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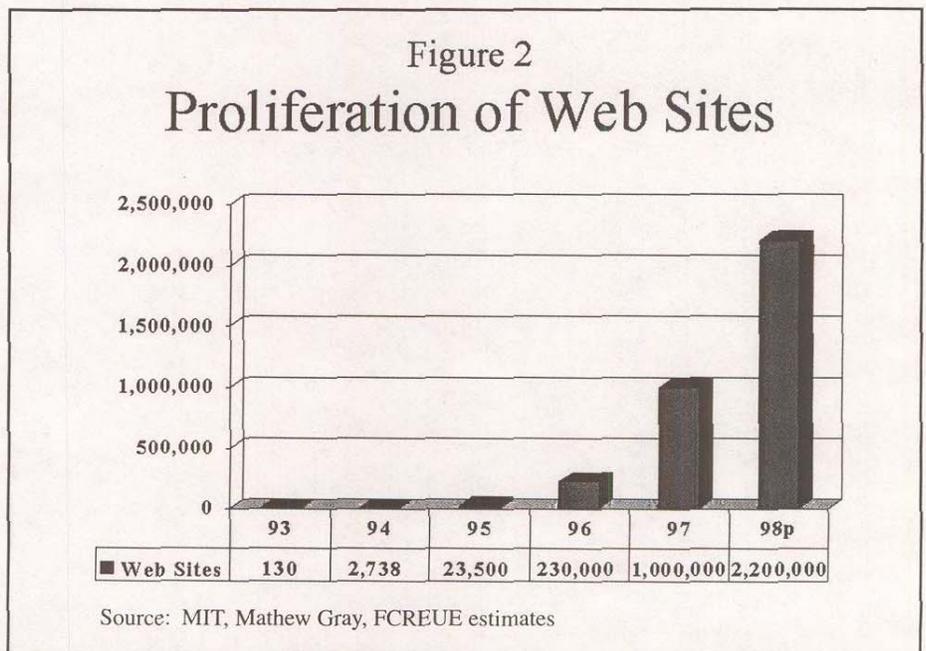
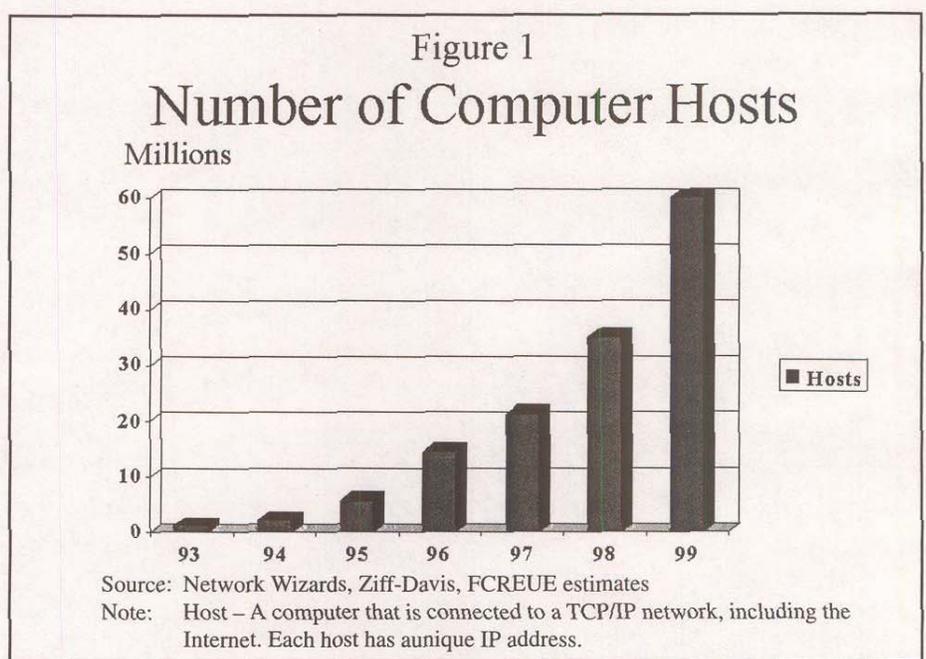
Research Report

