

IMPACT OF THE INTERNET ON INTERNATIONAL REAL ESTATE OFFICE MARKETS

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Executive Summary. The present study examines the impact of the Internet on the real estate office market through a survey of real estate professionals in traditional companies in Boston/U.S. and London/U.K. This survey captures professionals' opinions on the use of the Internet and how it affects their business. The results from both cities indicate differences when using the Internet versus traditional practice. The Internet seems to affect the role of the transaction participants, the length of the process but not the participants' earnings or transaction steps. It is currently used as a listing service, information-gathering resource and communication tool.

INTRODUCTION

The Internet is a recent expanding medium of economic and social exchange. It is most effective at breaking down barriers, improving information flow, and speeding up the decision-making processes (Hartung C.J., et al., March 2000). Two factors significantly contributed to the increase in Internet adoption among real estate brokerage companies: increased computer use throughout the population as well as companies, and the downturn in commercial real estate. This downturn led brokerage companies to list properties online to reach a wider market (Rebuz.com, 8/8/01). Similar to the retail industry and Web-based marketing (Baen J., 2000; Miller N., 2000) the real estate industry is expanding its online listings by con-

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tinuously advertising additional properties, thus providing property seekers with a variety of options.

The Internet use in the U.S. and the U.K. can provide a context of the Internet's adoption in the two countries where the survey took place. Nielsen/Net Ratings estimated that more than 62% of the U.S. population had Internet access in 2001 either at home or at work in comparison with 57% the year before (Stellin S., 2001). According to the U.S. Department of Commerce, in 2000 51% of all U.S. homes had a computer and 41.5% had Internet access. High per-minute charges have prevented people in the U.K. and other European countries from browsing the Internet, leading to a lower growth than in U.S. (Wickham R., 2000). In the U.K., household PC penetration was 46% (Nielsen, 2001). The U.K. government's E-envoy indicated that Internet penetration in the United Kingdom was still less than 60% (Holmes M., 2001). The housing market transactions have been more easily facilitated through the Internet compared to office transactions. Studies in the U.S. show that the numbers of homebuyers searching for housing on the Internet are between 40% [Forrester research, 2000; Farnsworth C. & Evans B., 2000] and 56% (Murray M., 2000). In general 79% of agents claim they do not think the Internet threatens their job (Gomez Research, 2000). However, the search for housing in the U.K. is mostly conducted through traditional methods because of limited Internet use.

This study was motivated by the limited research on the Internet's impact on the Real Estate Office Market (REOM). A survey of traditional real estate companies was conducted in Boston and London in order to capture the "real-world" views on Internet adaptation and especially its impact on the office properties transaction process. Boston was selected because of its small office market size compared to other major cities in the northeast U.S. and what brokers see as a tight, relationship-driven office market. London, however, was selected because it is the largest and most representative office market throughout U.K. What could the survey results indicate for these cities in two continents? This survey tries to identify how Internet use affects the role, time, and earnings of the key participants involved in the transaction process of office properties as well as the transaction process length. This survey of traditional real estate com-

panies in Boston and London indicates that the Internet affects the roles of the transaction participants allowing the real estate business to remain competitive.

LITERATURE REVIEW

The traditional real estate industry has been characterized as fragmented and technophobic (Hartung C.J., et al., 2000). A recent literature review (Dermisi S., 2002) shows that although the Internet Real Estate has made significant steps in its advertisement side, the transaction process has not shared the same growth. Adaptation of the Internet, as a new medium in a traditional "relationship driven" sector, was slow in the mid-1990s but has increased exponentially in the past few years (Baen J., and Guttery R., 1997). From the 1995 onwards, real estate Web sites evolved from static brochures to comprehensive online property listing sites with various information on the property, location, demographics, and statistics for the area and finally to process management sites that create efficiencies in the workflow process along with providing information (Harvard Design School, 2000; Bond M., Seiler M., Seiler V., Blake B, 2000).

