Towards a Conceptual Framework for Understanding Strategic Alliances in E-Commerce

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Abstract

The changing competitive dynamics in the online environment has resulted in an increased pressure for organizations to gain IT resources and capabilities much ahead of their rivals. This has resulted in a surge in strategic IT alliances and online partnerships among organizations engaged in E-commerce. Combining resource based view of firm and contingency perspectives, we offer a framework to understand (i) why firms form strategic IT alliances, and (ii) what influences the nature of their alliance mode.

Drawing upon several studies from strategic management and organization theory, we argue that resource discrepancies in terms of knowledge and property resources, and environmental uncertainties posed by business and technological environments largely influence a firm’s decision to form an alliance as well as its choice on the mode of the alliance.

1. Introduction

The phenomenal growth of world wide web as a new business channel has caused considerable rethinking and restructuring of the traditional ways of conducting business [4, 23]. With projections of online sales to be as high as 75% of total US retail spending in the next five years, large number of organizations are looking for different ways to exploit the web to increase their profitability. With decreased customer switching costs, shortened product development cycles, and intensified online competition, organizations are facing stronger challenges than ever before. Most firms simply lack newer capabilities to defend their positions and take advantage of the opportunities in the virtual market place. They are under pressure to acquire these capabilities quickly before their competitors. This has resulted in a surge in cooperative arrangements such as strategic alliances in the online market place.

Organizations are viewing strategic alliances as an attractive tactic through which they can improve and acquire capabilities for expanding their market reach and consumer base. Though co-operative agreements between organizations is not an entirely new phenomenon, the rate at which these alliances have happened over the past few years is unprecedented. The Standard magazine reported an average of over 30 online alliances per week that were made in year 2000. These strategic alliances have assumed several forms such as joint-promotions, co-marketing, contractual agreements, licensing arrangements, affiliate programs, and distribution agreements etc, and also between different sets of players – alliances between pure net firms, between brick-and-mortar firms and pure net players, and those among brick-and-mortar firms themselves Interestingly, some of these alliances are between competitors themselves.

Online strategic alliance formations are announced almost daily as seen from the data provided by TheStandard.com, a site that tracks alliances and inter-organizational arrangements in the internet economy. For example, Oracle, which is the e-business software maker, formed partnership with Compaq, the computer maker, to integrate cluster computing technologies. Similarly, MP3.com agreed to promote artists from Maverick Records, which is owned by AOL Time Warner, through MP3 download site, and, in turn, to license Maverick title to the service. Traditional companies seem to be searching to ally with other specialized companies such as IT vendors, e-commerce service providers, or Internet companies to gain capabilities for improving their online performance. Internet companies are in turn searching to partner with traditional companies to gain access to their resources and skills, especially physical related resources and managerial skills which are also critical for business expansion.

Despite the exponential growth in strategic alliances in the virtual market place, there is very little understanding of the dynamics underlying these alliances. There is no clear idea on how to
form and manage these alliances, and on the factors that would contribute to a successful strategic alliance. Given the multiple forms and different natures of online alliances, there is also considerable ambiguity about the applicability and extension of our current knowledge on conventional strategic alliances to the area of online alliances. It is important to gain this understanding if we were to advise managers on how they need to evaluate, form and manage their online alliances.

This paper is aimed at addressing the aforementioned issues. According to Gulati and Garigulo [10], firms form alliances to gain access to capabilities and resources that are essential to pursue their goals, but that are at least in part under the control of other organizations in their environment. The need for forming strategic alliances can stem from two domains – (i) uncertainties posed by the external environment, and (ii) internal need for building up resources and capabilities. The external environment factors are explained by contingency theory and the capability building is explained by the resource based view of firm. Drawing upon the resource based contingencies view and contingency theories, we propose a framework for understanding the motivations behind formation of online strategic alliances.

The main objective this paper is to identify and explain the key factors influencing strategic alliance formation in the context of e-commerce. Thus, the central research issue addressed is the extent and nature of impact of resource discrepancies and environmental uncertainties on the formation of online strategic alliances. We also try and understand what drives formation of different types of online alliances.

Though the issue of strategic alliances is a less explored area in MIS research, there is substantive research on this subject in strategic management and organization theory areas. We briefly present this literature in the next section. We then develop theoretical arguments for extending this research in the context of e-commerce. Subsequently, we present a research model integrating these theoretical perspectives. Finally, we present future extensions and implications of our research.

