

# The Impact of New Information Technologies on the Commercial Brokerage Industry

## Phase I: What Is at Stake?

### Estimation of the Revenue Flow to the Office and Industrial Brokerage Sectors<sup>a</sup>

Report for the Society of Office and Industrial REALTORS<sup>®</sup> Educational Foundation  
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by

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<sup>a</sup>This is the first of three reports to be provided. Phase II will document and analyze existing e-commerce initiatives in the commercial brokerage area. Phase III will conclude with how and why different facets of the brokerage business are likely to be impacted by information technology developments.

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are responsible for all errors and omissions.

## **Abstract**

We estimate there are from \$10.4-\$13.3 billion in annual brokerage commissions on office and industrial properties. Our estimate is based on an underlying imputation of office and industrial sector size that relies on new data that constitutes a census of properties in major markets. This is important because estimation error is reduced the more one can rely on a census for the measure of market size. Previous estimates made before these data became available look to be subject to much greater estimation error. Our analysis concludes that there is over 7 billion square feet of office space nationally and nearly 23 billion square feet of industrial product. In aggregate, we conclude that about \$185 billion in lease revenues are generated annually on this space.

Assuming the midpoint of \$11.8 billion from the estimated range of gross commissions, we calculate that the present value of industry profits is in excess of \$5 billion. This figure clearly is large enough to attract the attention of entrepreneurs using new information technologies to try to capture a portion of the value in this industry. The next two stages of this research will more carefully examine the nature of e-business operations in the commercial brokerage space and how they might influence the industrial organization of the commercial brokerage industry, the nature of brokerage firms, and compensation to brokers.

## I. Introduction

The rapid rise of the Internet and technology company valuations may have made it seem as if they would quickly and radically impact information-sensitive industries such as commercial brokerage. The even more rapid recent decline of these on-line companies may make it seem as if there would be little fall-out for bricks and mortar brokerage companies. We urge caution with respect to any such extreme conclusion, as the vagaries of short-run capital markets mood swings make them relatively poor predictors of longer-run impacts.

In fact, there is sound theoretical basis in economics suggesting that e-commerce could materially impact the nature of firms in commercial brokerage as well as the sector's industrial organization. One especially relevant insight is that if transactions costs fall substantially, there would be fewer transactions within firms and more transactions across firms.<sup>1</sup> In this scenario, firms become more specialized, buying things they need from other firms who are specializing in something else. Thus, an important question is whether e-commerce and other technological developments can materially lower the cost of leasing, selling, or managing a building.

Related work by Paul Milgrom and John Roberts published in their book *Economics, Organization, and Management*<sup>2</sup> provides additional insights into how the rise of cost-saving technologies might affect brokerage firms and the brokerage industry.<sup>2</sup> Their work focuses on process improvements afforded by technological advancements. For us, the question is how the Internet might

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<sup>1</sup>See Ronald Coase, *The Nature of the Firm*, *Economica*, Vol. 4 (1939): 386-405.

<sup>2</sup>See Paul Milgrom and John Roberts, *Economics, Organization, and Management*, Prentice Hall, 1992.

lead to different process improvements for the leasing, selling, and managing of space. More specifically, could the web be used to conduct transactions without a broker or a physical inspection of the property? The holy grail of many entrepreneurs is to cut costs by eliminating the middle man. However, economic history demonstrates that such intermediaries are very difficult to eliminate from the chain of business. In our case, brokers appear to be important repositories and conduits of information and knowledge that are not easily replaceable. Ultimately, the issue comes down to whether anyone, new or existing, can exploit new information technology to provide the repository of information and knowledge and be a flexible conduit of information – all more cheaply than can be done by the current brokerage community.

While economic theory provides good reason to believe that the rise of e-commerce might influence the commercial brokerage business, both at the firm and industry level, a proper analysis of the likely nature of any impact cannot be accomplished before we know just what is at stake. In other words, we need to determine how many resources there are in the commercial brokerage business. This turns out to be a difficult task for two reasons. First, brokers do not perform a single, homogenous task for which they are paid. They perform a variety of tasks, some of which are much less likely to be influenced by e-commerce than others. Second, data on the commercial brokerage industry, in aggregate or for specific property sectors, is very sparse, as most firms still are relatively small and not publicly-traded. There are no precise estimates of industry or sector size and revenue streams on which to base our analysis. Consequently, we focus below on developing such estimates for the industrial and office sectors in particular. They merit much of our attention, not just because the *Society of Office and Industrial REALTORS' Educational Foundation* is our funder, but also because the most reliable

data are available for those property sectors.

## **II. Estimating the Size of the Commercial Brokerage Industry**

### *A Review of of Some Previous Estimates*

Data on the size and revenues of the commercial brokerage industry are very sparse, largely because the industry is very fragmented, being comprised of numerous, relatively small firms. In addition, firms historically have been reluctant to share data for competitive reasons and no industry organization has successfully established industry-wide standard definitions for even the simplest metrics such as usable square footage. The absence of dominating, publicly-traded firms means that publicly-available, audited documents do not exist that would allow a relatively easy accounting of industry size and revenues. Hence, the size of the brokerage industry must be imputed.

A standard imputation method is to determine the scale of the brokerage business based on estimates of the stock or value of real estate. Conceptually, once one knows the stock of buildings, the revenue flow to the brokerage industry can be computed based on assumptions about transaction frequency and knowledge of commissions and other payments to the sector. Unfortunately, everything in the previous paragraph regarding the private, dispersed nature of the brokerage business applies to the real estate industry generally. Hence, we begin with a review of some existing studies that estimate the size of the real estate sector. Table 1 lists estimates from the academic and business research communities over the past decade.

**[Insert Table 1 here.]**

Mike Miles and various of his colleagues were the first to provide regression-based imputations

of the size of the real estate sector.<sup>3</sup> Their research strategy was to sample property tax records and then to employ a multiple regression analysis to impute national estimates. Very briefly, Miles and his colleagues began with aggregate data on property tax records at the state level. These state-level data were needed to obtain gross estimates of real estate wealth. The authors then performed a multiple regression analysis in which they regressed their real estate wealth measure on various demographic and economic factors including per capita income, the home ownership rate, the unemployment rate, population density, the age distribution of the population and the like. The regression results informed the researchers how correlated the various demographic/economic factors were with respect to real estate wealth in the sampled areas. The researchers then used these correlations to impute real estate wealth in non-sampled areas in the rest of the nation. They also performed the same type of analysis at the county level, using a small subset of counties for which they could obtain property tax records as the base from which to estimate real estate wealth in other non-sampled counties.

Estimation error in these studies is relatively large because the underlying data upon which the regressions are based are limited. For example, the small number of observations led the authors to include variables in their imputations that were not statistically significant at confidence levels normally used by academic researchers. This implies that the resulting size estimates are relatively imprecise. In statistical terms, there is a very wide confidence interval around the estimate. In addition, data from a very small subset of areas is used to impute conditions in the rest of the country. Unless the relationship

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<sup>3</sup>The interested reader should especially see Mike Miles, Robert Pittman, Martin Hoesli, Pankaj Bhatnager, and David Guilkey, "A Detailed Look at America's Real Estate Wealth", *Journal of Property Management*, July/August 1991: 45-50, and David J. Hartzell, Robert Pittman, and David Downs, "An Updated Look at the Size of the U.S. Real Estate Market Portfolio", *The Journal of Real Estate Research*, Vol. 9, no 2 (1994): 197-211.

between (say) income and the size of the real estate industry is the same in the sampled and non-sampled areas, the estimates are biased. Only if one had data from a representative sample of areas that is not subject to systematic measurement error would the resulting national estimate be unbiased. Unfortunately, this clearly is not the case in the studies done to date, as no such data has existed heretofore. And, bias issues aside, much better data are needed to increase the precision of the estimates.

The best possible data source would be a census B of buildings in this case. Accurately counting buildings always is preferable to estimating the number of structures. While academics tend to use more advanced statistical tools, we generally favor the estimates from the business community because they almost always are founded at least in part on some accurately counted base of data. The well-known estimate of industry size from the *Emerging Trends* annual report cited in Table 1 is a leading example. Many assumptions, some implicit and some explicit, regarding key variables such as value per square foot and cap rates, underpin the \$4.3 trillion estimate in the latest report. However, there is much good counting of capital flows and the like that helps form the base from which Lend Lease and PriceWaterhouseCoopers impute total industry size.

In conclusion, there are a number of recent studies of the size of the real estate industry upon which we could base an estimate of commercial brokerage commissions and profitability. However, each of the existing studies suffers more or less from a variety of data problems or estimation error. Consequently, we proceed to develop our own estimate of sector size, focusing on the office and industrial sectors for the purposes of this project.

## *Estimation of Office and Industrial Sector Size Based on an Underlying Census*

The twin problems of imprecise and biased estimates of office and industrial sector size can be minimized the more one can rely on a well-designed census or count of properties. A well-designed census is one in which the enumeration of buildings is done on a consistent basis and in which as much of the true population of structures as possible is captured. While there are a number of potential data sources on office and industrial properties, the market information available from the CoStar Group most closely approximates a well-designed census as just defined.<sup>4</sup> Consequently, their data serves as the base from which our estimations are made. From this point forward, we refer to this as the ‘base census data’ for our study.<sup>5</sup>

For our purposes, the biggest drawback to this base census data is that it does not include all markets in the United States, making the census incomplete from a national perspective. Fortunately, many major markets are covered, as documented by the list reported in Table 2. The base census data include all industrial and office properties containing at least 10,000 square feet. Thus, some small

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<sup>4</sup> We did consider various alternative data sources. With most other sources, there was no clear standardization of the process by which data are collected across individual markets. In addition, the CoStar Group data include a broader set of properties in the markets that are tracked, making their samples more representative of the population of buildings. [See footnote #14 for the details on a comparison involving a subset of markets.] This is the case largely because the business strategy of that firm is to provide data on as wide an array of properties and submarkets as feasible. For almost any other firm, corporate strategy would dictate a focus on a smaller, more targeted subset of properties or submarkets.

<sup>5</sup> It should be noted that our use of the their data does not constitute an endorsement of the firm or its data for business purposes. As researchers, we find it useful because this source most closely resembles a census of buildings. Industry practitioners typically need other information such as the extent of vacancy or the asking rent in a given submarket of a metropolitan area, and the timeliness of that data often is critical. We have no information on whether the CoStar Group data are superior to other sources in those (and other) respects. And, because the stock of buildings changes so slowly, timeliness beyond annual updates is immaterial to us.

buildings are missed, but this source provides the most comprehensive listing of office and industrial space available in the public domain.<sup>6</sup> In addition, information is provided on leased and vacant space and average quoted rent per square foot by property type and by suburban versus central business district location. Corporately owned and occupied properties are in the sample, but institutional and government properties are not.<sup>7</sup>

**[Insert Table 2 here.]**

Having begun with as good a census of office and industrial buildings as possible, we still have to make a number of adjustments and imputations in order to produce an estimate of the size of the national office and industrial markets. Most obvious is the need to understand how much of the overall market is reflected in the base census data. Because office and industrial properties are not distributed the same across space, it probably is the case that the base census data include different percentages of the national stock for these two sectors. In a related vein, we need to understand better the extent to which the base census data are appropriate for use in estimating property inventory in non-covered markets. Because the non-covered markets almost certainly are the smaller, less valuable ones, simply assuming rents and values in them are the same as in covered markets would result in an overstatement of the true size of the office and industrial sector. We also need to adjust for the fact that the average quoted lease rates we use (which are for the third quarter of 2000 (2000(3)) do not reflect past rents. Because rental rates have been rising over time, exclusive reliance on these data would result in

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<sup>6</sup> We refer the interested reader to the company web site, [www.costargroup.com](http://www.costargroup.com), for details on firm policy regarding data collection procedures and the like.

<sup>7</sup> Knowledge of corporately-owned space is important to us because that space will not generate the same commission revenue stream as does non-corporately owned space. We are grateful to the CoStar Group for providing us a breakdown of corporately-owned space in each market.

overstating the true rental flow on the buildings, as many in-place leases reflect rents from previous years.

With respect to the first issue of how much of the nation's overall office and industrial market is covered in the base census data, the only estimate we could find is from a FirstUnion Securities report of April 2000.<sup>8</sup> That report concluded the markets covered account for approximately 65 percent of the total stock of office and industrial properties in the United States. Subsequent conversations with other industry participants, including the FirstUnion Securities report author, led us to the following conclusions. First, the 35 percent non-coverage factor for office space should not be changed. However, the figure for industrial properties is understated and needs to be adjusted upward. This is because industrial properties and office properties are not spatially distributed in the same way across the country. Industrial space tends to be less concentrated, being more dispersed in less dense, non-urban parts of the country. In addition, industrial sites often are not multi-tenanted, do not have as frequent turnover as office, and are generally less lucrative to the brokerage community -- all of which combine to make it easier for these properties to elude brokerage attention and coverage in the data. Consequently, we decided that the extent of industrial property coverage was substantially lower than that for office. Specifically, we presume only 45 percent of the national stock of industrial properties are covered in the base census data and use that figure when imputing national totals for industrial space.<sup>9</sup>

Data from the SIOR/Landauer publication *Comparative Statistics of Industrial and Office*

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<sup>8</sup> FirstUnion Securities Equity Research Department, "E-Real Estate", April 18, 2000.

<sup>9</sup> We very much appreciate the time the First Union Securities report author, Burl East, spent discussing this issue, among others, with us. That said, we emphasize that we alone are responsible for the

*Real Estate Markets* then are employed to help determine how to adjust the quoted lease rate figures to better reflect the true average lease rate in force in each market.<sup>10</sup> For this task, only office data were used, as our examination showed that the two sets of industrial data were not compiled in a manner that made them readily comparable. First, across all covered markets, we estimate that the mean rental rate increased by about 4.5 percent from the beginning to the end of 1999.<sup>11</sup> For simplicity, we then assumed that this rental rate trend extended forward and back in time from 1999 on a non-compounded basis. A further assumption regarding the average length of lease is necessary before overall rental revenue can be calculated in each market. We presumed that the typical lease has a five-year term. If an equal number of leases were signed in each year, the average remaining term is 2.5 years (i.e., the average lease was put into effect 2.5 years ago). Combining this with the 4.5 percent estimated annual rental increase leads us to adjust the current rent data by 11.25 percent (i.e.,  $11.25=2.5*4.5$ ). That is, for the purposes of computing rental revenue arising from currently leased space, we presume the average rent is 11.25 percent lower than the rate on the most current lease information available to us.<sup>12</sup>

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decision to use the 45 percent figure for industrial space.

