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# Interfirm alliances in online retailing

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**Abstract**

Reports in the popular media attest to the fact that the commercial development of the Web has sparked greater interconnectedness and competition between firms. Under rapid technological and market change and opportunity, firms who have innovative ideas, technologies, and products form alliances to coordinate their resources and fully capitalize on them in a timely fashion. Drawing on interorganizational exchange behavior, we examine factors that contribute to the successful continuation of an alliance relationship. Specifically, we investigate how satisfaction with performance and resource dependency in the presence of market and technological turbulence affects alliance outcomes. We use data collected from alliance partners in the online retailing industry to test our propositions. Implications of the findings are discussed for both research and practice.


*Keywords:* Alliances; E-commerce; E-retailing; Internet commerce; Market turbulence; Technological turbulence; Resource dependency

## 1. Introduction

The steady stream of announced deals in the daily media attests to the fact that alliances among Internet companies and with bricks-and-mortar companies in the retail industry are being formed at a very rapid rate and for a number of different reasons. Baker (2000) notes that 155 retail-related strategic alliances were widely reported by prominent news media between July 1, 1999 and March 31, 2000. This list of alliances between U.S. based firms does not include the innumerable alliances formed between obscure companies which did not make the newswires. Deciding where and how to engage and align internal business processes with external firms and "hubs" of electronic market activity is an important planning task. Most partnerships are announced with great fanfare extolling the deal's benefits, however, little is known about the success of these alliances after the initial optimism and accompanying surges in stock price die out. Given the rapid pace of technology obsolescence, lack of dominant standards, global price transparency and competition, and high burnout rate of firms, alliances are critical to making value chains efficient and necessary for survival in the online retail marketspace.

The online retail industry is expected to grow from US$20 billion in 2000 to US$144 billion, thus accounting for 6% of all retail purchasing in 2003 (Forrester Research, 2001). Online retailers, as cybermediaries, operate to facilitate exchanges between producers and consumers by aggregating transactions to create economies of scale and scope. Internet retail operations require seamless integration of customer-oriented demand chain applications through website interfaces with enterprise operations applications and back-end supply chain activities. The uncertainties in consumer demand, unproven business models, high costs of staying abreast with technology, fragmented online marketspace, and fierce competition for consumer traffic and shopping dollars has lead to the closure or restructuring of many prominent online retailers (e.g., Petsmart.com, Boo.com). Even established retailers are recognizing that it is impossible for most individual firms (Gulati and Garino, 2000) to "go it alone." The network nature of the electronic medium makes it easier for online retailers to develop their unique competencies and bring together or borrow resources and expertise from a wide range of alliance partners. Hence, multifirm structures play an important role, as more of the firm's supply chain lie outside the company's boundaries.

Establishing business partnerships is a strategic means for retailing firms to gain access to new markets, new channels to serve customers and enhance the value of their offering through an infinite array of complementary prod-

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ucts and sophisticated value-added services without losing autonomy and at lower levels of investment and risk. Internet-related alliances in the retailing sector can be categorized in terms of:

(i) alliances that deepen product, service, content, and community offerings (Home and Garden TV–Homeportfolio.com, Amazon.com–Drugstore.com and Living.com),
(ii) give channel access to fulfillment capabilities (store-based Petco–Petopia.com),
(iii) give market access to partner's customer bases (Yahoo!–Kmart, AOL–Sears),
(iv) diversify revenue sources (Amazon and Greenlight.com, Imall–Nordstorm, Target), and
(v) give access to technology and marketing services (couponing etc.) to improve functionality of retailer website (Home Depot uses Lifeminders.com to send "how to" e-mail and Shaw's supermarkets uses Planetu.com to provide customized coupons).

These alliances represent a diverse array of transaction types, levels of commitment, objectives, performance criteria, creation of specific assets, and integration of operations.

Online-only firms have a number of advantages over bricks-and-mortar businesses including established online brand names and a mastering of technology needed to contact customers at low cost. They may also have weaknesses in their ability to provide service and logistical delivery components of the value chain. Without a physical location for customers to touch, feel, and return products, sales of some product categories may be limited. Similarly, bricks-and-mortar stores that are able to leverage the Internet as an alternative selling channel can obtain advantages over online-only sellers. For example, the Amazon.com–Toys 'R' Us alliance allows Toys 'R' Us leverage the logistical, customer fulfillment expertise, and online market access of Amazon.com while Amazon.com gains ToysRUs.com buying experience, product assortment, physical stores to handle returns, and bolster its weak toy product line.

Unlike vertically integrated mega-corporations and alliances studied in the literature, alliances in the e-commerce sector are lateral relationships. They consist of corporate allies who may be in entirely different industrial sectors but whose products, services, and processes are *virtually* and seamlessly integrated across organizational boundaries. Most alliances in the e-commerce sector have emerged out of a need to achieve critical mass to explore, the need to be compatible with multiple standards in the short run, and acquiring experience with the standard that becomes dominant in the long run. This organizational form pools a firm's unique skills with the specialized resources of its partners to create a more potent force with sufficient breadth and sophistication to compete in the rapidly changing market environment. Intellectual property and customer intelligence assets rather than physical assets are primary currency in online alliance relationships. *Co-opetition* is developing as a new competitive model in which businesses that are competitors in some areas cooperate with each other in noncompetitive areas. Further alliances take the form of constellations between multiple firms (e.g., alliance of 108 firms in developing Bluetooth technology) raising process management demands to a very high level, leading to high incidence of failures.

