Small Business Alliances:
A Framework for Internet-Enabled Strategic Advantage

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Abstract

The essential difference between small businesses and large corporations is found in their corporate structure. Similarly, the inter-organizational systems (IOSs) formed between small businesses to support strategic alliances and community-like networks have different requirements and functions from those formed between large corporations. This paper discusses the differences between the IOSs created by small and large organisations and then considers the transformations enabled by the Internet. When small businesses form IOSs on the Internet, the links created are both multi-purpose and multi-faceted - these IOSs can be transaction-based or can be used to exchange knowledge and to conduct joint production and projects. A large group of standard Internet services is available for use to enable the interaction of members within an IOS and we next provide a framework showing the way in which different inter-organizational relationships can be supported by using the Internet to enable competitive advantage. Finally, we consider the business drivers relevant to successful Internet alliance formation and analyse the strategy of building IOSs on the Internet.

Introduction

The term "small business alliance", which describes groups of businesses which have joined forces to share resources, information and support, is often seen in the popular literature concerning small to medium enterprises (SMEs). This kind of alliance can take different forms and its membership can include both business partners and competitors. The concept of resource sharing and support often takes the form of information exchange. Sharing of customer orders or project collaboration. In the past, small businesses usually dealt with customers located in a particular region, just as the majority of the alliances formed between such organisations were made up of members from the same geographic region. Prior to forming alliances, small business operators usually meet at functions organized by third parties (such as Business Development Centres, exhibitions, or trade organisations), because such gatherings provide excellent opportunities to develop future contacts for business collaboration. But as the globalization of business partnerships becomes an important issue for the survival of even small organizations, the traditional avenues for forming strategic alliances have become insufficient to cover the geographic distance and the potential high costs which now exist.

Following the commercialisation of the Internet, many entrepreneurial small businesses have begun to share information and experiences across this electronic medium, both in addition to and instead of their former, purely physical methods of communication. The interchange enabled by the Internet is remarkably similar to the discussion and exchange of experiences which took place in the early stages of the formation of strategic alliances/networks using physical contacts. It is apparent that this electronic medium is an important way in which small business alliances can exchange information and maintain the alliance once formed.

In this paper we initially discuss the key differences between inter-organizational systems (IOSs) formed by small businesses and those formed by large corporations, providing a foundation for an explanation of why the Internet as an information infrastructure is important for small business alliances. We then compare the similarities and differences between inter-organizational systems built on the Internet and those which were built using dedicated networks in the past and illustrate some trends and examples of how the Internet can be used to build inter-organizational systems. Finally, we introduce a framework which illustrates the different kinds of small business alliances and Internet usage strategies and discuss future research directions and approaches for which this early, theory-building work provides the foundation.
IOS for small businesses and big corporations

Quite apart from differences in terms of size, capital, geographic scope and diversification, small businesses are not merely "small big businesses" (Welsh and White [25]). Small businesses have traditionally been renowned for flexibility, ability to adapt to change, venture orientation and their impressive ability to specialize in products and markets. By the same token, however, small businesses are also known to suffer from resource constraints (Bhide [3]), lack of appropriate strategic planning and difficulties in expanding market share (Stephenson and Duncan [20]).

In terms of organizational structure, small businesses often have a simple and adaptable organizational infrastructure with little or no hierarchy, with directives often flowing down from the owner, manager, or small management team (OECD [16]). The operator/manager's personality, business skills, attitudes and overall plan therefore become decisive factors in the behaviour of the organization (Swatman et al. [23]), whereas the organizational infrastructure of large corporations is usually heavily layered, having structurally well-defined subgroups residing on each layer. Applegate [1] identifies an average of five to seven levels of hierarchies in large corporations, depending on the size of the organization. This difference in organizational infrastructure leads to the development of distinctly different characteristics in the inter-organizational system structures of small business alliances and those created by large corporations.

Inter-organizational systems are defined by Cash et al. [6] as "networked information systems used by two or more separate organizations to perform a joint business function". The fact that large corporations usually already have some form of communication infrastructure, often an existing information infrastructure, means that an inter-organizational system technically requires less start-up effort to build. Even information system functions which co-ordinate internal business activities by sharing information and/or executing transactions between divisions can be considered inter-organizational systems, if the divisions are inter-dependent. Although business groupings in the form of strategic or cooperative alliances (Stephenson and Duncan [20]) and networks (OECD [16]) have been identified among small businesses, members of such groupings usually do not have elaborate information system structures. The kind of IOSs established between small businesses often make use of common carriers' services, where the IOS structure is owned by a public carrier (such as an official telecommunications provider). Lack of resources and weak inter-organizational bonds have been an important factor preventing small businesses from implementing large scale IOS within a business alliance/network. When small businesses need to exchange information with a large corporation, they are often obliged to use that company's systems and protocols (see, for example, Fordnet's exclusive policies for using EDI for order transaction, described in Webster [24]).