<sup>10</sup> See *Comparative Statistics of Industrial and Office Real Estate Markets*. Society of Industrial and Office REALTORS and Landauer Real Estate Counselors. Washington, DC., 2000.

<sup>11</sup> We arrived at this figure via the following approximation. The SIOR/Landauer office data reflect various industry reporters' information on rental rates in their local markets over the past year, typically expressed as a range of increase (or decrease) over the previous year. [We use the midpoint of the range reported in our calculations (i.e., the midpoint of a 1-5 percent range is 3 percent).] For each market listed in Table 2, we computed the recent trend in rental rates based on their reports. The 4.5 percent average increase for the nation is then arrived at by weighting the individual market data by total lease revenue arising from leased space based on current rents.

<sup>12</sup> Sensitivity analysis showed that relatively minor changes in the underlying assumptions (e.g., assuming a seven year lease term rather than a five year term) do not materially impact the commission revenue estimates reported below.

Further investigation then showed that it would be inappropriate to assume that rents in non-covered markets were equal to the major markets listed in Table 2. A fairly complex chain of reasoning and calculations led us to conclude that the average rent on the 35 percent of office and 55 percent of industrial properties in non-covered markets was about 20 percent lower than the average in the covered markets listed in Table 2. The conclusion is based on an analysis of a sample of ten metropolitan areas covered by both the CoStar Group and SIOR/Landauer.<sup>13</sup> For each market and each data source, we began by multiplying the leased square footage by the appropriate rental rate, then totaled these figures and divided them by the total leased square footage totals to weight appropriately the differences in the markets' rental rates and sizes. The SIOR/Landauer figures were then adjusted up by 4.5 percent pursuant to the discussion in the previous paragraph. On average across the ten sample markets, these computations indicated that SIOR/Landauer rents were about 27 percent higher than reported by the CoStar Group. We believe this reflects the fact that the SIOR report contains data on a smaller, more valuable subset of properties that is more relevant to its audience.<sup>14</sup>

Following the establishment of this relationship, we then sampled a new set of 15 metropolitan areas not listed in Table 2, but reported in the *Comparative Statistics of Industrial and Office Real*

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<sup>13</sup> Those markets are Baltimore, MD, Boston, MA, Chicago, IL, Denver, CO, Houston, TX, Indianapolis, IN, Louisville, KY, Orange County, CA, Orlando, FL, and Seattle, WA.

<sup>14</sup> That this is the case is strongly suggested by the fact that the CoStar Group data report much higher square footage figures in each market. For the ten markets used in this particular analysis, that source's square footage numbers summed to 1.1573 billion square feet, more than double SIOR/Landauer's 0.5703 billion square feet for the same metro areas. Other differences in reporting and quality control also may help account for the difference. For example, SIOR/Landauer reports its data by different quality categories of office properties. CoStar aggregates across A and B properties. SIOR/Landauer also reports a weighted average across its quality categories which may not reflect the true mean, as we cannot tell what weighting scheme is used.

*Estate Markets.*<sup>15</sup> A mean square footage lease rate was determined following procedures analogous to those outlined just above. The mean implied rent across all these markets was found to be 19.6 percent less than that in the covered markets from Table 2. Hence, we conclude that rents in non-covered markets are approximately 20 percent lower than those in the covered markets.

After making these adjustments and imputations, we can estimate the total amount of office and industrial space. Table 3 reports figures on total square footage, with column one reporting data on the markets listed in Table 2 and column two reporting our estimates for the nation. Space is broken down by location within the metropolitan area, by vacancy status, and by whether it is owner-occupied. The latter is important for calculations made below, as we presume that owner-occupied space is of much less value to the brokerage industry.<sup>16</sup>

Total office and industrial space in the covered markets is about 15.1 billion square feet.<sup>17</sup> The second column of Table 3 then reports estimates for the nation that reflect our assumptions that the covered markets listed in Table 2 contain 65 percent of all office space in the country and 45 percent of all industrial space. As Table 3 indicates, we estimate there are over 7.3 billion square feet of office

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15 The markets investigated are Albuquerque, NM, Boise, ID, Charleston, SC, Chattanooga, TN, Colorado Springs, CO, Des Moines, IA, El Paso, TX, Hartford, CT, Las Vegas, NV, Minneapolis/St.Paul, MN, Norfolk, VA, Portland, OR, Providence, RI, Richmond, VA, and Rochester, NY.

16 A surprisingly large 17.7 percent of office space in covered markets is corporately owned and occupied. That said, there is a wide range for the fraction of owner-occupied space across markets, with the percentage much lower in the bigger, higher valued markets. Nearly 31 percent of all industrial space is owned by its user. We presume the fraction of corporately-owned and occupied space in non-covered markets equals the average for the markets tracked by the CoStar Group.

17 With respect to the data in the first column, the CoStar Group's web site notes that it contains just over 20 billion square feet of office and industrial properties, but the company confirms that this includes past and current sales including retail space sales. Thus, the 15.1 billion figure is accurate for existing office and industrial space.

space nationwide, and nearly 23 billion square feet of industrial space, for a combined total of just over 30.2 billion square feet.

**[Insert Table 3 here.]**

While data restrictions lead us to concentrate on the office and industrial sectors, Table 4 reports square footage estimates for multifamily, hotel, and retail property types, along with summaries of our office and industrial estimates. The National Multifamily Housing Council (NHMC) reports that there were 15.854 million multifamily units based on data from the 1999 *American Housing Survey*.<sup>18</sup> Assuming 750 square feet for the average unit, this implies about 11.9 billion square feet of multifamily space in aggregate.

With respect to hotels, Smith Travel Research reports data from the U.S. Lodging Census indicating there are 3.6 million hotel rooms in the United States. The U.S. Lodging Census data base tracks over 34,000 establishments with 20 or more rooms and is estimated to include over 98 percent of all available rooms. This implies 1.1 billion square feet of hotel room space, presuming the average room contains 300 square feet.<sup>19</sup>

Finally, our 5.5 billion square feet of retail space is based on Lend Lease's estimate from its *Emerging Trends 2001* report. More specifically, Lend Lease estimates that there is 20 square feet of

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<sup>18</sup> It should be emphasized that this figure is for multifamily units only, with multifamily being defined as part of a property containing five or more units. The total number of rental units, including those in smaller properties with from 1-4 units, is much larger. However, we suspect that commercial brokers collect few, if any, commissions from those smaller properties.

<sup>19</sup> See their web site [www.str-online.com](http://www.str-online.com) for the details. Another source for this sector is the American Hotel and Motel Association (AHMA), which also cites Smith Travel Research and U.S. Lodging data. The AHMA estimates there are 3.9 million rooms in 52,000 properties. Using the same square footage assumption, this implies a slightly larger total square footage of 1.2 billion. We suspect the small difference is due to the AHMA's inclusion of more smaller properties in its data base. See their web

retail space per capita in the United States. Given the Bureau of the Census population estimate of 274 million, the implied square footage is 5.48 billion. While there are other commercial property types that one can sell or lease (e.g., farmland, timber land, etc.), Table 4 captures the bulk of commercial space in the United States.

**[Insert Table 4 here.]**

Table 5 next reports aggregate lease revenue estimates for the office and industrial sectors. The national estimate of these annual revenues is approximately \$184 billion on office and industrial properties.<sup>20</sup> These estimates are for the entire nation and thus include imputed rents from properties in non-covered markets (i.e., in areas not listed in Table 2). Moreover, these estimates incorporate all the adjustments and imputations discussed above. Not surprisingly, office space is considerably more valuable per square foot and in aggregate, even though there is substantially more square footage of industrial space.

**[Insert Table 5 here.]**

Annual brokerage commissions on office and industrial space now can be estimated based on lease revenues. Our first step is to estimate project leasing and tenant rep commissions. As above, we assume that lease terms are for five years on average, implying that 20 percent of the leased space rolls over every year. This rollover space is the foundation from which we calculate the commission pool available in a year. Because this is newly rented space, commissions are based on existing market rents,

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site [www.webprod.ahma.com](http://www.webprod.ahma.com) for the details.

<sup>20</sup> One can perform various types of sensitivity analysis by changing any of the underlying assumptions. One of the more interesting ones is with respect to corporately-owned and occupied buildings. If no office or industrial buildings were corporately-owned or occupied (equivalently, if these structures were as economically valuable to brokers as other real estate), we estimate that total lease revenues would be

not older, in-place rents. In aggregate, these rents amount to \$41.7 billion.<sup>21</sup>

Table 6 shows that we estimate from \$8.5-\$9.7 billion of commission revenue is generated from space that rolls over, with the number depending upon the fraction of tenants who renew. We experiment with renewal rates of from 50-75 percent, which accounts for our range of commission estimates. Given market brokerage commission conventions, the higher the renewal rates, the lower the ultimate brokerage commission income.

A number of steps were involved in developing the figures reported in Table 6. Briefly, commissions of varying amounts are assumed to be generated on four categories of rollover space: (a) 4 percent commissions for cases in which the tenant renews and has a tenant rep broker; (b) 3 percent commissions for cases in which the tenant renews, but does not use a tenant rep broker; (c) 6 percent commissions for cases in which the old tenant does not renew, and the new tenant uses a tenant rep broker; and (d) 4 percent commissions for cases in which the old tenant does not renew, but the new tenant does not use a tenant rep broker.<sup>22</sup>

The process by which our commission revenue estimates in Table 6 are arrived at can be made more clear by beginning with the case in which only 50 percent of tenants are assumed to renew. With this assumption, tenants renew on space generating \$20.8 billion of rent ( $\$41.7 \cdot .5$ ). Of those who do

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approximately \$227 billion.

<sup>21</sup> Note that this is appropriately larger than  $.2 \cdot \$184$  billion (\$36.8 billion), as the aggregate lease revenue number from Table 5 reflects both current and in-place rents, while commissions on rollover space should be based on current rents only.

<sup>22</sup> The commission rates used were arrived at following an informal survey of about a dozen brokers and brokerage firm executives from around the country. The figures we use reflect averages as there was significant variance across markets. It also should be noted that the commission rates used take into account payments in a co-broker situation when appropriate. Finally, we also experimented with different rate assumptions and comment below on those results.

renew, half are presumed to use a tenant rep broker who, with the project leasing broker, shares a 4 percent commission. The implied commission revenue is \$2.1 billion ( $\$20.8 \times 0.5 \times .04 \times 5 \text{ yrs}$ ).<sup>23</sup> The distribution of this revenue by property type is listed in the first column of Table 6 for the 50% Renewal assumption under the heading Tenant Renewals, Tenant Rep Broker. The other half (of the half who do renew) does not use a tenant rep broker, so the commission is presumed to be lower at 3 percent. The implied commission revenue on this space is \$1.6 billion ( $\$20.8 \times 0.5 \times .03 \times 5 \text{ yrs}$ ), the distribution of which is presented in the 50% Renewal part under the heading Tenant Renewals, No Tenant Rep Broker.

Summing the total revenues arising from renewals under the 50 percent assumption yields a project leasing and tenant rep commission stream of approximately \$3.64 billion. Under the alternative assumption that 75 percent of tenants renew in space that is rolling over, we obtain a revenue stream to the brokerage industry of nearly \$5.5 billion. This represents the sum of the \$3.1 and \$2.3 billion figures in the 75% Renewal columns for the Tenant Renewals, Tenant Rep Broker and Tenant Renewals, No Tenant Rep Broker headings in Table 6.

Moving now to the fraction that does not renew, our calculations presume that 90 percent of the relevant space is released to someone who uses a tenant broker. For this space, a total commission of 6 percent is assumed split between the tenant rep and the landlord broker. Note the wide difference in resulting commission revenue depending upon the fraction of tenants renewing. If only 50 percent of tenants renew on space rolling over, the commission stream on the non-renewing space for which there

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<sup>23</sup> Given the five year lease term assumed here (which we believe better represents most newer leases), we assume the commission is paid in cash up front. We acknowledge that this often is not the case on longer leases.

is a tenant rep broker is \$5.6 billion ( $\$20.8 \times 0.9 \times .06 \times 5\text{yrs}$ ), as shown in the first column under the Tenant Does Not Renew, Tenant Rep Broker heading of Table 6. This compares to only \$2.8 billion if 75 percent of tenants renew.

The remaining 10 percent of space is presumed leased to tenants who do not use tenant rep brokers (i.e., the tenant simply walks in without having a broker). A commission of 4 percent is assumed on this space. Implied commissions here are \$417 million under the 50 percent tenant renewal assumption versus \$208 million if 75 percent of tenants are presumed to renew. (see the last two columns of Table 6 under the Tenant Does Not Renew, No Tenant Rep Broker heading).

Depending upon the fraction of tenants who renew, commission revenues from space rolling over ranges from \$8.5 billion to \$9.7 billion with a midpoint of \$9.1 billion. Naturally, the higher figure obtains the lower the fraction of tenants renewing.<sup>24</sup> However, this range still does not capture all possible revenues to the brokerage industry, as commissions are also earned on investment sales and corporate dispositions.

