marketplace, there are several factors that distinguish e-commerce from traditional bricks-and-mortar sectors. These factors include relying on fixed and wireless Internet infrastructure (Amit & Zott, 2001), critical roles of information (Evans & Wurster, 1999; Porter, 2001), high reach and richness of information (Evans & Wurster, 1999), and network effects (Afuah & Tucci, 2001; Shapiro & Varian, 1999).

Unlike the traditional marketplace where customers exchange numerous goods and services at specific locations, the electronic marketplace using Internet infrastructures is mainly designed to exchange information and create virtual communities (Hagel & Armstrong, 1997). For example, ebay.com, an online auction service provider, generates revenue by allowing customers to find both buyer and seller information. Yahoo.com generates revenue by providing a portal service for information and creating an online community. If e-commerce firms want to buy or sell traditional tangible products, they have to rely on bricks-and-mortar operations. For instance, Amazon.com spends heavily to set-up offline distribution systems.

Electronic information exchanges allow firms to arrange commercial transactions that bypass significant portions of traditional business transaction costs typically incurred at various stages of value chain activities, such as delivering tangible products between buyers and

suppliers, managing inbound logistics, and controlling distribution channels (Porter, 2001). The convenience of electronic information exchanges also help firms speed up traditional business transactions. Thus, in the electronic marketplace, information and information processing capabilities that increase efficiency and/or convenience in various exchanges become a critical source of competitive advantages. These capabilities often become tools to reduce transaction costs, mediums to create a virtual community, or major products. For example, ebay.com initiated an information service for auction participants by providing transaction history and evaluation records of other traders. This additional information facilitated online auctions by removing potential uncertainties about reliability of other traders. The additional information itself and ebay.com's capability to provide it in a timely manner become critical sources of competitive advantage. When only a few firms possess these capabilities and they are very difficult to imitate, they can generate significant competitive advantage (Barney, 1991).

Another characteristic of e-commerce is high reach and richness of information (Amit & Zott, 2001; Evans & Wurster, 1999). Evans and Wurster (1999) defined reach as how many customers a business can connect with and how many products it can offer to those customers. They defined richness as the depth and detail of information that firms offer to customers, or the amount of customer information that firms collect. In the electronic marketplace, open standards and Internet support greatly reduce marginal transaction costs of information for additional users or products. Bakos (1997) suggested that online transactions have the potential to achieve both economies of scale and scope due to insignificant marginal costs of information exchange. For instance, unlike offline travel agencies, online travel service provider Travelocity.com can serve more customers, provide greater selection, and exchange more detailed information about its products and services while hardly increasing operating costs. Thus, the resources that help e-commerce firms increase reach and/or richness of information also affect rent generating capabilities. For example, prior research suggested that e-commerce firms can improve their profit margins by either bundling more products and/or serving more customers (Evans & Wurster, 1999).

E-commerce also provides great potential for network effects (Shapiro & Varian, 1999). Network effects refer to positive externalities in which participants' utility increases with the number of other network participants (Garud & Kumaraswamy, 1993). A good example is ebay.com. As the number of online users (either sellers or buyers) increases, users can more easily sell or buy items. These network effects may also result from inter-firm activities. Once leading firms introduce a novel way of "doing things," more market participants adopt it (Amit & Zott, 2001). For instance, as adoptions of the Microsoft Windows operation system increased, relevant third parties began to design and supply for this emerging standard, further increasing its functionality and consumer appeal (Vandermerwe, 1997). E-commerce firms can exploit various benefits when there is potential for network effects. For example, firms with larger customer bases tend to gain new customers at a faster rate than firms with smaller customer bases (Katz & Shapiro, 1985) because customers recognize additional benefits of larger networks. Thus, strategic capabilities that enable firms to devise a better business structure or product portfolio to create network effects will be a critical source of competitive advantage.

There are several other resources and characteristics of e-commerce that may affect value-creation. One is the great potential for customer information accumulation, which

most likely creates customer lock-in effects and/or high switching costs (Amit & Zott, 2001). Compared to offline businesses, the nature of e-commerce transactions, such as tracking customers' Internet navigation behavior at every click, improves both accumulation and customization of customer information. Richer customer information helps firms learn how to better serve customers and provide more personalized services. Thus, over time, experience with clients allows e-commerce firms to increase reach and richness of information, which reduces transaction costs of future sales to those clients (Reichheld, 1996; Rust, Zahorik & Keiningham, 1995). Such customer lock-in effects help firms increase long-term customer value from multiple transactions and/or cross-selling (Vandermerwe, 1997). The above mentioned e-commerce characteristics, such as information accumulation, decreasing marginal costs of information exchanges, network effects, and customer lock-in effects, provide e-commerce firms with great potential to create increasing returns (Arthur, 1989, 1994; Campbell & Hulme, 2001; Vandermerwe, 1997). Increasing returns is the positive feedback cycle helping that which is ahead to get further ahead and causing that which is losing advantage to suffer further loss (Arthur, 1989, 1994; Kaldor, 1994; Nelson, 1996; Shapiro & Varian, 1999). Therefore, in the electronic marketplace, strategic resources that help firms exploit the above characteristics will create more value than other resources.

Expecting various benefits, e-commerce firms recently established numerous alliances with other online or offline firms. However, there are relatively few theoretical and empirical studies investigating the effect of e-commerce alliances. To address this paucity of research, we examine how e-commerce alliance strategies, including choices of alliance type and partner, affect firm value.

Hypotheses

Previous studies suggested that alliance benefits include cost reduction, risk sharing, access to financial capital, complementary assets, improved capacity for rapid learning, and knowledge transfer (e.g., Eisenhardt & Schoonhoven, 1996; Kogut, 1988; Powell et al., 1996; Singh & Mitchell, 1996). Other studies showed that alliances may allow partner firms to combine loyalty programs, enhance legitimacy, establish trust, and improve reputation (Baum & Oliver, 1992; Dollinger, Golden & Saxton, 1997; Saxton, 1997). E-commerce firms may exploit these alliance benefits especially when they ally with bricks-and-mortar firms. For example, new e-commerce firms in an emerging sector can improve their business reputation, minimize investment in offline functions, and learn from well-developed management experience of bricks-and-mortar partners.