As in other industries, views vary on the Internet's use and impact on the real estate sector. Some real estate professionals believed that traditional real estate companies could not easily adopt the Internet. Others argued that "in the new information technology paradigm of place and space, the classic location, location, location mantra of real estate decision-making is replaced by information, communication, location" (Roulac S., 1996). In recent years another thought has been that "although real estate is not very technology-oriented, people are beginning to appreciate that technology can be relationship-oriented" (Pike P., 1998). The relationship between brokers and the Internet is not mutually exclusive, but allows technology to complement them in order to produce more valuable services (Devine A., 2001). Bond M., et. al. (2000) reported that most of the firms they surveyed either operate their own Web sites or list their properties on larger industry sites. While the Internet cannot replace relationships, brokers' roles will likely be redefined as more emphasis is placed on financial and analytic services (Hartung C.J., et al., 2000). Brokers and clients still need to communicate but they are meeting face to face less and "talking" electronically more. Brokerages must distinguish themselves in other ways mainly by

their ability to help companies make increasingly complex decisions about real estate (Moore P., 1999).

In the real estate business using a common online platform that functions as a repository for documents and information is a vital first step toward simplifying the complex transaction process (Carpenter S., 2000). The combination of commercial real estate's limited transparency and information sharing as well as the variety of deal clauses are significant obstacles to the use of a common standardized platform (Miles M., 2000; Bergsman S., 2001). Consortia, like Constellation and Octane, have been formed to overcome these obstacles. Although it is cheaper and more flexible for consortia to merge with other companies, the challenge is to pool all listings together in a comprehensive and meaningful way on a neutral platform for all players (Harvard Design School, 2000; Bergsman S., 2001). Along with consortia, portals have begun to evolve presenting a new medium for possible future transactions. The portal evolution has led to trends that consolidate and globalize existing markets by developing a comprehensive procurement platform service, enabling business practices (Harvard Design School, 2000).

DATA COLLECTION

The real estate data were obtained in 2001 from a survey of companies in the U.S. and London/U.K. chosen to meet the following criteria: a) national coverage in terms of listings as a real estate agency; b) largest real estate companies in Boston and London in terms of broker numbers; and c) well-established research and investment departments. The population (all companies meeting the criteria) was determined through the Internet, financial/consulting organizations, local chambers of commerce and real estate organizations such as BOMA and NAREI. This search led to the conclusion that the Boston population consisted of ten real estate companies: CB Richard Ellis, Spaulding & Sluye (Colliers), Prudential, Jones Lang Lasalle, Cushman & Wakefield, Grubb & Ellis, Insignia, Prudential, CRESA partners, and Meredith & Graw Inc. A similar search in London revealed a population of ten companies: DTZ, Jones Lang Lasalle, CB Hillier Parker, Lambert Smith Hampton, Healy Baker, Henderson, Prudential, Cushman and Wakefield, Coldwell Banker, and GVA Worldwide.

Probability sampling (DeVaus A., 1996) was selected because of its random sampling principle in a population and its effectiveness even in small population sizes (Lyberg L., and Kasprzyk D., 1991). Finally, representatives from four major brokerage companies in Boston (CB Richard Ellis, Spaulding & Slye, Prudential and Jones Lang Lasalle) and seven in London responded to the survey (DTZ, Jones Lang Lasalle, CB Hillier Parker, Lambert Smith Hampton, Healy Baker, Henderson, and Prudential). All these participating companies are among the most representative in terms of certified brokers and deals in each city, indicating that they are very knowledgeable about both the market as well as the best practices for a property transaction.

QUESTIONNAIRE DEVELOPMENT AND ADMINISTRATION

The questionnaire was designed to capture the views of real estate professionals working in traditional companies on how and if the use of Internet facilitates office market transactions.

An effort was made to formulate questions that were self-explanatory and would gather most data. The respondents' answers would allow the better understanding of what the companies believed to be the impact of the Internet on the real estate office market. Since close-ended questions could create a bias leading the respondent to answer in a specific way, a combination of closed and open-ended questions was utilized. The close-ended questions required from the respondents to select their answer based on a grading system (i.e., very significant, significant etc.). Respondents could also add other observations they thought significant.

The method chosen for the questionnaire administration was "face-to-face interviews" (DeVaus A., 1996; Lyberg L., and Kasprzyk D., 1991). However, some of the respondents requested additional time to consult with colleagues in their organization. Ultimately, for both Boston and London companies, the responses were a product of more than one person within the company.