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The Real Estate Industry and the World Wide Web: Changing Technology, Changing Location

The Internet, in its Web based graphics version, has captured the imagination of both consumers and businesses. Its convenience, speed, low cost and versatility are being exploited on a daily basis in ever-changing ways. Together with its capacity to transform existing businesses, promote new businesses and facilitate exchange of information and data, its other striking attribute has been the speed with which this new technology has spread throughout the global economy. The number of computer hosts grew by more than ten-fold between 1995 and early 1999, as shown in Figure 1. The number of Web sites increased almost 100-fold, to over two million, between 1995 and 1998 (see Figure 2). Analysts estimate that by the year 2000, there will be approximately 400-500 million Internet users in the world, and the total number of Web sites will exceed five million.

This new technology has the potential for affecting the real estate industry directly and indirectly. Directly, it may become a tool that allows a real estate business to expand its information and sales network. Indirectly, it may change the location equation — where and how firms do business — which in turn will affect



the role of firms involved in real estate development, investment and transactions. In this preliminary article, we examine how this technology has been absorbed by firms involved in the real estate industry during the first five years of the World Wide Web.

Measuring the Spread of the Web

There are few reliable published statistics on Internet or Web use, and statistics reported by different analysts are often inconsistent. Our discussion of the Web and real estate is based on limited information from surveys and on examination of Web sites rather than on more comprehensive data. We have built our overview of the role of the World Wide Web and real estate by examining a variety of sources (including trade publications, existing Web sites, and our own survey of selected real estate firms) and drawing on the consistent observations from those sources.

From E-mail to E-commerce

Before the advent of the World Wide Web and its point and click interface, the Internet existed mostly for the purposes of e-mail, data transfers, newsgroups and bulletin boards, and its reach was limited primarily to the academic and the defense community. The technology itself was not particularly user-friendly, the network speed was not very high, the medium was limited to text and data, and accessing information was cumbersome and time-consuming. The browser technology greatly simplified usage, enabled multimedia information, and created interactive possibilities. The technology brought together TV entertainment, library information, news bulletins, communication and data in one desktop machine.

Although initially the greatest patrons of the Internet were the academic community, the commercial sector quickly caught on

to the potential of the Web. The private sector saw in the Web an opportunity to widen its marketing reach, lower costs of information dissemination, improve customer relations, and ultimately to conduct sales. Existing private sector Web sites can be roughly categorized into three types, as summarized in Figure 3. The most basic level is for simple information dissemination. The firm registers a Web site and develops a page giving basic company information. The second stage is an expansion of information, marketing goods and services or providing other customer information. The third stage is the addition of transactions to the activities possible on the Web site.

Most business sites at present are in Stage 2. The use of the World Wide Web for detailed information dissemination, and marketing has had several advantages. For the firm, marketing, information dissemination and customer services on the Web can be monitored and analyzed with some details unavailable from conventional methods of marketing using other media. Internet tools can now provide a firm with data on who accessed the site, which pages were visited most, heavily, from where and for how long. This information contributes to improved measures of the results of promotional efforts. The promotional costs associated with the Internet have also been very low. For example, in direct mail marketing, to send a one-page color brochure to 5,000 random addresses will cost upwards of \$2,500. The cost of setting up a

Figure 3

Stages of Commercial Web Sites

- ***The Billboard or "Signaling Presence" Stage***
Staking Claim to Space on the Internet;
Basic Information Dissemination
- ***The Brochure or "Marketing/Advertising" Stage***
Detailed Information; Customer Service;
Marketing Aid
- ***E-Commerce or "Cyberspace Office/Store" Stage***
Transactions on Web; Full Service Office in Cyberspace

Web site could be one-tenth of this amount or less (although tracking and analysis can quickly add to the cost).¹ Many different sectors, including real estate, have found the Internet to be both efficient and cost-effective as a marketing device.

