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EXPLOITING THE INTERNET: STRATEGIES AND FRAMEWORKS FOR A SMALL BUSINESS

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ABSTRACT

The Internet represents one of the most dramatic, widespread innovations of recent times. For the small businessperson, it can be both a tremendous opportunity as well as a potential threat. This paper presents a series of frameworks and examples to help a small businessperson recognize, and develop a strategy to cope with, the electronic commerce opportunities and threats posed by the Web. Potential uses of the web with respect to five different stakeholders are presented: customers, intermediaries, suppliers, competitors, and employees.

INTRODUCTION

It is virtually impossible these days to pick up a magazine or journal, read a newspaper, or watch a news program on television, without hearing about the Internet. Consider the statistics. Nielsen (the same firm famous for measuring television ratings) has repeatedly conducted telephone surveys of the extent of usage of the Internet. While definitive results are a moving target--the number of Internet users continues to double each year, and there seems to be no end to this trend--the most recent large Nielsen survey (June 1998, www.commerce.net) indicates that approximately 79 million adults (34%) in the U.S. and Canada use the Internet. Eighty-three percent use the World-Wide Web. IDC (www.idc.com) predicts that the number of devices accessing the Web will grow to over 300 million world-wide by yearend 2001. Much of the growth will be international; the United States will go from 65% of the world market last year to 54% in December 2001.

An earlier Nielsen study (December, 1997) found that about 21% of Web users had used it to make on-line purchases. IDC predicts the percent of users buying goods on-line will go from 21-25% today to 39% in December 2001. This is partly because as users gain experience with the Web, they are increasingly likely to respond to on-line advertising, and make purchases over the Web. A study by Find/SVP in 1997 (www.findsvp.com) found that experienced (1995 and earlier) users are 50% more likely to look at ads and click on them to make purchases than new (1996-97) users.

Further, the demographics of the typical Internet user are very appealing to potential marketers. According to a survey conducted by the Georgia Institute of Technology, the average income of

Internet users is $58,000, and 54% of users have completed college. Combining the factors of a greater number of users, increased willingness to make on-line purchases, and larger average transaction size, IDC predicts that the amount of Web commerce will rise from $2.6 billion in 1996 to over $220 billion in 2001. Forrester (www.forrester.com) estimates that US businesses will exchange an estimated $17 billion in goods and services this year over the Net, more than double the amount in 1997. They predict that number will rise to $327 billion by 2002, about 3% of GNP. Combined with the cost savings to businesses and online consumer buying, the Internet could add an estimated $10 billion to $20 billion to gross domestic product in 4 years (Business Week, 1998).

Clearly, the potential for electronic commerce over the Web is vast. There are numerous stories of entrepreneurs who have generated significant revenues with successful Web-based businesses. Examples include Amazon.com (a retailer of books and music on the web), Open Market (www.openmarket.com, which sells Internet commerce solutions), Auction Web (www.ebay.com, an electronic auction site), and Auto-By-Tel (www.autobytel.com, an auto price quote site).

While many established businesses, such as Dell and Cisco, have leveraged the Web very successfully, the opportunities on the Web may be particularly significant for small businesses competing with more established rivals. As Shikhar Ghosh, founder and Chairman of Open Market (see above), has stated, "Ultimately, the risk of Internet commerce for established businesses is not from digital tornadoes but from digital termites" (Ghosh, 1998). Yet, it is striking that only 8% of firms surveyed in early 1998 by Dun & Bradstreet reported marketing through a Web site (Henricks, 1998). In fact, the survey showed that small businesses have been counting on less technological means such as walk-in retail traffic (44%), telephone sales (22%), and field sales (18%).

One impediment that prevents large firms from engaging in on-line sales is the large investment in "face-to-face meetings, handshakes, and product demonstrations (that) have built strong customer relationships" (Anders, 1998, p. 1). Jeopardizing these relationships could cause conflict in traditional sales channels. Furthermore, some very large firms would prefer to sell large quantities to a distributor rather than fulfill large numbers of small orders. Thus, barriers to entry for small businesses are fewer and weaker than one might have guessed.

In many cases, small businesses are finding that they are able to compete on a global scale that would have been impossible before. For instance, Network Associates in Santa Clara, CA makes anti-virus software that it has traditionally not marketed outside the US because the distribution channels would be too expensive. They do, however, have a web site. Recently, a bank in Spain downloaded the software from their Web site and ordered a 30-seat license! As division manager Zach Nelson noted "Instant sale. No cost." (Business Week, 1998)

Many of the web-based businesses discussed earlier began as very small enterprises and worked their way up very quickly thanks to the global reach of the Internet. An excellent example is Auto-By-Tel, which allows customers to specify their needs and obtain price quotes from particular local dealers. At the beginning of Auto-By-Tel's operations on Prodigy in March, 1995, about 500 purchase requests were expected per week, but 1,348 requests were received on the *fourth day* alone (Welles, 1997). By late 1998, Auto-By-Tel was receiving about 25,000 requests per week, and threatens to reshape the automobile sales industry.

Likewise, Amazon.com began as a small business, opening in 1995 with 1 million titles for sale but only 2,000 volumes in stock. Amazon.com's model still focuses on stocking very little inventory and ordering from quickly-responding distributors on demand, but Amazon.com now stocks over 1.4 million volumes in two large warehouses to take advantage of bulk purchases directly from publishers (Macht, 1998). The model has prompted legions of "copycat" imitators in other product groups such as toys, groceries, cooking, sporting goods, stationery, flowers (Macht, 1998), and even scientific instruments (Wagner, 1998). For instance, eToys.com, hoping to emulate Amazon.com in the toy industry, enjoyed a 10-month lead on Toys 'R' Us, and made deals with portal sites such as AOL and Yahoo!. Today eToys.com has over 3,000 toys in its Web-based catalog. While Toys 'R' Us is now investing in similar deals, eToys has a significant advantage: it has no investments in bricks and mortar, and very small inventories (Macht, 1998).