Small business alliances and the Internet

Furukawa et al. [9] observed that the relationship among the members of a small business network evolves from loosely coupled and shallow sharing of information to tighter coupling which eventually leads to joint development projects having formal rules like those of joint ventures. These authors further identified the characteristics of such a network:

- It is an organization constituted of autonomous parts which have their own objectives, but are interactively and mutually dependent and share supplementary resources.
- Its structure is very flexible or loose, in the sense that it has no definite hierarchy or formal authority-responsibility relationship.
- It provides an arena where members exchange their resources in continuous, interactive relationships.
- As a result, members come to share those resources which are mutually dependent or supplementary. The sharing of resources makes it possible for them to obtain necessary resources externally, but not through a market mechanism.

These characteristics lead to the formation of a flexible (even fragile) network whose behaviour itself tends to change during the course of the mutual activities. Although these small businesses form network organizations based on project needs and sharing of resources, including information and materials, they are self-sufficient, independent organizations. The networks so formed have little definite structure or size. There are, however, selection criteria for network membership which aim to minimize competition and maximize cooperation (one such criterion is to ensure that only one member from any industry is invited to join). Similar business networks, which Perrow [17] called Small-Firm Networks (see Figure 1) also possess characteristics of mutual support and shared resources. According to Perrow [17], each small firm has about ten people who interact with one another, sharing information, equipment, personnel, and orders, even as they compete. They are supplied by a smaller number of business service firms (providing such services as business surveys, personnel administration, research and development) and financial service firms. In addition, there are suppliers of equipment, consumables and raw materials. Although these firms may do their own marketing and distribution, it is more common for there to be a fair number of quite small distributors to handle such activities in a collective way.
Johnston and Vitale [12] proposed that IOSs can be categorized into a continuum ranging from boundary transaction systems to those which integrate core aspects of participants' business [functions]. According to these authors, IOSs need to earn participatory organizations competitive advantages in the form of either comparative efficiency and/or bargaining power. Even though some of the relationships formed between members of a small business network have been consolidated through different stages of co-operation, members in such network may not be ready to invest heavily in building an IOS with a large start-up cost and inflexible means of switching from one business network to another (for example, using a proprietary value-added network service provider). Further, the relationship between members of some networks is based on short term contractual and informal agreements. For this kind of network, new members need to be able to become part of the IOS without significant set up cost and waiting time, while returning members can re-use their invested time and experience when joining another business network.

The typical information system within a small business often consists of a single microcomputer, or no more than a small number of workstations linked up with off-the-shelf networking facilities. The applications are usually standard packages (e.g. accounting, word-processor, spreadsheet, personal assistant software and presentation graphics/desktop publishing) with few (if any) specific user requirements incorporated. Despite the modest hardware and software investment such a small business has put in compared with a large corporation, it is adequate for connecting to the Internet, often through a Internet Service Provider (ISP). The implication of this is that small businesses can now build IOSs using an already established information infrastructure (see Figure 2). Furthermore, the geographic reach and links of an IOS so built often rival those specifically built for linking several large corporations. Most importantly, such an IOS is flexible, easily extended and can interlace with the information systems within a large corporation.
Communication activities such as Electronic Data Interchange (EDI), Remote Login, File Transfer and Synchronous and Asynchronous Electronic Conferencing can be carried out simultaneously using the Internet, which is often more affordable and flexible than the majority of Value-added Networks (VANS). The software needed to connect to the Internet is not only cheaper than that needed for connecting to a VAN but is also implemented using common industry standards. Currently, connecting to the Internet through an ISP requires no more effort than installing a simple application software package. Once connected to the Internet, a small business does not need to go through the process of un-subscribing and re-subscribing, as in the case with a VAN, when an organization decides to leave one business network and join another.

The Internet, therefore, creates a kind of electronic market whose standardised protocols and services, together with its open philosophy, allows small businesses to deal with multiple customers simultaneously - whether big or small. This, in turn, allows globally-oriented small businesses to interact within a totally open market, where there are effectively no switching costs. More importantly, networks so formed can have their membership updated as often as necessary to maintain their viability.