The next logical step — a full-fledged office/store on the Web with transaction capability and commerce on the Internet is now being attempted in varying degrees depending on the firm's area of business. Retail sites selling products between \$10 and \$100, the kind that are traditionally part of a direct mail sales catalog, seem to be the ones having the greatest success (although 4% of sites sell products over \$10,000 and another 13% sell products ranging from \$100 to \$9,999). Retail and entertainment sites were among the fastest growing category of Web sites in 1997-1998, with average monthly sales per revenue generating site in the region of \$40,000, and a projected growth rate in excess of 100% per annum. A number of retail sites have also harnessed a secondary revenue stream from advertising. Advertising revenues on the Web have crossed the billion-dollar mark and total Internet generated revenue will approach \$100 billion this year.

¹ Costs for setting up Web sites vary widely. A prominent Web hosting service and internet marketing agency that specializes in real estate offers a complete maintenance/hosting program for less than \$50 a month. This reportedly also includes maintaining a top position on search engines. The initial setup cost of the site is negotiable and can range from \$200 upwards.

Consumers' Use of the Web

Surveys of consumers using the Web suggest that a Web site does not substitute for the more traditional forms of business, but can greatly facilitate the run-up to the final transaction. The most common use of the Web is for information searching, closely followed by work-related uses, education, and entertainment, as shown in Figures 4 and 5. According to Active Media, a significant majority of those that use the Web for shopping do so to carry out detailed research on product information (90%) and to do price comparisons (85%). This more often leads to purchases through normal channels (67%), rather than on the Web (38%). Most of

Figure 4

Primary Uses of the Web

• Education	61.4%
• Shopping	52.4%
• Entertainment	60.1%
• Work	65.9%
• Communication	35.4%
• Information Search	73.6%
• General Surfing	37%

Source: GeorgiaTech

Note: Survey only of those who surf the Web

Figure 5

A View of the Web

<i>Point of View of Business</i>	<i>Point of View of Consumer</i>
• Marketing/Publicity	• Product Information Research
• Customer Service	• Price Comparison
• Direct, Instantaneous Feedback & Communication	• Communication
• Customer Support	• Ease & Convenience of Ordering, Payment, Delivery and After-Sales Service
• Online Sales	

the online purchases tend to be of items that are standardized—four of the five top items bought on the Web, according to a Georgia Tech survey, are software, books, hardware and music (the fifth is travel). More than half of consumers who make purchases on the Web spend less than \$500 in a six-month period, as shown in Figure 6.

The demographics of Web users vary widely in age and income. Surveys by Georgia Tech, Active Media and Web excitement indicate that the average age of Web users is 35 years, with average household income \$67,000. Most are college educated (65%). A high proportion of the respondents (42%) has accessed real estate sites.