2. Literature Review

Two research streams from strategic management and organization theory form the principal foundations for our research. These two research streams combine the external and internal perspectives of organizations. The first theoretical perspective is the resource-based view of firm, a recent perspective that has been extensively discussed in the strategic management area. While the traditional theories of firm strategy such as the competitive forces framework and Porter’s industry impact model emphasize the role of external environment in determining a firm’s competitive position, the resource-based theory places emphasis on the firm’s internal attributes as the primary sources of competitive advantage [2]. According to the resource-based theory, a firm is viewed as a collection of resources under common control [2, 28]. When a firm’s resources and capabilities possess four attributes namely – valuable, rare, inimitable and non-substitutable (commonly referred to as VRIN attributes), they are likely to give a firm distinct advantage over its competitors [16, 21]. Although the resources can be distinct from those of the competitors, these resources need not be necessarily produced internally. Resources and capabilities can be either produced internally or acquired from the firm’s environment.

Strategic alliances are an opportunity to gain resources and capabilities from outside of the firm. Alliances are arrangements between firms that involves exchange, sharing, or co-development of products, technologies, or services [9]. Access or acquisition of resources and capabilities is the primary incentive for firms to form a tie. Given this background, resource-based theory can be useful in explaining the emergence of strategic alliance formation. In fact, several researchers in organization theory and strategic management are using resource based views to explain inter-organizational arrangements such as alliances [1,6,7]. We are extending these arguments in the context of online strategic alliances.

There are two ways to gain access to resources and capabilities from external environment – they can be gained through a merger/acquisition or through an alliance. Das & Teng [6] indicated two conditions under which alliances will be preferred over merger/acquisition. The first condition is when not all the resources possessed by the target firm are valuable to the acquiring firm. The other condition is when both firms have similar resources in part. Unwanted assets are mixed with needed assets. Acquisition will result in redundant resources, and thus alliance formation is preferred.

Contingency theory deals with the role of external environment in determining the content as well as process of various strategic actions within an organization. Environmental uncertainty is the
primary construct that has been found to influence the interactions among businesses and those between firms and its environment. Thompson [27] regarded uncertainty as the key element that organizations seek to reduce. Thompson argued that uncertainty is a state where organizations cannot control or predict some of the variables that are subject to influence them. This means organizations have incomplete understanding of the surrounding environment. In order to cope up with environmental uncertainly, firms follow specific mechanisms that are intended to reduce or minimize the uncertainty. In the context of strategic alliances, several researchers have identified environmental uncertainty as a key factor influencing alliance formation, nature of alliances as well as performance of alliances [13,14,19,24,25].

Though there is considerable research on the strategic alliances among traditional firms, it is not clear if this knowledge could be extended to the domain of e-commerce. E-commerce markets are defined as the all-in-one markets, the markets that offer, side-by-side, alternative ways for buyers and sellers to transact business [18]. E-markets differ from the traditional ones not only on technology-based business transactions, but also on the number and kinds of competitors. On internet, the competitive boundaries are blurred, and the markets are not delimited by geographical and national barriers. Internet also offers opportunities for virtual product showcases and virtual inventories. Also, the business boundaries for each organization became more permeable for competitive entrance. This results in more complex business interactions and more intense competition from both traditional and Internet companies. Since the e-commerce has emerged not so long ago, the market is still unstable. Although a number of Internet users have been increasing [22], customer preferences are hard to understand and predict. The difficulty in such prediction has caused constant changes in the market, especially in terms of competitive moves.

### 3. A Typology of Strategic Alliances

Strategic alliances are voluntary arrangements between firms involving exchange, sharing, or co-development of products, technologies, or services [9]. Based on incentive system among the partners, non-market pricing mechanisms and co-ordination between the partners, alliances can be classified into three categories namely: joint venture, minority alliances, and contractual alliances [11].

Another categorization scheme by Kantar focuses on the nature of relationship among partners, grouping alliances as mutual service consortia, joint venture, and value-chain partnerships. Hagedoorn [12] used technology as a variable, and categorized modes of cooperation into 2 major groups. The first category consists of relatively strong modes of inter-organizational governance such as joint ventures, research corporations and minority investment. The second one has contractual arrangements such as joint R&D agreements, technology exchange agreements, customer-supplier relationships and one-directional technology flow.

Our primary interests are in the use of co-operative arrangements in order to promote e-commerce activities. Given this focus, we adopt a three-group scheme for classifying strategic alliances. Our categorization is based on two variables – (i) degree of control and commitment in a partnership, and (ii) level of expected technological contribution. We view alliances in three broad categories namely: joint ventures, minority alliances, and contractual agreements. This typology is presented in Figure 1.

Joint ventures are combinations of the economic interests of at least two separate companies in a distinct firm; with profits and losses usually shared according to equity investments. Minority alliances involve certain degree of investments made by one firm on another. These are usually made by a large company in a smaller firm. Finally, contractual agreement refers to the cooperation between firms to transfer or interchange each firm’s resources to its partner with the least degree of control over its partner’s resources. Contractual alliances do not involve the sharing or exchange of equity, nor do they entail the creation of new organizational entities [11]. Thus, the right to control the resources still belong to each individual firm.