Alliances in the electronic marketplace may also create meaningful benefits. Amit and Zott (2001) argued that in network economies, such as virtual markets, alliances offer a viable alternative to developing or acquiring key resources and significantly reduce information exchange costs. Evans and Wurster (1999) suggested that one major alliance benefit for e-commerce firms is increasing the installed base of customers. A larger installed base not only increases reach, but also helps e-commerce firms exploit economies of scale and scope in terms of both selling products and retaining customers. Expanding customer base through alliances further improves the potential to create network effects in the

e-commerce sector. For example, in the case of online auctions, a larger number of buyers increase financial liquidity of the market, which attracts more sellers, which in turn attract more buyers. Accordingly, the increased network effects stemming from alliances also help e-commerce firms retain existing customers. Better customer retention rate subsequently allows e-commerce firms to accumulate more customer knowledge, which reduces the cost of doing business with existing clients (Peppers & Rogers, 1997). Firms then exploit more value over time per customer through cross-selling and value-added services. Considering these benefits, alliances may increase the value of e-commerce firms. Therefore, we predict:

Hypothesis 1: Alliances of e-commerce firms will positively affect firm value.

Previous studies showed that firm value was differentially affected depending on the types of alliances: production, marketing, and technology. Given that e-commerce firms are rarely involved in production activities, marketing and technology are the two major types of alliances made by e-commerce firms. To study the effect of alliance types, we will focus on these two types in this paper.

The importance of information, information reach and richness, and network effects in the electronic marketplace make it vital for e-commerce firms to both increase installed customer bases and retain existing customers. As entrepreneurial firms in an emerging sector, e-commerce firms have to devote significant attention and resources to announce their existence, obtain brand awareness, and educate customers about their new business models. Indeed, e-commerce firms spend five times more money for acquiring new customers than they do for retaining existing customers (Calkins, Farello & Shi, 2000). In addition, the cost of acquiring a new e-commerce customer is often greater than the lifetime value-added from that customer (Hoffman & Novak, 2000). However, marketing activities that obtain loyal customers and increase customer base will be a primary foundation for creating competitive advantage. For instance, Reichheld and Schefter (2000) found that loyal customers not only purchase more and provide customer referrals, but they tend to educate other customers, which ultimately reduces technical support costs. In this respect, marketing alliances would significantly reduce both costs and risks of customer acquisition and retention efforts through cross-selling products, sharing loyalty programs and brand names, providing joint advertisements, developing co-promotion programs, sharing distribution channels, and exchanging sales forces (Evans & Wurster, 1999).

Technology alliances were found to be more influential in industries characterized by rapid technological changes, product complexity, and high costs or risks associated with product development (Chan, Kensinger, Keown & Martin, 1997; Das, Sen & Sengupta, 1998; Koh & Venkatraman, 1991). This is especially the case when R&D activities are subject to moral hazard or adverse selection (Williamson, 1975). In such industries, technology alliances have greater potential to generate mutual benefits, such as reducing duplicated investment, facilitating tacit knowledge sharing, and shortening product development cycles.

E-commerce technology components are usually general-purpose hardware, such as networking equipment, web servers, and communication servers, which are easily available through comprehensive e-commerce packages or toolkits offered by various vendors. For instance, Sendwine.com, an online wine seller, paid only $150,000 for the e-commerce

technology to initiate online sales operations (Raik-Allen, 1999). Consequently, many e-commerce firms rely on market transactions or outsourcing, rather than internal development, for these technological capabilities. Since off-the-shelf technology components are readily available and easily imitated, such technological resources would rarely become a source of competitive advantage (Barney, 1986, 1991). Thus, attracting customers would be more challenging than obtaining necessary technologies for online operations. With potential to provide network and customer lock-in effects, marketing alliances are more likely to improve performance of e-commerce firms than technology alliances. Thus, we predict:

Hypothesis 2: Marketing alliances of e-commerce firms will increase firm value more than technology alliances.

Another factor affecting alliance impact on firm value is partner selection. E-commerce firms may partner with other online firms or with bricks-and-mortar, offline firms. Alliances with e-commerce firms may provide better potential to create network effects with more scale and scope economies of information since e-commerce firms are so information intensive. For instance, customer information is a major value-creation source, which is more easily combined between e-commerce firms. Compared to offline firms, online firms accumulate richer and more similar information about their customers, who already understand online searching and purchasing procedures. For example, both ebay.com and Amazon.com develop similar databases to record their customer purchase histories and patterns. Richer customer information allows e-commerce firms to provide more accurate and efficient customization. The synergy stemming from combining customer information enhances customization, information reach and richness, and customer lock-in effects. Firms failing to collect the right customer information, analyze it, and adjust operations accordingly were slow to learn customer preferences and rectify mistakes (Varianini & Vaturi, 2000). Brynjolfsson and Smith (2000) found that despite heterogeneity among online retailers, information acquisition is relatively frictionless for e-commerce firms. Due to overall information similarities, online navigation experience, and web link convenience, customers of e-commerce firms are more likely to visit online partners' websites than customers of bricks-and-mortar firms were to visit offline partners' stores.

While integrating online and offline operations may also provide advantages such as broader distribution, reputation, management skills, and capital, these benefits are most likely to occur when both online and offline operations are merged, or one is acquired or internally developed by the other (Gulati & Garino, 2000). In alliances with bricks-and-mortar partners, different business platforms may delay or reduce synergy from combining customer information. For example, firms accumulate limited customer information in many bricks-and-mortar sectors, except for credit card firms, educational institutions, and hospitals. Given the information intensiveness of most e-commerce firms, potential benefits from traditional bricks-and-mortar partners tend to be less critical and more difficult to integrate than benefits from simply combining customer information between e-commerce firms. Thus, we predict:

Hypothesis 3: Alliances between online firms will increase firm value more than alliances between online and offline firms.