The questionnaire consists of three conceptual areas based on 8 questions (Exhibit 1):

- a) *Company information* (questions 1 and 2): such as name and year of establishment. The purpose is to identify the company's experience in the mar-

ket.

- b) *Information on the real estate transaction process and participants* (questions 3 through 6): such as grading participants in the transaction process based on their role significance, earnings, and time spent with and without the use of the Internet. In addition they aimed to measure the difference between transaction length with and without the Internet.
- c) *The Impact of the Internet on the office market transaction steps* (questions 7 and 8): Identification of transaction steps conducted traditionally and using the Internet.

DATA ANALYSIS AND DISCUSSION

The effect of the Internet on REOM was evaluated through the surveys in Boston and London, which attempted to answer the following question: *How does the use of the Internet affect the role, time and earnings of the key participants involved in the transaction process?* The question is answered by testing the following two hypotheses:

- H1: *The Internet reduces the significance and earnings of the key participants involved in the transaction process.*
- H2: *The Internet reduces the time spent by key participants on each transaction and also reduces the transaction process length.*

The questionnaire's three conceptual areas are analyzed quantitatively (questions 3 through 6). Tables 1,2,4,5, and 6 were developed to agglomerate data from the answers to the questions. Qualitative data were derived from the transaction process steps defined by the respondents. The agglomeration of these steps with comments made by respondents on the use of Internet were used as a vehicle for answering the question, *"How can the Internet be used between searching for a property and its transaction?"* The transaction in the Internet era refers not only to the actual transaction, but also to the process of submitting a property for lease or sale online.

Boston survey

In the traditional market, the broker seems to be the most important "key" participant in the transaction process preceding the lawyer, whereas bro-

kers using the Internet lose some of their power (see Table 1 for lease and sale properties). This occurs for a few reasons:

- a) Consumers have the flexibility to search through the Internet for properties without consulting brokers until they identify a property that interests them.
- b) The literature review acknowledges that Internet allows faster decision-making because of real time exchange of information by all the parties involved in the deal, possibly decreasing the broker's significance. In order to remain competitive, the Multiple Listing Service (MLS) portals are continuously evolving to offer better and quicker services to the lessees/buyers. Therefore, lessees/buyers are more easily empowered and aware of property market availability.
- c) Part of the brokers' ability to identify property opportunities is replaced by the MLS.

The time spent by each of the "key" participants in the transaction process is also presented in Table 1. Comparing time spent on traditional and Internet transactions, respondents' answers show a decrease in time spent by the broker on lease properties' deals using the Internet. This can be caused by the quicker flow of information among parties on the Internet and the more standardized agreements compared to sales. For sales, however, the broker's time increased when using the Internet. One possibility is that clients are usually more demanding from their brokers because they use the Internet as a information-gathering resource and then request additional research from their broker, taking more time from them. Another possibility is that the sale of a property is a long-term investment and future owners, aware of the Internet, explore a number of investment opportunities with or without a broker, before they finalize their decision. Thus, the Internet informs the future buyer of multiple available investment opportunities, which he can simultaneously evaluate and bid on, increasing the time the broker needs to prepare with the counter party another proposal for the future owner.

In examining if the Internet reduces the earnings of "key" participants in the transaction process all the

Exhibit 1

SURVEY OF INTERNET'S IMPACT ON REAL ESTATE OFFICE MARKET

- 1) What is your company's name?
- 2) What year was your company established? (year)
- 3) Identify "key" participants ("key" is identified as i.e., broker, lawyer, mortgage company etc.) involved in office market transaction process and state their significance by the following point system:
1: very significant, 2: significant, 3: not significant 4: don't know

<i>Traditional transaction (without Internet use)</i>			<i>Internet Era Transaction (with Internet use)</i>		
Role	Lease	Sale	Role	Lease	Sale
Broker			Broker		
Lawyer			Lawyer		
Appraiser			Appraiser		
Mortgage comp.			Mortgage repr.		
			Web MLS		

- 4) What are the key participants' earnings in office market transaction process?

<i>Traditional transaction (without Internet use)</i>			<i>Internet Era Transaction (with Internet use)</i>		
Role	Lease	Sale	Role	Lease	Sale
Broker			Broker		
Lawyer			Lawyer		
Appraiser			Appraiser		
Mortgage comp.			Mortgage repr.		
			Web MLS		

- 5) What is the time spent by key participants involved in office market transaction process?