Marketing alliances in online retailing are a form of working partnership defined by Anderson and Narus (1990) as the "... mutual recognition and understanding that the success of each firm depends in part on the other firm ...." They are contractual relationships undertaken by firms who perform complementary activities in facilitating marketing exchanges. Unlike manufacturer–distributor partnerships, marketing alliances are horizontal relationships between firms at the same level of the value-added chain and represent a form of "symbiotic marketing" (Adler, 1966; Vardarajan and Rajaratnam, 1986). For example, consider the alliance between DealTime.com, an independent online comparison shopping service, and USAToday.com, a general interest news site on the Web (*WSJ*, 1999). It will expose 14 million unique monthly subscribers to the cobranded version of DealTime.com service in the USAToday.com's Marketplace section. USAToday.com will in turn, be able to enhance its service by offering DealTime.com's patent-pending Desktop Notifier to provide readers with time-sensitive notification of breaking news headlines and hot deals.

We distinguish alliance relationships from retail affiliates that are more visible on the Web. An affiliate or associate program is an arrangement between a company and many affiliate firms is characterized by unidirectional linking with the purpose of generating traffic and transactions similar to "instant access to salesforce of thousands." The most popular examples are Amazon.com's 260,000 associates and CDNow's 145,000 affiliates. An affiliate agrees to place information (usually a hyperlinked logo) about its partner on its (i.e., affiliate) website; however, there is no explicit reciprocal linking from the partner site to the affiliate site. The affiliate gets a commission when a visitor at its website uses a link to go to the partner site or when the link results in a sale at the partner website. In comparison to alliances that are collaborative relationships (Day, 2000), affiliate relationships are short-lived and transaction orientated with no commitment of joint success, typically established or terminated with minimal effort and investment. Typically, there are no exclusivity restrictions, so an affiliate firm can offer links to several competing firms. Partner firms offering affiliate programs benefit from increases in sales and from image enhancement due to broader exposure. For the affiliate site, being associated with the partner company may improve consumer's perceptions of the affiliate firm however the main incentive is commission income accrued by delivering traffic or sales referrals.

The focus of investigation in this paper is on marketing alliances in the online retailing industry. Equity-based relationships, mergers, and joint ventures are not under consideration. Strategically, alliances build on core competencies, strengthen research and technological capabilities, accelerate the new product introduction process (Flanagan, 1993), and address asymmetries in the skill endowments of firms (Hamel, 2000). Alliances also lead to a reduction of risk and entry costs into new markets, higher capacity utilization, and economies of scale (Flanagan, 1993). Smaller firms may create alliances to survive and be competitive with big competitors and incumbents.

Despite their potential benefits, marketing alliances pose significant management challenges. While the necessary condition for forming an alliance are predicated on the notion that the alliance will provide a profit boost, a more dynamic perspective is that the benefit/cost balance from an alliance is not based on a one-time transaction, but is better viewed as a continuous, repeated relationship over time till one or both partners decide to leave the alliance. Research indicates that marketing alliances alter investor valuation of the firm (McConnell and Nantell, 1985) and consumer valuation of the firm's products (Mahajan and Venkatesh, 1996). However, increase in valuation due to an alliance may not be equally beneficial to all partners and the dominant role of one branded component can affect the value of the partnering component. The potential for serious conflict is always present as partners may compete with each other in other product lines and, on occasion, in those directly covered by the alliance agreement. The potential for opportunism is high as partners may use the alliance only as a means to gain market position at the expense of a partner or to build technological skills from exposure to the partner's intellectual property unraveling even the most well-crafted alliances. The imbalance in alliance outcomes leads to dependence-balancing behaviors and opportunistic activities that ultimately lead to termination of the relationship (Bucklin and Sengupta, 1993).

In keeping with our aim of studying factors influencing survival of alliance relationships, we draw upon the inter-organizational exchange behavior literature to formulate a conceptual framework of anticipated marketing alliance outcomes in terms of decision to continue in the alliance. We investigate the effect of relative resource dependency, uncertainty in market and technology environment on alliance outcome and define diagnostic measures. We then report initial empirical data collected from key informants within marketing alliances in the online retailing sector and evaluate our results. We conclude with a discussion of managerial implications of our findings.