Data, Statistical Method, and Measures

Data

We collected data on 311 alliance announcements of 82 e-commerce firms from January to September 2001. Based on stock price availability, these firms were selected from the Bloomberg E-commerce indexes, the Dow Jones Internet Commerce (DJIC) index as well as e-commerce firm listings from Yahoo, AOL, and other published sources, such as industry magazines, SEC documents, and Internet sites. While the average number of alliances per firm is 3.9, a few e-commerce firms, such as Amazon.com, ebay.com, and Cnet.com established more than 8 alliances. Following the lead of previous studies (e.g., Gulati, 1995; Parkhe, 1993), we excluded temporary cooperative arrangements, such as one-week joint sales promotions, since those temporary events seldom affect firm value. Based on our definition of e-commerce firms, we excluded online retailers that also have traditional offline sales. For example, we excluded Dell Computers and 800flowers.com because they also have retail or telephone sales networks. Only alliance announcements containing accurate and detailed information about date, partner, alliance purpose, and duration were included. To control for possible confounding effects, we excluded alliance announcements that coincided with other major firm-specific events that might affect stock such as earnings announcements, executive turnover, large investment decisions, mergers and acquisitions (for a review of confounding effects see McWilliams & Siegel, 1997). After meeting these conditions, our final sample contains 272 alliance announcements of 69 e-commerce firms. We collected data on announcements of alliances and firm-specific confounding events from four major publications in the Lexis/Nexis database (e.g., Das et al., 1998): The Wall Street Journal, New York Times, PR Newswire, and Business Wire, which report almost comprehensive e-commerce business events. The FactSet database, a commercial database used by most investment banks, provided daily stock-returns, value-weighted market index returns, and e-commerce index returns.

Statistical Methods

We used both an event study method and regression analyses for this study. We employed an event study method to measure effects of alliances on firm value by using changes in stock price. The event study's details are explained in the ensuing dependent variable section. Event studies are commonly employed in the accounting, economics, finance, and management fields to examine the value implications of corporate events (for a review, see Brown & Warner, 1985; MacKinlay, 1997; McWilliams & Siegel, 1997; Park, 2003). To test our hypotheses, we employed a two-step approach. First, we used mean tests and the binomial *z*-statistic tests for H1 (McWilliams & Siegel, 1997). We also conducted the binomial *z*-statistic and difference-of-means tests for H2 and H3. These primary tests show whether alliances of e-commerce firms increase firm value, and whether alliance type or partner selection creates a meaningful difference in the change in firm value. Second, using change in firm value as a dependent variable, we ran regression analyses to investigate whether the effects of alliance type (H2) and partner selection (H3) are significant when controlling for several focal firm characteristics and unobservable firm capabilities.

Since our data include multiple alliances of focal firms, autocorrelation, heteroskedasticity, and unobservable firm-specific effects may bias coefficient estimates of our regression models (Greene, 2000). We ran the Durbin–Watson and Breusch–Pagan tests to check for autocorrelation and heteroskedasticity, respectively (Kennedy, 1998). These tests confirmed that our regression results are not subject to autocorrelation and heteroskedasticity. Unobserved firm features, such as firm capabilities to utilize alliance relationships, might also influence results (e.g., Barney & Zajac, 1994). Using either a fixed or random effects specification can control for unobservable firm effects (Kennedy, 1998). We reported random effects models because we do not observe a complete population and the Hausman test favors the random effect model specification (i.e., $\chi^2(6) = 7.06$ for model 2) (Greene, 2000).

Dependent Variable

Our dependent variable is the change in firm value surrounding an alliance announcement. We operationalize it using cumulative abnormal returns (CARs), which are the sum of daily abnormal returns (ARs) during a specified event window of day −1 to day +1. ARs capture the percentage change in stock price after adjusting for a focal firm's systematic risk and general stock market movements. To calculate daily AR, we extract the residuals from a market model that estimates a firm's stock price returns. The market model controls for both the overall stock market movement and the e-commerce sector index movement that may significantly influence daily stock prices of e-commerce firms. In line with previous studies (e.g., Das et al., 1998; Koh & Venkatraman, 1991; Reuer, 2001), we used the following market model in Equation (1) to estimate firm-specific parameters over a 250 trading day period ending 10 days before each announcement day:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \gamma_i ES_{mt} + \varepsilon_{it}, \tag{1}$$

where R_{it} is firm i's daily stock return on day t, R_{mt} is the daily return of market index on day t, ES_{mt} is the daily return of the e-commerce sector index on day t, α_i, β_i, and γ_i are firm-specific parameters, and ε_{it} is a random-error term with $E[\varepsilon_{it}] = 0$ and $\mathrm{Var}[\varepsilon_{it}] = \sigma_i^2$. To capture the daily market movement, we used the corresponding daily returns of the NASDAQ index. For the e-commerce sector movement, we used the Morgan Stanley Internet index. These adjustments allow us to control for volatility in both the overall market and Internet sector. Then, we used Equation (2) to calculate daily ARs:

$$\mathrm{AR}_{it} = R_{it} - (a_i + b_i R_{mt} + g_i ES_{mt}) \tag{2}$$

where AR_{it} is the daily ARs for firm i on day t, and a_i, b_i, and g_i, are the firm-specific OLS parameter estimates from Equation (1).

Whereas previous alliance studies have accumulated ARs for periods up to 60 days in length (e.g., Lee & Wyatt, 1990), shorter event windows have been used in studies investigating alliance announcements (Das et al., 1998; Koh & Venkatraman, 1991), divestments (Cinebell & Cinebell, 1994), acquisitions (Shelton, 1988), and diversification (Nayyar, 1993). When looking for stock price changes in a very volatile sector, a short interval may reduce potential noise, provided the interval can capture price adjustments from information leakages or delayed responses (e.g., McWilliams & Siegel, 1997; Reuer, 2001). Considering the volatility and newness of the e-commerce sector, we define the event window as a period

of up to three days centered on the event day (day 0) (Das et al., 1998; Reuer, 2001). We define day 0 as the first day the market *could* respond to an alliance announcement. If the announcement was made after the close of trading, then day 0 is the next trading day. In the case of multiple announcements for a single alliance, day 0 was the earliest announcement date.

Explanatory Variables

Marketing versus technology alliances. We classified alliances into two types: marketing or technology, and operationalized alliance type using a dummy variable coded as one if the alliance contains marketing-related activities and coded as zero if it contains technology-related activities. While prior studies classified alliances into production, marketing, and technology (Chan et al., 1997; Das et al., 1998; Hergert & Morris, 1988; Kogut, 1989; Mowery, 1989), very few e-commerce firms have production alliances due to their business nature.

Although our alliance type classifications were based on previous literature (Hergert & Morris, 1988; Kogut, 1989; Plant, 2000), we employed additional procedures to ensure their validity and reliability. First, following previous strategic management studies (e.g., Chen, Smith & Grimm, 1992), we consulted and validated the alliance classifications with e-commerce experts, including three senior executives, two e-commerce sector analysts, and a few academic experts. Then we trained multiple coders with e-commerce experience and asked them to classify alliance types. These multiple coders coded 96% of alliance announcements without any discrepancies. We checked the inter-rater reliability using the Perreault and Leigh index (1989), and found consistency among coders was significant at the .05 level. Subsequent discussion resolved the few discrepancies.