Very small firms can make use of the Web for reshaping their own businesses. Auto-By-Tel was a reincarnation of a failed automobile dealership (Welles, 1997). One Oregon firm, Sapient Health Network (SHN), faced bankruptcy because its health subscription service failed to generate enough customers. However, the Web allowed it to move the service on line and experiment with approaches until it finally settled on a very successful sponsorship, rather than subscription, business model. This demonstrates that, at least for some, "a Web-based business can reinvent itself in a matter of weeks" and can change direction about as easily as its founder changes his or her mind about what the business should be (Raths, p. 52).

As the quote from Mr. Ghosh indicates, however, the Internet is not an unmitigated blessing. As with any reshuffling of the competitive landscape, there are winners and losers. Consider the following two examples (Business Week, 1998).

Mike Dobres, general sales manager of Royal Motor Sales in San Francisco, has seen his profits fall by more than 25% over the past couple of years. Auto-by-Tel, as well as other car buying services, offer consumers an alternative purchase channel. Also, consumers are now much better informed about such things as invoice prices and are, therefore, able to negotiate better. On the other hand, Jeff Peters, manager of Byers Chrysler Plymouth Dodge in Columbus, OH, hooked up with Autoweb.com and increased his monthly sales from 160 to 172 cars, at a cost of just $29 per Internet referral. The article cites an example of Mr. Peters selling a car to an on-line buyer in Kentucky!

What this example points out in no uncertain terms is that the Internet itself is an equal opportunity resource—all who wish to have access can probably do so without jeopardy. Thus, whether it turns out to be an opportunity or a threat will depend largely on how well a business understands the capabilities and limitations of the Web in relation to its own specific needs, and how effective it is in designing a web strategy.

One approach that is not likely to be viable is to do nothing. Consider the following numbers. 93% of purchasing managers had Internet access and another 5% planned to get it soon, according to a survey by the National Association of Purchasing Management. 34% of the respondents used the Web 5 to 10 times a week to do their jobs, while 19% used it 20 times a week, many as a research tool when switching suppliers or purchasing a product for the first time (Southwick, 1998). In the words of Shikhar Ghosh, "Companies that do not want to participate in Internet commerce may be forced to do so by competitors or customers" (Ghosh, HBR, 1998).

The purpose of this article is to present a series of frameworks and considerations to help the small business owner identify opportunities and threats posed by the Internet and develop an

appropriate strategy for coping with them. Five generic sets of stakeholders can be affected by the use of the Internet: customers, brokers and intermediaries in the marketing channel, suppliers, competitors, and employees. Next, we consider each of these in detail.

CUSTOMERS

Much of the interest in electronic commerce comes from the unique potency of interaction with customers afforded by the Internet. Large businesses have always had the option of establishing direct on-line links with their customers--particularly large industrial customers--via their own proprietary networks. The Internet has now made it economically feasible for even the smallest business to establish such electronic linkages. Depending on the nature of the application, the link may be established over the Internet, which is accessible to all, or over an "extranet." Extranets are private networks that typically use the communications infrastructure of the Internet (and web browsers as the user interface) but access to an extranet is restricted to users explicitly authorized by the operators of the extranet (through passwords and other security devices collectively referred to as a firewall). For instance, a travel agent may use the Internet to communicate with any customer looking to buy an airplane ticket. On the other hand, a stock analyst may use an extranet to provide access to his investment analyses reports to subscribers only.

An example of a successful extranet is the case of Silver Platter Information, Inc., a $72 million company that licenses huge bibliographies from publishers such as Elsevier, converts them into searchable databases, and then ships them, typically on CD ROMs, to its global network of 176 independent distributors. In the past, a considerable portion of Silver Platter's employees' time was spent responding to routine questions from distributors such as the status of their shipments. So, Silver Platter developed an extranet that made its customer information database accessible to its distributors. While the system cost $30,000 to develop, Silver Platter feels the money was very well spent, based on the reactions from distributors and their satisfaction with the system.

The generic question that a business needs to answer is how best to exploit the potential of electronic linkages with customers. A common mistake to avoid is to evaluate the potential for electronic commerce for a business based strictly on the likelihood of on-line sales. This is an easy error to make in light of the focus in the popular press on on-line purchases, as reflected in the surveys above. Consider, however, that a recent survey by the Georgia Institute of Technology (www.gvu.gatech.edu/user_surveys/survey-1997-04/) found that the most popular reasons for using the Web were: gathering information (86%), searching (63%), and browsing (61). The least popular reason was shopping (19%). These numbers highlight an important point: even if an actual purchase is not made on-line, much of the decision-making by consumers may be supported by collecting information on the Web before the purchase. To the extent this is true, not having an effective Web presence may be a significant competitive drawback.

One framework that can be of great value to businesses hoping to develop a comprehensive strategy is the Customer Resource Life Cycle (Ives & Learmonth, 1984). This framework reminds us that a customer goes through multiple stages in acquiring and using a product: (1) Requirements, (2) Acquisition, (3) Stewardship, and (4) Retirement. Each of these stages represents a possible point of contact with customers. Anything that a business can do, through a Web site, to help a customer with any of these stages is likely to be a source of value added for the customer and can help the business differentiate its product or service. In addition, the business may also be able to reduce costs, for instance, by offloading some data entry to customers, or by allowing customers the opportunity to find relevant information directly on the

Web, rather than having to interact with employees of the business. Below, we will discuss the generic stages in the Customer resource life cycle and some examples of applications in each stage. First, however, we begin with a stage that is not included in the formal definition of the customer resource life cycle but is nevertheless important for any business—creating product awareness.

Product Awareness

In this stage, the seller's challenge is the same as in most advertising—making buyers aware of its product and service offerings. What, then, is the advantage of the web? Cronin (1994, p. 119) offers an interesting view in the Table below, where the amount of information is plotted against the potential interaction with customers. Traditional advertisements have low customer interaction and low information content. The amount of content can be boosted in long print advertisements or half-hour "infomercials," but the interaction is still quite low.