## 2. Conceptual framework

Theoretical perspectives from transaction cost analysis (Williamson, 1975) and interorganization exchange behavior (Frazier, 1983; Pfeffer and Salancik, 1978) suggest that given functional specialization and a scarcity of resources, organizations seek to reduce uncertainty by exchanging resources in alliances for mutual economic gain. Since firms voluntarily form alliances to get access to resources owned by the partner, the effect of resource dependency on the alliance outcome is the focus of our investigation. The convergence of information technology and telecommunications, increased channel turbulence caused by the Internet, the embodiment of information technology in new products has lead to creation

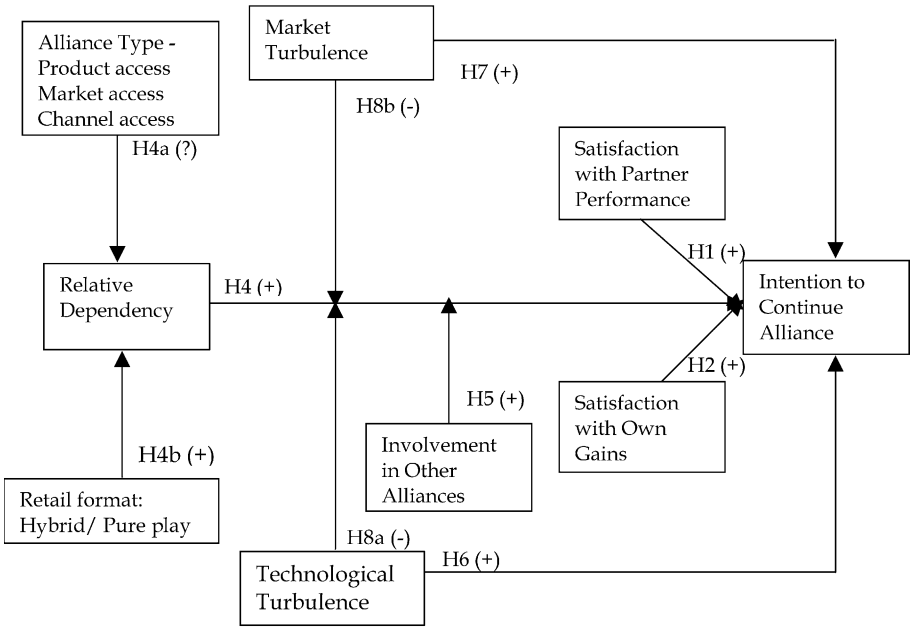


Fig. 1. Conceptual framework of factors affecting alliance outcomes.

of new markets and changes in evaluating returns to investment, hence any research effort must consider the moderating effect of environmental uncertainty (Fig. 1).

### 2.1. Alliance outcomes

Research on alliances suggests that as partners engage in the alliance and work together, each partner also engages in an ongoing assessment on essentially two dimensions: outcome assessment and value appropriation (Hamel, 2000). Each partner assesses the outcomes from the joint activities as signals and clues about potential future value creation. Several performance indicators of alliance success like profitability, market share, investment in alliance, increase in stock price, and consumer valuation of the alliance offerings have been investigated in organization theory (Van de Ven, 1976). However, many of these measures are difficult to track quantitatively or allocate as results of an alliance especially if a firm is involved in more than one alliance typical of players in the online retail industry. Further, typical of alliances in the online retail sector, partner performance in terms of generating exposures to links (e.g., Yahoo!–Kmart), chat activity in online communities around topics of interest to the firm (Healthion/WebMD–Gobel Sports) is of importance rather than generating sales that may be indirectly generated. Because alliance participants perform complementary roles, a firm's success depends on its own performance and the performance of its partners. Satisfaction with partner performance has been widely recognized as an important influence on interfirm relationships (Hunt and Nevin, 1974) and would depend upon the perceived contribution to the member's performance outcomes (Frazier, 1983) and influences the member's decision to continue in the alliance. Hence, we propose:

**Hypothesis 1:** Satisfaction with the partner's performance has a positive effect on intention to continue with the alliance.

Partners also assess how they will equitably share the benefits from the alliance, presumably in proportion to their contributions and efforts. In addition to the visible and mutually expected set of outcomes and distribution of benefits (tangible and intangible) identified in the explicit agreement, there lie a series of other potential outcomes of lesser or greater value to partners. Some of these benefits may be discovered post hoc and may not be equally available to each partner given differences in their capabilities and contributed skills. Furthermore, the partners may not measure contributions and outcomes according to the same yardstick, making mutual understanding difficult. Perception of inequity in distribution of benefits is fraught with suspicions of hidden agendas and leads to dissatisfaction with one's realized or anticipated gains from the alliance, in turn leading to lower commitment to the alliance. Hamel (2000) observed that successful alliances were characterized by expanding ambitions on the part of partners and growing satisfaction with the firm's gains from the alliance. Hence, we propose,

**Hypothesis 2:** Satisfaction with firm's gains from the alliance has a positive effect on intention to continue with the alliance.