Online–online versus online–offline alliances. Alliance partners were classified as either online or offline firms with information from several sources including stock analysis sites (e.g., www.marketwatch.com), annual reports, and SEC filings. We operationalized alliance partners using a dummy variable: online partners were coded as one and offline partners were coded as zero. We used our definition of e-commerce firms, firms selling products or services exclusively through websites, to classify firms as either online or offline partners. 31 partners possessed both online and offline operations. To check the sensitivity of our partner classification scheme, we used a criterion of 90% online sales to total revenue ratio (e.g., Nayyar, 1993). If online sales were greater than or equal to 90%, the firms were coded as online partners. 22 of the 31 partners had greater than 90% online sales. We conducted analyses assigning these partners as either offline or online or excluding these partners altogether and found that our results reported below were not sensitive to the treatment of these alliance partners.

Control Variables

Several characteristics of focal firms were used as control variables to rule out alternative explanations for changes in firm value surrounding alliance announcements. Relying on findings from previous studies, we included control variables for the focal firm's number of

previous alliances, age, size, and types of e-commerce business models. We collected data on these control variables from annual reports and SEC filings. Previous studies reported that successive alliances affect a focal firm's managerial learning, coordination costs, and strategic flexibility (e.g., Gulati & Singh, 1998; Park & Martin, 2002). To avoid a left censoring problem in computing previous alliances, we summed all alliances involving a focal firm from its founding to the alliance's announcement date. Thus, the previous alliance variable measures the entire history of alliance activities by focal firms.

Prior research showed that age significantly influences a firm's capabilities to cope with alliances, survival, profitability, international expansion, and liabilities of foreignness (e.g., Autio, Sapienza & Almeida, 2000; Mezias, 2002). Following the lead of prior studies in entrepreneurial sectors (e.g., Kotha, Rindova & Rothaermel, 2001), firm age was measured by a logarithm of the number of days from a focal firm's initial public offering to one day prior to alliance announcements. We conducted additional analyses using the number of days from a firm's founding date and found that this did not change our regression results reported below.

Previous event studies found that firm size was associated with a significant change in firm value surrounding alliance announcements (Chan et al., 1997; Das et al., 1998; Koh & Venkatraman, 1991). Following these prior studies, we measured firm size using a logarithm of quarterly market capitalization value. To control for potential effects stemming from the various e-commerce business models, we used a dummy variable coded as one for business-to-customer models and coded as zero for both Internet portals and business-to-business models. We conducted additional analyses using multiple dummy variables for business models and alternative coding procedures. This treatment did not change our regression results.

Results

Table 1 presents average ARs from 272 alliance announcements for individual trading days surrounding the announcement date. The average AR on event day 0 (AR_0) is +1.49%

Table 1
Abnormal returns on individual event days and cumulative abnormal returns over different event windows[a]

Event day	Mean abnormal return (AR)	Positive AR (%)	Z_p[b]	Event windows	Cumulative abnormal return (CAR)	Positive CAR (%)	Z_p[b]
−1	−.2196 (−.54)	46.7	−1.09	Days −1, 0, +1	1.4184 (2.28)*	57.7	2.55*
0	1.4914 (2.63)***	59.9	3.27***	Days −1, 0	1.2718 (2.13)*	58.3	2.06*
1	.1465 (.66)	51.8	.60	Days 0, +1	1.6380 (2.58)**	58.5	2.79**

[a] $N = 272$ alliances announcements. Numbers in parentheses in column cells represent associated z-statistics for a test of the null hypothesis that the cross-sectional mean is zero.

[b] Z_p: binomial z-statistic for testing the significance of the proportion of positive abnormal returns and cumulative abnormal returns.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

and significantly different from zero ($p < .001$). Among 272 alliances, 163 alliances generate positive changes in firm value. The binomial *z*-test shows that alliance announcements create positive ARs significantly more than negative ARs ($Z = 3.27$, $p < .001$). The AR_0 is greater in magnitude than that observed by some previous alliance studies in bricks-and-mortar industries, such as .74% by McConnell and Nantell (1985) and .64% by Chan et al. (1997). While ARs on event days −1 and +1 are not significantly different from zero, there is evidence of information leakages and delayed responses to specific alliance announcements. For instance, the alliance announcement of Homestore.com increased its stock price 9.2% on day −1 while only 3.9% on day 0. Likewise, the announcement that Mothernature.com allied with three nationwide healthcare firms increased its stock price 11.5% on day 0 and 8.9% on day +1.

The average CAR over the event window of day −1 to +1 ($CAR_{-1,+1}$) is 1.42%, which is significant ($p < .05$). This magnitude is similar with that observed in studies of other industries: such as +1.2% by Das et al. (1998), +.87% by Koh and Venkatraman (1991), +.85% by Chan et al. (1997), and +.8% by Woolridge and Snow (1990). The binomial *z*-test results also show that the proportion of positive CARs is significantly greater than that of negative CARs. We confirmed that these findings remained robust for various stock return estimation models, such as controlling for NASDAQ movement only, e-commerce sector index only, and using different e-commerce sector indexes. Thus, these results provide strong support for Hypothesis 1: Alliances of e-commerce firms positively affect their firm value.

Table 2 reports CARs for different alliance types and partners. $CAR_{-1,+1}$ for marketing alliances is 1.68% and significant at .05 level. Yet, $CAR_{-1,+1}$ for technology alliances is negative and not significant. The binomial *z*-test results also show that the proportion of positive CARs is larger for marketing than for technology alliances. The mean-difference tests indicate that marketing alliances create significantly greater increase in firm value at the .01 level than technology alliances. We obtained similar findings over different event windows using various stock return estimation methods. Overall, these results provide strong support for Hypothesis 2: Marketing alliances of e-commerce firms will increase firm value more than technology alliances.

Table 2 shows that $CAR_{-1,+1}$ for online–offline alliances is greater than $CAR_{-1,+1}$ for online–online alliances. The binomial *z*-test results show that the proportion of positive CARs for online–offline alliances was significantly greater than that of negative CARs. Yet, the mean-differences between the two groups are not significant. Overall, these results do not support Hypothesis 3. Thus, there is no evidence that alliances between online firms increase firm value more than alliances between online and offline firms.