Limits to the Web — Some "Catches" to the New Technology

New technology is frequently a mixed blessing, and the World

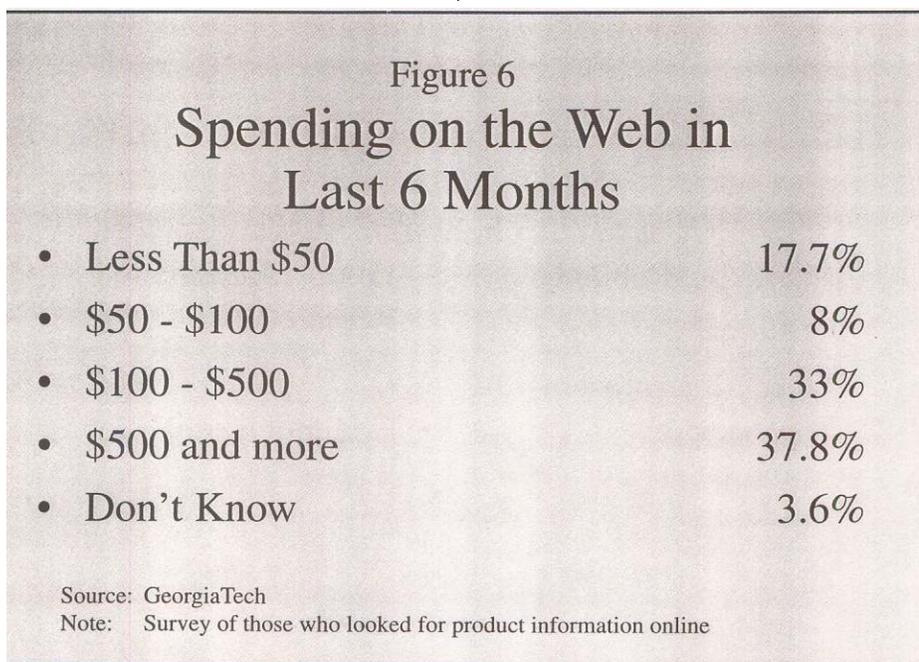
Wide Web is no exception. Apart from the teething troubles that any new technology faces and the time, as well as resources needed to learn, adapt and master it, the Web poses some unique issues and problems of its own. Consumers today are facing information overload of taxing proportions. It is not always easy, or even possible, to locate the relevant information on the Web, despite sophisticated search engines. Once the site is located, fancy graphics, complex linkages, labyrinthine routings, and a lot of irrelevant information may overwhelm the consumer — in short, poor and confusing site design can reduce the site's effectiveness.

From the point of view of the business, there are two commonly heard complaints. First, the business may find that its site does not figure prominently on search results, limiting the number of customers reached. Second, for many firms, Web initiated leads are as yet few and far between.

Real Estate Web Sites

Real Estate firms and related businesses were among the early private sector pioneers of Internet use and have had a fast growing presence on the Web. One example of the real estate sector's presence on the Internet in its pre-World Wide Web incarnation was the real estate classified bulletin board of Prodigy, the online service, which had listings for homes and other real estate. A few real estate related Web sites started in 1994 (generally regarded as the inaugural year of the Web). For example, the New York City Real Estate Guide Web site, created in the summer of 1994, was one of the first to offer free access to the latest New York real estate information. By the summer of 1995, the site was receiving more than 100,000 inquiries a month.

The real estate industry registered its entry on the Web in a dramatic way in 1995. By the end of that year there were close to 4,000 real estate Web sites. The content matter of the sites, as well as the mix of real estate related firms on the Web have changed over time. Initially, quite a few of the sites were residential real estate brokerages and listing guides, but fairly rapidly the list expanded to include commercial and retail listings, mortgage brokers, appraisers, architects, real estate attorneys, developers, construction firms, and suppliers. As investment vehicles for real estate expanded, REITs, publicly held firms, and investment advisors also added Web sites.



The early real estate broker Web sites quickly took advantage of the unique features of the Web. Prospective customers could find out what properties were for sale or rent, look up detailed descriptions of each listing, view photographs and floor plans, and contact the broker by e-mail. Viewers could also look up statistical and data reports on conditions in various geographical areas and on emerging macroeconomic trends.

Ever since then, the real estate industry has been among the most enthusiastic users of the Web, by some measures accounting for 4% to 6% of commercial Web sites. The proportion taking advantage of Web technology remains particularly high among brokers. A survey conducted by *Real Estate Broker's Insider* in early 1998 confirmed that nearly 95% of the respondents/brokers had a Web site, and more than 90% of the housing stock on sale at a given time is now listed on the Web. Indeed, because of the dispersed, localized nature of the role of information in real estate, the prospective gains from information dissemination, comparability, and Web links were particularly significant in real estate.