Contractual agreements can range from loose to tight agreements between the partners. The level of control and commitment, including technological contribution to the alliance is lower in loose than that in tight contractual agreement. Loose contractual agreements include marketing/promotion agreements, distribution agreement, and service/consulting agreement etc. In the context of e-commerce, an instance of marketing/promotion agreement is when one or both partners agree to have their websites linked to each other through banner displays or through hyper-links. The agreement may include revenue sharing resulting from the website reference.
Another common example is when one company agrees to produce the marketing/promotion campaign for the partner and deliver through its website. Distribution agreement is similar to a supply-chain agreement which happens when an Internet firm, particularly electronic retailer, agrees to buy products from a vendor to sell them on the Internet. Service/consulting agreement usually happens when traditional firms seeking ways to enter the e-commerce business by either allowing a partner to operate its Internet related business or searching for an advice and operating the business themselves. On the other side, tight contractual agreement includes the agreement involves legal contracts that spells out mechanisms of co-ordination, delivery, and termination clauses. Typical examples of tighter contractual agreements include technology licensing, the agreement to share operations especially technological operations, and R&D agreements.

4. Resource Discrepancies and Strategic IT Alliances

According to Wernerfelt [29], resources are tangible and intangible assets that are tied semi-permanently to the firm. Barney’s [2] definition of resources include “all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness”. Grant [8] made a distinction between resources and capabilities. He defined resources as a firm’s ability to earn a rate of profit in excess of its cost of capital, and categorized them into six groups namely: financial resources, physical resources, human resources, technological resources, reputation, and organizational resources. He defined capability as an ability to make exploit and make use of resources. In that sense, capability refers to the capacity or ability of a set of resources to perform some task or activity. In this research, we shall use the term resources to collectively refer to resources as well the capabilities.

Resource-based theory has been applied in several areas of MIS research. The theory has been applied to explain IT value and IT performance [3, 17], business-IT alignment and IT decisions, e.g. IT adoption [15], and IT outsourcing [26]. Though the general notion of IT resources include technological infrastructure such as hardware, software and telecommunications, most MIS researchers adopt a broader notion of IT resources. Besides physical capital and human resources, Teng, Cheon, & Grover [26] specifically identified information resources which refer to information in the form of data files and scheduled reports, including information systems that facilitate information access and acquisition. IT resources, hence, include, physical resources as well as abilities to exploit these resources.

We posit that the a firm’s decision to form strategic alliances for its e-commerce efforts as well as its choice regarding the nature of the governance agreement i.e. the type of strategic alliance is largely influenced by the differences in the availability of IT resources. According to Das and Teng [6], firms form strategic ties when they desire to obtain others’ resources or to retain and develop their own resources by combining them with that of other firms. Madhok stated that collaborations are a useful vehicle for enhancing knowledge in critical areas of functioning where the requisite level of knowledge is lacking and cannot be developed within an acceptable timeframe or cost. Teng et al. [26] stated that the
external acquisition of complementary resources may be necessary to develop new capabilities in order to fill gaps of resources. Thus, the need to attain resources under time pressure is the primary motive for firms to enter strategic alliances. This view is enforced by Das & Teng [6] who stated: “only if a firm cannot efficiently get needed resources from elsewhere, except by a sharing arrangement with its owners, will it be willing to form a strategic alliance”. In other words, when existing pool of resources within a firm is inadequate, or when there is a gap between the firm’s expected stock of resources and its actual stock of resources, the firm may acquire those resources elsewhere. The discrepancy in needed resources leads to the firm’s motivation to obtain them through partnership with other firms.

**Proposition 1:** When a firm engages in e-commerce activities, the discrepancies in the level of its IT resources is likely to influence its decision to form strategic alliances with other firms.

While differences in the availability of resources is likely to influence a firm’s decision to form a strategic alliance, the nature and type of resources the firm wants to acquire is likely to influence the nature of the strategic alliance. The resources could be classified into four categories - financial, technological, physical and managerial resources [5]. Later, a simpler classification to group resources as property-based and knowledge-based resources was proposed [6]. Property-based resources are legal properties owned by firms, including financial capital, physical resources, including technological infrastructures, and human resources. This also includes patents, contracts, copyrights, trademarks, and registered designs. Knowledge-based resources refer to a firm’s intangible know-how and skills, which include technological and managerial resources. Basically, the property-based resources refer to resources, which are easily to acquire, and do not need specific knowledge to utilize such resources. On the other hand, knowledge-based resources require particular skill to obtain and utilize resources successfully.