The top panel of Table 7 reports our estimates of commissions from investment sales as ranging from \$1.4-\$3.0 billion, with a midpoint of \$2.2 billion. This range is estimated as follows. First, we begin with square footage by property type at the national level. For this calculation, leased square footage is computed net of corporately-owned and occupied space. [Commission revenues from

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<sup>24</sup> We experimented with other commission rates, most of them lower than the figures used in the analysis reported in the text. Assuming that rates are systematically lower so that only a 3 percent commission is reaped on a renewal with a tenant rep, only a 2 percent commission is paid on a renewal without a tenant rep, only a 4 percent commission is paid when there is a new tenant with a tenant rep, and a 3 percent commission for a new tenant without a tenant rep, our aggregate revenue estimate falls to \$5.9 billion (under the 50 percent renewal assumption). Assuming commissions midway between those listed in this footnote and those used in Table 6 yields an aggregate revenue estimate of \$7.8

corporate dispositions are computed below.] We then assume an average value per square foot for each of the four property subtypes analyzed.<sup>25</sup> Asset values are the product of square footage and price, of course. The frequency with which buildings sell is very important, of course, and is presumed to vary by property type. Specifically, central business district offices and standard industrial properties are presumed to sell once every ten years. Suburban office and flex space is presumed to sell once every seven years. Because of the relatively wide variation found in commission rates for investment sales, in all cases except for CBD office, we provide estimates based on a range of commission rates as follows: (a) a 0.75 percent commission is earned on investment sales of CBD office product; this is the only product type for which we do not vary the commission rate; (b) the commission on an investment sale of a suburban office is presumed to vary from a low of 1 percent to a high of 2 percent; (c) the commission on an investment sale of industrial space is allowed to range from a low of 1 percent to a high of 3 percent; and (d) the commission on an investment sale of industrial flex space is as low as 1 percent and as high as 3 percent.

If the lowest possible commission rates are presumed for each product type, simple multiplication yields the nearly \$1.4 billion figure in total commissions under the Low Commission Case column. Using the upper end of the commission rate ranges produces the nearly \$3.0 billion figure, with a \$2.2 figure resulting from using the midpoint of the commission ranges. Hence, commission revenues from investment sales are significant from an economic standpoint even if commission rates are no more than one percent for any property type.

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billion.

<sup>25</sup> Office properties in the CBD were assumed to sell for \$200 per square foot; suburban office was assumed to go for \$135 per square foot; regular industrial sites were presumed to sell for \$30 per

The figures in the bottom panel of Table 7 report our estimates of commissions arising from corporate dispositions. These dispositions occur only on corporately owned and occupied buildings, with the space identified by the CoStar Group scaled up to the national level as outlined above in Table 3. We presume valuation per square foot by property type is identical to that reported above in footnote #25 for non-owner-occupied space. Corporate dispositions are presumed to occur with much less frequency than investment sales. Hence, for corporately-owned CBD office and standard industrial product, we assume the typical building sells once every 40 years. The average suburban office or industrial flex building is assumed to sell once every 25 years.

We then compute a range of estimates of commission revenue based on the following assumptions for the upper- and lower-bounds on commission rates: (a) a 1 percent commission is earned on a corporate disposition of a CBD office building; for this product type there is no variance in commission rate; (b) the commission on a corporate sale of a suburban office ranges from a low of 2 percent to a high of 4 percent; (c) the commission earned on a corporate disposition of basic industrial space ranges from a low of 4 percent to a high of 6 percent; and (d) the commission earned from a corporate transaction of industrial flex space ranges from a low of 3 percent to a high of 5 percent.<sup>26</sup>

Not surprisingly, commission revenues from corporate dispositions are much lower than those arising from investment sales. However, our low end estimate still is nearly \$400 million per annum, with the upper end estimate almost reaching \$650 million. If we presume commission rates in the middle of the ranges noted above, the figure is \$525 million.

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square foot, with flex space going for \$50 per square foot.

<sup>26</sup> These ranges for commission rates capture the bulk of responses we received in our informal survey of brokers across the nation.

Aggregating the commission revenue estimates from Tables 6 and 7 yield a range of from \$10.4-\$13.3 billion. The \$10.4 figure is derived from using the lower bound estimates from both tables, while the \$13.3 figure presumes the top end of each range is used in each case. Given that conditions do differ across markets, the midpoint of \$11.8 billion may be a reasonable approximation of the average for the nation. Given the complexities of industry practice, the fractured nature of brokerage ownership, and the proprietary nature of many real estate transactions, it is not surprising that estimates of the brokerage commission pie (even for the office and industrial sectors) have not been common. Still, this information is perhaps the most critical to monitoring the industry and understanding the impact of new information technologies and changes in service delivery on the bottom line.

Our estimates for the office and industrial sectors can be put in perspective by comparing them to recent estimates for the entire commercial brokerage industry. Both FirstUnion Securities' and Bank of America Securities' real estate research groups recently developed estimates of total brokerage income by applying various sets of assumptions to aggregate commercial real estate.<sup>27</sup> Bank of America further broke its estimates into lease and sale components. However, neither group breaks down commission by property sector. The FirstUnion report estimates \$20 billion in brokerage commissions, while the Bank of America study figure is \$18.8 billion.<sup>28</sup>

Thus, our estimates for the office and industrial sectors are just over 50 percent of their estimates for all property types. Given the scale and value of the retail sector in particular, we do not

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<sup>27</sup> See FirstUnion Securities, "E-Real Estate", April 18, 2000 and Bank of America Securities Equity Research, "E-Commercial Real Estate Industry Overview", August 2000.

<sup>28</sup> The Bank of America Securities study includes \$11.7 billion in lease commissions and \$7.2 billion in sales commissions. Their study uses a given 1.625 to 1 ratio of lease commission dollars to sale commission dollars. Our implied ratio is significantly lower, but we are unable to determine how they

find it unbelievable that commissions on other property types would be as large as for office and industrial. However, a detailed examination of those other sectors awaits better information on lease rates, lease structures, and commission structures applicable to those property types.<sup>29</sup>

In general, we strongly believe it is useful to construct estimates by sector because of differences in rents, leases, and commissions across sectors. Disaggregate data also will be more relevant to those specializing in a given property types. And, such data may indicate that disintermediation by new information technology developments is more likely in one sector versus another.

### **III. Implications and Conclusions**

We conclude this report with a brief discussion of what our estimates mean for future research. While a complete analysis awaits Phase III of the project, a few conclusions already can be drawn. First, the value of the annual brokerage revenues to the industry is large enough to attract the attention of entrepreneurs in the information technology field. Even restricting one's attention to the industrial and office sectors, and making some reasonable assumptions about firm and industry profitability, leverage, and goodwill amortization, the value of the industry as configured is in excess of \$5 billion.<sup>30</sup>

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derived theirs.

<sup>29</sup> While our focus is on the office and industrial sectors, we welcome suggestions from readers on data regarding lease rates, lease structures, and brokerage commission rates and structures in those three property sectors.

<sup>30</sup> The details behind this \$5 billion figure are as follows. First, assuming a 12 percent earnings before interest, taxes, and depreciation and amortization (or EBITDA) margin on \$11.84 billion in revenues results in a \$1.42 billion in EBITDA for the office and industrial component of the brokerage industry. The five large public real estate service companies have an average trailing EBITDA multiple of just under four. Private company valuations for brokerage companies range from 3 to 5 times EBITDA. Recent buyout offers for CB Richard Ellis and Grubb & Ellis would imply a market value in the 5 times EBITDA range. However, the multiple for the entire industry should be higher than the multiple for one or even a group of brokerage companies, given that a brokerage customer cannot easily find a substitute

If the investment banking group estimates for the entire brokerage industry are even roughly accurate, the total value for the industry is over 50 percent more than that what we estimate for the office and industrial sectors. And, there may be more value arising from an improvement in the efficiency of the transactions process that results in lower brokerage costs and fees. Such savings could be quite valuable to landlords who trade at higher multiples. The point is that overall value is a prize worth attacking, or to be more precise, trying to take away or disintermediate. Thus, it is useful to proceed by carefully considering how the industrial organization of the commercial brokerage industry might be impacted by new information technologies.

We already know from the stock brokerage industry that disintermediation of commissions is possible, and not just in theory. Firms such as Charles Schwab have successfully used new information technologies to take away brokerage commissions from more traditional, full service investment banking operations. For stock brokerage firms, the rise of the Internet and on-line trading is in the process of fundamentally changing the business model by which those firms operate. That is, the new information technology is not serving merely as another (possibly important) distribution channel. It is changing the way these firms organize and run their firms. For example, the full service firms now understand that they cannot operate a retail stock brokerage business on the assumption that profits from trading shares will be a huge source of net income. These firms are moving rapidly to become investment and money managers, realizing that the margins from share turnover have shrunk and probably will continue to do so. This not only requires a refocusing of managerial talent, it requires different skills within the stock

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for the entire brokerage industry. [Stated differently, the industry is less risky than any one or even a group of individual brokerage firms.] A multiple of 4 would give the industry a \$5.7 billion “value”, with a 5 multiple equating to \$7.1 billion in value.

broker work force, and a new compensation strategy.

Whether new information technology will change the typical commercial real estate brokerage firm so fundamentally is not yet clear, and in any event, will be a major focus of Phase III research. However, even if the Internet functions as a new distribution channel for commercial real estate brokers and does not cause a fundamental change in the underlying business model, it still could change the way commercial real estate brokerage firms operate, who they hire, and how they compensate employees.

To see this more clearly, it is useful to note that brokers are compensated for a variety of activities, not just one. Among them is the ability to source new business, the ability to actually pitch and win new business, and the ability to execute and efficiently manage whatever plan was successfully 'pitched'. While new technology has and will continue to make more efficient the sourcing and winning of new business, we suspect that technology advances are likely to have their greatest impact on the execution part of the brokerage process. The actual execution of a brokerage transaction at its core is a complex communication and project management function. The intersection of computing, wireless capabilities and the Internet could dramatically simplify the process. Consequently, investigation of this type of potential Milgrom-Roberts process improvement will be a central issue for our work.

It then almost goes without saying that anything leading to reorganization within the firm or industry will have a direct impact on the brokers themselves. After all, they share in the commission revenues flowing to the industry. If their employers come under heightened cost pressure from new competitors employing various information technologies (or if the traditional firms themselves employ the new technologies), the number of brokers employed, the type of skills they will need, and the compensation they receive each are likely to be subject to change.

We will also try to integrate our analysis of potential technology impacts within the framework of other changes occurring within the commercial brokerage industry. The rise of new information technologies may interact in important ways with these changes. The continued growth of corporate outsourcing transactions is one such example. In a typical outsourcing agreement, a major corporation will award all of its brokerage work to one (or maybe two) firms. In return for the contract, the client might receive a commission discount. However, because the corporation will likely demand a very customized brokerage process to deliver its transaction management business, it may pay a retainer fee to the brokerage firm to offset the cost of dedicated staff and management from the brokerage firm.

Information technology developments aside, outsourcing alone is changing the brokerage industry in a couple of ways. First, the historic commission rate declines, although this is offset somewhat by the retainer arrangement. Second, a higher level of administration, coordination, analysis, research, and communication are required. Without prejudging the issue until Phase III research is completed, we do suspect that the growth of outsourcing and information technology are not a coincidence. Paired together, they could have important impacts on how firms organize themselves and whom they decide to hire in order to take advantage of this opportunity.

Independent of outsourcing, the spread of information technology seems likely to increase the transparency, if not the ease, of services actually provided. We know from other industries that greater transparency in a transaction tends to expedite the lowering of fee schedules. In a related vein, information technology may reduce the difference in effort required on large versus small transactions. If so, we would expect further impact on fees.

In conclusion, Phase II of our research will document the nature of e-business activities being

undertaken in the commercial brokerage space. Phase III then will delve deeper into the implications of e-commerce and technology advances for the brokerage business – at the industry level, firm level, and broker level.

**Table 1: Select Estimates of U.S. Domestic Commercial Real Estate Industry**

Source	Year	Estimate (trillions)
Bank of America Securities	2000	\$4.0
FirstUnion Securities	2000	\$3.4
Lend Lease	2000	\$4.3
Hartzell <i>et. al.</i>	1994	\$2.4
Miles <i>et. al.</i>	1994	\$4.0
Miles <i>et. al.</i>	1991	\$2.7

**Notes:**

1. All figures in nominal dollars. The Consumer Price Index has increased just over 20 percent since 1994, so the 1994 should be multiplied by 1.2 to convert them to current dollars. The analogous conversion rate for 1991 is 1.3.
2. The interested reader also should see Mike Miles, “What is the Value of All U.S. Real Estate?”, *Real Estate Review* (Summer 1990) for a review of various estimates from the 1980s.

**Sources:**

1. Bank of America Securities, Equity Research, “E-Commercial Real Estate Industry Overview”, August 2000.
2. FirstUnion Securities, “E-Real Estate”, April 18, 2000.
3. Lend Lease and PriceWaterhouseCoopers, *Emerging Trends Report 2000*.
4. Hartzell, David J., Robert H. Pittman and David H. Downs, “An Updated Look at the Size of the U.S. Real Estate Market Porfolio”, *The Journal of Real Estate Research*, Vol. 9, no. 2 (Spring 1994): 197-213.
5. Miles, Mike, John Roberts, Donna Machi, and Robert Hopkins, “Sizing the Investment Markets: A Look at the Major Components of Public and Private Markets”, *Real Estate Finance*, Vol. 11, no. 1 (Spring 1994): 39-49.
6. Miles, Mike, Robert Pittman, Martin Hoesli, Pankaj Bhatnager, and David Guilkey, “A Detailed Look at America’s Real Estate Wealth”, *Journal of Property Management*, (July/August 1991): 45-50.