The relative strength of satisfaction with partner performance and gains from the alliance on the decision to continue with the alliance deserves close investigation. Since attribution of the causes underlying the asymmetric distribution of benefits are more likely to be perceived as more stable (either as the partner's hidden motives or the firm's inherent characteristics that prevent it from mitigating the inequity) than a partner's dissatisfactory performance. Further, most firms in this industry are under pressure from their investors and market analysts to demonstrate their viability as profitable enterprises, regardless of how their alliance partners perform. Hence, we propose,

**Hypothesis 3:** In the online retailing industry, satisfaction with firm's gains from the alliance will have a stronger effect on intention to continue with the alliance than satisfaction with partner performance.

### 2.2. Resource dependence and impetus for alliance

One of the consequences of exchange among organizations is the emergence of resource dependencies among partners. In the channels literature dependence refers to one firm's need to maintain a relationship with another firm in order to achieve desired goals. The connection between dependency and transaction cost analysis perspectives is observed when the replaceability aspect of the resources and partners is considered. Relative dependence is increased when fewer alternative replacements to the incumbent partner and resource are available (El-Ansary and Stern, 1972). A firm with greater relative dependence has, by definition, relatively greater interest in sustaining the relationship to at least reap its own share of benefits in the short term (Bucklin and Sengupta, 1993). Hence, we propose,

**Hypothesis 4:** Firms in the online retail industry that are relatively more dependent on their partners are more likely to continue with the alliance.

Adopting a resource-based approach, the strategic worth of the resources gained through alliance relationships makes firms more likely to continue in relationships when compatible partners are identified whose complementary resources, when combined with their own resources, provide competitive advantages (Morgan and Hunt, 1999).

Motivation to stay in an alliance is stronger when the resources that produce sustainable advantages cannot be easily replaced through a purchase (e.g., online or offline

fulfillment capabilities of a partner), are imperfectly mobile (e.g., access to a partner's consumer clickstream file may be nondeployable by law for privacy concerns), and imperfectly imitable (e.g., copyrighted community and service offerings of an online partner). Since most alliances apply to more than one category, we empirical test that firms that depend on their partners for product, market, and channel access are more likely to continue with the alliance than those who receive revenue and technological resources. Hence, we propose,

**Hypothesis 4a:** Firms that primarily get market, product, and channel access are more likely to be dependent on their alliance partner than those who get revenue or marketing services.

Firms that own operations in both the online and offline markets typically termed "hybrids" will be less dependent on their alliance partner for access to online and offline consumers than those firms who only have online or offline operations or "pure plays." While hybrid firms do form alliances to enhance their online and offline offerings they are better positioned leverage the advantages offered by both the channels than pure plays. Hence, we propose,

**Hypothesis 4b:** Firms that own both offline and online operations will be relatively less dependent on their alliance partner than pure play firms who own either an offline or online channel.

### *2.3. Alliance involvement*

Research in alliance capability suggests that firms learn to manage interfirm relationships better as experience accumulates. Alliances involve a high degree of contractual ambiguity and firms that enter into more alliances are able to institutionalize alliance knowledge and benefit from learning effects (Nuance, 1994). In an environment where most companies, on average, face high alliance failure an ability to manage alliances more effectively can itself become a source of sustainable competitive advantage. A large firm may have as many as 60 alliances over time, hence skills of alliance partners in managing alliances is an important success factor rather than characteristics of the alliance. Hence, we propose,

**Hypothesis 5:** Firms that are involved in more alliance relationships are more likely to continue in the alliance than those involved in fewer alliances.

### *2.4. Market and technological turbulence*

Market and technological dynamism have been shown to be important in interorganizational relationships (Heide and John, 1988). Technological turbulence refers to the degree to which technology changes over time within the industry and the degree to which such changes affect the industry. Volatility due to the rapid emergence and obsolescence of new technologies and standards for online security and payment systems and watermarking technologies that online retailers have to comply with require huge financial investments making it necessary for players to ally themselves. Researchers have argued that alliances may be a more effective organizational firm under conditions of high technological turbulence by making it possible to accelerate time to market and gain access to complementary products or technolo- gies without all the risks of internal development (Bucklin and Sengupta, 1993; Jaworski and Kohli, 1993). Hence,

**Hypothesis 6:** Firms that perceive greater technological turbulence affecting the online retailing industry are more likely to continue in an alliance.

Market turbulence refers to the degree to which customer preferences change over time resulting in new, previously unknown, target segments emerging with greater impact on the market (Jaworski and Kohli, 1993). Literature is equivocal on whether market turbulence enhances or detracts relationships between firms. In fast-changing Web market environment with unproven potential (typical of the online marketplace), participating firms have a greater incentive to coordinate their efforts to reduce uncertainty affecting their own firm (Achrol et al., 1990) and the market. However, in a contrary view, a firm operating on its own may be able to respond rapidly to changes in consumer preferences with changes in its product offerings, the another firm may be slow to respond and can limit the flexibility. The process of communication and joint-decision-making between alliance partners may introduce delays and limit proactive measures that a firm operating alone can take. Hence, we propose,

**Hypothesis 7:** Firms that perceive greater market turbulence affecting the online retailing industry are less likely to continue in an alliance.

