A WORLD WIDE WEB PRIMER FOR SMALL BUSINESS

Albert L. Lederer
Donna J. Maupin
University of Kentucky

ABSTRACT

The World Wide Web is growing very quickly. It offers small businesses the opportunity to reach a wider customer base. However, before deciding to launch a Web site, a small business manager needs an understanding of the Web and how to use it to achieve business goals.

This article provides a foundation for using the Web to achieve them. It includes a brief history of the Web, its commercial demographics, and reasons for building a Web site. It also explains the key issues and steps for developing a Web site and assessing its success.

INTRODUCTION

Beyond a doubt, the growth of the World Wide Web has been dramatically accelerating. The appearance of "http://" and "www" in magazine, newspaper, radio, and TV ads and stories has become an ordinary, daily occurrence. In fact, the Web has become so visible that many observers believe that small to mid-sized businesses will miss significant opportunities if they fail to use it to promote their products and services.

However, before a business decides to develop a Web presence, it must face some important issues. First, it needs some knowledge of the Web and its foundation, the Internet.[1] It also needs to understand the demographics of the Web users who might become its customers. It must develop business strategies for its presence on the Web.

Finally, the business has to face such mechanical issues as to whether it or a service provider will furnish its hardware, software, and expertise. Many small business managers lack the knowledge and time to learn about how the Web works. Understanding the mechanical issues can be challenging but it is still essential before a manager begins listening to the offers of vendors and consultants.

---

[1] The Internet is a global network comprised of regional networks of hardware and software connected by cables and other media. The Web is a body of information stored on and distributed by the Internet.

USING A WEB SITE TO ACHIEVE BUSINESS GOALS

The most important issue in the decision to use the Web is its role in the competitive strategy of the business. A competitive strategy includes a broad formula for how the business will compete, the goals of the business, and the means whereby the business will achieve the goals (Porter, 1980). The decision to develop a WWW site is an element in that formula and can be an important means for achieving the goals. In other words, small businesses need to decide why they want a Web site before investing the time and resources needed to create one. Some possible goals the business may want to achieve by using the Web are to:

> increase product awareness
> expand their audience
> improve customer service, and
> generate sales

Thus, the primary concern of the small business is the motivation of a Web appearance. The key motivator is the need to be more competitive by creating synergies in marketing and distribution. In addition to developing its own competitive strategy, the small business must also assess competitors' strategies and use of the Web so it can either overcome its competitors or at least stay even. In conjunction with this, the business must understand how its customers might use the Web to learn about and buy its products.

In any case, each of the four goals above requires knowledge of business management and marketing techniques for the Web. Businesses can develop a Web awareness by studying the Web to see how it operates and how other businesses have created successful sites. Without knowledge of how the Web works, businesses will be unable to make informed decisions about building their own site.

Increase Product Awareness

More than half of the companies on the Web are there with the intention of building product awareness (Dellecave, 1996). Using the Web to educate potential customers on the qualities of the company's product differs from traditional methods of advertising. Web visitors have their own unique agendas and succinct, meaningful information will attract them.

One business that increased its brand awareness was Ben and Jerry's. Its site has used unique graphics to lead visitors to product and company information. It also has had contests to create an awareness of its product and company values.

Expand Audience

By providing value-added benefits, a business can improve its brand awareness, expand its audience, and thus gain market share. Federal Express developed a site to lure customers by providing them the ability to track their packages on-line. FedEx's site enabled it to attract as many as 18,000 people each day (Dellecave, 1996). Marketing efforts at the site have included special offers, FedEx news, and information on new services. The company spent

under $100,000 for its site because much of the necessary hardware and software was already in place.

Improve Customer Service

Good customer service provides more than just a product. On the Web, providing additional information for customers adds service. Virtual Vineyards, a business start-up, used the strategy of making wine purchasing user-friendly on its Web site. Its site has had links to (i.e., immediate displays of) wine descriptions, special offers, and a question and answer page (Resnick and Sterne, 1996). To encourage the customer to order online, each page on the site has had a link to the order form.