**Table 2 - Metropolitan Markets Covered by the CoStar Group**

Region	Market
MidAtlantic	Baltimore
MidAtlantic	D.C.
MidAtlantic	Philadelphia
MidAtlantic	Pittsburgh
Midwest	Chicago
Midwest	Cincinnati
Midwest	Cleveland
Midwest	Columbus
Midwest	Dayton
Midwest	Detroit
Midwest	Indianapolis
Midwest	Kansas City
Midwest	St. Louis
Northeast	Boston
Northeast	Long Island, NY
Northeast	NYC - Downtown
Northeast	NYC - Midtown
Northeast	Northern NJ
Northeast	Westchester/So CT
Southeast	Atlanta
Southeast	Charlotte
Southeast	Jacksonville
Southeast	Louisville
Southeast	Orlando
Southeast	Raleigh/Durham
Southeast	South Florida
Southeast	Tampa/St. Pete
Southwest	Dallas/Ft. Worth
Southwest	Denver
Southwest	Houston
Southwest	Phoenix
West	Inland Empire
West	Los Angeles
West	Orange
West	Sacramento
West	San Diego
West	San Francisco
West	Seattle/Puget Sound

Source: Company documents and web site ([www.costargroup.com](http://www.costargroup.com))

**Table 3 - Total Office and Industrial Space Estimate**  
(millions of square feet)

	Covered Markets Only (see Table 2 for listing)	National Estimates
<b>Office</b>		
<b>Central Business District</b>		
Leased	1,113.2	1,712.7
Owner-Occupied	232.7	358.0
Vacant	121.4	186.8
<b>Total CBD</b>	<b>1,467.3</b>	<b>2,257.4</b>
<b>Suburban</b>		
Leased	2,349.5	3,614.6
Owner-Occupied	617.0	949.3
Vacant	360.8	555.1
<b>Total Suburban</b>	<b>3,327.3</b>	<b>5,119.1</b>
<b>Combined CBD and Suburban</b>		
Leased	3,462.7	5,327.3
Owner-Occupied	849.7	1,307.3
Vacant	482.2	741.9
<b>Total Office</b>	<b>4,794.6</b>	<b>7,376.5</b>
<b>Industrial</b>		
<b>Industrial</b>		
Leased	5,025.1	11,166.8
Owner-Occupied	3,463.1	7,695.7
Vacant	706.1	1,569.1
<b>Total Industrial</b>	<b>9,194.3</b>	<b>20,431.6</b>
<b>Flex</b>		
Leased	621.3	1,380.7
Owner-Occupied	354.7	788.2
Vacant	131.3	291.8
<b>Total Flex</b>	<b>1,107.3</b>	<b>2,460.6</b>
<b>Combined Industrial and Flex</b>		
Leased	5,646.4	12,547.4
Owner-Occupied	3,817.8	8,483.9
Vacant	837.4	1,860.9
<b>Total Industrial Space</b>	<b>10,301.6</b>	<b>22,892.2</b>
<b>Combined Office and Industrial</b>		
Leased	9,109.1	17,874.7
Owner-Occupied	4,667.5	9,791.2
Vacant	1,319.6	2,602.7
<b>Total Office and Industrial</b>	<b>15,096.2</b>	<b>30,268.7</b>

Note: Covered markets include those listed in Table 2. Data were obtained by summing the square footage listed for each property type in all of the markets maintained in the CoStar database at the end of the third quarter 2000. (see their web site, [www.costargroup.com](http://www.costargroup.com)) for the details. National figures are scaled up to reflect the fraction of stock outside of the covered markets. See the text for the details.

**Table 4**

Estimate of Total Commercial Space Square Footage, Gyourko & Nakahara (2001)  
Billions of Square Feet

U.S. Commercial Office Space	7.4
Central Business District	2.3
Suburban	5.1
U.S. Industrial Space	22.9
Industrial	20.4
Flex	2.5
<b>Total U.S. Office &amp; Industrial Space</b>	<b>30.3 billion SF</b>

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Other Property Types

	# of Building or Units	Square Footage ( <b>billion SF</b> )
Multifamily	15.854 million	11.9 billion SF
Hotel	3.6 million rooms	1.1 billion SF
Retail	N/A	5.3 billion SF
<b>Total Other Property Types</b>		<b>18.3 billion SF</b>

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Sources: See text.

**Table 5 - Total Office and Industrial Lease Revenue Estimates**

	<b>Total Lease Revenue (\$millions)</b>
<b><u>Office</u></b>	
CBD	52,737.9
Suburban	62,279.4
Total Office	115,017.3
<b><u>Industrial</u></b>	
Industrial	52,667.2
Flex	17,186.7
Total Industrial	69,853.9
<b>Total Office and Industrial</b>	<b>184,871.2</b>

Note: See the text for the details on how these numbers were computed.

**Commissions from Space Rolling Over (\$millions)**

	Tenant Renews, Tenant Rep Broker		Tenant Renews, No Tenant Rep Broker		Tenant Does Not Renew, Tenant Rep Broker		Tenant Does Not Renew, No Tenant Rep Broker	
	50% Renewal	75% Renewal	50% Renewal	75% Renewal	50% Renewal	75% Renewal	50% Renewal	75% Renewal
	\$594.2	\$891.3	\$445.7	\$668.5	\$1,604.4	\$802.2	\$118.8	\$59.4
	\$701.7	\$1,052.6	\$526.3	\$789.5	\$1,894.7	\$947.3	\$140.3	\$70.2
	\$1,296.0	\$1,944.0	\$972.0	\$1,458.0	\$3,499.1	\$1,749.6	\$259.2	\$129.6
	\$593.4	\$890.1	\$445.1	\$667.6	\$1,602.3	\$801.1	\$118.7	\$59.3
	\$103.7	\$155.5	\$77.7	\$116.6	\$279.9	\$139.9	\$20.7	\$10.4
	\$787.1	\$1,180.6	\$590.3	\$885.5	\$2,125.1	\$1,062.6	\$157.4	\$78.7
	\$2,083.1	\$3,124.6	\$1,562.3	\$2,343.4	\$5,624.2	\$2,812.1	\$416.6	\$208.3
<b>Industrial</b>	50% Renewal \$9,686.2	75% Renewal \$8,488.4						

**Table 7:**

**Estimated Commissions from Investment Sales (\$millions)**

<b><u>Sector</u></b>	<b><u>Low Commission Case</u></b>	<b><u>High Commission Case</u></b>
CBD Office (0.75%, 0.75%)	\$257	\$257
Suburban Office (1%, 2%)	\$697	\$1,395
Industrial (1%, 3%)	\$335	\$1,005
Flex (1%, 3%)	\$99	\$296
<b>Total</b>	<b>\$1,388</b>	<b>\$2,952</b>

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**Estimated Commissions from Corporate Dispositions (\$millions)**

<b><u>Sector</u></b>	<b><u>Low Commission Case</u></b>	<b><u>High Commission Case</u></b>
CBD Office (1%, 1%)	\$18	\$18
Suburban Office (2%, 4%)	\$103	\$205
Industrial (4%, 6%)	\$231	\$346
Flex (3%, 5%)	\$47	\$79
<b>Total</b>	<b>\$399</b>	<b>\$648</b>

**The Impact of New Information Technologies on the Commercial Brokerage Industry**

**Phase II: E-Business Initiatives in the Commercial Brokerage and Listing Space<sup>a</sup>**

**Draft Report for the Society of Office and Industrial REALTORS Education Foundation  
April 6, 2001**

by  
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<sup>a</sup>This is the second of three reports to be provided. Phase I estimated the size of the office and industrial brokerage sector and its profitability. Phase III will conclude with how and why different facets of the brokerage business are likely to be impacted by information technology developments.

This research was funded by a grant from the *Society of Industrial and Office REALTORS Education Foundation*. Sally Fullam and Robert Mason provided excellent research assistance on this phase of the project. While this draft could not have been done without them, we alone are responsible for all errors and omissions.

## **Abstract**

This report summarizes the state of activity in the on-line commercial brokerage and listing spaces by reporting on the sites of over two dozen existing and prospective companies. The sites analyzed represent a broad array of ideas and concepts. Most efforts are focused in the listings area. Whether these firms survive as independent entities or are merged into more traditional companies, it seems clear that that the development of the World Wide Web has changed the efficiency with which that part of the brokerage process is conducted. Fewer firms are focused on conducting transactions electronically. However, there are a small number of efforts being made not only to effect transactions on the Web, but to impact the entire supply chain in real estate brokerage. The first sign of a distinct discount brokerage model also is apparent in our review. Given how important this development was for e-businesses in the stock brokerage sector, it bears close scrutiny going forward.

## **I. Introduction**

Even with the recent collapse in the prices of Internet-based firms traded on the NASDAQ, there still are many companies doing business in the commercial brokerage and listing spaces. This phase of our research reports on 25 of those firms. Our sample does not constitute the universe of firms in these spaces, but it does include the vast majority of companies tracked by the major Wall Street investment houses.<sup>1</sup>

These firms represent a broad array of ideas and concepts. A number of firms clearly hope to be able to dominate specialized markets. For example, PropertyByNet.com focuses its operations geographically on the Southern California market. Others such as Storetrax.com have concentrated their efforts on a single property type – retail, in its case. Yet another firm, Offices2Share.com has developed its business around a leasing niche – office sharing, an area that generally was not brokered heretofore.

At the other end of the spectrum are very ambitious enterprises that could disintermediate commercial brokers to some extent – if the new businesses are successful, of course. These include NetStruxr.com, an effort supported by some in the corporate real estate community that has the potential to affect the balance of power between commercial brokers and their corporate clients. Another example is Zethus, the most widely discussed company that apparently was intent on providing a web-based transactions platform. Its recent demise is a clear indication that it will be very difficult (and expensive) to fundamentally change the way the commercial

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<sup>1</sup> It is noteworthy that we focus on commercial, not residential, applications in the brokerage and listing spaces. While many Wall Street firms cover ‘e-real estate companies’, an excellent source for the interested reader is “The E-Real Estate Yellow Pages” published by the Banc of America Securities Montgomery Division. The latest edition is dated March 5, 2001. In addition to brokerage and listing-focused firms, that report includes lists of residential (primarily owner-occupied housing) firms, financial firms, intranet providers, portals, procurement specialists, and the like.

brokerage business operates. That said, there are other companies such as Peracon that also hope to use new information technology to standardize the sales transaction process and, thereby, change the very nature of the commercial brokerage business.

What follows in the next section is a series of 1-2 page summaries of each firm. The synopses include a description of what the company presently does and hopes to do. In addition, the URL for the firm is listed and, if clicked upon, will take the interested reader directly to the firm's home page if further information is desired. For those not inclined to read the individual firm reports, a one-page matrix listing each site and seven key characteristics also is included. The traits include the following: (1) whether the site currently is on-line; (2) whether the site has a listing or transactions focus; (3) an estimate of the extent of listings where applicable; (4) information on the costs for listings and for accessing the site information; (5) the target audience of the site; (6) the site's geographic focus; and (7) whether the site focuses on a single or multiple property types.

**[Insert Matrix here.]**

A quick glance at the matrix shows that two of our covered firms already have disappeared from the Web. Thus, failure (or demise via acquisition) has hit the commercial real estate and listings sector, and we suspect its pace will only increase. It also is evident from this page that most firms have a listings focus, with only a handful of sites trying to effect transactions electronically. The number of listings varies enormously among the sites covered. Because economies of scale are likely to be critical to profitability, we suspect that those sites with relatively few listings will have to increase them quickly and markedly, or failure is likely.

Revenue models vary substantially across the firms as the Listing Costs and Access Costs

columns show. For most, but not all, listings-focused operations, listings are free. This is the case for accessing site information in some cases, but various fixed and variable fee structures exist for accessing other sites. Those sites with no listing or accessing fees rely on advertising for revenue generation or are being supported by venture investors of some type. Given the failure of the advertising model as a sole or primary revenue source in other industry sectors, we strongly suspect that pricing for access will become widespread here.<sup>2</sup>

That tenants, brokers, and landlords are targeted by the various sites is indicative of the wide array of operations and strategies being employed in commercial real estate (see column six of the matrix). The next column in the matrix also demonstrates that most of the listing and transactions players in e-space have a national focus. This probably is because economies of scale are important in the long run. Size and scope also may make it easier to attract capital from major industry players and venture capitalists. Finally, the office sector most frequently is targeted as a source of business, but there are a handful of sites specializing in another property type or dealings with the full array of commercial properties (see the final column of the matrix).

Before getting to the site descriptions themselves, it is useful to keep in mind a key question as one reads the individual summaries. That question is to what extent new developments in information technology will fundamentally change the way that commercial brokerages do business versus to what extent will this new technology simply serve as another distribution channel for a commercial brokerage operating under what is essentially the same

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<sup>2</sup> While our focus is on commercial real estate listing and transaction sites, it is instructive to compare our sample in this respect to Microsoft's MSN HomeAdvisor on the homeowner side of the market. MSN HomeAdvisor charges nothing for listing or access, and does not appear to have plans to do so in the near future. However, this operation clearly is a special case. Its listing volume truly is enormous and its brand with web users is valuable. Microsoft may not even need advertising revenues for its MSN HomeAdvisor operation to make sense economically. It may be able to cross sell enough services to make a profit. This is virtually impossible for any commercial real estate

business model as before.

The number of listing companies out there, both large and small in scale, provides much food for thought in this regard. The presence of these firms leaves no doubt that the Web will be an important distribution channel and conduit of information for commercial real estate brokerages. However, whether the CoStar's of the world ultimately survive as independent entities is not something we can easily predict, and more properly is a focus of Phase III research. Regardless of the answer, it seems very likely that the development of firms such as CoStar will put pressure on fees charged by brokerages. The increased transparency provided by the Web also should increase the division of labor within and across firms. That is, the development of specialists within commercial brokerages seems likely to accelerate.

More broadly, the recent bankruptcy filing of Zethus casts doubt on the near-term potential for an e-firm to fundamentally change the business model of traditional commercial brokerages. However, the continued existence of Netstruxr.com, Peracon.com, and Tenantwise.com indicates that the potential for significant disintermediation still exists. The corporate real estate financial backing for Netstruxr.com clearly is intended to reduce brokerage costs for corporate tenants. Peracon.com is even more ambitious in the sense that its goals potentially include impacting the entire supply chain for real estate. And, Tenantwise.com, while geographically focused on the Manhattan market, brings to the fore the concept of a discount brokerage operation.

The discount model is particularly interesting because of its role in the history of stock brokerage and the development of web-based trading in stocks. Following the deregulation of

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operation. Hence, pricing of access almost certainly is going to become an important issue in the near future for commercial listing operations.

trading commissions decades ago, but well before the development of true Internet firms such as E\*Trade, discount stock brokerage was popularized by Charles Schwab. Schwab attracted customers who did not wish to pay for all the services beyond trading execution that were provided by the more traditional stock brokerages. Recent research suggests that the clients of the discount brokers such as Charles Schwab were the initial customer base of the true e-firms such as E\*Trade in this sector.<sup>3</sup> Those who were most accustomed to fewer services and were more hands-on in terms of stock transactions were the most amenable to electronically executing trades themselves. There also is some evidence that those who had done the best in terms of stock picking and return performance were more likely to be willing to trade through accounts at the new e-firms. They probably thought that they were smart, not lucky, so that they did not need even the limited array of services offered by the discount stock brokerages.