		Interaction with Customers	
		Low	**High**
Information Content	**High**	• Infomercials • Print	• Personal Visits • Electronic Information Distribution
	Low	• Traditional Ads	• Phone Sales

Telemarketing can boost the amount of interaction with customers but it is difficult to provide a large amount of information content; not only is the telephone medium unable to demonstrate the physical characteristics of products, often the callers are not deeply knowledgeable about the products or services.

The goal of high information and high interaction is very interesting; that cell contains both the most and least expensive approaches of all. Firms who would obtain great advantage from very high interaction with customers along with high information content have historically needed to employ a very expensive door-to-door sales strategy. Some of these same firms are now finding that a great deal of tailored information can be distributed electronically for a fraction of the cost. Furthermore, the interaction element does not imply that only the information requested is given to the customer, but also that information can be collected from the customer to open up two-way communication or to store for future use.

A key assumption in the discussion above, of course, is that the business is, in fact, able to attract customers to its web site. Given the millions of web sites on the Internet, this is not an insignificant challenge for a business, particularly a small business without the name recognition of a Microsoft or an IBM. What strategies are available to a small business to attract potential customers to its web site?

One way is by placing prominent ads on some well known and frequently visited Web sites (see the table below, from www.relevantknowledge.com). Rates for placing so-called "banner" ads

range widely by site, but sites such as Yahoo!, Infoseek, Lycos, and Excite charge about $20 to $30 per thousand visitors who see the banner (Voetsch, 1998). Their minimum monthly charges of $1,000 to $6,000 are easily covered by the millions of visitors each month, and a small business advertiser can elect to limit the number of exposures to contain costs.

So far, there are relatively few sites that attract such traffic; such sites are usually those that provide the ability to navigate the Internet (such as Yahoo!, HotBot, and Infoseek), or those that were set up as the "starting page" when the browser was installed by the computer manufacturer or the user. Such web sites have recently added directories, search engines, news, and other services to position themselves as Web "portals." That is, they provide a wide range of services with the expectation that a user looking for virtually any kind of a web site can start off at the portal and then, by following a series of well structured links, arrive at the destination web site. The key is finding a way to make sure that interested parties will stumble across your site.

Top Ten Web Sites Visited, September 1998	
1. Yahoo.com	6. excite.com
2. Aol.com	7. lycos.com
3. microsoft.com	8. msn.com
4. netscape.com	9. infoseek.com
5. geocities.com	10. altavista.digital.com

One important consideration to make users' access less of a random event is *targeting*, where you place advertisements on portals in strategic locations. For instance, if a person does a search or otherwise arrives at a page having followed a set of insurance links in Yahoo!, he or she will almost always be presented with a banner ad for insurance, gaining instant global exposure for the business displayed. Thus, one possible strategy for a business is, in fact, to "purchase a word" from Yahoo! such that every time a user searches on, or follows links based on, that word, the ad displayed to the user is for this business.

Very small businesses that find the rates for placing ads on portals too high can try to identify specific sites that their customers are most likely to visit. That is, "Go where your potential customers are" (Southwick, 1998). In general, customers are likely to consult on-line versions of the same references they used in print form. For instance, the *Thomas Register of American Manufacturers* is a frequently used source by many procurement manufacturers. Plastics Technology Group, a $16-million manufacturer of flexible plastic tubing, paid Thomas Register $ 7,000 for links to its site under 100 different categories. Now, marketing manager Donald Warner states that "...the link from *Thomas's* is consistently in the top 6 out of about 40 different places where people find us."

Requirements

In the requirements phase, customers often seek information about the product to clarify the purchase. This may involve one or more of the following steps:

(a) Determine product appearance: Customers may need to ask how the product looks. For instance, a product that customers often buy over the phone is flowers. Rather than having to trust the salesperson to select the appropriate bouquet for the occasion, a customer can now visit FTD's web site (www.ftd.com) to see the various flower arrangements that he or she can purchase. This reduces the

possibility of a dissatisfied customer. Another example is the web site of BMW. Visitors to the site can look not just at still images of the car but can actually take a "test drive" (using "Shockwave" technology). While BMW is of course a large car company, it would not be difficult for an individual car dealer to develop such an application, or for any small business to develop a similarly interactive application.

(b) Determine prices: Clearly, a buyer needs to know how much a product costs before he/she makes a purchase decision. There are three ways a seller can provide this information. The most obvious one, of course, is to list prices on its own Web site. However, this assumes that the buyer can, in fact, be induced to visit the business's web site. As we noted above, this is not a trivial challenge for a small business. Another possible avenue for a business is to participate in alternative web-based distribution channels, such as electronic markets, that are designed specifically for the purpose of helping buyers compare prices across multiple sellers. We discuss these again later in the paper. Finally, simple electronic mail can be a powerful and efficient means to communicate with both new and existing customers, although it can present some interesting challenges. For instance, James Kantor of Eastern Avionics International used to delete most of his E-mail without reading it simply because he could not understand it, being in a foreign language. He began to subscribe to Comprende, a real-time Internet based service that translates E-mail ($250 set-up fee plus $100 a month for a corporate account). In the first ten weeks he used Comprende, his international sales went up by 60%! (Esterson, 1998).

(c) Determine what quantities or variations are available: Sometimes, a buyer may know that he/she needs a product in a general category but may not know exactly which product. In that case, the seller may be able to help the buyer by presenting a set of choices. For instance, a visitor to Amazon.com can enter a general subject area or author and get a list of books, along with published and reader reviews and possibly, a table of contents for each book. In some cases, the Web site can be used to create or to surface latent demand. For instance, once a buyer has purchased books through Amazon.com, the next time he/she returns to the Web site, Amazon displays a personalized message with specific recommendations of books the buyer may like, based on his/her previous purchases. In some cases, this may point the buyer to purchase a book that he/she may have been completely unaware of before.

It serves several needs of the seller to provide this kind of information electronically. First, sellers without a web site often need to employ many telephone representatives to answer these highly repetitive questions, for instance, on product specifications or prices. Further, if a buyer is more fully aware what he or she is going to receive, the levels of returns will decrease. Finally, as noted, an awareness of the kinds of options available in some products can serve to increase sales.