Generate Sales

Although generating sales on the Web may not be a primary strategy for some businesses, others are already obtaining a good return for their investment. A site can provide a small business with increased distribution nationally and internationally. Traditional selling methods could not achieve that. Thus, the Spindler family's Chocolate Factory added 40 percent to its annual sales through a Web site by including clever descriptions and tantalizing pictures of its products (Resnick and Sterne, 1996).

Holiday Inn closed the sales loop by using the demographics of Web users to develop its site (Dellecave, 1996). The company's customer profile matched the profile of the Web user. Holiday Inn saw the opportunity for a new distribution channel, a low-cost advertising medium, and an information source. Its site has let potential guests check availability and price, and book rooms at any of its hotels. The site also has provided its visitors with a travel trivia game. Thus Holiday Inn has viewed the Web as a long-term selling tool.

ORIGINS

Understanding such examples of how organizations have used the Web to accomplish their goals is useful. A brief history of it can also help the small business manager understand its workings and possibilities.

In the late 1960s, the Internet was launched when the U.S. Defense Department commissioned a group of Stanford University researchers to study computer networking with a project named ARPANET. Its designers originally intended it to facilitate tactical military operations and academic research.

In 1986, the National Science Foundation created the NSFNet fiber-optic backbone on ARPANET to establish supercomputing centers with high-speed computing power for all U.S. users. Also in 1986, the Cleveland FreeNet came online as one of these supercomputing centers to offer free, public access to the network of computers.

In 1990, ARPANET ceased to exist and the network of computers became officially known as the Internet. Today the Internet's physical foundation has grown to a supranational

collection of interconnected computers governed by a set of a communications rules called transmission control protocol/Internet protocol (commonly referred to simply as TCP/IP). The Internet's technical parameters are set by the Internet Engineering Task Force, a small group of technical experts who have insisted on making openness its main attribute (O'Flaherty, 1996).

Communication on the Internet was always difficult. In response, scientists at CERN (Centre Europeén pour la Récherche Nucleaire), the European Particle Physics Laboratory in Switzerland, created the Web. Its purpose was to communicate on the Internet more easily and efficiently with other researchers around the world. The scientists' goal was to make all information accessible in a simpler and more consistent way (Ayre and Reichard, 1995). Their effort led to the release in late 1990 of a Web prototype with the ability to index and search all information (Applegate and Gogan, 1996b).

By 1992, over a million computers were linked to the Internet. The end of an NSF stricture against commercial activity on the Internet also occurred that year. Hence, the dawn of commercial use began on the Web.

In 1994, the Clinton Administration approved a $6 million grant to form CommerceNet, a consortium of computer and communications companies, to explore the commercial potential of the Web (Wilder, 1995). CommerceNet was created as a non-profit corporation partially funded by the U.S. government's Technology Reinvestment Project. The consortium is comprised of founding, sponsoring, and associate members. The founding members are responsible for consortium management and technical programs. The sponsoring and associate members include organizations from the electronics, computer, information service, telecommunications, and financial service industries, and other companies and organizations committed to electronic commerce (CommerceNet, 1996a). CommerceNet working groups meet to discuss issues, field pilot applications, and document experiences to help define best business practices and new interorganizational processes.

The World-Wide Web Consortium (W3C) is another important body. It consists of more than 100 high-powered corporate members who also promote the Web. An industry driven group, the W3C focuses on the commercialization of the Web (O'Flaherty, 1996).

Thus by 1996, the Web, consisting of Internet-connected computers with multimedia databases, became the Internet's fastest growing "business district" (Applegate and Gogan, 1996b). Thanks to use of the Hypertext Markup Language (HTML) for displaying information on Web pages and to the development of browser software - such as Netscape Navigator and Microsoft Internet Explorer - users can view material located around the world as easily as they can peruse a CD-ROM on their own PC. The material is simply designated with a site location - called universal resource locator (URL) - such as www.company-name.com and the user finds it there.