Since alliances in the online retail industry are loose and informal and do not involve exclusivity or proprietary arrangements (e.g., Netscape and its alliance partners providing plug-in technologies), collaborative exchanges featuring very close information, social, and process linkages, and mutual commitments must be made in expectation of long-run benefits (Day, 2000). While both parties can seek partners elsewhere, they may fail to capitalize on a market opportunity in the short window available in Internet time. Hence, the potential of the alliance to leverage opportunities for gains in the future rather than project payoff in the near term may be the deciding factor in continuing the relationship thus moderating the effect of relative resource dependency on alliance success. In an environment rife with rapid changes in technologies and market conditions, a commanding position in an alliance relationship does not guarantee satisfactory returns, making the stronger partner more willing to comprise with its weaker alliance partner. A firm with

higher relative dependence has a higher motivation to stay in the alliance, but is in a better situation to rely on the goodwill of its partner to request response to changes that it believes will either mutually increase the outcomes of both partners or singly increase its own outcomes from the relationship (Anderson and Narus, 1990). Hence,

**Hypotheses 8a and 8b:** The effect of resource dependency on intention to continue in an alliance would be lower for firms that perceive greater (a) market turbulence and (b) technological turbulence.

## 3. Research methodology

### 3.1. Research setting

We selected firms within the online retailing sector as the research setting for our study. Several features of this setting make it appropriate for our investigation. First, strategic alliances between firms in the online retailing sector have been widely reported since 1995 (Internet Retailing Report, 1995). Most of these alliances have now gone beyond the point of mere news value and publicity events to offer credible and operational data for this research. Second, while most e-commerce ventures have not yet demonstrated profits, firms in the retailing sectors have been ramping in revenue and are under more pressure to demonstrate economic viability. Sample was limited to firms in a single industry to maintain homogeneity. Third, we include Internet malls and not just individual retailers in our study in anticipation of the wide range of alliances that can exist. An Internet mall or cybermall is a collection of online retail storefronts assembled in one electronic domain, either physically or through links. The alliance context examined in this study is quite different from those studied in the past because the Internet mall environment reflects a wide variety of dependence levels between partners. For example, online malls or retailers offer certain customer service features (e.g., shopping cart technology or product shipping function) or product lines at their website for which there are multiple vendors and others (e.g., payment and certification technology) for which they are highly dependent on their vendors. Alliance partners differ in size, reputation, financial strength, and may be own suppliers, other retailers (in same or complementary product categories), hardware, site hosting and application software providers, payment processors, advertising, and product delivery (http://www.econgo.com/partners.esl offers one such example). Fourth, contractual agreements are typically short or open-ended, allowing firms more flexibility to terminate their relationship.

The research design was unique in that both partners in an alliance were studied. Because the Internet mall is the unit of analysis, malls were selected from lists dynamically generated or maintained at Cyberatlas, E-marketer, or Yahoo! websites. To reduce the incidence of non-operational sites, we selected only those that were listed in all three lists (589 malls). We made initial contact by e-mail to solicit participation in the study, identify key informant within the organization (either owners or those with significant financial responsibility to reduce informant bias), and obtain information on their alliance partner firms (who met set criteria to avoid joint venture, merger, subsidiary firms from being counted as alliance partners). A total of 47 Internet malls agreed to participate in the study, however 11 firms had to be dropped because they did not have any alliance partners. We identified a total of 3167 alliance partner pairs and contacted each partner separately for participation in the study. Respondents were asked to complete an extensive questionnaire that focused on their relationship and were assured of complete anonymity and confidentiality, however we had to assign codes for each pair to match replies. Due to the length of the questionnaire, we restricted each respondent to answering only one questionnaire for a single designated partner although they could have answered for their other partners. We correlated responses offered by both members of each pair to detect cases where partners may have colluded in answering the questionnaire, but did not find any. After all questionnaires were returned, we had usable data on 446 firms.

### 3.2. Measures

A brief description of measures used in the study follows:

| Construct | Item | Number of items |
|---|---|---|
| Decision to stay in the alliance (STAY) | 1. We intend to continue with the alliance in the next period. | 1 (five-point scale) |
| Relative dependence (DEPEND) (Anderson and Narus, 1990), Cronbach's alpha=.68 | 1. Our alliance partner exerts ___ influence over the way our firm advertises/distributes/markets/promotes our products.<br>2. There are other firms available to our alliance partner who can provide resources comparable to those we provide.<br>3. There are others firms available to us who can provide us resources comparable to those provided by our alliance partner. | 3 (five-point scale) |
| Exclusivity restrictions (EXCLU), Cronbach's alpha=.55 | 1. We require that our alliance partners sign exclusivity agreements with us. | 2 |