Acquisition

The acquisition phase is the one that is most often associated with electronic commerce because it includes on-line ordering. However, even within the Acquisition phase, there are different activities that may be supported. Thus, customers need to know the following:

(a) Where to go to find or order the item: This can include such simple information as relevant phone numbers and mailing addresses that the customer can use to find a hotel location (www.hilton.com), on-line forms that the customer can use to request a call from a salesperson (www.autobytel.com), or even on-line ordering capabilities (for instance, www.llbean.com, or making reservations at www.hilton.com), depending on the nature of the product and the sophistication of the site.

(b) Specify or configure the product: A pioneer in this respect has been Dell Computers (www.dell.com) (as well as other PC vendors such as Gateway (www.gw2k.com) and Quantex (www.quantex.com)). Customers looking to buy Dell computers can visit its web site and configure computers to their exact needs, assembling the specific components they would like (within certain boundaries, of course). This has given Dell a competitive edge over vendors using traditional retail outlets where customers are forced to accept pre-configured machines. 25% of Dell's customers say they would not have purchased their computers without the Web site.

(c) Check the status of their order: The visionary in this has clearly been Federal Express (www.fedex.com). Anyone using Fedex to mail a package can later enter the tracking number on the package and get accurate, up-to-the minute information on where the package is. Customers can also check the status of their orders for PCs at some mail order computer vendors such as Dell and Quantex. Some sellers have found tremendous cost savings; a recent Department of Commerce study (1998, http://www.ecommerce.gov/emerging.htm) reports that 20,000 Dell customers check the status of their orders every week. If 10% of these customers were to make phone calls, costs would increase $6,000 to $10,000 per week. Similarly, Fedex supports the tracking of a million packages each month. Without the tracking system, Fedex would need to hire 20,000 additional employees to handle the paperwork, phone, and data entry activities.

(d) How to (or even simply to) take possession of the item: Particularly for information-based products, it is even possible for the customer to take delivery of the item over the Web. This has clearly become quite common for many software companies, which routinely release software, including updates and patches, on the Web (for example, www.microsoft.com). In some cases, customers are even offered a discount if they are willing to take delivery of the software over the Web rather than having a CD or disk shipped to them.

Stewardship

Customers also need to be supported while they own the product. For instance, they may need help with assembly. Bush Furniture (www.bushfurniture.com) makes available assembly instructions for their furniture over the Web. Some products may need maintenance and upgrading. Thus, as noted above, software vendors routinely deliver updates over the Web. Dell has saved a great deal in this area, with users downloading 30,000 files every week. Without the Web site, Dell estimates it would need to spend $150,000 weekly on phone and diskette mailing costs. Also, because each troubleshooting call costs Dell $15, if 2-3% of the 30,000 to 40,000 troubleshooting queries each week reached phone representatives, costs would rise by $9,000 - $18,000 per week.

Retirement

Finally, there are even rewards in helping customers retire the product or otherwise complete their involvement with the service. Including these functions on commercial Web sites can increase efficiency (for example, when removing URLs from search engine sites at www.altavista.com) or increase revenues (for example, when reselling unused hotel rooms at www.hoteldiscount.com/hotels.html). Failing to allow customers to remove their URLs automatically would be a potential nightmare of phone calls and/or electronic mail messages. Unused hotel room re-sales can help three parties: the hotel loses a "no-show," the customer obtains a discount, and the third party earns a commission.

While many of the examples cited above are from large firms, primarily because they have been the leaders in exploiting the potential of the Web for established businesses, the underlying principles and possibilities apply equally well to small businesses. As the discussion above has pointed out, the important thing is to move away from a narrow focus on on-line sales only, and recognize that businesses of all sizes can benefit by making use of the Internet in all phases of the customer resource life cycle, either to enhance customer service or to reduce costs by avoiding repetitive and unrewarding customer contact. In fact, as noted above, the primary advantage of the Web over more traditional telecommunications technologies is the low fixed cost of access which makes it available to even the smallest firms.

MARKETING CHANNELS: DISTRIBUTORS AND BROKERS

One of the important impacts of the Web has been to create a whole new set of possibilities with respect to the structure of distribution channels, specifically, the role of the intermediary/broker. On the one hand, as it becomes efficient for sellers to establish direct electronic links with customers, even those in geographically dispersed locations, in many cases there may no longer be a need for a broker or an intermediary. At the same time, a whole new class of cybermediaries is starting to emerge that could provide useful alternate or additional means for a small business to reach its customers.

For the small businessperson, this represents both an opportunity and a threat. Specifically, it raises three sets of questions:

1. Evaluate the role of brokers in its own channel structure and consider establishing direct links with the customer. Some factors to consider in making this decision are:

a) To what extent is the intermediary or broker merely dispensing information on behalf of the seller and to what extent is the intermediary actually selling and promoting the business's products? The former case may be an opportunity to use the Web to bypass the intermediary but not necessarily the latter.
b) Is the intermediary providing technical assistance to the customer that can now be delivered through the Web?
c) Is the intermediary assembling the business's product with those of other complementary sellers into packets that buyers purchase together in bundled purchases? In this case, it will not be prudent for the seller to discontinue using the intermediary because buyers may not be willing to unbundle the purchase and buy each item independently directly from the seller.
d) Can the product be delivered over the Web? If not, the business may still need the services of a physical distributor even if the information-based functions provided by the

intermediary can be replaced by the Web. Here, the business may want to consider alliances with such companies as Federal Express that offer complete logistics management services including warehouse management and shipping.

2. Consider using the services of the new cybermediaries

As noted, although traditional intermediaries are being challenged by the Web, a whole new set of web-based intermediaries, called cybermediaries, are emerging that have the potential, in many cases, to significantly restructure the distribution channel. Specifically, three options are useful to consider:

a) Electronic Markets

An electronic market is formally defined as "an electronic intermediary over which multiple buyers and sellers do business" (Malone et al., 1987). In effect, it is a shopping service that is designed to make it easy for buyers to locate and compare a set of sellers offering a specific product. For instance, a buyer visiting www.shopper.com can specify any computer product that he/she is interested in purchasing (e.g., HP Laser Printer) and the system will retrieve a list of vendors offering the product, along with their prices and such information as stock availability and shipping and handling charges. For a small business, this represents an additional, inexpensive sales channel to reach customers it may otherwise have difficulty reaching, as well as a way to highlight its low prices (assuming, of course, that it has low prices—these services are not as useful for businesses competing on the basis of exclusive product features or strong customer service, attributes that are difficult to convey in a simple comparison table).