BRIEF HISTORY OF THE WEB

The Web is reshaping the business environment because of its ability to facilitate the global sharing of information and resources. With its efficient channel characteristics, it provides businesses with an interface to market and distribute goods and services. This opportunity for business growth generates the need to know the size and composition of the market being created by the Web. Business Week's November 14, 1994 cover story on the Web thus concluded that it will become one of the world's busiest business districts (Verity and Hof, 1994). And indeed, that appears to be happening.

Many statistics on Web usage, user demographics, and the number of commercial sites are available. However, the rapid growth of commercial activity on the Web and flaws in research procedures make these demographics useful only in predicting a partial picture of the use and opportunities of the Web.

The size of the Web is impressive and businesses are beginning to flock to it as an untapped market. Its size and growth prospects make it an attractive commercial medium. It grew by 1,758 percent in 1994 and has been doubling in size about every two or three months (Hoffman and Chatterjee, 1995). In July 1985 over 80,000 Web servers were estimated to exist. In fact, this number may have been low by as much as 20 percent due to measurement problems. By 1996, the number of such names was growing at a rate of 2,000 per week (American Demographics, 1996). As of March 1997, the InterNIC, which maintains Internet addresses, listed 1,178,886 registered, commercial domain names (i.e, the ".com" portion of an e-mail address after the @ sign).

The number of Internet-connected networks of computers of potential customers has also shown an impressive growth rate in the U.S. and internationally. By January 1995, there were 26,681 U.S. based networks and 19,637 international networks connected to it (Martin, February 5, 1996). These numbers illustrate the global potential of business on the Web.
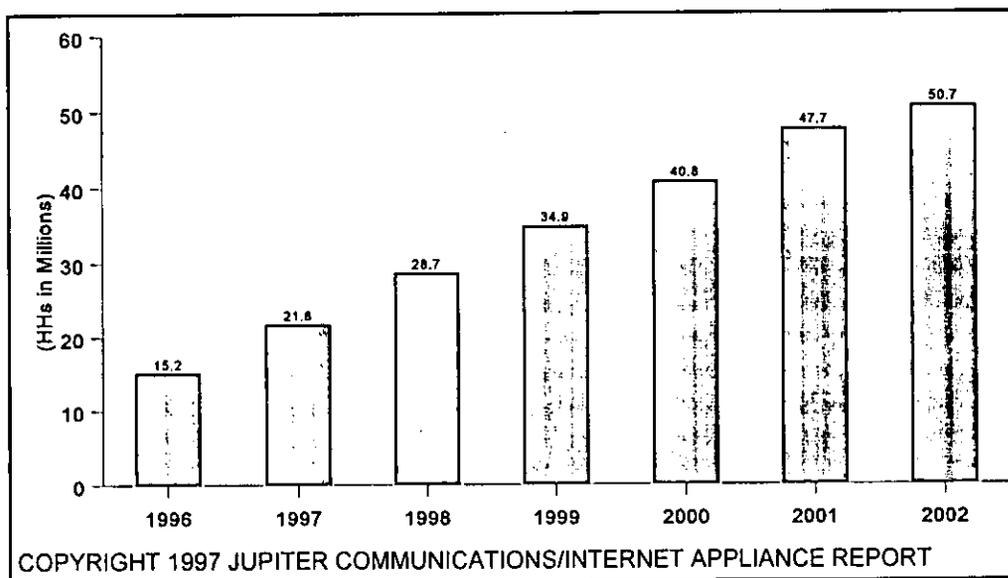
On the other hand, the statistics of retail sales are minor given the "gold rush" mentality of the Web. Jupiter Communications, a New York research firm, reported that in 1995, on-line sales totaled $132 million in the U.S. Some analysts have predicted sales to reach $4 billion by the year 2000 (Martin, February 5, 1996).