Inter-organizational exchanges on the Internet - trends and examples

An illustration of how strategic alliances can be formed to enable inter-organizational exchange on the Internet is given by Bottoms [4], who cites the California-based CommerceNet and

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4To access the CommerceNet's Internet site using a World-Wide Web browser, use the Uniform Resource Locator - http://www.commerceonet.com/
the Enterprise Integrated Network\footnote{To access the Enterprise Integrated Network's Internet site using a World-Wide Web browser, use the Uniform Resource Locator - http://galaxy.einet.net/}. Both prototypes are implemented using the World-Wide-Web service and are intended to bring together business services such as on-line marketing and order entry, collaborative engineering, product data exchange and other transaction services such as payment using EDI. The issues to be resolved are mainly management-oriented, rather than technical. In another example of Internet-enabled alliances, Locke \cite{13} illustrates the way in which MecklerWeb fosters the formation of virtual alliances:

"...such [professional] associations will often provide from among their own ranks the knowledgeable individuals who will serve as discussion moderators and bring expert organization to the multi-media resources that will develop around each domain area" (Locke \cite{13}, p. 24).

Locke defends the anarchic nature of such alliances, suggesting that:

"What is interesting to us is the potential for collaboratively crafting a viable commercial cyberspace in which all of us can launch exciting new business initiatives, assist in the construction of dynamic new online communities, and have a lot of fun with an unusually interesting collection of creative people, while at the same time generating substantial new sources of wealth in which potentially millions will share" (Locke \cite{13}, p. 25).

As small businesses continue to experiment with the Internet for business activities, different ways of exploiting the efficiency and effectiveness offered by such an infrastructure surface. The kind of Internet services used by small businesses are mainly standard Internet application services (e.g. HTTP, FTP, Telnet, E-mail and Video/Audio-conferencing). Some technologically inclined small businesses may find that the standard services are not sufficient for their needs and develop special purpose applications (such as EDI over TCP/IP). Those readers interested in the full set of Internet services are recommended to an earlier version of this paper, published in working paper format - see Poon and Swatman \cite{18}.

Figure 3 illustrates the four main types of business entities with which a small business will have to interact - suppliers, customers, alliance partners and competitors. There are many ways in which each of these relationships can be developed and this diagram highlights the fact that such interactions often exist in two directions. Such "two-way" interactions can include "request and response" (e.g. customer-supplier relationship), or simply two parties undertaking a similar exercise with one another (e.g. competitive intelligence gathering). The grey arrows illustrate the way in which the defined methods of interaction can be bypassed through the establishment of electronic markets. For example, a customer can go to the current supplier's competitor and request a product or service. Similarly, each small business can form a strategic alliance with any number of other small businesses, regardless of geographic distribution. Therefore, the Internet enables the formation of links which would otherwise be prohibited by geography, time or limited resources.

**Inter-organizational relationships and Internet usage strategies - a framework**

Researchers have reported that small businesses are forming strategic alliances by networking in order to become competitive in both local and global markets. The utilities shared among members of such groupings include technology, knowledge, human resources and finance resources (Forrest \cite{7}; Furukawa, Teramoto and Kanda \cite{9}; OECD \cite{16}; Golden and Dollinger \cite{10}; Stephenson and Duncan \cite{20}; and Yarnell and Peterson \cite{26}). Golden and Dollinger \cite{10} investigate these inter-organizational relationships by networking in order to become competitive in both local and global markets. The utilities shared among groupings include technology, knowledge, human resources and finance resources (Forrest \cite{7}; Furukawa, Teramoto and Kanda \cite{9}; OECD \cite{16}; Golden and Dollinger \cite{10}; Stephenson and Duncan \cite{20}; and Yarnell and Peterson \cite{26}).

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- **Confederation** - Firms which compete with one another but which maintain some contractual functional activities in common, co-ordinated by a central management. Confederations are similar to horizontal diversification patterns. Activity examples are:
  - joint sales agreements.
  - joint venture agreements.
  - licensing agreements.
  - joint purchase agreements.
  - shared transportation costs.
  - joint advertising.
  - joint research and training.

- **Conjugate Collectives** - Firms which have contractual arrangements for symbiotic purposes. Conjugate collectives represent vertical linkages through the value-added chain such as formal supplier-buyer networks. Activity examples are:
  - joint research with suppliers or customers.
  - joint venture with suppliers or customers.
  - joint advertising with suppliers or customers.
• Agglomerate Collectives - Firms which compete within the same industry but have no contractual "business" arrangements. Activity examples are:
  • pricing from industry-wide lists.
  • producing industry-standard items.
  • sharing with competitors.
  • using industry-wide costing.