While the recent downturn in the broader stock market and the debacle in the technology stocks almost certainly will show that luck, not skill, was the driving force behind the performance of these traders, the point about the development of a discount stock brokerage model being an important facilitator of individual e-trading still holds. Its relevance for us is that for a Zethus (or Peracon?) to be successful, it may be important for a successful discount model to have been developed. Thus, if a Tenantwise.com can be successful, it may facilitate the move of clients to a more purely Internet-based brokerage operation. Indeed, an important issue to be considered in the final phase of our research is whether a discount brokerage model is a necessary condition for the successful implementation of e-brokerage.

This discussion and recent events such as the proposed merger of LoopNet and

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<sup>3</sup> See Brad M. Barber and Terrance Odean, "Online Investors: Do the Slow Die First", Working Paper, University of California at Davis, October 2000, for the details.

PropertyFirst indicate that the present time is an early stage in the evolution of this sector and its technologies. There certainly will be more twists and turns along the way that will end up influencing the development of commercial brokerage. Hence, constant attention and analysis are warranted. That said, the current state of activity and ideas in the commercial brokerage and listing spaces on-line can be gleaned from the site summaries that follow below.

## **II. Company Summaries**

### **BigBidder.com**

<http://www.bigbidder.com/>

BigBidder.com is an auction site that has not yet launched. The site is being developed by LFC Internet Technologies, one of the LFC Group of Companies. LFC is a real estate firm specializing in marketing, brokerage, advertising, financing and escrow services that has been involved in a variety of high profile projects nationally over the last twenty years, including complex auctions.

The BigBidder site will facilitate commercial, residential and land sales promoted nationally and internationally by LFC. The site's proposed launch date is not known.

### **BizTrader.com**

<http://www.biztrader.com/>

BizTrader.com is a site aimed at serving a classified advertising function for commercial real estate and the sale of small businesses. It provides a database of commercial properties for sale and lease along with listings of small businesses for sale. The site charges brokers or individual business people \$39 monthly for a single listing or \$49.95 per month for unlimited

postings. Its database including domestic listings is very small. Recently, there were four properties listed in the site's home state of Arizona, five in New York and forty-seven in California. The small business database appears to be larger.

It is fairly easy to search the listings database, although the state selection is the most detailed geographic category available. Searching by property type permits the use of finer selection criteria in that 19 property type categories are available. Once listings are selected, data provided include the ask price, square footage, location without specific address, contact information and a short description of the property provided by the broker/individual who posted the listing. No pictures are provided for any of the properties.

In order to become a convincing venue for sourcing new business, the site will need to expand its database, search criteria, and information available on listed properties. Its lack of focus in covering both real estate and unrelated small business sales also seems problematic. Because the site is privately held it is difficult to evaluate its profitability.

### **Blacksguide.com**

<http://www.blacksguide.com/>

Blacksguide.com is a leasing-oriented website maintained by the long-time publishers of a series of hard copy commercial real estate guides marketed primarily to brokers and other real estate professionals. The firm maintains a database of over 64,000 properties and 3,000 services companies in 19 major markets nationwide. It publishes regional guides available by subscription on a quarterly, semi-annual or annual basis. The internet site provides information on the firm's broader array of products and services, as well as access to a database on available commercial space in the covered market areas. Searching the database online is free (the firm's

hard cover publications are not), as are listing properties online and in the regional publications.

The site itself is easy to use, but not particularly notable given the lack of available detail. Most listings do not include photos or floor plans, and those that do have photos do not provide much additional information. The site is comprised of property listings and information on the local real estate companies active in each market. The site provides a useful way to gain an overview of the market, the submarkets and the players within them, as well as a means to locate vacant space and obtain contact information on the relevant leasing broker. This site has an advantage in that it is commonly known in the brokerage community, as are the firm's guides. This site could also be useful to tenants seeking to gain some knowledge of a market prior to contacting a leasing broker.

It is not yet clear whether making this information available online will cannibalize sales of the firm's hard copy publications or whether they will be complementary to one another. By promoting use of its underlying products and providing enhanced services to its current users, the firm is most likely using its website to maintain and advance its market position in an electronic environment. Because it is not known whether or not the costs of developing and maintaining the website are met by increased revenue from subscriptions to or advertising in its publications, it is difficult to evaluate the site's profitability.

**Cityfeet.com**  
<http://cityfeet.com/>

Cityfeet.com is a listings database targeted to leasing small office, retail and industrial space to local businesses. The site has extensive listings in its covered metropolitan areas of New York, Los Angeles, San Francisco, Atlanta and Washington, D.C. Searching Cityfeet

listings is free, while brokers and others pay a monthly listing fee.

The site is accessible and user-friendly. One begins a search by selecting a city followed by property type, size range and location. Results are displayed by submarket and can then be sorted following other criteria, including square footage, monthly rent, annual rent per square foot, and date available.

Each listing has an accompanying “listing details” page which includes pertinent information about the property. This includes contact information, rent, date available, ideal use, description of the building and whether or not the site has high speed internet access. The Cityfeet site has the capability of posting interior and exterior building pictures and floor plans, although they are not included in most listings.

The Cityfeet website also contains a number of listing-related features and services. The “Cityfeet agent” feature permits users to receive emails when new listings appear that meet criteria specified by the user. The site also includes an online industry glossary designed to help non-real estate users, presumably small business people, to access general information about real estate terms. Postings are also included on goods and services firms in a variety of categories, including computer resource, financial services, human resources, etc.

The site’s business model is based on revenue from the broker or property owner placing listings, as well as fees generated by banner advertising. The company recently completed a second round of venture capital funding in February 2001. The site’s reported future plans include expansion to ten additional cities, incorporating panoramic videos of the sites, adding chat rooms with industry experts, providing greater specialization within the “types of use” categories, adding a reverse auction function that would permit prospective tenants to receive

bids from landlords or brokers, and incorporating the capability to process and complete transactions online. Thus, this primarily listings-focused operation plans to expand into the transactions arena.

One final future goal is to add a broker area to the site's functionality. Currently, the site concentrates on sourcing new business for their customers, rather than themselves. Pitching and winning new business is not handled by the site, as prospective tenants must initiate communication with the contacts listed on the listed properties in which they are interested.

**CommercialSpaceOnline.com**  
<http://commercialspaceonline.com/>

CommercialSpaceOnline.com is a listings site for sales and leasing. Its capabilities include posting properties throughout the United States and Canada. The site is a division of Computer Futures Corporation, an Indiana-based firm that specializes in internet development, hosting and online training. Searching the listings is free, as are listings that brokers and owners post on the site themselves. The site charges for listings that it "creates" by scanning photos and the like. The site will also submit posted listings to twelve major search engines.

Searching the listings is simple, although the volume of listings is small. One begins by selecting the United States or Canada, then sale or lease. The site will then display the number of listings meeting the criteria in each state. One then selects a state and the site lists all of the properties in that state in alphabetical order by municipality. The user then clicks on a particular property to see more detail. During a recent site visit there were fewer than 300 properties listed for sale and less than 200 listed for lease in the entire United States. While many of the listings

include photos, other useful information such as contact phone numbers often is missing. Typos are also apparent throughout the site. Recent attempts to view the Canadian properties posted also resulted in error messages.

**CoStarGroup.com**  
<http://www.costargroup.com/>

CoStarGroup.com grew out of Realty Information Group, a Bethesda-based commercial real estate information service started in the 1980's. CoStar now has the largest and most detailed database of office and industrial properties in the world and claims to have collected and verified data on more than 800,000 properties in over 50 markets across the country. CoStar estimates that it was utilized in more than 60 percent of the sales and leasing transactions that occurred last year.

Aimed at helping with those transactions, CoStar's services include current sales listings on nearly 60,000 buildings offered for a total of more than \$70 billion. Much detail is available on-line for its listings, including detailed floor plans and IPIX virtual tours. CoStar has the largest commercial real estate image library in the nation containing nearly one million high-resolution digital images. The firm maintains information on more than 565,000 confirmed sales comparables and incorporates cluster mapping capability and portfolio listings into its site.

Leasing information is available on what appears to be the full inventory of office and industrial space in the markets covered. CoStar's tenant database includes contacts, lease expirations, industry information, number of employees and square footage requirements, designed to help brokers seeking new business. CoStar maintains market trend data for the markets it covers by aggregating information on all of the properties by general location for

office space, and property type for industrial space.

How frequently CoStar can accurately update its detailed building and tenant information to serve the needs of the brokerage community well may determine the future of the company. If CoStar's services are to be successful in replacing some brokerage staff, users need to be very confident of CoStar's information. Otherwise, it cannot be employed in developing bid and ask prices or be of help in other brokerage activities.

CoStar is unique among online e-real estate firms in that it is publicly held. It is presently generating revenues of more than \$58 million annually. While *pro forma* net losses are declining they still exceeded \$6 million for the fourth quarter 2000. The ability of the firm to exist successfully as a stand-alone entity probably will be decided in the relatively near future. No matter what the outcome, CoStar has highlighted how the internet can be utilized to provide information that can be useful to a wide range of brokerage activities.

**LookingForSpace.com**  
<http://lookingforspace.com/>

LookingForSpace.com is a lease-oriented listings website that lists nearly 4,700 spaces. The site reports itself as tracking more than 3,000 buildings and listing nearly 2,300 agents. Initially, LookingForSpace.com served the metropolitan New York area, but has since grown to include the Washington, D.C. and Chicago areas. Office space is the primary type of space listed, with some smaller retail space offered as well. Plans are underway to expand the site to include an "instant office" module. While reference is made to industrial properties, no listings are available presently.

Posting listings and searching through them is free. All revenue for the site is derived

from advertising, with rates ranging from \$125 monthly for a small “Agent of the Month” ad to \$1,000 monthly for “Featured Agency” and \$200-\$300 weekly for featured space advertising.

Searching through the available listings begins at the site’s home page by selecting a state, property type and entering a general square footage requirement from a rolodex card image at the top right hand corner of the page. The home page which also incorporates other design elements from the rolodex card theme displays photos and data on featured properties, as well as access to listings of featured agents, agencies and resource providers. The search yields a property list with addresses and general information that can be clicked on to learn more about each property. The property detail generally includes photos and more information about the building, its history and leasing data. The detailed pages also permit users to print the property data or to view a site map with zoom and distance capabilities. While many of the Manhattan listings exclude building photos, this probably reflects brokers’ decisions rather than a shortcoming of the site.

The resources section provides brief descriptions and links to instant office, legal architecture, furniture, project management and technology providers. The services of featured providers are listed first, more prominently and separately from the others. The site has attracted advertising from some prominent firms, including Newmark, Cushman & Wakefield and Insignia. Similarly, featured agents have photos and bios prominently displayed. Searching the non-featured brokers can only be accomplished alphabetically or by looking up a specific name. The site is private, held principally by Neal Lerner, the site’s president and a New York broker with experience as a tenant rep. While LookingForSpace appears to be growing and generating some advertising revenue, it is difficult to evaluate the long-term potential for the site. If it is

unable to sustain substantial listing and hit volume, it seems vulnerable to losses in advertising revenue.

### **LoopNet.com**

<http://www.loopnet.com>

LoopNet.com is one of the best-financed and best-known commercial e-real estate sites, focusing on a full spectrum of services offered nationally, including listing and facilitating sales and leases for brokers, owners, prospective buyers and prospective tenants. It recently announced plans to merge with PropertyFirst, with the combined company operating under the LoopNet name.

The site's database includes more than 121,000 listings, including \$80 billion of properties for sale and over 1.35 billion square feet of properties for lease. The listings are derived from more than 150 real estate organizations nationally that list through LoopNet. The leasing database includes office, industrial and retail properties, while the sales portion of the site includes a wider variety of commercial property types. More than 166,000 users have registered on the site to conduct searches of LoopNet's database.

Searching the listings is free once registered at the site, as is posting a basic listing. Revenues are derived from advertising and from fees generated by enhancing the basic listings. Searching the listings is an easy process, once the somewhat cumbersome registration process is complete. To search the leasing database, one enters some preliminary information on property-type, size requirements, cost and geographic data. A posting date range may also be utilized to assure that listings are current. A similar process is followed to access the sales listings.

LoopNet also offers a variety of other services for brokers, investors, owners, and tenants.

Included in these services are website development, customized listing services and a variety of financial services focused on mortgage procurement. The site's LoopLender division provides information on loan packages available from a number of different lenders, at no charge to the searcher and a small charge to the lender if the loan is made. The site claims that this service saves time and money through an accelerated loan review process and the removal of loan application fees. In addition, the site includes a News Center posting recent industry news and other stories. A Business Services Center is also offered online that provides links to contractors.

LoopNet is privately held and funded through a variety of venture capital and industry funders as well as other private investment pools. Consequently, it is difficult to determine the site's precise financial situation. Clearly, LoopNet's single biggest advantage is the extensive listings that the site holds. Its recently announced merger with PropertyFirst probably is an indication of how difficult it is to go it alone in the current market and how important scale is.

**MovePoint.com**  
<http://www.movepoint.com>

MovePoint.com, with the slogan "Business Space Solutions for Companies on the Move," is in the process of implementing plans to provide a full-spectrum of space solutions for corporate clients including planning for, acquiring, building-out, moving into, and managing space. The site began by providing commercial property tenants a vendor marketplace for goods and services. The site is now expanding its services to include property leasing, design build-out and move-in services. It also plans to include sales in the future.

The site is not fully operational, but is available for demonstrations through the high tech public relations firm, Avinon, Inc. The apparent revenue model is of a service that is free for

tenants (with some exceptions) and of revenues coming primarily from space/service providers who must pay a contact fee of \$25-100 per tenant introduction and a 1.5 percent commission on signed leases (and possibly for other finalized service agreements).

While the site correctly points out that real estate related costs are second only to labor costs in most firms' expenses, e-business plans are viewed with skepticism today. Hence, the actual rollout of the site cannot be taken as certain.

**netStruxr.com**  
<http://www.netstruxr.com>

NetStruxr.com is a new site developed with the assistance of a consortium consisting of Prudential, IBM, and Bank of America. With the slogan, "The first e-business solution designed specifically for the Corporate Real Estate enterprise," NetStruxr is a leasing website that is driven by the needs and prospective needs of corporate tenants, with the aim of impacting the entire real estate supply chain. These firms are now stakeholders in the company and have pledged to run at least \$3 billion in annual leasing transactions through the site.