CommerceNet, in partnership with Nielsen Media Research, conducted several surveys of North American users from 1994 through 1996. The section of the survey that focused on Web usage and demographics revealed that the users of the Web are affluent, well-educated, and professional(CommerceNet, 1996b).

The Nielsen study showed that over 76 percent of Internet users 16 years and older in the U.S. and Canada also used the Web. International Data Corporation said that there were over 8 million active Web users at the end of 1995 with that number continually growing (Sandberg and Ziegler, 1996). A Tenagra Corporation report stated that by 1996, Internet usage was increasing by over 10 percent of its total user base each month, with business users being the largest growth segment(Tenagra, 1996a).

As the price of a PC to access the Web continues to drop, the surge in household Web usage will probably transform many major industries(American Demographics, 1996). Thirty-two percent of U.S. households had a PC and only 9 percent of them had online access by 1996 (Martin, March 18, 1996). Even so, the size of the market is one for businesses to see as a growing opportunity.

Figure 1
Total Online Households, 1996-2002

COPYRIGHT 1997 JUPITER COMMUNICATIONS/INTERNET APPLIANCE REPORT

SMALL BUSINESS OPPORTUNITIES
OF THE WORLD WIDE WEB

With the changes in the business world produced by the Web, small and mid-sized businesses may have access to the same capabilities as large businesses. The Web provides new ways of cementing alliances, obtaining customer feedback, and developing information-related revenue streams (Graef, 1996). Yet, utilizing the Web as a revenue stream has been slowly developing. The Yankee Group indicated that of the businesses on the Web, 35 percent showed a limited ROI while only 12 percent showed a reasonable and strong ROI(Dellecave, 1996).

Businesses that provide consumer products do well in the areas of software and CDs, clothing, food products, and hard to find products. The best opportunities for business to business marketers are for reaching small to mid-sized companies. Fortune 500 companies have increasingly been becoming involved as vendors to these companies (Fried-Cassorla,

1995). The Tenagra Corporation has identified these products as selling well on the Web (Tenagra, 1996b):

> products appealing to the technologically savvy
> computer related products
> products appealing to broad segment of the Web user base
> products appealing to wide geographic audience
> specialty or collector items, and
> informed purchases

ATTRACTING VISITORS TO A SITE

Attracting visitors is a major concern for any business setting up a Web site (Dearth and Kling, 1995). A knowledge of the how the Web operates is imperative to attracting visitors. Registering with such search engines (i.e., programs for customers to search the Web based on keywords in the URL, name, and site description) as InfoSeek, Excite, Lycos, Alta Vista, and Yahoo! will attract visitors. In addition, a company can advertise its site on directories and yellow page sources.

Newsgroups (i.e., electronic forums where members leave messages for all other members) offer another place to advertise a Web site. Also, some Web sites will help promulgate a business site by forwarding its URL and description to lists, databases, and indexes. In addition, business directories are becoming available.

Another way a business can attract visitors is to have other Web sites that attract similar customers link to its own site. Some sites charge to provide such a link to their page while others do not.

Using traditional promotional methods will draw visitors to the site. These methods include print ads, brochures, radio and TV ads.

MEASURING SUCCESS

Measuring the success of a Web site provides valuable information to help a business reach more customers. Data on how visitors use a site, what attracts them, and why they return may allow a business to manage and expand its site. Such data is often available in electronic documents known as access logs. An access log typically includes the name of each visitor's main host computer, the date and time of each request, and other pertinent data.

Despite limitations to the accuracy of such information, several tools and services permit its analysis. They provide reports about the number of accesses for each page, breakdowns of requests based on host name, server load and performance statistics, average time spent on each page, paths a visitor takes through a site, URLs of users, and correlations between these data.