| | | |
|---|---|---|
| | 2. Our alliance partner requires us to sign an exclusivity agreement with them. | |
| Satisfaction with partner performance (SATISPARTNER) | 1. We are satisfied with our alliance partner's performance. | 1 (five-point scale) |
| Satisfaction with own gains (SATISOWN) | 1. We are satisfied with our share of financial and nonfinancial gains in relation to our contributions in this alliance. | 1 (five-point scale) |
| Technological turbulence (TTURB) (Jaworski and Kohli, 1993), Cronbach's alpha=.76 | 1. The technology in our industry is changing rapidly.<br>2. Technological changes offer big opportunities in our industry.<br>3. It is very difficult to forecast where the technology in our industry will be in the next 2 to 3 years<br>4. A large number of product ideas and business models have been made possible through technological breakthroughs in our industry.<br>5. Technological developments in our industry are rather minor. | 5 (five-point scale) |
| Market turbulence (MTURB) (Jaworski and Kohli, 1993), Cronbach's alpha=.64 | 1. In the online retail industry, customer preference changes quite a bit over time.<br>2. Our customers tend to look for new products all the time.<br>3. We are witnessing a demand for our products and services from customers who have never bought them before.<br>4. New customers tend to have product-related needs that are different from those of our existing customers.<br>5. We cater to many of the same customers that we used to in the past. | 5 (five-point scale) |
| Impetus for alliance (CBASE, MERGEOFFER, FULFILLMT, REVENUE, TECH) | 1. This alliance gives us (a dot.com/physical) firm access to fulfillment capabilities of our partner (physical/dot.com) firm. | 1 (binary) for each variable |
| Involvement in other alliances (OTHER) | 1. We are involved in ___ number of alliances at this time. | 1 (count) |
| Channels owned (B&M, CL) | 1. We have only bricks-and-mortar channels.<br>2. We have Internet-based channels. | 1 (binary) |

We did not use a binary measure for "decision to stay in the alliance" (*STAY*) because pretest of our questionnaire indicated that most respondents tended to answer in the positive even if they were not certain of it.

### 3.2.1. Relative dependence (DEPEND)

Relative dependence (DEPEND) was measured with a three-item scale based on replaceability. Respondents answered on a five-point scale ranging from prohibitive to negligible. Binary responses were recorded if respondents answered they were subject to an exclusive arrangement with their partner (EXCLUOWN = 1) or if they required their partner to sign an exclusive agreement (EXCLUPARTNER = 1).

### 3.2.2. Satisfaction with own (partner) performance goals (SATISOWN, SATISPARTNER)

For both these measures, respondents were asked to mark a point on a line anchored from by words *poor* (1) and *excellent* (5) that best expressed their level of overall satisaction with their own (SATISOWN) or alliance partner (SATISPARTNER) performance goals. The midpoint on the line corresponds to satisfactory performance. The question was purposefully not anchored to any comparison so that respondents would be free to use whatever standard (for example, profit, growth in revenues or traffic, experience) they felt was appropriate.

### 3.2.3. Perception of technological and market turbulence (TTURB, MTURB)

Items for both these measures were motivated from the literature (Jaworski and Kohli, 1993). For both these measures, respondents were asked to mark a point on a line anchored by words *too many uncertainties* (1) and *no uncertainties* (5) that best expressed their perception of technological turbulence (TTURB) and market turbulence (MTURB).

### 3.2.4. Impetus for alliance (MERGEOFFER, FULFILLMT, CBASE, REVENUE, TECH)

Binary responses were recorded based on the firm's perception of primary reason for forming the alliance. If the alliance give a dot.com firm access to fulfillment capabilities of another dot.com firm or a physical firm or

gave a physical firm access to an Internet outlet FULFILLMT = 1, else FULFILLMT = 0.

### 3.2.5. Involvement in other alliances (OTHER)

Respondents were asked about the total number of alliances their firm was involved in at the present time.

### 3.2.6. Channels owned (B&M, CL)

Binary responses were noted for two variables if respondents had both online and offline operations, B&M = 1, CL = 1; only bricks-and-mortar operation, B&M = 1, CL = 0; or only online operation, B&M = 0, CL = 1.

In addition, experience in the retail industry, retail formats used, information on annual sales revenues, traffic, length of contract, future performance expectations, investment in, and length of their alliance partnership were collected.

## 3.3. Analyses and results

Table 1 presents descriptive statistics about respondents considered in this study. Our data indicate that the propensity to continue the alliance differ across firms in alliance pairs, in 26% of alliances only one of the partners indicated that they are likely to terminate the alliance (STAY: 1 = strongly disagree, 2 = somewhat disagree). Irrespective of performance, both partners in 65% of alliance pairs independently indicated that they wanted to continue with the alliance.

Moderated regression analysis was used to test Hypotheses 1–5. LISREL cannot be used for estimation because it assumes the constructs are measured with reflective scales (Bagozzi and Fornell, 1982). Since some of our constructs are multidimensional and formative made operational as the sum or difference of underlying unidimensional constructs, they cannot be accommodated in a LISREL model. We estimated two separate regressions for decision to continue in an alliance and resource dependency, since the residuals for both the equations were uncorrelated.