Some electronic markets will only list prices from vendors with whom they have explicit arrangements. Others, particularly "intelligent agents," are designed to locate vendors' web sites and retrieve information without any explicit agreement with the vendor. An example of an intelligent agent, which is essentially a software program that acts as a buyer's shopping assistant, is Bargain Finder (http://bf.cstar.ac.com/bf/), which helps buyers shop for music CDs. A buyer looking for a specific music CD can type in the title and Bargain Finder will retrieve for the buyer the prices of the CD from the sites of a number of Web-based vendors (some web-based vendors consciously choose to block the intelligent agent's access to their sites). In either case, a small business interested in participating in such an electronic market should be sure to have its offering listed when a buyer conducts a search.

b) Electronic Catalogs

Another kind of shopping service, which we can generically refer to as an electronic catalog service, is exemplified by such sites as Net Market (www.netmarket.com) and Value America (www.valueamerica.com). A visitor to the Netmarket site will find a large number of items for sale, from televisions to office supplies. The difference between this service and an electronic market as described above is that a buyer gets a single price for an item (assuming the service carries the item), not a comparative list of multiple vendors' prices. In addition, the transaction is directly between Net Market and the customer, whereas an electronic market typically presents the comparative information but the transaction is between the customer and a selected vendor from the list presented by the electronic market. Net Market itself, however, does not carry any of the items in its catalog. Each item is shipped directly from an independent vendor (with whom Net Market has an agreement and whose name the final customer may never know) to the customer. One possibility for a small business is to enter into an agreement with services like Net Market and Value America to be their chosen supplier for a selected set of products. Note once again, however, that Net Market competes largely on its ability to offer lower prices than anyone

else so that this is usually a viable strategy only for those small businesses that are competing on a price-based strategy.

c) Electronic Auctions

One potential channel that has gained considerable momentum recently is the electronic auction (such as Auction Web at www.ebay.com, or uBid at www.ubid.com), where buyers register their identity and/or credit card information and then bid on items that become available. The bidding is conducted in real time, with current prices that change from moment to moment and an electronic "gavel" that closes at a particular time unless continued bidding pushes the process into "overtime." Of course, this fundamentally changes the pricing process—instead of a predetermined price, the seller is essentially letting market demand determine prices (within certain parameters, of course). This may be a particularly attractive outlet for sellers to consider in disposing of surplus or overstocked items, refurbished items that do not otherwise have a ready retail outlet, or items that are difficult to price ex-ante, for instance collectibles that are in limited supply but in high demand.

3. Evaluate the threat to its own brokerage/distributionbusiness: form alliances if necessary

The potential to bypass brokers may be an opportunity for some, but if a small firm is in the brokering or intermediation business, this represents a threat to its very survival. For instance, as an increasing number of Web-based travel services become available to the average consumer (for example, Microsoft Expedia at expedia.msn.com, Preview Travel at www.previewtravel.com, or ITN at www.itn.com), many travel agents are suffering reduced business volumes. Vanita Louie, president of San-Francisco based South Pacific Express Travels, a $25 million dollar travel agency, claims that they have lost 10-15% of their volume to the Internet over the last year (Business Week, 1998). Unfortunately, there is no easy solution. A small business that is in a strictly brokerage role must confront the hard reality that its value-added may be replaced by the Web. It must, therefore, search for alternate means of adding value to the customer. For instance, some travel agents act as consolidators and negotiate special fares with airlines or cruise lines (not available directly to the final passenger) by consolidating purchases across multiple customers on specific routes.

A second threat to the small distributor/broker is that, with electronic commerce, many buyers are consolidating their sources of supply and moving towards sole source contracts for a category of products. Consider, for instance, the case of the maintenance, repair, and overhaul (MRO) industry. An important recent trend in the industry has been the movement towards "integrated supply," that is, exclusive contracts by buyers with single suppliers for all their MRO needs. The movement towards integrated supply places a premium on breadth of product line coverage, which favors the largest distributors, and puts smaller, regional firms at a significant competitive disadvantage. Many of these smaller distributors have responded by forming strategic alliances that give them the necessary product coverage to compete for exclusive, integrated supply contracts. One example is the New England iPower Distribution Group (IDG/NE), an alliance among a group of small distributors of complementary MRO products (e.g., fasteners, electrical goods, fluid connectors, and pipe valve fittings) in the New England region. From the customer's point of view, the consortium functions as a single supplier. Each seller in the consortium maintains its independent identity and continues to do business as usual with customers not interested in moving towards an integrated, exclusive supply arrangement. However, as part of the alliance, each distributor is also completely responsible for the supply of its product group to customers who have signed exclusive contracts with IDG/NE for all their MRO needs.

The engine behind IDG/NE is a hub--a central computer that runs the iPower software. Purchase orders are sent by the customer electronically to the hub which then splits the order, based on product groups, and transmits each resulting "sub-order" to the IDG member responsible for the product group. Each individual IDG member ships the product independently to the buyer, and sends its invoice to the hub. The hub, in turn, consolidates the information and forwards a single electronic invoice to the customer every month for all transactions for the month from all the IDG members. As far as the customer is concerned, it is dealing with a single supplier. This results in a significant reduction in the transaction costs (iPower estimates the savings at 20-40%). The most important benefit to the franchise members themselves, all small businesses, is that it allows them to compete effectively for integrated supply contracts against large distributors, which they could not have done on their own.

SUPPLIERS

The web can also be a powerful tool in streamlining the upstream value chain and the procurement process. There are two principal choices. The first is to increase the efficiency of communication with a select set of suppliers through the use of electronic data interchange (EDI)—the objective of this approach is to reduce transaction costs and, possibly, inventory levels. The second option is to try to reduce the price paid for a product by using an electronic market or an electronic bidding service to expand the range of suppliers searched before making a purchase.