NetStruxr either facilitates or plans to facilitate 3 product lines -- SPACEdirect, CORPORATEDirect, and SERVICEdirect. SPACEdirect, the leasing service, is the primary product available at this time and incorporates a different kind of business model from other leasing sites or traditional brokers. In this "buyer-centric" approach, prospective tenants post their space needs online, field responses from landlords, and negotiate online. In exchange for this matching and facilitating role, the site charges a 0.5% fee to landlords for leases transacted in this manner. Theoretically, many tenants and landlords will need a broker to participate in this interaction. Sophisticated and well-staffed tenants, including many high volume multinational

corporations, and some highly knowledgeable landlords however, could use this process to disintermediate brokers from some lease transactions and diminish their role in others. If the three consortium members are able to reduce their brokerage fees by even 1% on the \$3 billion in annual leases being run through the site, the savings to them and loss to brokers will be \$30 million per year.

NetStruxr describes CORPORATEDirect as the “first buyer-to-buyer internal marketplace providing space sub-lets, sharing, acquisition and disposition directly to other CREs.”

SERVICEDirect is described as the “first e-commerce services platform that will seamlessly integrate buyers, customers, suppliers, and partners across the entire CRE program supply chain.”

The site itself is well-designed albeit a little jargon-laden to the layman. Given the sophistication of the site’s potential users, however, this may not prove an obstacle.

The recent agreement with the consortium that beta-tested the site provides the three corporations with an undisclosed stake in NetStruxr, and should provide the site with \$15 million in annual revenue. It is not clear if the site is incurring costs to bring landlords into the process, but it is promoting the site’s potential efficiencies to them. Given the substantial and proactive nature of the business involved, it is probably worthwhile for them to participate, and they are not charged a fee unless a lease is signed.

There are, however, some potential concerns with this model. Real estate is the most local of all industries, and it might prove difficult for corporate real estate departments to know the marketplace as well as others operating in it. Tenant rep brokers have traditionally served an important role in equalizing this knowledge differential. While real estate markets are becoming more transparent and it is increasingly likely that companies will develop relationships with

landlords operating across various markets, poorly negotiated leases can cost a corporation far more than is saved by lowering or eliminating brokerage commissions. Still, corporations will need to carefully evaluate the costs and benefits of how netStruxr is utilized.

**OfficeDirectory.com**  
<http://www.officedirectory.com>

OfficeDirectory.com is a site specializing in listing office-leasing opportunities nationally. The site provides free searches to potential tenants and free listings to owners and brokers. OfficeDirectory.com also provides a variety of online tools to assist brokers, including the ability to track a portfolio or create a building watchlist. The site's revenues are derived exclusively from advertising.

The listings included in the site are extensive. To search, one selects a state then a metro area or specific town name. Searching the listings can be a little more cumbersome than in other sites if the user is looking for properties in a specific part of an MSA. Alternately, the search through an MSA can be narrowed by specific building address or name. Some other sites will permit a search by county, which accommodates this kind of need in a more straightforward manner. When the searches are complete, little information beyond an address is available unless one goes through a registration process. Even then, the listings are not as detailed as those available on other sites. We also experienced some technical difficulties during our searches, although these problems certainly can be remedied. The site sometimes utilizes PropertyFirst's Universal Listing System, by transferring searches over to the PropertyFirst site at some search points. Finally, the site also includes other a products and services section that includes promotional links to contractors' lists and other resources.

It is difficult to evaluate the long-term prospects for this site, as there are numerous other competitors, and it is increasingly clear that scale is needed for profitability. An expanded user base seems needed to attract sufficient advertising revenue to operate profitably.

**OfficeFinder.com**  
<http://www.officefinder.com>

OfficeFinder.com, with the motto “The Information Source for Users of Office Space,” provides an online information and referral network to users seeking office space. Firms associated with this site include C.B. Richard Ellis, Grubb and Ellis, and The Staubach Company. The site includes a variety of tools and information to assist users in understanding the market in their target area; in determining how much space they need based on number of executives and other employees; in explaining how space is measured according to the Building Owners and Managers Guidelines; and in providing a checklist to determine needs and to determine the best deal. Use of the site is free, although ultimately users who actually proceed with leasing or buying space as a result of using this site pay a brokerage fee.

The site is easy to use, but only partially takes advantage of the capabilities of the internet. Users put their needs onto a form, including contact information, market, square footage requirements and type of space and then press a “submit request” button. Rather than conducting an instant listings search of an online database, the user is contacted via phone or email “usually within 24 hours” by a member of the broker network with search results. While personal contact undoubtedly helps brokers to close deals, the delay incorporated into the process here is different from the ‘immediate information’ strategy pursued on other listing sites. Some users of the internet also may prefer to do their own initial information gathering directly rather

than through a contact.

The business model of the site is to serve the member brokers. It appears that OfficeFinder.com concentrates as much on pitching and winning new business as it does on sourcing new business. The industry experts associated with the site work for real estate brokerage firms around the world and have decided to become members of the site for the purpose of obtaining new leads and referrals. In one sense the site is not only sourcing new business, but also attempting to pitch and win the business on the first contact with the user. Users of the site are presented with a very respectable interface for virtually all of the information they could want about office space, except information on space currently available. Whether this will negatively impact the long-term success of the OfficeFinder business model is not yet clear. At a minimum, the site represents an interesting initial foray of bricks and mortar brokerage firms trying to integrate the internet into their operations.

**Offices2Share.com**  
<http://www.offices2share.com>

Offices2Share.com is a listings website specializing in short-term sublets of office space. The site currently lists three categories of available space -- office, medical and executive suites available as short-term shares and sublets. Most of the available space is small, but the site has also begun to list larger spaces available for sublet. In addition, the site has initiated a Super Short-Term Space service which can be used to lease space on an hourly, daily or weekly rate. The site charges listing fees to post available space on the site. Searching the listings is free.

The site was originally developed to meet the needs of small firms with limited budgets who were operating in highly space-constrained office markets. By matching these tenants'

needs with those of firms with temporary excess space, the site began to provide a sharing and sublet service. The site is further expanding its market niche by facilitating its super short term service, aimed at meeting the local needs of out-of-town business people. [This market probably is less valuable, as many firms will not wish to list space on a super short term basis due to the cost in time and money of organizing the requisite logistics.]

While using this site generally involves establishing a leasing relationship without generating a commission, in the case of subleasing the commissions involved do not constitute a major source of commercial brokerage revenue. In addition, some brokers have turned to the site as a useful means of finding tenants for clients seeking to sublet their own excess space. Office sharing has not traditionally been a brokered relationship, so the arrangements facilitated through this site impact brokers only to the extent that tenants subletting shared space might otherwise seek to occupy brokered space. Many of the comments from users posted on the site declare the site to be vastly superior to taking out a classified ad. Hence, if the site is successful in the long run, one can speculate that newspapers might experience the greatest long-term revenue impact from the site.

While this site appears to have developed a market niche, it is hard to evaluate its long-term profitability. The site has benefited from venture capital from Internet.com, although the precise amount invested is not known.

### **Peracon**

<http://www.peracon.com>

Peracon is a new site targeted primarily to serve seller's agents with an interesting, but untested business model designed to standardize the sales transaction process. Launched in

December 2000, Peracon refers to itself as “the first Internet-based commercial real estate platform to provide buyers, sellers and their agents with full-service, end-to-end transaction capabilities.” It offers an array of support services aimed at adding value to the sales transaction process, including the prequalification of all of the parties involved.

Peracon offers fee-based services in two standardized packages. The “ASP Model” is the basic service package permitting seller’s agents to offer exclusively listed properties online for a fee that “approximates the amount an intermediary currently spends on the production of an offering document.” The broker also provides Peracon with the financial and marketing content needed to post the property online. Peracon, in turn, provides the maps, demographic data, and market information. According to the site, the seller’s agent receives a package of products and services that includes a downloadable offering memorandum, a fully interactive online offering memorandum, internet distribution, and an IPIX virtual tour. The company also provides due diligence materials and numerous contracts and reports (e.g., insurance and engineering; environmental reports require an additional fee). Tracking reports detailing buyer perusal and interest in the property are also provided, as is access to Peracon’s list of qualified buyers.

The ‘ASP Plus’ model requires an additional fee for which Peracon abstracts the leases, conducts valuation analysis, prepares a financial forecast, performs market and economic research, and oversees and manages due diligence queries.

Use of the site is free to prospective buyers and their agents, but buyers must go through a qualification process to fully access the site. While this prequalification aims to speed the transaction process by eliminating unexpected problems in the negotiation process, this step may also discourage mildly interested buyers from learning more about an available property. It

remains to be seen if this added step will discourage busy and qualified buyers.

While a very ambitious site and undertaking, a number of questions remain as to whether or not this business model will ultimately succeed. Peracon must prove itself trustworthy to parties used to sometimes having data and analysis presented in a light most favorable to their particular position. Similarly, prospective clients may not wish to standardize their processes in the way Peracon requires.

Initial funding has been received from the BV Group, a merchant bank with financial investments in venture and growth capital. While the site has been up and running only since December 2000, it had just six properties listed after a couple of months. It is extremely difficult to effectively market and promote such a small number of properties on a national basis. In addition, it took the site more time than its press materials predicted to close its first sale.

**PropertyByNet.com**  
<http://propertybynet.com>

PropertyByNet.com is a relatively early entrant in the listings market that offers a range of services, while targeting the Southern California market. The site's business model is based on membership fees, wherein member agents and brokers pay a \$240 annual fee to access the full range of listings and utilize all of the other site services. Some company revenues are also derived from advertising.

Many of the site's services seem geared to the needs of smaller and independent brokerage operations. The site offers an extensive set of links to other commercial and investment real estate sites serving Southern California. The site also offers access to a host of real estate-related services including accounting, insurance, repair and maintenance services and

technology services. The site also lists networking and professional training opportunities for brokers and maintains calendars of real estate events by county. Some free software is also offered on the site, including loan payment and amortization software, while proprietary software that includes analysis and presentation capabilities is available for a fee. Such services as reduced-cost web sites are also offered.

This site's geographic focus, low fee structure and targeted range of services set it apart from other efforts. With no venture capital involved, the site probably does not have to meet difficult revenue requirements. It is doubtful, however, that this site will have much impact on the business practices of the national brokerage community. It also remains uncertain whether it can achieve sufficient scale to become profitable in the longer run.

**PropertyFirst.com**

<http://www.propertyfirst.com>

PropertyFirst.com is one of the most sophisticated commercial real estate web sites and also represents one of the most substantial investments of this sort on the internet. The firm recently announced plans to merge with LoopNet, with the merged entity integrating technologies in the near future and continuing operations under the LoopNet name.

PropertyFirst reports having listed \$70 billion in properties since September 1999. Like many sites, PropertyFirst permits users to conduct free searches of its listings for sale and lease. Fees are charged to owners and brokers for listings and for the use of the site's other services. PropertyFirst distinguishes itself from other sites through a series of strategic alliances, partnerships and its range of services, one of the most notable of which is its new open-platform Universal Listing System, an open-access system that permits PropertyFirst's listings to be

searched and accessed through other listing services (including those of key competitors).

The site is easy to use to in searching the listings for lease and sales properties. It is unusual in the range of property categories listed and for the subcategorization of property types. For instance, the site lists six types of office space. The majority of the listings include good quality photographic images, as well as other detailed data. The site intends to enhance the listings further with such features as virtual tours. The listings available on site are also fairly extensive, although the retail listings are much more scarce.

The site is designed to further assist searches in a variety of ways. Search criteria can be saved and email messages can be sent to users when properties meeting certain criteria become available. The site also maintains an extensive and searchable database of brokers in business nationally and offers a variety of additional marketing and database tools to brokers.

PropertyFirst's relationships and strategic alliances were entered into in order to source listings and to provide added services such as mortgage financing. PropertyFirst has also established a strategic relationship with the Appraisal Institute wherein PropertyFirst will develop and host the Appraisal Institute Commercial Database, the first online databank of appraiser-verified commercial real estate information (provided by members of the Appraisal Institute.)

PropertyFirst has attracted investors including more than 30 firms and individuals in venture capital and the real estate industry. Revenues are generated through listing fees and through fees charged for other services. The fees charged to brokers are generally bundled in a package of capitated services to firms that work out to be approximately \$420 to \$600 annually per broker. It is not clear how this revenue model will translate in the merged enterprise.

### **PropertyGO.com**

<http://www.propertygo.com>

PropertyGo.com is a listings website that targets consumers. With the stated goal of “connecting people with property,” the site reported offers “free information on thousand of commercial real estate properties.” PropertyGO’s business model involves charging listing fees to brokers and property owners, while offering free searches to the public. The site itself is easy to use. A user selects a property type, a transaction type and a state (and sometimes more detailed geographic requirements) then clicks on the “GO” logo. However, the listings are extremely limited compared to competitors in this space. In addition, the data available on the sites listed is less than that provided by competitors. If a consumer was interested in the properties listed, the listing broker minimally would have to be contacted, so at most, a tenant rep broker might be disintermediated from a transaction. While no venture capital was invested in the site, (so the revenue demands on it may not be high), it appears somewhat doubtful that the site will generate sufficient listing volume to remain viable over the long haul.

### **PropertyRover.com**

<http://www.propertyrover.com>

PropertyRover.com is a new real estate search engine site for residential and commercial properties that is in beta testing. It is designed to provide links to multiple listings’ sources, as well as offering a real estate news service. The site launch is expected to be completed soon.

### **RealCentric.com**

<http://www.realcentric.com>

With the motto “Turning Real Estate into Real Solutions,” RealCentric.com is a site that attempts to bring together various aspects of the commercial real estate market including space, services, furniture and equipment to better serve the needs of business tenants. The site

facilitates the leasing process by including a searchable listings database that currently serves the Austin, Chicago, Denver, Las Vegas, Los Angeles, Orange County, San Diego and Silicon Valley markets. The site also includes detailed demographic and economic information on each of the covered MSA's. Searching the site is free to users, while owners and brokers pay a monthly listing fee. In addition, vendors pay a fee to RealCentric for business arranged through the site. The site also includes an expert advice module that includes a glossary, a review of the leasing process, and a "Real Knowledge" section featuring information on trends and industry news. Searching the listings appears to be easy, but technical glitches prevented successful searches on several occasions when they were attempted. Between this and the limited number of areas covered, the long-term success and impact of the site remains questionable.