Table 1
Description of sample

| Variables | Retailers | Internet malls | Nonmerchant partners | Total |
|---|---|---|---|---|
| Actual responses | 336 | 36 | 74 | 446 |
| STAY = 1 | 282 | 26 | 23 | 331 |
| MTURB/TTURB = 1 | 214 | 28 | 51 | 320 |
| MERGEOFFER = 1 | 76 | 21 | 18 | 115 |
| FULFILLMT = 1 | 134 | 11 | 7 | 152 |
| CBASE = 1 (%) | 42 | 79 | 96 | 46 |
| REVENUE = 1 | 155 | 29 | 24 | 208 |
| TECH = 1 | 122 | 34 | 55 | 211 |
| OTHER (average number of other alliance relations) | 18 | 42 | 37 | 24 |
| Publicly traded (%) | 38 | 21 | 89 | 47 |

Table 2
Regression results: propensity to stay in alliance and resource dependency

| Independent variable | Standard coefficients | *t* values | Mean (S.D.) |
|---|---|---|---|
| *Dependent variable: Intention to stay in the alliance (STAY, $R^2$=.39)* | | | |
| Hypothesis 1: SATISPARTNER | **.49** | 4.72 | 3.01 (1.923) |
| Hypothesis 2: SATISOWN | **.29** | 2.94 | 3.43 (1.024) |
| Hypothesis 4: DEPEND | **.25** | 2.41 | 2.68 (1.34) |
| Hypothesis 5: INVOLV | **.18** | 1.99 | 6.4 (4.9) |
| Hypothesis 6: TTURB | **.26** | 2.87 | 3.52 (1.231) |
| Hypothesis 7: MTURB | .13 | 1.72 | 2.22 (1.46) |
| Hypothesis 8a: TTURB × DEPEND | **−.23** | −2.22 | – |
| Hypothesis 8b: MTURB × DEPEND | **−.21** | −2.11 | – |
| *Dependent variable: Relative resource dependency (DEPEND, $R^2$ = 0.22)* | | | |
| Hypothesis 4a: MERGEOFFER | **.28** | 2.54 | – |
| Hypothesis 4a: FULFILLMT | **.46** | 4.13 | – |
| Hypothesis 4a: CBASE | −.18 | −1.54 | – |
| Hypothesis 4a: REVENUE | **−.21** | 2.24 | – |
| Hypothesis 4a: TECH | .19 | 2.08 | – |
| Hypothesis 4b: B&M | −.11 | −1.12 | |
| Hypothesis 4b: CL | **.31** | 2.87 | |

Coefficients in bold are significant at .01 level or higher.

In the alliance equation, intention to continue in alliance was the dependent variable, while the main effects of satisfaction with own gains and partner performance, involvement in other alliances, relative dependence and impetus for alliance, and the hypothesized moderator effects of technological and market turbulence were the independent variables. Regression results are reported in Table 2. Because all independent variables are standardized, each variable's coefficient provides a measure of its relative importance. Hypothesis 2 predicted a positive relationship between satisfaction with own gains from alliance on intention to continue with the alliance and was supported by data ($\beta$=.28, $P<.05$). Hypothesis 1 predicted a positive relationship between satisfaction with partner's performance goals on intention to continue with the alliance and was supported by data ($\beta$=.49, $P<.01$). These findings support the notion that alliances succeed when firms are satisfied with their own gains and partner firm performance. However, the hypothesized stronger effect of satisfaction with own gains on intention to continue with alliance (compared to satisfaction with partner performance) was significant in the opposite direction. This unexpected result could be a result of respondents only considering distribution of financial or tangible gains and not suspecting any inequity in distribution of gains at this early stage of their alliance relationships (average age of alliance was 2.2 years in this sample). This may change as relationships evolve. An alternate explanation is that regardless of pressures to demonstrate profits, firms, and possibly their investors have a long-term orientation to alliance relationships and are willing to sacrifice immediate gains to be competitive in the long run. The hypothesized positive effect of relative resource dependency on intention to stay in the alliance

(Hypothesis 4) was supported (β=.25, $P<.05$). Firms that are involved in more alliance relationships are significantly more likely to continue in an alliance, Hypothesis 5 is supported. While the hypothesized positive effect of technological turbulence on intention to continue in an alliance is supported (β=.26, $P<.05$, Hypothesis 6 supported), the hypothesized negative effect of market turbulence (Hypothesis 7) is not. This finding may be explained by the fact that unlike technological turbulence that is explicitly manifested through personal experience and media reports, market turbulence, or change in consumer preferences is more difficult to perceive and rarely identified.

Hypotheses 8a and 8b predicted that the degree of perceived technological and market turbulence would moderate the effects of relative dependence on intention to continue in an alliance. Both of these interaction terms are statistically significant. The results indicate that technological (β = − .26, $P<.05$) and market turbulence (β = − .21, $P<.05$) do moderate the effects of relative dependence on intention to continue in an alliance. Thus, Hypotheses 8a and 8b are supported by the moderated regression results. In the relative dependence equation, we find that pure click firms are more dependent on their alliance partner than bricks-and-mortar and hybrid firms, while this provides partial support for our Hypothesis 4b for hybrid firms, we did not anticipate this finding for pure brick-and-mortar firms. Pure brick-and-mortar firms may not perceive themselves to be more dependent on the alliance to gain access to the online channel because their offline businesess are well established and stable, and revenues from online operations are typically a very small proportion of a firm's overall revenues. Further, many firms are using this as a learning experience before they establish their own full-scale operations to tap the online market. Firms with alliance partners who complement their product offerings or provide fulfillment services (product or channel access) preceive themselves as significantly more dependent than those who derive financial returns from the alliance relationship, thus partially supporting Hypothesis 4a. We will discuss the managerial implications of these and other findings in the next section.