EDI - EDI is inter-company, computer-to-computer communication of standard business transactions in a standard format that permits the receiver to perform the intended transaction (Sokol, 1989). According to the Department of Commerce (1998), procurement is a complex, multi-step process where a firm must

- find suppliers who meet volume, delivery, quality, price requirements,
- send detailed drawings and specifications to the suppliers,
- send a purchase order to the chosen supplier for a specified quantity,
- receive a confirmation of the order,
- receive a notice and invoice that indicates when the product was shipped, and
- try to match the invoice to the purchase order.

Virtually all of these stages can be made more efficient through the use of EDI to exchange documents electronically to avoid delays, printing costs, mailing costs, and, in some cases, redundant data entry costs. The principal objective of EDI is to reduce the transaction costs of established procurement relationships. EDI is most useful when there are large volumes of stock items bought/sold, easily-identifiable products (by a product code), requirements for careful tracking and reporting, abundant paperwork, and when there is a need for rapid processing and delivery.

Historically, EDI was performed using a private network, but more recently firms have turned to the use of Internet technologies and communications linkages. Use of the public Internet has opened EDI to smaller suppliers and buyers. Without the Internet, adding a single additional trading partner to an EDI network can cost up to $50,000. Now, many large vendors offer Web EDI services that convert purchase orders from big buyers into Web forms that smaller suppliers can get over the Net. General Electric's Trade Web costs a firm less than $1,000 a year to join—as a result, more than 3,000 small suppliers have signed up (BW, June 22, 1998). EC Co., based in Silicon Valley, is constructing an Internet service that converts EDI data into formats that small companies can import directly into their PC-based business systems.

Typically, EDI is conducted over what we described earlier as an extranet, that is a restricted access network to which only business partners have access. An example of a successful extranet is GE's Trading Process Network (Department of Commerce, 1998). The Trading Process Network allows requisitions to be sent and received electronically, bid packages to be sent to suppliers around the world via the Internet, and engineering drawings to be found and attached to requisitions electronically. Within 2 hours, suppliers are notified of incoming requests for quotation (RFQs) by e-mail, fax, and EDI. Bids can be evaluated and awarded on the same day they are received. GE has found procurement labor costs to diminish by 30%, and material costs to diminish by 20% (due to enhanced competition between suppliers). GE has redeployed 60% of their procurement staff in other areas. The sourcing department now has 6-8 additional days per month for strategic activities. As of October 1997, 8 divisions of GE used the TPN for a grand total of $1 billion of transactions. By 2000, it is expected that all 12 of GE's business units will use it for a total of $5 billion of transactions. Over the next 3 years, savings of $500-$700 million are expected.

Electronic Markets and Electronic Bidding Systems

We referred earlier to electronic markets and their ability to facilitate efficient market search and comparison among multiple sellers. We also discussed how an electronic market can be an efficient means for a small business competing on low prices to reach large numbers of scattered customers that it would not otherwise reach. The same is also true on the supply side. A small business can use an electronic market to search among a much larger number of suppliers than it would normally be able to justify. This increases the firm's chances of finding a better price. For instance, in the aircraft parts industry, an electronic market called Inventory Locator Service (ILS) allows even an individual plane owner or a small hangar facility to search a large number of used parts vendors to locate a needed part and try to obtain a better price.

Another Internet based service that a business can use to try to expand its reach and compare prices across a larger set of suppliers is an electronic bidding service such as the one operated by Free Markets Online. When contacted by a firm looking to buy certain parts (such as injection molds, their earliest specialty), Free Markets identifies and screens a large number of suppliers worldwide and then conducts an electronic bidding process among them (similar to an electronic auction in reverse) to arrive at a final price. Typically, Free Markets is able to procure a lower price for the buyer than the firm could have achieved on its own.

COMPETITORS

One of the most common arguments given for developing a Web site is to keep up with, or surpass, the competition. In some cases, there is certainly merit to these arguments, but it is important to understand more specifically the competitive forces identified by Porter (1980) and expanded and applied to computer-based systems by Cash et al. (1988). Seven useful and interesting goals for achieving competitive advantage include:

- Building barriers to entry (against new competitors)
- Increasing switching costs (making it more difficult for customers to change vendors)
- Increasing responsiveness to market changes
- Creating new products or services

- Creating specialized products (a market niche)
- Reducing costs dramatically (increasing profit and/or reducing prices)
- Achieving bargaining power against suppliers

All seven goals can be potent either separately or in combination, and the Internet can be a powerful enabler in each case.

Barriers to Entry

Often, innovations can be copied by other firms rather quickly. In some cases, however, investments required to imitate a product or service are prohibitively high. The most common barriers are legal (patents, copyrights, trademarks, exclusive contracts), technical (requiring research and development or other specific knowledge), or economic (capital investments in equipment, or promotion). For example, it would be difficult for most people to attempt to start a company to produce and sell copies of popular vehicles because all three barriers stand in their way. However, building and selling personal computers might be feasible because hardware and software components, as well as directions for building them, are readily available.

In the domain of the Internet, barriers to entry might be attained by

- entering into exclusive contracts with other firms for providing a link to your site at their popular portal (e.g., Yahoo!),
- heavily investing in programming to create a site that offers advanced features (such as BMW's "test drive" or Federal Express' package tracking),
- creating a particularly creative site to generate early publicity (such as Amazon.com), or even
- reserving domain names that customers can easily "guess."

Some firms discovered early on the importance of using an appropriate domain name. In 1995, Procter & Gamble registered over 1,400 domain names (http://www.idbnet.com/Q-A.html) such as indicated in the table on the following page:

Switching Costs

Customer loyalty is based not only on the quality of the product or service, but also on the time, effort, and/or cost of switching to another supplier. One way a Web site can build switching costs is by storing and making good use of information about the purchases of customers. For example, the on-line bookstore Amazon.com stores address and credit card information for each customer, and electronic "cookies" stored on the customer's hard disk reveal--only to Amazon.com-- the customer's identity. This allows the customer to avoid the time required to enter his or her address and credit card number for each subsequent purchase, making it very convenient to shop there repeatedly. In addition, as noted earlier, Amazon.com tracks and even analyzes the purchases of each customer to suggest other books that he or she may like.