For much of the real estate sector, the Internet generates not so much the actual transactions themselves, but creates initial leads that are later followed by transactions, purchases and sales. Web sites frequently lead to contacts that are then nurtured through telephone and person-to-person meetings. For residential real estate, Web activity includes residential searches, housing

details, and pricing information (both on houses and mortgages), with follow-up contact with brokers. Real estate-related transactions are seen in the hospitality industry (making reservations for hotels and vacation homes), and in online mortgage applications. Mortgage and home loan finance companies report both inquiries from mortgage shoppers who obtained initial information from their Web sites, as well as closing of loans through the Web, lead to great savings in time and overhead costs.

It is not just the real estate professionals who are enthusiastic about their Internet presence, judging it to be as effective as print and radio advertising. Mortgage shoppers, homebuyers and vacation rental seekers as well applaud, in particular, the convenience it brings to the entire process of searching, researching, comparing, communicating and transacting business. As a result of the increased Web based activity, the netcentricity (proportion of internet related or generated revenues in total revenues) of the real estate industry has been rising for the past two years, particularly for the hotels and vacation rentals sector.

Beyond these sectors, many other types of real-estate related firms are using the Web to broaden their market areas, increase the depth of their marketing, and to provide a range of services to existing customers. Commercial brokers provide not only information on available sites but also on market conditions for different locations and sometimes

more in-depth economic analysis of a region. REITs and other investment firms provide detailed information on their products as well as background market or economic information. Public companies provide up-to-date stock quotes and quarterly and annual reports on the Web.

Web Penetration and Use: The Experience of Leading Real Estate Firms

We conducted a limited survey of a sample of leading real-estate related firms in the US and California. Responses from approximately 60 of these firms showed that over four-fifths had Web Sites by March 1999.² Of those with Web sites, one-third had inaugurated their sites by the end of 1996. Among the earliest with a Web presence were brokers, investment firms, lenders, business and financial services firms, law firms, residential developers, and a trade organization. Another third of the group were newcomers, with sites inaugurated in 1998 or early 1999. Commercial developers were prominent among this group, with residential developers, consultants and advisors, lenders, REITs and investment firms also among this group. Those without sites were more likely to be privately held firms with a relatively narrow base of activity (for example, a commercial developer centered in the San Francisco Bay Area).

² Close to half of those to whom we sent surveys responded. Of those who did not respond to our survey, almost half had Web sites that could be identified through Web searches.

Most with Web sites used their site to provide information about the company and to market services. In addition, about one-third marketed property from their site (either as individual pieces or as part of a REIT), providing detailed information on the characteristics of buildings available, surrounding communities, and other related data. Other Web site uses include employee recruiting, providing information for members or investors, and disseminating related information on topics such as regulations or real estate markets.

What does the Web specifically do for Real Estate?

According to Activemedia, an internet research company, some of the sectors experiencing the greatest growth in terms of their presence on the Web in 1998 were computer hardware and software, real estate, publishing and information, finance and Internet services. A significant initial motivation for this rush for the Web is provided by, what can be termed, the "tiptoe" effect. The first ones on the Web had an additional advantage over those who did not; information on their services, products, home listings and the like could now be accessed conveniently by those with computers. The low setup cost, however, and the potential *disadvantage* of not having a Web presence has propelled others in the profession to set up their own sites.

Real estate shares in some of the basic advantages of the Web mentioned earlier, such as ease of

marketing, communication and feedback from clients, lowered costs of operations and sales, and convenience of customer service and support. In addition, the Web provides positive features specific to the real estate industry. These are summarized in Figure 7. Key elements include the following.