The discrepancy in resource levels can result in three conditions: high deprivation (desired level far exceeds actual level), equilibrium or moderate deprivation (desired level slightly less than or equal to actual level), and saturated (actual level far exceeds desired level) [26]. Generally, joint venture is preferred when there is high deprivation in resource requirements, and hence more control and ownership over resources is desired. The degree of resource deprivation tends to be lower for firms selecting minority equity alliance and lowest for those selecting contractual agreement. The type of resource need can further distinguish choices of contractual agreement. Since property based resources tend to be acquired easier than the knowledge based resources, firms have more opportunity to acquire the particular resources from different partners. Thus, they need not create tight contracts with any specific partners. However, the same scenario does not hold for knowledge-based resources. The knowledge based resources are more specific in nature. Different firms have different technology know-how. In order to obtain the resources successfully, the partner may need to spend a period of time to learn and understand how to utilize the resources. This requires a certain level of the firm and the partner’s commitment. Thus, it results in tighter contractual agreement between firms.

**Proposition 2:** Firms with resource discrepancies in property resources are likely to form loose contractual agreements with their alliance partners.

**Proposition 3:** Firms with resource discrepancies in knowledge resource are likely to form tight contractual agreements with their alliance partners.

5. **Environmental Uncertainty and Strategic IT Alliances**

Apart from internal resource requirements, external environment could also influence a firm’s decisions on strategic alliances. The external environment consists of – external business environment and external IT environment. External business environment consists of competitors, suppliers, customers, regulatory bodies and other industry related factors. The technological environment supplying the hardware, software, telecommunication and specialized human resources for an organization comprises the external IT environment of an organization. Both business and technological environments could pose considerable uncertainties that are likely to influence a firm’s decisions on partnerships. Several researchers have identified environmental uncertainty to be a significant factor influencing the decision of a firm to form strategic alliances. In the context of e-commerce, there is a high competitive intensity as
firms face online competition from established firms that are moving online as well as from pure net firms. Also the number of new entrants on internet is increased as the barriers to online entry are low. The switching costs for suppliers and customers are considerably low. Porter [20] outlines a number of reasons due to which the uncertainties on competing online has increased. In order to cope up with the high degree of environmental uncertainty in the online environment, firms are likely to forge multiple partnerships that help them reduce the extent of these uncertainties.

Proposition 4 : When a firm engages in e-commerce activities, environmental uncertainty is likely to influence its decision to form strategic alliances with other firms.

Uncertainty has been extensively researched by both organization theorists as well as MIS researchers. Sutcliffe & Zaheer [25] extended the basic concepts of primary and secondary uncertainty to include competitive and supplier uncertainty. The uncertainty posed by the external business environmental factors, especially those of potential business partners is referred to as behavioral uncertainty. This refers to the difficulty in predicting the actions of other relevant actors, particularly in view of the potential for opportunistic behavior [25]. In order to cope up with the high behavioral uncertainty, firms are likely to form alliances with high degree of control and commitment between the partners. In order to establish tighter controls, firms are likely to have strong control mechanisms and tighter co-ordination tactics.

Proposition 5 : Firms facing high levels of behavioral uncertainty are likely to form joint ventures, minority alliances, or tight contractual agreements with their alliance partners.

In the context of technology, Steensma & Corley [24] identified commercial uncertainty as a significant factor. Commercial uncertainty is the uncertainty associated with the commercial success of a technology. It arises from the ambiguity as to whether the technology will work as it is designed to work and whether the marketplace will favor associated products and processes. In the current, dynamic IT environment, there are newer information technologies that are appearing as well as disappearing at a rapid pace. The uncertainties associated with the information technologies is likely to influence a firm’s alliance mode in order to have greater control over the technological resources. They are likely to choose alliances mode that would help them spread and minimize the risks posed by commercial uncertainty.

Proposition 5 : Firms facing high levels of commercial uncertainty are likely to form joint ventures, minority alliances, or tight contractual agreements with their alliance partners.

6. Conclusions

This research sought to understand the strategic alliances made by the firms for improving their e-commerce initiatives. Our goals were to understand why firms form strategic alliances for their e-commerce efforts, and what influences their choice on the type of alliances they make. Two theoretical perspectives, namely resource-based view of firm and contingency theories were used to explain firm decisions on strategic alliances and their choice of alliance modes. An integrated framework, combining these two perspectives is presented in Figure 2.

There are several important implications of our research for research and practice. First, we used some of the concepts from organization theory and strategic management to understand a contemporary phenomenon in E-commerce. Second, we integrated internal and external perspectives to offer a holistic view of strategic alliances for e-commerce. Thirdly, our framework could be further operationalized and empirically verified by researchers interested in this area of research.

With intensified competition and increased environmental pressures, firms are seeking strategic alliances as a means of improving their e-commerce efforts. Strategic alliances are being viewed as an important way to reduce environmental uncertainties and to acquire IT resources and capabilities. Our research is an effort to offer some theoretical understanding of strategic alliances in E-commerce. Our work could be used as a starting point for conducting empirical studies to uncover the dynamics underlying strategic IT alliances.
References