<i>Traditional transaction (without Internet use)</i>			<i>Internet Era Transaction (with Internet use)</i>		
Role	Lease	Sale	Role	Lease	Sale
Broker			Broker		
Lawyer			Lawyer		
Appraiser			Appraiser		
Mortgage comp.			Mortgage repr.		
			Web MLS		

- 6) What is the average transaction process length?

<i>Traditional transaction (without Internet use)</i>		<i>Internet Era Transaction (with Internet use)</i>	
Lease	Sale	Lease	Sale

- 7) Please identify all the transaction steps of a traditional office property transaction.

- 8) Please identify all the steps of an office property transaction carried out with the use of Internet.

participating respondents answered that the broker receives from 1-5% per deal no matter whether executed traditionally or via the Internet. Lawyers are paid hourly. Mortgage company fees are tied to the amount of the actual mortgage. The Web MLS usually has a monthly fee for participating brokers and thus does not add directly to the consumer's cost. Therefore, the use of the Internet can reduce

costs only if the participants spend less time during the transaction process.

The Internet's impact on the mean length of the transaction process is presented in Table 2. For lease properties a reduction of 19 days¹ was found, which represents a 22%¹ reduction in time length. However, for sale properties the mean reduction is

15 daysⁱⁱ that is only a 10%ⁱⁱ reduction in time. The respondents also indicated a 25% decrease in the properties for lease transacted in 2 months or less. For sale properties the decrease is the same, but for properties transacted in 4 months or less.

The qualitative section of the survey questions 7 and 8 (Exhibit 1) identified 24 steps in a typical traditional lease transaction (Table 3). According to respondents, the use of the Internet cannot significantly reduce these steps. There are some exceptions, such as a "property walkthrough," where the Internet is used for "virtual tours." Other steps that might take less time are negotiations, lease reviews, and the construction overview. Using the Internet (i.e., email, chat rooms) participants can communicate immediately about changes, thereby decreasing the time involved in the decision process.

The Boston results validate the first hypothesis that the Internet reduces the significance of the key participants. However, they do not validate the second part of the hypothesis referring to the participants' earnings. The first part of the second hypothesis, reducing the time spent by key participants was validated with some exceptions, as was the second part of the question referring to reduced transaction length.

London survey

appraisers are the key participants whose power decreases with Internet use. The reasons for this are the same as in Boston. One additional reason is that the appraisers' work can be partially substituted via the Internet (i.e., estimation of property values based on other properties listed online) as in the case of brokers, which is a significant difference compared to the U.S. market.

The time spent by each "key" participant involved in the transaction process is also presented in Table 4. Appraisers' time decreases but brokers' increases by 1%. The impact on appraisers is more significant because they are estimating property values. The Internet provides information about comparable properties for free, with the click of a mouse and without involving an appraiser requiring a fee. On the other hand, the broker's time appears to increase by 1% possibly because they must be aware of the continuous information flow available from the Internet.

The respondents' answers whether the use of the Internet reduces the earnings of key participants in the transaction process is presented in Table 5. Among these participants the brokers' and appraisers' earnings decrease by 2.5% and 0.25%, respectively, when they use the Internet. Clients are now aware of more resources available to them and the broker, making them more demanding and in less time. In general, Internet use reduces earnings only for those participants who spend less time on the transaction process. In addition,

Table 1. Key participants' role in an office property transaction in Boston

Participants	Significance of involvement				Time spent			
	Traditional process		Internet era process		Traditional process		Internet era process	
	Lease	Sale	Lease	Sale	Lease	Sale	Lease	Sale
Broker	43%	30%	37%	24%	37%	36%	35%	39%
Appraiser	14%	20%	13%	17%	25%	29%	21%	25%
Lawyer	29%	30%	24%	25%	13%	21%	17%	20%
Mortgage comp.	14%	20%	13%	17%	25%	14%	24%	13%
Web MLS	-	-	13%	17%	-	-	3%	3%

In the traditional market, the broker seems to be the most significant participant in the transaction process followed by the lawyer and the appraiser who are equally significant for lease and sales properties (Table 4). With the use of the Internet the broker shares the same significance with the Web MLS for lease and sales properties. Brokers and

the Web MLS usually has a monthly fee for the participating brokers, which does not add to the consumer cost directly.