• Organic Collectives - Firms (or the representative thereof) which engage in traditional networking, such as board memberships or other voluntary organization, in an indirect and non-contractual form. Activity examples are:
  • membership of a Chamber of Commerce.
  • membership of a religious organization
  • membership of a Political Action Committee.
  • active engagement in other community organizations.

Golden and Dollinger [10] then use the Miles and Snow [14] typology, which classifies the strategic posture of organizations as:

• the Defender, who has narrow product-market domain and limited expansion, trading new market growth for efficiency of operation;

• the Prospector, who searches continually for new markets and trades off efficiency;

• the Analyzer, who spans the Defender and Prospector by maintaining one relatively stable domain and one turbulent product-market;

• the Reactor, who has an ill-defined approach to strategy and responds only when 'jabbed' by the environment.

Golden and Dollinger [10] conclude that small businesses which assume a variety of strategic postures tend to participate in different kinds of strategic alliance. This understanding of small business's inter-organizational strategies is critical to successful strategic use of the Internet to support alliance activities. The business exchanges resulting from such strategies are important for the creation and replication of strategic alliances on the Internet, and result in a kind of network we describe as "virtual alliances".

In order to rationalize the way in which the Internet can be
used to help these different kinds of inter-organizational relationship, we have developed a framework (see Table 1) which maps the alliance’s activities against Internet usage strategies. A detailed listing of the ways in which Internet usage strategy can be implemented with customers, suppliers, alliance partners and competitors is described in Poon and Swatman [18].

Targeting needs for Internet-based inter-organizational systems

In order to understand the efficacy of Internet-based small business inter-organizational systems, it is important to investigate the business drivers which encourage the setting up of such systems. Ives, Jarvenpaa and Mason [11] use global business drivers to analyse the benefits of global IT management, suggesting that this approach provides a rich language for communicating the IT requirements of a firm’s global vision and strategy within the frame of reference of non-technical, executive-level management. These authors’ analysis focuses on broad business entities such as customers, suppliers or projects and captures the current and future information requirements shared across different operating units (i.e. ‘the few things that must go well to ensure the success of a manager’ Ives et al. [11], p. 146).

We believe that this approach can be applied to our own investigation of the way in which small businesses can benefit from the proper implementation and application of inter-organizational systems using an Internet-based implementation platform - global business drivers can apply equally effectively to SMEs developing an international alliance.

In addition to viewing business drivers from a small business strategic perspective, it is equally important to understand the environmental factors which affect the success of such alliances. This requires an understanding of where an organisation lies on the value-chain continuum (after Porter and Millar [19]) when setting up Internet-based IOSs. Those will only be viable if access and use are not in any way hindered and if interaction (e.g. sales transaction, information and knowledge sharing, product delivery) can be carried out under acceptable conditions for all parties. For example, all parties in the value chain should have appropriate (if not equal) access to the Internet. Products need to have either a high information content or, if digitizable, must improve the benefits at least for the customer (and preferably also for the supplier).

Table 1. The Internet usage strategy framework: mapping inter-organizational relationship types to Internet usage strategy.

<table>
<thead>
<tr>
<th>Inter-organizational Relationship</th>
<th>Internet Usage Strategy</th>
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<tr>
<td><strong>Confederation</strong> (e.g. small business groups sharing resources through contractual agreements).</td>
<td>- Co-ordinate sales by sharing inventory and sales information.</td>
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<td><strong>Purpose</strong>: Improve efficiency, Lower costs, Share resources, Improve information flow.</td>
<td>- Logistics co-ordination.</td>
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<tr>
<td><strong>Conjugate Collectives</strong> (e.g. Closed group agreements between supplier and customer).</td>
<td>- Sharing of market information.</td>
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<tr>
<td><strong>Purpose</strong>: Vertical diversification, Reduce transaction costs, Secure sales, Improve information flow.</td>
<td>- Joint customer support.</td>
</tr>
<tr>
<td><strong>Agglomerate Collectives</strong> (e.g. Trade Associations).</td>
<td>- Exchange of research information.</td>
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<tr>
<td><strong>Purpose</strong>: Assemble and share common threats, opportunities, hostile regulations, technological experiences.</td>
<td>- Improve bargaining power against suppliers.</td>
</tr>
<tr>
<td><strong>Organic collectives</strong> (e.g. Community Services Groups).</td>
<td>- Sharing research data and product information.</td>
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<tr>
<td><strong>Purpose</strong>: Boundary spanning, Fulfill corporate citizen functions, Provide free professional services in exchange of future business opportunities.</td>
<td>- Exchange market intelligence in order to improve supplier-buyer relationship.</td>
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<td></td>
<td>- Referral to other suppliers/customers within the closed group.</td>
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<td></td>
<td>- Gauge performance of competitors by collecting customers’ feedback.</td>
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<td></td>
<td>- Obtain information about industry-wide product/service requirements through industrial bodies’ Internet sites.</td>
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<td></td>
<td>- Access industry-wide funding resources and news (e.g. Small Business Development Centres).</td>
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<td></td>
<td>- Connect to topical forums on the Internet to participate in discussion on industry-specific issues.</td>
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<td></td>
<td>- Link-up to voluntary bodies’ Internet sites and strength corporate presence.</td>
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<td></td>
<td>- Gain exposure to groups beyond immediate alliance members (e.g. in the case of Conjugate Collectives).</td>
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Porter and Millar [19] explained the way in which "conventional" information technology permeates the value-chain and thus transforms the way value activities are performed. The Internet is today transforming the value-chain further by opening up markets and reaching individual members of society (Benjamin and Wigand [2]). In order to benefit from the competitive advantages the Internet offers, each value-activity within the value-chain needs to be made "Internet Ready". Alternatively, the infrastructure must be set up in such a way that organisations making use of value-activities will gain an edge over other firms with similar value-chain and value-activities, which are not exploiting the potential benefits offered by the Internet. The following five steps, adapted from Porter and Millar [19], explain the way in which SMEs can align their business processes with Internet usage:

- Assess information intensity by concentrating on the potentially high information intensity in the value chain, or the potentially high information intensity in the product.
- Determine the role of the Internet in the industry structure by predicting the impact of using the Internet in terms of likely changes in the industry structure and organizational boundaries.
- Identify and rank the ways in which the Internet might create competitive advantages by reducing cost, improving knowledge exchange and enhancing links between value-activities and between organizations.
- Investigate how the Internet spawns new businesses. Determine how the Internet provides new or emerging business opportunities (e.g., information brokerage, Internet Service Provider, Consultancy).
- Develop a plan to take advantage of the Internet. An action plan which ranks the strategic investments necessary in setting up the infrastructure and organizational change necessary to reflect the new linkages.

Conclusion

The Internet, as a global and open model of information infrastructure, is already offering small businesses today opportunities to be more versatile and dynamic when competing in the global market-place against large corporations. While there are different ways in which small businesses in the 1990s can compete and survive, the access to and the ability to make use of and exchange knowledge and information is crucial to survival in today's business world. By making use of the services available on the Internet and by aligning and matching strategic alliance characteristics with Internet usage strategies, small businesses can gain both efficiency and effectiveness which will lead to greater competitive advantage.

The ways in which small businesses are using the Internet demonstrates that it can be an enabling factor for the formation of strategic alliances, groupings formed by small businesses which allow them to share information, knowledge, resources and projects. Such groupings can take many different forms, and have the potential to make use of very flexible structures, while their inter-connected nature means that alternative paths for business linkages/relationships can be formed using Internet connections.

Up till now, there has been relatively little research conducted to provide a comprehensive understanding of the strategic significance of the Internet for small businesses. Although much research and experimental effort has been focused on how to advertise and market successfully on the Internet, how to conduct sales transactions securely and how to improve customer services through better communications link-ups, limited work has been undertaken on the way in which long term strategic advantages within an alliance group can be secured. Furthermore, there are no significant findings on the subject of whether our previous understanding of inter-organizational systems dynamics and strategic alliance can be directly applied to an information infrastructure which is not only significantly larger, but also has minimal entry barriers.

Given our lack of a consolidated understanding of IOS between small businesses, it is important that further research efforts be devoted to the understanding of these areas. Since commercial usage of the Internet has already outstripped that of the academic and government communities worldwide (and much of this traffic come from small and medium enterprises), the strategic value of the Internet is crucial to the future development of small business operations. We do not foresee the Internet eliminating the many mature business practices currently in existence, but we suspect that they may well be transformed by the direct and second-order effects of the Internet and its successors.

This theoretical underpinning provides a foundation for a longer-term empirical investigation of the strategic possibilities which the Internet offers to SMEs. A survey of small business usage of the Internet is already in preparation and, following the analysis of the results of this survey (which will provide a baseline for later investigation), a series of case studies is intended to furnish a detailed understanding of the activities of a group of strategically-oriented small firms. A second survey will then provide a longitudinal comparison of SME Internet activity and enable us to test the accuracy of our initial hypotheses. Our project will also build upon related work being undertaken at the Manchester Metropolitan University (see, for example, Narasimran, Strom and Whiteley [15]) and at Durham University in England (see, for example, Fuller and Jenkins [8]).

References