Switching costs in a business-to-business context often involves an application developed by a firm, which provides several services that the customer would otherwise have to cover in some way. For example, a vendor might link to the customer's inventory database and provide suggestions for anticipatory shipping, or provide analysis tools to evaluate inventory levels.

Switching to a new vendor could result in higher inventory costs, or could require training to make use of the new vendor's system.

A Sample of Domain Names Reserved by Procter & Gamble	
ANTIPERSPIRANT.COM	DRY.COM
BACTERIA.COM	FRESHNESS.COM
BADBREATH.COM	GERMS.COM
BEAUTIFUL.COM	GUMS.COM
BRIGHTEN.COM	GUM-CARE.COM
BRIGHTENING.COM	HEADACHE.COM
BRIGHTENS.COM	HYGIENE.COM
CAVITIES.COM	NAILS.COM
CLEANS.COM	PIMPLES.COM
COMPLEXION.COM	ROMANTIC.COM
CONDITIONER.COM	SCALP.COM
COUGH.COM	SENSITIVE.COM
DANDRUFF.COM	SENSUAL2.COM
DENTALCARE.COM	STAINS.COM
DENTURES.COM	THIRST.COM
DEODERANT.COM (sic)	TISSUES.COM
DIARRHEA.COM	TOILETPAPER.COM
DISHES.COM	UNDERARM.COM
DISINFECT.COM	UNDERARMS.COM

Responsiveness

Some firms find today's market to be very fickle with respect to quantities demanded at any given moment, or with respect to styles offered. It is therefore often very difficult to respond to changes in demand; this difficulty is primarily based on the lack of adequate information at the correct time. The Internet could provide early clues about market trends in several ways.

One example is the vast arena of Newsgroups, an area of the Internet that allows "threaded" discussions to take place. These discussions are sorted into thousands of different groups, and address nearly every imaginable product, hobby, or interest. Several groups are likely to hold discussions about products or services nearly any firm offers. Threading allows responses to be sorted along with their questions, so that a person can review entire discussion topics within each group. For example, a pet store should pay attention to opinions on groups such as rec.pets.cats, and rec.pets.birds; an electronics dealer should pay attention to groups such as rec.video, rec.audio.car, etc. It might be very instructive to read comments from groups of people comparing their experiences on available products or services.

Another way in which market trends could be collected is by providing an avenue for two-way communication on a firm's site. Such communication can range from the formal to the informal, from structured feedback forms to simply providing an e-mail address for customer comments.

Finally, because information on the Internet is available for all to see, it is quite easy to monitor what the competition is doing. Such monitoring can range from a highly formal competitive intelligence effort to simple informal awareness.

New Products Or Services

Some products or services could not exist without the Internet. Certainly, the portal site Yahoo! created an entirely new market simply by collecting, examining, and screening sites to include in their directory. Their current market capitalization (at $12 billion dollars in late 1998) far exceeds their physical net assets; furthermore, their capitalization even exceeds that of American Airlines (Reed, 1998). Other new Internet services include search engines and Internet Service Providers.

Many other new products and services are related to the sale of more traditional products. A site such as Auto-By-Tel can use the power of the Internet to extend the reach of automobile dealers farther beyond their own neighborhoods than ever before. E-Bay brings together buyers and sellers, making it possible to conduct international auctions for thousands of products. And www.shopper.com (referenced earlier) allows computer product customers to compare the prices of dozens of on-line retailers easily and quickly. There seems to be no shortage of ideas for new products and services on the Internet.

Market Niche

Businesses that are limited by physical boundaries often cannot offer highly specialized products unless the nearby population is very large and diverse. For example, very small American towns often offer only a small number of restaurants, usually American, many of them franchises. Only larger cities can support a variety of familiar ethnic restaurants (for example, Italian and Chinese), and only the largest cities can support less familiar varieties (such as Burmese and Tibetan).

The Internet breaks down physical location barriers, effectively widening the customer base beyond the ability of a physical store. Therefore, it becomes feasible to offer highly specialized products. For example, satellite dish accessory dealers, high-end hi-fi dealers, and novelty pet accessory dealers can now thrive in remote rural areas that include inadequate customer bases for their products. The Internet can enable a small business to compete in a global market.

Cost Reduction

Some firms have found ways to reduce costs dramatically, thus increasing their profit margins and/or reducing prices. Reducing prices significantly can dramatically and quickly change the balance of power, and market share, in an industry. Several examples of Internet-enabled cost reductions have already been described above, in areas such as lower inventory levels, automated ordering, and solving repetitive customer problems.

Bargaining Power

By increasing its bargaining power with suppliers, a firm can uncover significant cost reductions. As discussed earlier in the case of Free Markets Online, the Internet can help open up competition among suppliers. While it is not always necessary to go to the extreme of developing real-time auctions to achieve significant power with suppliers, the reward can be high. Free Markets Online has been able to achieve an average of 17% cost reductions in prices paid by their

customers. Their effectiveness has been highest in inefficient markets such as custom-produced injection molding subassemblies, and lowest in efficient markets such as sucrose and other commodities. Without the efficient communications infrastructure provided by the Internet, locating and comparing among such a large number of suppliers would be highly inefficient and infeasible for most buyers. The use of the Internet to increase the base of suppliers is much easier for commodities than for specialized products.

Deploying Investments to Increase Competitiveness

Whatever the competitive strategy chosen, it is important to decide the extent to which the investment should be deployed, and the time frame for such investments. Such investments can include personnel and equipment needed to develop a Web presence, communicate with customers, monitor the competitive environment, develop new products or niche, and/or expand the supplier base.

A useful capital investment framework is that of Kester (1984), who asserted that two important factors in deriving a competitive strategy are the strength of the firm's competitive position and the replicability of the benefit derived from the investment.