A business can use off-site or on-site methods for data collection. Off-site analysis through companies such as I/Pro or NetCount saves time and system resources, especially for

small businesses with limited resources. On-site analysis with software such as Interse's Market Force or OpenMarket's WebReporter makes analysis available upon demand and provides a higher level of interactivity. To determine which is better, a business should consider who will use the data, how much flexibility the business wants in its reports, and how interactive the tool needs to be.

DECISION TO LAUNCH A SITE

When a business decides to open a site on the Web, it needs to determine if it will operate the site or hire an Internet Service Provider (ISP) (Richardson, 1996). ISPs are not all alike. Some offer different services, speed, and technical support. By locating in a cybermall with similar types of business, a small business can benefit from the collective traffic.

If the site will be small with light traffic, renting space with an ISP may be preferable. If the site is to be large and will generate considerable traffic, it may be more advantageous to set up a server in-house. Although the expected traffic is an important determinant, a business still needs to evaluate other pros and cons of building a site or paying an ISP for space.

The pros of building a site include:

> full control over site management,
> ease of information collection,
> ability to choose security tools,
> maximum ability for content changes, and
> maximum creativity for page design.

The pros of renting ISP space on the Web include:

> no system maintenance or setup expenses,
> lower expense to the business,
> no internal management of the server, and
> requirement of a smaller, dedicated staff.

Before building a permanent site, a business would benefit by setting up a test page through a host service to evaluate the types of visitors and interactivity that will generate return visits. The business should develop a sound business plan for developing a Web site. By hiring a consultant experienced in creating sites, a business can be guided through the process of setting up its own server. The best consultants are those who have general knowledge and will bring in specialists for specific work. In addition, registering a domain name, choosing hardware and software, and building an in-house LAN will be required. The process of setting up a Web site may be done quickly but can also take several months.

REGISTERING A DOMAIN NAME

The first step in building a site is to register a domain name. Doing so requires up to two months to accomplish. It is done through the InterNIC's registration process at

http://www.internic.net (Gerwig, 1996). The registration requires the number of the primary and secondary servers where the site will reside. Applicants must verify that the name they are registering does not violate any federal copyrights. An annual fee for the first two years holds a domain name. After the first two years, the company is billed annually for the domain name.

ASSEMBLING THE HARDWARE AND SOFTWARE FOR A WEB SITE

Web sites can reside on Unix, Macintosh, or Windows NT but the majority now run on Unix (Richardson, 1996). Unix workstations have had the most Internet-ready applications, but Windows NT has had cost, benefit, and familiarity advantages.

A direct connection between the Internet and the server provides a faster and more continuous link than a telephone line. The most common direct lines are referred to as T1, T2, and T3 lines (where the "T" abbreviates tariff and the number designates a particular tariff). Lines based on the ISDN (integrated services digital network) - a relatively new standard for combining voice, data, text, and image transmission - are becoming available in some areas (Verity and Hof, 1994).

To attach the direct line to the computer requires a LAN or other connecting device. A LAN is the best option because it allows sharing the data, printers, and other resources. Setting up such a system has been costing between $10,000 and $35,000 depending on the power of the computer and the speed of the connection.

CHOOSING AN INTERNET SERVICE PROVIDER FOR A WEB SITE

If the business chooses to use an ISP rather than to build its own site, it should select one that meets its needs. Many businesses would benefit by choosing an ISP with access to storing its sites on electronic malls, kiosks, villages, markets, or plazas.

Extra services include clickable image maps, forms, tracking, searchable indexes, secure financial transactions, and data publishing. Not all ISPs will provide each of these services.

If it chooses an ISP, the business will need to know the cost of service, the speed of the connection, traffic data, information on extra services, services covered by the setup fee, the cost of a domain name, and the type of server. The cost of the service will include a setup fee and monthly rental charge. Most setup fees are negotiable if the business is willing to create the site and register, promote, and maintain it. Rent varies depending on the number of pages and complexity of the site, but a business can rent raw space if it is willing to maintain the site itself.