Since our data include multiple alliances for individual firms and alliances within a relatively short time period, focal firm characteristics and/or unobservable firm characteristics may affect regression results. Thus, we conducted regression analyses to investigate effects of alliance type (H2) and partner selection (H3) when controlling for several focal firm characteristics and unobservable firm capabilities. Table 3 reports descriptive statistics and correlations. While correlations among explanatory variables are not particularly high, correlations among previous alliances, firm age, and firm size are positive and significant. For the sake of completeness, we checked the multi-collinearity issue by entering or dropping explanatory and control variables sequentially, and confirmed that it did not threaten our coefficient estimates.

Table 2
Cumulative abnormal returns of marketing, technology, online–online and online–offline alliances[a]

Event windows	Marketing alliances (n = 212)	Positive CAR (%)	Z_p[b]	Technology alliances (n = 60)	Positive CAR (%)	Z_p[b]	Mean-difference t-test[c]
Days −1, 0 +1	1.6786 (2.05)*	59.3	2.73***	−1.1514 (−.77)	37.3	−1.82	2.63**
Days −1, 0	1.3751 (1.98)*	57.5	2.19*	−.9499 (−.65)	45.1	−.70	2.17*
Days 0, +1	1.8873 (2.85)**	61.2	3.26***	−.9790 (−.69)	41.2	−1.26	2.65**
	Online–online alliances (n = 134)	Positive CAR (%)	Z_p[b]	Online–offline alliances (n = 138)	Positive CAR (%)	Z_p[b]	Mean-difference t-test[c]
Days −1, 0, +1	.3953 (.92)	51.9	.43	1.7482* (2.42)	62.7	2.85**	−1.95
Days −1, 0	.7769 (1.37)	54.1	.95	1.1845* (2.01)	61.1	2.49*	−.81
Days 0, +1	.7532 (1.58)	52.6	.62	1.9512* (2.49)	64.3	3.21***	−1.66

[a] Numbers in parentheses in column cells represent associated z-statistics for a test of the null hypothesis that the cross-sectional mean is zero.
[b] Z_p: binomial z-statistic for testing the significance of the proportion of positive abnormal returns and cumulative abnormal returns.
[c] The reported statistics is the value of t for a difference-of-means test.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 3
Descriptive statistics and Pearson correlations[a]

Variable	Mean	S.D.	1	2	3	4	5	6
1. Change in firm value	1.42	9.61						
2. Marketing alliances	.78	.41	.15**					
3. Online–online alliances	.49	.50	−.02	.11				
4. Previous alliances	7.39	10.25	−.01	−.03	.04			
5. Firm age	6.06	.74	.09*	−.11	.11	.53***		
6. Firm size	14.28	1.86	−.07	−.12	.04	.55***	.47***	
7. E-commerce business model	.31	.46	.05	−.10	−.13	−.09	.09	−.12

[a] $N = 272$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 4 presents results of multiple regressions with random effects for the dependent variable measured by CARs over four different event windows. For each of these different windows, the first model reports a base set of control variables. There are no significant effects of a focal firm's prior alliance experience, size, and types of e-commerce business models. Only firm age is significantly associated with change in firm value. We checked whether this positive effect of firm age is influenced by high correlations among firm age, firm size, and previous alliance, and found that firm age has its own individual impact on change in firm value.

For each of these different windows, the second model includes our two main explanatory variables. While the choice between online and offline partners does not create a significant difference, the distinction between marketing and technology alliances significantly favors marketing alliances ($p < .05$). Interestingly, this finding contradicts many previous event studies' results that technology rather than marketing alliances increased firm value more (e.g., Das et al., 1998; Koh & Venkatraman, 1991). All of these findings are very similar with the regression outcomes of subsequent models. While low in absolute terms, the final *R*-square of 4.94% is adequate and quite typical for event study results without firm-fixed effects. Overall, these results provide additional support for H2, but not H3.

Discussion

This study fits into a burgeoning empirical research stream assessing relationships between strategic actions and value creation of entrepreneurial firms (Hitt, Ireland, Camp & Sexton, 2001). We found that alliance announcements in general increase firm value. Compared to previous studies that examined alliance impact on firm value in various bricks-and-mortar industries (Chan et al., 1997; Das et al., 1998; Koh & Venkatraman, 1991; Woolridge & Snow, 1990, Park, 2003), the magnitude of change in firm value in the electronic marketplace is larger. Subramani and Walden (2000) also found large magnitude of firm value changes in response to announcements of launching e-commerce businesses. These findings may indicate that e-commerce value creation potential is greater than

Table 4
Results of multiple regression analyses with random effects on strategic alliances and firm value[a]

Independent variable	Dependent variable	CAR −1 to +1		CAR −1 to 0		CAR 0 to +1		AR_0	
		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant		.3615 (.6892)	.6861 (.9687)	.2792 (.4017)	.5032 (.6325)	.4909 (.6653)	1.0737* (.6108)	.3731 (.4212)	.9805 (.7141)
Marketing alliances	Hypothesis 2 (+)		3.2943** (1.5683)		2.7028** (1.2716)			3.5376*** (1.2935)	3.3696** (1.3119)
Online–online alliances	Hypothesis 3 (+)		−1.0329 (1.2604)		−.8469 (.9751)		−.9091 (1.0234)		−.9734 (1.0447)
Previous alliances		−.0299 (.0756)	−.0469 (.1102)	−.0639 (.1008)	−.0306 (.1019)	−.0437 (.0756)	−.0590 (.0638)	−.0865 (.0462)	−.0527 (.0786)
Firm age		2.1996** (.9897)	2.7263** (1.3412)	1.9626* (1.1112)	2.1515* (1.2277)	1.9904** (.9596)	2.2321*** (.8411)	1.0166* (.6048)	2.2747*** (.9941)
Firm size		−.6675 (.4002)	−.8114 (.5119)	−.6129 (.4617)	−.5532 (.4670)	−.4544 (.3734)	−.3139 (.3388)	−.1593 (.2446)	−.3807 (.3638)
E-commerce business model		1.0175 (1.3355)	1.2210 (1.6576)	1.3535 (1.7149)	.9651 (1.3011)	1.1943 (1.6973)	1.2671 (1.5943)	.9115 (1.7448)	1.3442 (1.9002)
R-square		.0247	.0494	.0215	.0441	.0232	.0529	.0197	.0416
F-value		2.11*	2.58**	2.07*	2.34*	2.23*	2.77**	1.98*	2.19**
Degrees of freedom		4, 267	6, 265	4, 267	6, 265	4, 267	6, 265	4, 267	6, 265

$N = 272$.