	Not Replicable	**Replicable**
Strong Competitive Position	• Aggressive, creative stance • Take time to implement.	• Let others take big risks. • Take time to "polish" the approach
Weak Competitive Position	• Aggressive, creative stance • Implement quickly	• Invest small amount quickly; • Continue to innovate

In general, a strong competitive position buys a firm time in implementation of the investment. If the benefit from the investment can be replicated quickly by others, it might make sense to postpone the investment while other firms take the risks. After a while, the strong firm can invest in what works best and avoid less promising approaches. If the benefit from the investment is not replicable, a more aggressive and creative approach can be useful, but as stated above, there is no rush to implement that approach.

A weak competitive position creates the need for quick action. Once again, replicability is a key factor in determining the aggressiveness of the investment. An investment that is easily replicated by others should be made quickly, however, at levels that do not jeopardize the firm's already weak position. Continuing innovation is needed because other firms will quickly adopt the best of what has already been done. On the other hand, if the investment is not easily replicated, then it might represent a rare chance for the weak firm to strengthen its position.

Small businesses appear to most often postpone their investments, according to a study by the U.S. Small Business Administration and IBM (Buchanan, 1998). When asked when small business owners purchase technology, 61% wait until it is "proven." Furthermore, 54% wait until they learn about the experiences of others. Although the common practice for small business owners is to postpone investments, Kester's framework as well as the experience of firms such as of eToys.com (Macht, 1998) would suggest that there are ways to improve substantially the

competitive position of a small business, and gain meaningful advantage over a firm with a large market presence.

EMPLOYEES

Finally, the Internet can also be an excellent tool for communication and information retrieval among the employees within a business. This is generally done over an "intranet." An intranet is an internal-only network, that is, access to information on the Intranet is available only to employees of the company, typically controlled by passwords and other security mechanisms that erect a "firewall" between the intranet and the broader, public-access Internet. Typically, an intranet uses a Web browser as the user interface.

One of the most interesting aspects of intranets is that they often show the largest and fastest returns on investment but are quite mundane in their content. Many provide access to corporate databases, corporate systems, employee personnel files, documentation, reports, purchase requisitions, reimbursement requests, and correspondence. *PC Week's* (Paul, 1997) survey showed the average cost of an intranet per thousand users to be just over $35,000 annually, including help desk costs ($9,500) and solving hardware and software problems ($6,700).

Accounts that have been reported widely show returns on intranet investments to very often be many times the investment itself, often because the firms already have the required equipment and communications connections. One example is that of Nissan's site (Mulich, 1998), built at a cost of $178,500. In its site, Nissan included such items as press releases, employee anniversaries, company fitness center schedules, up-to-the-minute internal news, management tips, and databases of stories on competitors. In its first year, Nissan's Intranet saved $750,000 in staff time and $72,000 in printing costs, giving a first-year return on investment of 661%. Printing savings have recently grown to $210,000, so returns are expected to grow substantially. The 2,500 Nissan employees average 34 hits apiece per week.

Often internal communication paths are made quicker by deploying an intranet, resulting in dramatic, strategic savings. One ripe target is to reduce inventory levels. IBM's Advanced Planning System (APS) allows the marketing department to transmit their monthly estimates of how many PCs will be sold immediately to the production planning and purchasing areas (Department of Commerce, 1998). Capacities in each factory can then be assessed and production schedules can be adjusted to best meet the demand. Fine-tuning can be performed on a weekly basis with the real-time information furnished by the system.

Once again, while the above examples and figures are based on large corporations, a small firm can build an Intranet at a cost of just a few thousand dollars that can yield percentage returns that are comparable to those described above.

CONCLUSION

This paper laid out some basic strategies and frameworks for a small business to consider in developing appropriate strategies for exploiting the Web. The Web represents a particularly exciting opportunity for small businesses because it breaks down entry barriers, allowing them to compete with established large businesses on a scale that may not have been possible before. At the same time, the potential for such changes as disintermediation can be a threat to small businesses.

The specific recommendations offered in this paper can be summarized in the following points:

1. Consider opportunities for electronic commerce that go beyond just the sales transaction, including:

- building customer awareness, through targeted advertisements and a well designed web site,
- allowing customers to determine specifically which products or services they need,
- giving them instructions for purchasing or allowing them to check their order status,
- helping them assemble, repair, or upgrade their products, and
- making it easier to retire the product or complete their service encounter.

2. Web portals such as Yahoo! can help attract users to a firm's Web site. If the rates for such portals prove to be too high for a small business, target your advertisements to those sites your customers are likely to use most often, such as the *Thomas Register* or other industry specific sites.

3. Consider whether it may be possible to establish direct customer links and eliminate intermediaries. On the flip side, if you are an intermediary, evaluate whether the Web can replace your current functionality. What additional sources of value can you add?

4. Several alternative channels, or "cybermediaries," can be used to reach customers. Such channels include electronic markets, electronic catalogs, and electronic auctions. These are particularly useful for small businesses because they level the playing field, presenting information on a single unbiased screen, and highlighting any price advantage a firm has.

5. Electronic markets and auctions can also be used to reduce costs by expanding the base of suppliers from whom a business purchases products.

6. Alliances can be used to counter threats from larger competitors, especially in competing for exclusive supply contracts that require breadth of product line supply beyond that possessed by most small businesses.

7. Internet-based EDI is accessible to all businesses, and effective in reducing the transaction costs of working with customers and suppliers.

8. In identifying Web-based services to be offered, it is beneficial to keep in mind seven competitive targets: building barriers to entry, increasing switching costs of customers, increasing responsiveness to market changes, creating new products or services, emphasizing a market niche, reducing costs dramatically, or achieving bargaining power with suppliers.

9. The speed at which investments should be made depend on a firm's competitive position and replicability of the innovation.

10. Internal communications through an intranet can lower costs and speed communication within a firm.

A small business that is run with adequate planning and vision, and with knowledge of what is possible, can capitalize on the abundant opportunities on the information highway, and indeed gain substantial advantage over large, well-established, competitors. Awareness of strategies and frameworks such as those described in this article can help direct a small business owner toward improved planning and vision to achieve that advantage.

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