**RealtyIQ.com**

<http://www.realtyIQ.com>

RealtyIQ.com is a site geared to real estate professionals that stresses a research-driven focus. Founded in 1991 as a database of commercial properties in New York City, the company expanded this database to 32 markets before launching an internet delivery model. Use of the site is available to real estate professionals who pay \$30 monthly or \$288 annually in membership fees. The site has over 200 researchers who gather information directly from leasing agents and property owners to help build the site's property database. The database includes details on 225,000 office and industrial properties in top markets throughout the nation including more than 100,000 in available listings. The site also maintains extensive tenant information on a large number of companies..

Members of RealtyIQ may access a variety of online products, reports and publications,

as well as searching the listings. One of the features is Property Lookup, which permits users to query the database on any commercial building by address. The Tenant Search function provides users with information such as a property's tenant list, credit reports on prospective tenants, a customized list of qualified tenants for a given property based on criteria delineated by a member, and current addresses on prospective tenants. All of these features add up to a very ambitious site that hopes to be able to help brokers be more effective at each step of the brokerage process. RealtyIQ does this with a straight-forward, good-looking interface. The long-term success of the site remains to be determined however, as the site has already been down for a considerable period of time due to financing problems. And, the recent cash infusion by Zethus that brought the site back undoubtedly is short-lived since Zethus has filed for bankruptcy.

### **Storetrax.com**

<http://www.storetrax.com>

Storetrax.com is a listings website that focuses exclusively on retail property leases. With a logo "The Power Source for Retail Real Estate," Storetrax has steadily increased its listing volume since its launch in 1998 and now includes listings for 670 million square feet in 46 states. The Storetrax business model is one whereby revenues are generated through listing fees. The fees themselves are relatively modest, starting at \$35 per property per month for a basic listing, with multiple listings generating volume discounts. Each listing includes an interactive site plan, property photo, tenant list, demographic data, and contact information. The site's listing volume is such that even though the listing fees are low, volume is sufficiently large to produce an ongoing revenue stream. While no venture capital was invested in the site, it is not known if

the level of revenue is sufficient to make the site profitable.

The site itself is very easy to use, and its focus gives it a distinctive identity to users. To search the listings one enters more or less restrictive geographic criteria and clicks on the search button. Unlike some other listing sites, listings are then viewable. The listings themselves are not all as visually sophisticated as the site permits, but are none the less accessible and easy to use. The site also includes linkages to other industry sites and a “Retail Forum” board to encourage discussion of current industry topics. [People seem to use this for promotional rather than discussion purposes.]

**TenantWise.com**  
<http://www.tenantwise.com>

TenantWise is a listing and transaction site that specializes in leasing office space in Manhattan. It aims to serve all segments of the office market, including landlords, tenants and brokers by pairing a standardized web-based leasing process with staff representatives. TenantWise permits landlords to list properties without charging a fee, provides them with almost immediate access to a significant pool of potential tenants, and offers a 20 percent reduction in commission rates on transactions when compared with traditional fees. For brokers, the site provides an opportunity to list free of charge, and while such a listing will reduce a broker’s fee, the site will provide a co-brokerage fee of up to 50 percent of a standard commission. The site implies that the time savings brokers will experience through the TenantWise process will more than compensate for the lower commissions earned through the site. Referral fees can also be earned.

TenantWise particularly tailors its services to potential tenants by providing a one-stop

shopping opportunity to find and lease space in the complicated Manhattan market. The site standardizes and explains the leasing process and also offers access to a variety of resources potentially helpful to office tenants. Brokerage fees are also discounted, at up to a 40 percent savings compared with traditional commissions. The site also offers the opportunity to involve one's own tenant rep broker in the process.

The site's listings within Manhattan are fairly extensive. A search of the listings can be conducted by either choosing from among 20 Manhattan neighborhood selections, selecting a range of streets or avenues, or picking a specific building address in conjunction with the potential tenant's square footage estimate and some general budgetary requirements. The overview search provides general information about potential sites that match a tenant's needs.

In order to access more detailed information, a tenant must officially register with the site, agreeing to use TenantWise as tenant rep for space listed in the site. At this point, the tenant can also list a referring broker. When the tenant has reviewed more detailed information on the sites, TenantWise can schedule tours of the appropriate properties, as well as hire any consultants needed. Representatives associated with the site will help tenants make offers and negotiate the lease process. They can also help in securing any other goods or services needed to occupy the new space.

Since the site is privately funded, it is difficult to evaluate its profitability. Given the volume of listings, it appears to have established itself in the market and is generating some kind of cash flow however. While the site itself theoretically disintermediates at least a portion of a broker's services and income, by also sharing commissions TenantWise may be able to gain acceptance in the brokerage community. At the least, it is an attempt to provide a discount

brokerage model.

**TradeAddresses.com**  
<http://www.tradeaddresses.com>

TradeAddresses.com is a licensed real estate broker designed to sell and lease commercial properties on-line. The site was developed by the San Francisco Bay area-based firms of Starboard Commercial Real Estate and TCN Worldwide Real Estate Services. It relies on a “worldwide” network of independent member organizations, each of which is a “local market leader.” Users have the option to execute agreements on-line or to request an appointment with experienced “trade facilitators.”

In order to search the listings, one must enter into an agreement to use the firm as a broker. As a result, it is difficult to assess their listings, but given the fact that all of their “facilitators” are based in the San Francisco area, national listings almost certainly are not extensive. Members of the worldwide network of independent member organizations are not listed. Two of the sites pull-downs, “Save \$ on Moving” and “Partners,” link to other sites, “EverythingOffice.com” and “Mucho.com”, the latter being a site for small business owners.

One part of the site is the “1031 Exchange,” named after section 1031 of the internal revenue code, which permits the deferment of tax payments on “like kinds” of property exchanges. To utilize this portion of the site, one must post a property for exchange and agree to use TradeAddresses to broker the exchange transaction in accordance with the regulations of section 1031.

It is somewhat hard to evaluate the success of the site, but it would appear to function primarily to provide added assistance and new leads to a local brokerage firm.

**Web-Real-Estate.com**  
<http://www.web-real-estate.com>

Web-Real-Estate.com is a sales and leasing website that covers properties in approximately 15 states. Aimed at “competitive real estate professionals” the site seeks to promote “actively marketed properties” and touts its services as providing “the most comprehensive information available on line.” The site’s business model is one whereby revenue is generated through listing fees, and it aims to increase covered areas over time. Searching the listings is free. Geographically diverse, the listing states include some rural and southern areas that tend not to be covered in other sites, as well as New York.

The site is fairly easy to use. Listings can be accessed by entering a property number or by searching the site by various criteria. The number of listings is low. For instance, just two retail properties were listed for the state of North Carolina. Many of the listings themselves are, however, more extensive than those available on many other sites and include detailed photo arrays of the property that the user can zoom in and out of. The map feature on the site also includes a zoom function.

Given the low volume of listings and the odd mix of areas partially covered, it is hard to be optimistic about the site’s long-term potential of establishing a place for itself nationally.

**Zethus.com**  
<http://www.zethus.com>

While never launched, Zethus was believed to have had the potential to play a very important role in commercial real estate by facilitating the whole brokerage process electronically. It is worth monitoring what happens to its assets. Formed by an alliance of the e-commerce firm Inforte, Sun Microsystems and Goldman Sachs, the company attracted an

estimated \$40-50 million in venture capital and developed a “patent-pending web-based technology platform to conduct commercial transactions.” Their aim was to “transform how transactions are executed in the real estate community,” while also developing “an enduring business with a clear path to profitability.”

In general, its long-range goals appear to have been similar to those of recently-launched Peracon in their aim to facilitate the entire transaction process on the internet. However, Zethus was believed to conduct leasing as well as sales transactions.

The company’s motto, “Time, space and the bottom line...” emphasized the firm’s aim to increase industry efficiency. In a press release, the Zethus platform was described as “automating many of the processes involved in leasing, buying and selling commercial property” and providing tools online that “offer a cost-effective, comprehensive, and neutral transaction platform that brings buyers, sellers, landlords, tenants and brokers together to conduct business more efficiently.”

## e-Real Estate Transaction and Listing Sites

	Site Name	Currently OnLine (Y / N)	Type (Listing / Transaction)	Listing Volume (Ballpark)	Listing Costs	Access Costs	Target Audience (Brokers/buyers, etc.)	Intended Scope (Nat'l, regional, local)	Prop. Type [1]
1	BigBidder	N	T (auction)	N/A	N/A	N/A	Buyers	Likely National	C, R, L
2	BizTrader	Y	L / T	+/- 100	\$40 - \$50 / Month	None	Buyers	National	C + small bus.
3	Blacksguide	Y	L	+/- All major props	None	Online - none	Brokers	National	O, I
4	Cityfeet	Y	L	+/- 10,000?	Not Clear	None	Tenants	Key Markets	O, I, Rt
5	Commercial Space Online	Y	L	+/- 10,000	\$35 / year	some - <\$75/yr	Tenants	Key Markets	O, I, Rt
6	CoStarGroup	Y	L/T	+/- 800,000	None	Sub. / Access	Brokers	National	C
7	LookingForSpace	Y	L	+/- 5,000	None	None	Tenants	Key Markets	O, Rt, I
8	Loopnet	Y	L/T	+/- 125,000	None	Some fees	Space users / sellers	National	O, I, Rt
9	MovePoint	Not fully	L	N/A	None - enhanced --> fee	\$25 and 1.5%	Tenants	National	O
10	Netstruxr	Y	L	Limited to Test Cos	None	.5% (Landlords)	Landlords	National	O
11	OfficeDirectory	Y	L	+/- 10,000?	None	None	Tenants	National	O
12	OfficeFinder	Y	L	Unclear	None	None	Tenants	National	O
13	Office2Share	Y	L	Unclear	Monthly Fee	None	Tenants	National	O
14	Peracon	Y	T	+/- 10	Substantial	Restricted	Brokers	National	O, I, Rt
15	PropertyByNet	Y	L	+/- 5,000 ?	Free	\$240 / year	Brokers	Southern Cal.	C
16	PropertyFirst	Y	L/T	+/- 50,000?	+/- \$500 / year	None	Brok / Buy / TTs	National	C
17	PropertyGo	Y	L/T	+/- 1,000	Yes	None	Brokers	National	C
18	PropertyRover	N	L/T	N/A					
19	RealCentric	Y	L	+/- 5,000?	Unclear / None?	Unclear / None?	Tenants	National	O
20	RealtyIQ	Y	L/T	+/- 350,000	None	+/- \$300 / year	Professionals	National	C
21	StoreTrax	Y	L	600 MM SF	+/- \$35 / month	None	Space users	National	Rt
22	TenantWise	Y	L/T	Unclear	None	None	Space users / sellers	New York City	O
23	TradeAddresses	Y	L	Unclear / small	None	Use as Broker	Users	National	C
24	Web-Real-Estate	Y	L	Small	Fees	None	Users	Limited	C
25	Zethus	GONE							
	Footnotes								C = Commercial R = Residential O = Office Rt = Retail L = Land M = Multifamily I = Industrial

# **The Impact of New Information Technologies on the Commercial Brokerage Industry**

## **Phase III: What Does New Information Technology Make Possible and Under What Conditions Will Changes Occur?<sup>a</sup>**

**Report for the Society of Office and Industrial REALTORS<sup>®</sup> Educational Foundation**  
June 25, 2001



Dedicated to Education and Research  
for the Commercial Real Estate Industry

The SIOR Educational Foundation mission is to promote, sponsor, and support education and research initiatives that advance professionalism in the commercial real estate industry. Established more than 30 years ago to publish the industry's first graduate-level textbook on industrial real estate, SIOREF has maintained its dedication to expanding understanding of the commercial real estate industry.

**by**

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<sup>a</sup>This is the final of three reports written for the research program "The Impact of New Information Technologies on the Commercial Brokerage Industry" for the SIOR Educational Foundation. Phase I estimated the size of the office and industrial brokerage sector and its profitability. Phase II documented and analyzed existing e-commerce initiatives in the commercial brokerage area.

This research was funded by a grant from the SIOR Educational Foundation. Sally Fullam provided excellent research assistance on this phase of the project. Without implicating them, we are grateful to our Wharton colleagues, Professors Lorin Hitt, Andrew Metrick, and Jeremy Siegel for helpful insights and discussions on how new information technology has impacted stock brokerage and other industry sectors. We also benefited from numerous discussions with a variety of executives in the information technology and commercial brokerage sectors, as well as investors and owners of real estate who are customers of the brokerage industry. That said, we should emphasize that all the opinions and

conclusions in this report are ours alone.

## Abstract

The rise of new information technology is likely to bring about three broad changes to the commercial brokerage industry. The first, which already is occurring, is the development of specialist firms that perform only a part of the brokerage process such as the research or listings function. We believe the real issue for the commercial brokerage industry is not whether the research function largely will be outsourced in the future, but who will provide and control the data. If a stand-alone, for-profit firm proves itself to be highly profitable, we would expect some type of collective response from the brokerage firms themselves to capture some of that value. Either they will create some type of multiple listing service platform or the stand-alone firms will share some of their profitability with the brokerage houses by lowering fees. Additionally, we believe other parts of the brokerage process will be outsourced to non-brokerage firms as technology advances and adoption rates increase.

The second area of change involves how new technologies have and will continue to influence the existing operations of traditional brokerages. New technologies already have interacted with the trend towards corporate outsourcing to make it easier for large brokerages to more efficiently manage complex portfolios. And, increased transparency that is making the brokerage process more visible to clients is likely to lead to new payment mechanisms that do not rely exclusively on commissions. Project-based fixed prices should become more common, and a fee per hour worked arrangement, possibly with a bonus or other incentive structure, is likely to become more common in the industry. By no means should this be viewed as unambiguously negative for brokers, as the potential loss of commission upside is balanced at least somewhat by the security of an income stream.