## 4. Conclusions

Much attention continues to be focused on the use of strategic alliances in the area of e-commerce (ZDNet, 1998). This is particularly relevant to entrepreneurial firms who may be able to utilize alliances to overcome inherent problems in accessing markets, reaching economies of scale/scope and/or further developing innovative technologies. Empirical results from our study raise several interesting issues regarding the use of strategic alliances by firms operating in the online marketspace. Contrary to published commercial reports of high failure rate (e.g., 60% KPMG Alliances 1996) of alliances in general, we find more firms (65%) willing to continue their alliance relationships. In conjunction with our finding that 73% of firms perceive technological and market turbulence to be relatively high and our hypotheses of positive relationships between turbulence and intention to continue in alliances supports theoretical research in the area of marketing strategy (Achrol et al., 1990). In a turbulent technological and marketing environment, alliances appear to be an attractive option allowing firms exploit valuable resources and opportunities in the new Internet economy. While there may be due to the fact that most alliances were relatively short (average age 2.2 years), since online retailing as a sector is a recent phenomenon, future research when the sector has matured should be able to establish or refute this fact.

The results suggest that resource dependency, satisfaction with alliance partner and own gains from the alliance determine whether a firm will continue in an alliance. The results point a somewhat paradoxical picture regarding dependence on alliance relationships. While causality cannot be clearly established here, as resource dependence theory predicted, those firms who felt that they most needed alliance relationships to be successful were in fact likely to gain less even if the alliance turned out to be successful. We find that pure-Internet firms perceive themselves more dependent on their alliance partner compared to hybrid and bricks-and-mortar firms. Firms that are involved in more alliances seem to be gaining experience effects and more likely to get involved in alliances that have higher success potential.

However, more interesting is the significant moderating effect of perceptions of turbulence. First, we find there is no statistical difference in mean perception of turbulence across the two dependency groups. This suggests that when customer composition and preferences are rapidly changing, even firms that consider themselves dominant in an alliance relationship are more likely to stay in the alliance relationship and are less likely to exhibit short-term opportunistic behavior. Loose, evolving relationships in alliances act as an enabling factor under conditions of uncertainty.

The fact that a firm is in a superior position in an alliance, however told us little about the firm's satisfaction with its own performance. There was no statistical difference between firms who were in a stronger position compared to those in a weaker position. To get at performance-related issues, it was necessary to delve further into the reasons why a firm was using alliances, and a need to go beyond traditional measures of profits and sales revenues especially in a channel that has yet to prove its profit-making potential. From a research perspective, the findings suggest that it is time to broaden the focus of alliance analysis to include not only the success or failure of a single alliance and its impact on firm performance, but a system-wide examination of all alliances affecting the firm's success. This becomes particularly relevant as firms are increasingly involved in networks of alliance relationships.

Analyses of primary impetus for forming alliance relationships indicates that alliances that primarily involve merging of products, service and content, and fulfillment

capabilities are more likely to survive. This makes intuitive sense because they require higher levels of investments, integration in operations and creation of joint assets and are more likely entered into after careful consideration in the first place. Alliances formed for revenue generation and marketing services are less likely to survive and may be explicitly designed for a limited time frame to reduce duplication and overload of exposures to marketing communications. We observed that alliances that involve sharing of customer bases do not have a significant effect on decision to continue in an alliance. Concerns over privacy, "consumer profiling" and secondary use of consumer information in the online marketplace, and the accompanying interest of regulatory agencies (even though the direct marketing industry has been built around selling of consumer information) may have a role of dissuading firms from sharing consumer information as a currency in establishing alliances. Future research analyzing the characteristics of these resources may provide stronger results.

Alliances between firms in the online retailing sector become necessary because of dependence on several critical functional areas and technologies and the need to eliminate costs of in-house development and market transaction. In addition to providing a shopping interface, online stores have to go beyond traditional retailing functions to provide other sources of value that help consumers in their decision making this may include tools for comparison shopping across competing retailers [e.g., shopping agents], personalization and external memory aids to store choice, and preference information online across multiple shopping occasions [e.g., shopping cart features], and product trial prior to purchase [e.g., downloading audio files or demo versions of software, trying out apparel at websites] among others and enhance their navigation experience. This research investigates how intermediate outcomes and factors influencing it affect member decision to continue in the alliance in the online retail industry. Further research in this area is needed especially with a focus of deconstructing different impetus for forming alliance relationships.

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