[a] $N = 272$ alliances announcements. Numbers in parentheses in column cells represent associated *z*-statistics for a test of the null hypothesis that the cross-sectional mean is zero.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

traditional industries due to information exchange benefits, high reach and richness of information, and network effects. Alternatively, it could indicate that investors' speculation may be greater in this new and fast growing sector.

While prior research reported greater firm value increase from technology alliances in many bricks-and-mortar industries (e.g., Chan et al., 1997; Das et al., 1998), we found that marketing alliances generated significantly larger firm value than technology alliances did. As mentioned, marketing alliances may be more effective in exploiting potential benefits from high reach, high richness, network effects, and larger installed customer base, which are all effective selling points to various stakeholders, such as potential investors, advertisers, suppliers, buyers, and employees. Additionally, marketing alliances allow e-commerce firms to improve customization and personalization more easily, both of which lead to greater switching costs. We attributed the weaker impact of technology alliances to the less significant roles of R&D as well as widely available hardware and software packages for e-commerce.

We also investigated the impact of alliance partner selection. While we predicted that alliances between online partners would increase firm value more than those with offline partners, but our findings did not support this prediction. In fact, some of our findings may suggest that alliance announcements with offline partners might increase firm value more than those with online partners. While e-commerce partners may provide various information benefits, investors also recognize the value of resources from bricks-and-mortar partners. Due to high uncertainty and relative inexperience in e-commerce, investors may appreciate e-commerce firms partnering with offline firms that supply more stable resources, such as management capability, offline distribution channels, more business experience, and greater creditability. Age may reflect business experience. We found that firm age has a significant and positive impact on firm value. This indicates that investors favor alliances of more experienced rather than younger e-commerce firms.

This study makes a meaningful contribution to the existing alliance literature. While alliance studies have been one of the main research streams in the field of corporate strategy, a principle theoretical approach for understanding alliance formation and its performance implication is transaction cost economics (e.g., Hennart, 1988; Williamson, 1991). This study provides a RBV perspective to understand the performance implications of alliances by identifying unique characteristics and critical resources of e-commerce. In particular, in terms of alliance types, this study suggests that marketing alliances create great potential to leverage information processing capability, information reach and richness, network effects, and customer lock-in effects in the electronic marketplace. This study also advances current alliance research by empirically investigating alliances outside traditional bricks-and-mortar sectors. This extension helps assess generalizability and contingencies of existing alliance theories.

This study has some meaningful implications for e-commerce managers. While e-commerce firms can increase firm value through alliances, not all alliances are beneficial. Indeed, we find that about 40% of alliances in our study decreased firm value. We show that some types of alliances are more likely to generate greater positive abnormal returns. Specifically, marketing alliances increased firm value more than technology alliances. Since attracting new customers is expensive and the value derived from some new customers is often uncertain, managers should recognize that alliances for cross-selling

products, sharing loyalty programs and brand names, providing joint advertisements, developing co-promotion programs, sharing distribution channels, and exchanging sales forces may yield numerous benefits (Evans & Wurster, 1999). Given that we did not find a significant difference between online and offline partners, this distinction of alliance types becomes more meaningful. We also find that older e-commerce firms are more likely to increase firm value through alliance formations than ones with less business experience. This implies that e-commerce managers may first need to prove both the reliability and stability of their business models to derive more benefits from alliances.

Limitations and Future Research

This study contains a number of limitations that suggest meaningful directions for future research. We investigated change in stock price surrounding alliance announcements, which inherently limits our analyses to publicly held firms during their post initial public offering (IPO) periods. In particular, the short history of e-commerce sector indexes, most available from 1999, significantly reduced our observation period. While these limitations apply to all event studies, future studies may improve our understanding of this new sector by examining other dimensions of corporate performance in the entrepreneurial sectors, such as growth, profitability, IPO performance, business survival, and wealth creation. Researchers may overcome these limitations by applying qualitative analysis methods. For example, in-depth case studies, intensive field studies, or survey methods may uncover sources and mechanisms of value creation in the e-commerce sector.

Our strict definition of e-commerce firms may reduce generalizability, but it provides a rigorous test of existing alliance literature in a distinctly different setting. While we investigated e-commerce alliances with offline partners, given the null findings about the effects of partner selection, future studies may compare alliance activities between online and offline industries and their performance implications. For instance, future research may examine changes in firm value at the dyad level, especially between online and offline partners. Studies with longer observation periods may help future research investigate how the e-commerce sector's radically changing business environment over the last few years affects outcomes of strategic actions.

Another limitation of our study is the small number of technology alliances. Since most e-commerce firms create their revenue by managing information and not by production activities, the number of e-commerce technology alliances is significantly smaller than in other sectors. The e-commerce sector is still developing and future studies with larger samples and longer observation periods could investigate the impact of technology alliances over time. These additional studies will provide opportunities to further investigate whether technology alliances will significantly influence firm value in the electronic marketplace.

In summary, identifying unique characteristics of e-commerce using the RBV, we hypothesized and confirmed that alliance strategies significantly affect firm value of e-commerce firms. We hope our study encourages future research about this new entrepreneurial sector. We believe that further theoretical and empirical efforts in this area have great potential to make meaningful contributions to the field of strategic management.

References

Afuah, A., & Tucci, C. L. 2001. *Internet business models and strategies*. New York, NY: McGraw-Hill.

Amit, R., & Schoemaker, P. 1993. Strategic assets and organizational rent. *Strategic Management Journal*, 14: 33–46.

Amit, R., & Zott, C. 2001. Value creation in e-business. *Strategic Management Journal*, 22: 493–520.

Arora, A., & Gambardella, A. 1990. Complementarity and external linkage: The strategies of the large firms in biotechnology. *The Journal of Industrial Economics*, 38: 361–379.

Arthur, W. B. 1989. Competing technologies, increasing returns, and lock-in by historical events. *Economic Journal*, 99: 116–131.

Arthur, W. B. 1994. *Increasing returns and path dependence in the economy*. Ann Arbor, MI: University of Michigan Press.