The cost of using an ISP will vary. Most charge a monthly rate and additional one time setup fees. Costs for developing the actual Web documents can vary too.

The business will also need to consider the architecture of the server because the amount of traffic will be partly determined by the quality of the connection. The preferable connection has been T1.

An alternative to having one's own domain name is to use the ISP's. Some ISPs offer their own domain name. They charge on a per-page basis, offer fewer extras, and stress their value-added services such as marketing, design, and consulting. Although less expensive, this approach will reduce the visibility of the business and its name recognition on the Web.

CONCLUSION

The Web's skyrocketing use and the growing frequency of references to Web sites with their specific locations in TV, radio, newspapers, magazines suggest it is moving from a passive marketing and distribution tool to one that is becoming increasingly proactive. Nevertheless, the Web may not be for all small businesses. Thus a small business can benefit by first learning about the potential contribution of the Web to the realization of its business goals and then considering a plan for its own Web site. To succeed on the Web, it needs to evaluate its expectations and be realistic in its goals. Knowledge of the Web and its users will help a business make the best decisions for its site. Continuing to educate itself of the developments in software and technology may allow it to gain an advantage in the rapidly growing Web marketplace.

REFERENCES

American Demographics. (1996, February). pg. 8.

Applegate, L. and Gogan, J. (1996a, March 22). Open Market, Inc.: Managing in a turbulent environment. Harvard Business School Working Paper N9-196-097.

Applegate, L. and Gogan, J. (1996b, March 26). Paving the information superhighway: Introduction to the internet. Harvard Business School Working Paper, 9-195-202.

Ayre, R. and Reichard, K. (1995, February 7). The Web untangled. *PC Magazine*, 173-196.

CommerceNet. (1996a, February 26). http://www. commerce.net/.

CommerceNet. (1996b, February 26). Executive summary. http://www.commerce.net/.

Dearth, J. and Kling, A.(1995, January 9) Negotiating the internet. http://techweb.cmp.com/.

Dellecave, Jr., T. (1996, April) Big business gets interactive. *Sales and Marketing Management*, 86.

Fried-Cassorla, A. (1995, February) Successful marketing on the internet: A user's guide. *Direct Marketing*, 23-26.

Gerwig, K. (1996, February). Putting your mark on the Web. *NETGUIDE*, 87-88.

Graef, J.L. (1996, February 26). Using the internet for competitive intelligence. http://www.cio.com/.

Hoffman, D., Novak, T., and Chatterjee, P. (1995). Commercial scenarios for the Web: Opportunities and challenges. http://shum.cc.huji.ac.il/jcmc/vol1/issue3/hoffman.html.

Martin, M. (1996, February 5). Why the Web is still a no-shop zone. *Fortune*, 127.

Martin, M. (1996, March 18). Online services, now on their own. *Fortune*, 142.

O'Flaherty, D. (1996, March). Gerstner's vision. *Internet World*, 44-50.

Porter, M.E. (1980). *Competitive Strategy*, New York: The Free Press.

Resnick, R. and Sterne, J., "At Home on the Web", *Small Business Computing*, 14(4), April 1996, pp. 64-70.

Richardson, E. (1996, April) Site Construction. *Internet World*, 62-66.

Sandberg, J. and Ziegler, B. (1996, January 18). Web trap: Internet's popularity threatens to swamp the on-line services. *The Wall Street Journal*, A1.

Tenagra. (1996a April 21). How big is the internet and who uses it? http://arganet.tenagra.com/.

Tenagra. (1996b, April 21). What sells on the internet. http://arganet.tenagra.com/.

Verity, J.W. and Hof, R.D. (1994, November 14). The Internet. *Business Week*, 80-87.

Wilder, C. (1996, January 16) An electronic bridge to customers. http://techweb.cmp.com/iw/510/10mton.htm.