Internet's impact on the mean transaction process length is presented in Table 6. For lease properties a reduction of 20 daysⁱⁱⁱ is found, which represents

a 39%ⁱⁱⁱ time length reduction. For sale properties the mean reduction is 18 days,^{iv} only a 23%^{iv} reduction. It also appears that Internet use reduces by 14% the transaction time for lease properties transacted in 1 month or less. For sale properties the decrease is the same, but for properties transacted in 2.5 months or less.

Table 2. Transaction process time (months) in Boston

Months	Traditional process		Internet era process	
	Lease	Sale	Lease	Sale
1	-	-	25%	-
2	50%	-	50%	-
3.5	25%	-	-	-
4	25%	25%	25%	50%
4.5	-	25%	-	25%
6	-	50%	-	25%

In terms of the qualitative part, questions 7 and 8 (Exhibit 1—Table 7), some comments are presented based on respondents' answers. Parts of the transaction process are facilitated via the Internet allowing a small but not significant decrease in the length of the process. The respondents indicated that the actual transaction steps are not reduced. However, they use the Internet for e-mail, quicker communication between parties and setting up password-protected chat rooms on the brokerage company's network or on other mutually agreed Web site (extranets). These techniques allow discussion and viewing plans, etc., achieving transparency or monitoring of information between participating members.

CONCLUSIONS

This study surveyed views of real estate professionals on the Internet's impact on the Real Estate Office Market (REOM) in Boston and London. Although the survey was conducted among various real estate professionals and not only brokers, the participating companies were brokerage and investment firms, which might have influenced the brokers' self-importance.

The results for both cities indicated more commonalities than differences in the Internet's impact on the REOM. The Internet affects the roles of the transaction participants, especially brokers in both cities and appraisers in London. It is forcing participants to redefine their roles, from information providers to strategists for risk reduction, towards

Table 3. Traditional transaction process steps for lease properties in Boston

1. Client contact	9. Initial space fit plans	17. Negotiate lease
2. Client pitch to get hired	10. Counter proposals	18. Finalize pricing for tenant work, pick general contractor
3. Client retained	11. Final choice	19. Sign lease
4. Prepare survey	12. Final negotiations	20. Oversee construction (some cases)
5. Property tours	13. Letter of intent	21. Coordinate move (some cases)
6. Request for proposal	14. Detailed space planning begins	22. Punch list (some cases)
7. Evaluate proposals	15. Draft lease review	23. Furniture installation (some cases)
8. Determine finalists	16. Pricing of plans for tenant construction	24. Move (some cases)

Source: CB Richard Ellis brokers

Combining the results of the London survey the same hypotheses as in Boston were validated. That is, respondents said the Internet reduces the significance of the key participants, but not their earnings. Their time consumed is reduced with one exception, and the transaction length is also reduced.

a more knowledgeable audience, thus leading to a transformation of the real estate business to remain competitive. However, participants indicate that the Internet's impact on their earnings is currently not substantial and there is no actual reduction in the number of steps in the transaction process or the time they consume closing a deal. The use of Internet in the length of the transaction process indicates a mean reduction by 22% for lease properties and 10% for sale properties in Boston. Similarly, in London the Internet use reduced the length of the transaction process for lease properties by 39% and for sale properties by 23%. The

Table 4. Key participants' role in an office property transaction in London

<i>Participants</i>	<i>Significance of involvement</i>				<i>Time spent</i>			
	Traditional process		Internet era process		Traditional process		Internet era process	
	Lease	Sale	Lease	Sale	Lease	Sale	Lease	Sale
Broker	50%	50%	33%	33%	33%	33%	34%	34%
Appraiser	25%	25%	17%	17%	50%	50%	33%	33%
Lawyer	25%	25%	17%	17%	17%	17%	11%	11%
Mortgage comp.	-	-	-	-	-	-	-	-
Web MLS	-	-	33%	33%	-	-	22%	22%