Autio, E., Sapienza, H. J., & Almeida, J. G. 2000. Effects of age at entry, knowledge intensity, and imitability on international growth. *Academy of Management Journal*, 43: 909–924.

Bakos, J. Y. 1997. Reducing buyer search costs: Implications for electronic marketplaces. *Management Science*, 43: 1676–1692.

Barney, J. B. 1986. Types of competition and the theory of strategy: Toward an integrative framework. *Academy of Management Review*, 11: 791–800.

Barney, J. B. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17: 99–120.

Barney, J. B., & Zajac, E. J. 1994. Competitive organizational behavior: Toward an organizationally-based theory of competitive advantage. *Strategic Management Journal*, 15: 5–9.

Baum, J. A. C., & Oliver, C. 1992. Institutional embeddedness and the dynamics of organizational populations. *American Sociological Review*, 57: 540–559.

Brown, S. J., & Warner, J. B. 1985. Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14: 3–31.

Brynjolfsson, E., & Smith, M. D. 2000. Frictionless commerce? A comparison of Internet and conventional retailers. *Management Science*, 46: 563–585.

Calkins, J. D., Farello, M. J., & Shi, C. S. 2000. From retailing to e-tailing. *The McKinsey Quarterly*, 9(1): 140–147.

Campbell, D., & Hulme, R. 2001. The winner-takes-all economy. *The McKinsey Quarterly*, 10(1): 82–93.

Chan, S. H., Kensinger, J. W., Keown, A. J., & Martin, J. D. 1997. Do strategic alliances create value? *Journal of Financial Economics*, 46: 199–221.

Chen, M. J., Smith, K. G., & Grimm, C. M. 1992. Action characteristics as predictors of competitive responses. *Management Science*, 38: 439–455.

Chi, T. 1994. Trading in strategic resources: Necessary conditions, transaction cost problems, and choice of exchange structure. *Strategic Management Journal*, 15: 271–290.

Cinebell, S. K., & Cinebell, J. M. 1994. The effect of advanced notice of plant closings on firm value. *Journal of Management*, 20: 553–564.

Cohen, W. D., & Levinthal, D. A. 1990. Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35: 128–152.

Conner, K. R., & Prahalad, C. K. 1996. A resource-based theory of the firm: Knowledge versus opportunism. *Organization Science*, 7: 477–501.

Das, S., Sen, P. K., & Sengupta, S. 1998. Impact of strategic alliances on firm valuation. *Academy of Management Journal*, 41: 27–41.

Dollinger, M. J., Golden, P. A., & Saxton, T. 1997. The effect of reputation on the decision to joint venture. *Strategic Management Journal*, 18: 127–140.

Eisenhardt, K., & Schoonhoven, C. B. 1996. Strategic alliance formation in entrepreneurial firms: Strategic needs and social opportunities for cooperation. *Organization Science*, 7: 136–150.

Evans, P., & Wurster, T. 1999. Getting real about virtual commerce. *Harvard Business Review*, 77(6): 85–94.

Garrette, B., & Dussauge, P. 1995. Determinants of success in international strategic alliances: Evidence from the global aerospace industry. *Journal of International Business Studies*, 26: 505–530.

Garud, R., & Kumaraswamy, A. 1993. Changing competitive dynamics in the network industries: An exploration of Sun Microsystems' open systems strategy. *Strategic Management Journal*, 14: 351–369.

Greene, W. H. 2000. *Econometric analysis*. Upper Saddle River, NJ: Prentice-Hall.

Gulati, R. 1995. Social structure and alliance formation: A longitudinal analysis. *Administrative Science Quarterly*, 40: 619–652.
Gulati, R. 1998. Alliances and networks. *Strategic Management Journal*, 19: 293–317.
Gulati, R., & Garino, J. 2000. Get the right mix of bricks and clicks. *Harvard Business Review*, 78(3): 107–114.
Gulati, R., & Singh, H. 1998. The architecture of cooperation: Managing coordination costs and appropriation concerns in strategic alliances. *Administrative Science Quarterly*, 43: 781–814.
Hagel, J., III, & Armstrong, A. G. 1997. *Net gain: Expanding markets through virtual communities*. Boston, MA: Harvard Business School Press.
Harrigan, K. R. 1988. Joint venture and competitive strategy. *Strategic Management Journal*, 9: 141–158.
Henderson, R., & Cockburn, I. 1994. Measuring competence? Exploring firm effects in pharmaceutical research. *Strategic Management Journal*, 15: 63–84.
Hennart, J. F. 1988. A transaction costs theory of equity joint ventures. *Strategic Management Journal*, 9: 361–374.
Hergert, M. E., & Morris, D. 1988. Trends in international cooperative agreements. In F. J. Contractor & P. Lorange (Eds.), *Cooperative strategies in international business: Joint ventures and technology partnerships between firms*: 99–109.
Hitt, M. A., Ireland, R. D., Camp, S. M., & Sexton, D. L. 2001. Guest editors' introduction to the special issue: Strategic entrepreneurship: Entrepreneurial strategies for wealth creation. *Strategic Management Journal*, 22: 479–492.
Hoffman, D. L., & Novak, T. P. 2000. How to acquire customers on the web? *Harvard Business Review*, 78(3): 179–188.
Holloway, S. 1997. *Straight and level: Practical airline economics*. Sydney, Australia: Ashgate.
Kaldor, N. 1994. The irrelevance of equilibrium economics. In J. Buchanan & Y. Yoon (Eds.), *The return to increasing returns*: 85–196. Ann Arbor, MI: University of Michigan Press.
Kale, P., Dyer, J. H., & Singh, H. 2002. Alliance capability, stock market response, and long-term alliance success: The role of alliance function. *Strategic Management Journal*, 23: 747–767.
Katz, M. L., & Shapiro, C. 1985. Network externalities, competition, and compatibility. *American Economic Review*, 75: 424–440.
Kennedy, P. 1998. *A guide to econometrics*. Cambridge, MA: MIT Press.
Kogut, B. 1988. Joint ventures: Theoretical and empirical perspectives. *Strategic Management Journal*, 9: 319–332.
Kogut, B. 1989. The stability of joint ventures: Reciprocity and competitive rivalry. *The Journal of Industrial Economics*, 38: 183–198.
Koh, J., & Venkatraman, N. 1991. Joint venture formations and stock market reactions: An assessment in the information technology sector. *Academy of Management Journal*, 34: 869–892.
Koka, B. R., & Prescott, J. E. 2002. Strategic alliances as social capital: A multidimensional view. *Strategic Management Journal*, 23: 795–816.
Kotha, S., Rindova, V. P., & Rothaermel, F. T. 2001. Assets and actions: Firm-specific factors in the internationalization of U.S. Internet firms. *Journal of International Business Studies*, 32: 769–791.
Lee, I., & Wyatt, S. B. 1990. The effects of international joint ventures on shareholder wealth. *Financial Review*, 25: 641–649.
MacKinlay, C. A. 1997. Event studies in economics and finance. *Journal of Economic Literature*, 35: 13–39.
McConnell, J. J., & Nantell, T. J. 1985. Corporate combinations and common stock returns: The case of joint ventures. *The Journal of Finance*, 40: 519–536.
McWilliams, A., & Siegel, D. 1997. Event studies in management research: Theoretical and empirical issues. *Academy of Management Journal*, 40: 626–657.
Mezias, J. M. 2002. Identifying liabilities of foreignness and strategies to minimize their effects: The case of labor lawsuit judgments in the United States. *Strategic Management Journal*, 23: 229–244.
Montgomery, C. A., & Wernerfelt, B. 1988. Diversification, Ricardian rents, and Tobin's *q*. *RAND Journal of Economics*, 19(4): 623–632.
Mowery, D. C. 1983. The relationship between intrafirm and contractual forms of industrial research in American manufacturing, 1900–1940. *Explorations in Economic History*, 20: 351–374.
Mowery, D. C. 1989. Collaborative ventures between U.S. and foreign manufacturing firms. *Research Policy*, 18: 19–32.
Nayyar, P. 1993. Stock market reactions to related diversification moves by service firms seeking benefits from information asymmetry and economies of scope. *Strategic Management Journal*, 14: 569–591.