- ***Increased geographic reach.*** The Web has dramatically increased the geographic reach of both buyers and sellers. Although the "local" aspect of real estate will perhaps never be whittled away completely, there is no doubt that inquiries about properties can now emanate from far away to a much greater degree than before. This, in turn, potentially increases the size and "depth" of the market and makes it more efficient.
- ***Capability of visualization.*** In some sense, increased geographic reach has become possible due to the other

emergent feature of the Web, the capability of visualization. In its most state-of-the-art form, Web sites now allow prospective buyers to take virtual tours of homes, resorts, hotels and convention centers. Indeed, even the less sophisticated version of still pictures on the Web, together with other relevant details of listed properties, has reportedly been responsible for a significant drop in number of properties physically visited before the final sale. The power of virtual tour technology has not been harnessed to its fullest, but the National Association of Realtors plans to correct that. Together with Jutvision, a California based company that markets this technology, the NAR is proposing virtual tours of more than a million homes listed on their Web site. The cost of setting up a tour on the Web involving four scenes is now in the range of \$100, and

Figure 7

Speculation on Potential Impact of Internet on Real Estate Industry

- Shortening of Transaction Cycle
- Precise Market Targeting
- Transformed Competition
- Cost savings: a) Marketing, b) Sales, c) Operation
- Possibility of Disintermediation; Lowering of Commissions
- Tiptoe or Equalizing Effect
- E-mortgage; Access to MBS Secondary Market
- Combination of Comparison Shopping & Direct Sales

it is conceivable that more and more sellers would request their realtor to include one.

- **Reduced transaction costs.** The Web may reduce transactions costs. This has been particularly apparent in the case of mortgages. According to Fannie Mae, 1.5% of all mortgages were handled online this past year, with the number expected to grow exponentially. The Web-attributable features that make this kind of a transaction possible are instantaneous comparability, interactive capability, online calculation, online applications, and continuous updating of the sites.
- **Improved information dissemination.** The Web offers broad opportunities for increasing the scope and depth of information provided by many different types of firms. A well-constructed home page gives an overview of a firm's range of services or activities. Links allow the customer or client to learn much more detail about the selected items of most interest, while ignoring less relevant pieces of information. A number of sites take advantage of the ability to link to resources beyond the company's Web pages, linking customers and clients to related Web resources.

Unlike retail sectors, such as books and computer hardware, the Web as yet has not become a threat to the "middle man" role of many real estate firms. Instead, it

is more likely to be used as a means of expanding services offered or locations served. However, in the long term, the Web and related Internet technology have the potential to change the structure of business activity, which in turn will affect the demand for real estate in type if not in quantity. For example, some retailers already have closed stores while expanding sales on the Web. Also, the Internet has been seen as one factor allowing the decentralization of office space. These trends to date have not led to a decline, but rather to a redistribution in the demand for office, retail and warehouse space.

How to Find the Real Estate Sector on the Web

In beginning this study, we anticipated ending this article with a directory of real estate sites. A quick glance at the number of sites available makes this an unrealistic undertaking. However, there are a few key sites that can be used to access the broad range of real-estate related Web sites. These include:

- www.realtor.com—Site sponsored by the National Association of Realtors, linking users to realtor, home sales and market information.
- www.nahb.com—Site sponsored by the National Association of Home Builders, providing a wide range of market information.
- www.pikenet.com—PikeNet directory to commercial real estate sites, including brokers,

developers, investors and analysts.

www.interestratesonline.com and www.mortgagelocator.com, two sites that provide users with information about mortgage rates, mortgage brokers and with the opportunity to submit an application online.

www.nareit.com (National Association of Real Estate Investment Trusts) and www.reiac.org (Real Estate Investment Advisory Council), two associations related to real estate investment trusts.

www.car.org—The California Association of Realtors site.

www.uli.org is the site for the Urban Land Institute, with information on the organization, programs, conferences, and publications related to real estate and land use.

www.internetreview.com has three online magazines including *National Real Estate Investor*, *Shopping Center World*, and *Midwest Real Estate News*. An additional real estate online magazine, the *International Real Estate Digest* is available at www.ired.com.

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