Table 5. Earnings of transaction process participants in London

<i>Participants</i>	<i>Traditional transaction</i>		<i>Transaction with Internet use</i>	
	Leases	Sales	Leases	Sales
Broker	5-10%	1-5%	7.5%	1.5%
Lawyer	3-4%	0.5-1%	3-4%	0.5-1%
Appraiser	.25-0.5%	.25-0.5%	.25-0.5%	.25%
Mortgage company	-	1%	-	1%

Table 6. Transaction process time (months) in London

<i>Months</i>	<i>Traditional process</i>		<i>Internet era process</i>	
	Lease	Sale	Lease	Sale
Less than 1	-	-	40%	-
1	66%	-	40%	-
Less than 2	-	-	-	20%
2	-	34%	20%	60%
2.5	-	33%	-	20%
3	17%	-	-	-
3.5	17%	33%	-	-

Table 7. Traditional transaction process steps for lease properties in London

1. Client contact	8. Terms of bidding
2. Confirmation of instructions	9. Bidding
3. Agree fees	10. Choosing selected party
4. Due diligence/understanding the product	11. Instructing solicitors
5. Market research	12. Reviewing agreement terms
6. Marketing material preparation	13. Exchange contracts
7. Viewing/inspection	

reduction in the total time length, which seems to contradict the limited reduction in the time spent by the key participants, is due to quicker decisions made by the owners and space seekers as well as the quicker dissemination of information among participating parties.

The Internet is currently used in the REOM as a listing service (i.e., loopnet etc.), a rapid information-gathering medium (i.e., area/city information

for investment opportunities & risk assessment) and a communication tool among deal participants (i.e., email, extranet etc.). The next step has been already taken with the effort to develop an online transaction platform. Although consortia (Octane, Constellation) have tried to introduce such a platform they have not been yet successful and brokerage companies seem reluctant to adopt them. One main reason is that office property transactions cannot be easily standardized because most deals

are unique with different clauses and cannot be described by one simple format. However, the effort made to develop an online transaction platform indicates the willingness to utilize also the Internet to facilitate quicker and easier real estate transactions in the future similar to e-retail.

The results indicate that the Internet may enhance the transaction process transparency among participants with the use of a common online platform. However, this can not be accomplished if participants' such as brokers, lawyers, and appraisers income is threatened.

Appendix

¹Boston's mean traditional transaction process for lease properties is: $3.5 \times 0.25 + 4 \times 0.25 + 2 \times 0.5 = 2.87$ months or approximately 86 days. The mean transaction process using the Internet is:

$1 \times 0.25 + 2 \times 0.5 + 4 \times 0.25 = 2.25$ months or 67.5 days. Therefore, the mean weighted transaction time of properties for lease is 0.62 months or about 19 days. The mean reduction of the property transaction time length is: $19/86.2 = 22\%$

²Boston's mean traditional transaction process for sale properties is: $6 \times 0.5 + 4 \times 0.25 + 4.5 \times 0.25 = 5.12$ months or approximately 154 days. The mean transaction process using the Internet is:

$6 \times 0.25 + 4.5 \times 0.25 + 4 \times 0.5 = 4.62$ months or 139 days. Therefore, the mean weighted transaction time of properties for sale is 0.5 months or 15 days. The mean reduction of the property transaction time length is: $15/154 = 10\%$

³London's mean traditional transaction process for lease properties is: $3 \times 0.17 + 3.5 \times 0.17 + 1 \times 0.66 = 1.76$ months or approximately 53 days. The mean transaction process using the Internet is:

$1 \times 0.4 + 2 \times 0.2 + 0.7 \times 0.4 = 1.08$ months or approximately 32 days. Therefore, the mean weighted transaction time of properties for lease is 0.68 months or about 20 days. The mean reduction of the property transaction time length is: $20.5/52.8 = 39\%$

⁴London's mean traditional transaction process for sale properties is: $2 \times 0.34 + 2.5 \times 0.33 + 3.5 \times 0.33 = 2.66$ months or approximately 80 days. The mean transaction process using the Internet is:

$1.8 \times 0.2 + 2 \times 0.6 + 2.5 \times 0.2 = 2.06$ months or approximately 62 days. Therefore, the mean weighted transaction time of properties for sale is 0.6 months or 18 days. The mean reduction of the property transaction time length is: $18/79.8 = 23\%$

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