Nelson, R. 1996. *The sources of economic growth*. Cambridge, MA: Harvard University Press.

Nohria, N., & Garcia-Pont, C. 1991. Global strategic linkages and industry structure. *Strategic Management Journal*, 12: 105–124.

Oum, T. H., & Yu, C. 1998. *Winning airlines: Productivity and cost competitiveness of the world's major airlines*. Boston, MA: Kluwer Academic Publishers.

Park, N. K. 2003. A guide to using event study methods in multi-country settings. *Strategic Management Journal*, forthcoming.

Park, N. K., & Cho, D. S. 1997. The effect of strategic alliance on performance: A study of international airline industry. *Journal of Air Transport Management*, 3: 155–164.

Park, N. K., & Martin, X. 2002. *When do resources enhance firm value? Testing alliance and resource effects on firm value*. Working Paper, School of Business Administration, University of Miami, Coral Gables, FL.

Parkhe, A. 1993. Strategic alliance structuring: A game theoretic and transaction cost examination of interfirm cooperation. *Academy of Management Journal*, 36: 794–829.

Penrose, E. T. 1959. *The theory of the growth of the firm*. Oxford: Oxford University Press.

Peppers, D., & Rogers, M. 1997. *Enterprise one-to-one: Tools for building unbreakable customer relationships in the interactive age*. New York: Doubleday & Co.

Perreault, W. D., Jr., & Leigh, L. E. 1989. Reliability of nominal data based on qualitative judgments. *Journal of Marketing Research*, 26: 135–148.

Pisano, G. P. 1990. The R&D boundaries of the firm: An empirical analysis. *Administrative Science Quarterly*, 21: 398–418.

Plant, R. 2000. *E-commerce: Formation of strategy*. Upper Saddle River, NJ: Prentice Hall.

Porter, M. E. 2001. Strategy and the Internet. *Harvard Business Review*, 79(3): 62–78.

Powell, W. W., Koput, K. W., & Smith-Doerr, L. 1996. Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly*, 41: 116–145.

Prahalad, C. K., & Hamel, G. 1990. The core competence of the corporation. *Harvard Business Review*, 68(3): 79–91.

Raik-Allen, G. 1999, March 23. *No crime to buy wine online*. Red Herring Online.

Rayport, J. F. 1999. The truth about Internet business models. *Strategy and Business*, 16(3): 5–7.

Reichheld, F. 1996. *The loyalty effect: The hidden force behind growth, profits and lasting value*. Boston, MA: Harvard Business School Press.

Reichheld, F., & Schefter, P. 2000. E-loyalty: Your secret weapon on the web. *Harvard Business Review*, 78(4): 105–113.

Reuer, J. J. 2001. From hybrids to hierarchies: Shareholder wealth effects of joint venture partner buyouts. *Strategic Management Journal*, 22: 27–44.

Rust, R., Zahorik, A., & Keiningham, T. 1995. Return on quality (ROQ): Making service quality financially accountable. *Journal of Marketing*, 59: 58–70.

Saxton, T. 1997. The effects of partner and relationship characteristics on alliance outcomes. *Academy of Management Journal*, 40: 443–461.

Shapiro, C., & Varian, H. 1999. *Information rules: A strategic guide to the network economy*. Boston, MA: Harvard Business School Press.

Shelton, L. 1988. Strategic business fits and corporate acquisition: Empirical evidence. *Strategic Management Journal*, 9: 278–288.

Singh, K., & Mitchell, W. 1996. Precarious collaboration: Business survival after partners shut down or form new partnerships. *Strategic Management Journal*, 17: 99–115.

Subramani, M., & Walden, E. 2000. *The Dot Com effect: The impact of e-commerce announcements on the market value of firms*. Working Paper, Carlson School of Management, University of Minnesota, Minneapolis, MN.

Teece, D. J., Pisano, P. G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18: 509–533.

Vandermerwe, S. 1997. Increasing returns: Competing for customers in the global market. *Journal of World Business*, 32(4): 333–350.

Varianini, V., & Vaturi, D. 2000. Marketing lessons from e-failures. *The McKinsey Quarterly*, 9: 86–97.

Wernerfelt, B. 1984. A resource-based view of the firm. *Strategic Management Journal*, 3: 147–158.

Williamson, O. E. 1975. *Markets and hierarchies: Analysis and antitrust implications*. New York: Free Press.

Williamson, O. E. 1991. Comparative economic organization: The analysis of discrete structural alternatives. *Administrative Science Quarterly*, 36: 269–296.

Woolridge, J. R., & Snow, C. C. 1990. Stock market reaction to strategic investment decisions. *Strategic Management Journal*, 11: 353–363.

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