The final change we envision is a discount brokerage model that focuses on smaller, relatively low margin transactions. This represents a major change in the underlying business model of a brokerage firm and requires the meshing of new technology and labor force arrangements. While it is not yet clear precisely how such a firm will be organized, the factors necessary for success are becoming more apparent, and we believe the obstacles to success are not insurmountable. That said, not all firms will want to pursue an explicit discount strategy or even offer it as part of a package for clients. However, a successful discount model should be closely scrutinized by all in the industry because it always has the potential to be adapted to serve higher margin clients. We do not believe that a purely electronic or virtual brokerage is feasible in the near term. Widespread standardization of documents and processes would be required for this, and we do not think that is a likely outcome in the near term.

We conclude that these changes are much more likely to affect the tenant rep and project leasing sectors of the industry than they are the investment sales and corporate disposition areas (in the near to medium term, at least). Hence, relative commission growth going forward should be lower in the tenant rep and project leasing sectors.

## I. Introduction

The central organizing question around which our research has been conducted is whether developments involving new information technologies are likely to change the fundamental business model by which commercial brokerages function, thereby changing the basic role and compensation of the broker, or whether these technologies are more likely to serve as another (possibly quite important) distribution channel for commercial brokerages operating with essentially the same business model.

In Phase I of this study, we argued that economic theory provided good reason to suspect that e-commerce developments could materially affect the nature of firms in commercial brokerage as well as the sector's industrial organization. We also concluded that profitability in the office and industrial sectors alone was more than enough (in excess of \$5 billion annually) to attract the attention of entrepreneurs who believed they could use new information technologies to capture some of the revenues presently accruing to traditional brokerage firms and brokers.<sup>1</sup> Phase II of our research then surveyed a number of e-business initiatives in the commercial brokerage and listing spaces. A wide range of efforts already are in place, including some very ambitious ones clearly intended to change the balance of power between brokers and their clients—and to change the basic cost and profit structure of the industry.<sup>2</sup>

In this final phase of the research project, we analyze just what the rise of new information technologies makes possible for the brokerage industry and under what conditions those possibilities are likely to lead to significant change in the industry. Three broad areas are examined. The first—the rise of specialist firms that would not exist in the absence of new information technologies—already has

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<sup>1</sup> See our research report entitled “Phase I: What Is at Stake? Estimation of the Revenue Flow to the Office and Industrial Brokerage Sectors”, February 21, 2001, submitted to the SIOR Educational Foundation for the details.

<sup>2</sup> See our research report entitled “Phase II: E-Business Initiatives in the Commercial Brokerage and Listing

occurred, so it is not a mere potentiality. A leading example here is The CoStar Group which has replaced much of the research function previously done in-house by traditional brokerages. However, CoStar is not the only example as our Phase II research into e-business initiatives in the listing area showed.<sup>3</sup>

It is noteworthy that, at this point in time, most of these firms are not trying to replace traditional commercial brokerages or to become electronic versions of those entities. As we discuss more fully below, the key economically to the rise (and ultimate success) of specialist service providers is lower transactions costs across firms, so that outsourcing of specific tasks can be done profitably. New information technologies are the force that has helped lower those transactions costs across firms in the brokerage industry. For example, it is the rise of the Internet that really allows frequent updating of market information by specialist data providers. It also permits much easier and cheaper monitoring of activity both by brokerages who may have outsourced a function (such as research) and by clients of the brokerages. The brokerage can easily tell when a data provider had updated information. And, clients have more direct access to their broker than in the past (e.g., via email and cell phones). Cheap and easy monitoring is at the heart of transparency, thereby making it easier to contract and transact across firms. In the next section, we also explore whether there are other functional areas (i.e., besides research) that could be taken over by specialized firms.

In addition to facilitating the development of specialist service providers, the rise of new information technologies also is likely to materially influence the existing operations of traditional

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Spaces”, April 6, 2001, submitted to the SIOR Educational Foundation for the details.

<sup>3</sup> The interested reader should see our Phase II report (cited above) for more details on any firm mentioned in the text. We should emphasize that we do not endorse any firm noted here, nor have we made an evaluation of any firm’s economic worth or viability. Our mentioning of a firm simply signifies that it is an interesting example that helps illustrate a point we wish to make or a conclusion that we have reached.

brokerages. This represents the second broad potential impact of new information technology developments. The forces we have in mind here include the interaction of new information technologies and the continued outsourcing of transaction management tasks to brokerages by major corporations, as well as the impact of increased transparency in pricing and performance. Commercial brokerages already are employing new technologies to deal with large outsourcing opportunities, and it is difficult to see how they could be properly and profitably managed without such technologies. Increased transparency, by which we mean the brokerage process becomes more visible (especially to clients), has been facilitated by the Web. This is important because the more transparent the brokerage process becomes, the more likely it is that some type of fee per hour worked pricing system will be implemented (i.e., akin to how the legal, consulting, and accounting professions function). This is particularly true if the marketing effort by the broker can be more easily monitored by the client.<sup>4</sup> If this type of change occurs, it will not only affect broker compensation, but is likely to alter the type of work done and skills needed by the different personnel in a brokerage operation—even in the absence of a fundamental change in the underlying business model of the firm. And, this trend also could lead to the formation of new specialist firms that focus on discrete portions of the transaction process.

The third broad potentiality examined is whether the rise of e-business will allow for a new type of brokerage firm. Two, somewhat distinct, possibilities are investigated. The first is whether the Web and its associated technologies will facilitate the successful development of an explicit discount commercial brokerage model akin to what Charles Schwab did in the stock brokerage area. While discounting effectively already occurs in the industry, especially on large deals and portfolios, a key question is

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<sup>4</sup> See Joseph Williams, “Agency and Brokerage of Real Assets in Competitive Equilibrium”, *Review of Financial Studies*, Vol.11, no. 2 (1998): 239-280, for an analysis of why a commission structure is optimal when broker effort is difficult to monitor. When the process and the effort put into brokerage is made more visible to the

whether a distinct and explicitly advertised discount broker model will emerge. Our Phase II work uncovered a couple of efforts on the commercial front and others in the residential brokerage business along just this line. As is discussed more fully below, we believe this model has the greatest chance of near-term success to disintermediate the tenant rep function.

An alternative possibility examined is a purely electronic model. Here we are thinking about a predominantly web-based, transactions-oriented firm. The recent failure of Zethus, a firm which started off with a business model that wanted to 'replace the broker' before switching to a technology provider model, suggests that success is not likely to occur soon--and we agree with that conclusion. Only the most homogeneous of transactions seem suitable for a pure e-business model. And, the level of standardization that would be required by most sophisticated users and customers just is not going to happen that quickly in commercial real estate.

The remainder of the paper investigates each of these three areas of change in more detail. We conclude with a brief summary and some final thoughts on the future course of commission revenues in the commercial brokerage industry.

## **II. Change #1: The Rise of Specialized Firms Within the Commercial Brokerage Industry**

One of the most venerable articles in all of economics can help us understand how the rise of new information technology already has affected the nature and type of firms in the commercial brokerage industry.<sup>5</sup> The key insight from that research is that the diversity of tasks performed internally within a firm is critically dependent upon the cost of conducting transactions across firms. When those transactions costs are high, firms are likely to perform many tasks in-house because it is too expensive to contract

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client, a fee for service arrangement becomes viable and, generally, is preferred by the client.

with specialist firms for specific functions. Contracting costs tend to be high when the underlying business process itself is not transparent to all parties. The rise of the Web is relevant here because it has lowered transactions costs and increased transparency. This has occurred partly by making information collection, information processing, information storage, and communication and collaboration cheaper and partly by permitting improvements in the process by which transactions are done.<sup>6</sup>

As a result, numerous firms specializing in the research and listing functions have formed, as documented in our Phase II research report. The effort by The CoStar Group is among the most visible, with that firm attempting to provide a broad array of research services previously performed within each of the major brokerage operations. The potential cost savings from such an operation obviously arise from eliminating the duplicative effort (and associated labor costs) of having many different brokerage firms collecting virtually the same information in-house. A back-of-the-envelope calculation shows that the gross savings to be reaped by a single, large brokerage company operating in a major metropolitan area are likely to be in excess of \$150,000 annually.<sup>7</sup>

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<sup>5</sup> See Ronald Coase, "The Nature of the Firm", *Economica*, Vol. 4, (1939): 386-405.

<sup>6</sup> The two forces are not unrelated. Part of the reason information processing and storage is cheaper is that fewer employees are needed to perform these tasks. That is, a technological improvement allowed an entire business process to be redesigned. For more on process improvements and their impacts, see Paul Milgrom and John Roberts, *Economics, Organization, and Management*, Prentice Hall, 1992.

<sup>7</sup> This figure was arrived at as follows. Based on various conversations we had with brokerage firm executives, we presume that at least two more research personnel would be needed in each firm in the absence of a stand-alone data provider such as CoStar. We estimate the all-in costs of such a person to be about \$80,000 per year. [This includes salary, benefits, training, office space, etc.] Hence, the savings per firm are \$160,000 per year. If there are even five competing brokerage firms in the market, the aggregate savings in research personnel costs amount to \$800,000 annually. As long as the specialist data provider can make a reasonable profit by charging less than \$160,000 annually per firm, both the data provider and brokerage firm can benefit economically. While we emphasize the back-of-the-envelope nature of this example as it abstracts from many potentially important details (e.g., taxes and the like), it is illustrative that the cost savings could be large and will increase with the number of firms in the market. [This is one reason why specialist research firms are more likely to be successful in larger markets, but that is a separate issue.]

These potential cost savings long have been there to be had. Yet until quite recently, there was no sense in the industry that there was much potential for specialist firms in research or other areas. It is the rise of new information technologies that clearly has created conditions more amenable to individual brokerage firms outsourcing the research function. The cost of collecting, storing, and publishing the vast amount of information required on any given market simply has fallen with the advent of new technology. In addition, it is vital that information can be updated much more frequently and cheaply on the web. The frequency of updates in particular is valuable to brokers, and frequent updating was cost-prohibitive when it required the publication and delivery of the equivalent of a modest-sized paper book.<sup>8</sup>

While we firmly believe that the conditions for the development of specialist research firms have never been better because of new information technologies, this is not to imply that zero researchers will be employed by brokerage firms in the future. In fact, individual brokerage houses still have and will continue to need smaller research teams that augment and manipulate the data provided by the specialist firm. This is because both brokerage firms and their individual brokers have unique needs that are likely to generate specific data requirements that never will be fulfilled by a distributor of market-wide information. Hence, the brokerage firms themselves will need to retain some research staff, even if on a much reduced scale. In addition, brokers will continue to play a role in the research function as much of the unpublished (and often valuable) market and property information resides in their heads.

It also is not yet clear whether this function ultimately will be performed by a stand-alone, for-profit firm versus a cooperative multiple listing service (MLS)-type arrangement financed and owned by the brokerage community. After all, market-wide information on space availability and recent sales comps in

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<sup>8</sup> One of the most prominent efforts at providing market-wide research data for brokerage firms prior to the development of the Internet was *Black's Guide*. And, it could not be updated frequently for the very reasons just discussed. Thus, it is no surprise that *Black's Guide* also has gone electronic. [See the description of Blacksguide.com

the owner-occupied housing sector typically is provided by a MLS, not a stand-alone, for-profit firm.

Presumably, the existence of a MLS is a question of economics. That is, brokerage firms in the housing sector must believe there is value in providing the space and sales data, and they then cooperate with other brokerages in setting up the MLS in hopes of capturing some of that value. Otherwise, an independent firm would reap the profits.

In fact, this debate is just beginning to take place in the commercial real estate industry. One example is of a firm named Xceligent that is trying to sell technology that allows local brokers to be their own 'CoStar'. Effectively, they are challenging CoStar's business model by suggesting that local brokers form an association and control the data themselves. In addition, we understand that there are non-profit MLS platforms being developed in the Atlanta and Milwaukee markets, whereby brokers would contribute data and collectively pay for the maintenance of the platform.

In sum, we believe the real question for the commercial brokerage industry is not whether the research function largely will be outsourced in the future (it will be), but who will provide and control the data. If a stand-alone, for-profit firm proves itself to be highly profitable, we would expect some type of collective response from the brokerage firms themselves to capture some of that value. Either they will create some type of MLS platform and control the data or the stand-alone firm will 'share' some of its profitability with the brokerage houses by lowering fees.<sup>9</sup> Conversely, should the for-profit firms not be

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in our Phase II report for the details.]

<sup>9</sup> Thus far, we have not addressed issues relating to how likely are brokers to quickly and accurately report information. The reason is that we do not think that their incentives differ depending upon whether a firm such as CoStar or a collectively-run MLS exists. Stated differently, what information economists term 'incentive compatibility' does not differ much, if at all, based on who reports market information on space availability and transactions prices. For example, a tenant rep broker who sees the glimmerings of a negative trend or event in the market may not immediately reveal that information if it will delay a decision and fee income (not to mention any lower fee income received). Hence, the speed with such information is revealed seems unlikely to differ depending upon whether an independent, for-profit firm or a MLS exists.

able to reach or sustain profitability, we would expect the brokerage firms to create some type of cooperative rather than inefficiently re-staff the research function in each firm.

It is noteworthy that research is not the only function susceptible to new firm entry. Phase II of our research showed the listings and marketing function to be targeted by a variety of companies. The LoopNet/PropertyFirst combination is one of the more prominent examples. This merged entity clearly hopes to be the place where brokers can market their wares, all while implementing some of the processes involved in executing transactions. Once again, the goal is not to be a full service brokerage company, but to deliver cost savings to brokerage firms and brokers by providing a more specialized service (or set of services) to many firms that used to perform the function in-house, and to market ancillary services associated with a transaction (e.g., provide referrals for mortgage companies and the like).

As was the case in the research area, we do not know whether the new LoopNet or other existing or future competitors will be the winner in this space. What does seem clear is that scale, information quality, and critical mass is vital in the listings area. There are clear benefits from being the place where everything can be seen simultaneously. Hence, we would not expect more than a handful of such firms to be able to survive.<sup>10</sup>

The most obvious change that the rise of specialist firms will bring to commercial brokerages is in personnel. For example, jobs in the research and listing areas will be reduced, but not eliminated, and the remaining research jobs will require greater analytical and technology skills. Using research as an

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<sup>10</sup> In our opinion, the research and listing functions are the most viable areas for the immediate development of successful specialist entities. However, our Phase II report found efforts in other areas that bear mentioning. Peracon.com is an example of a firm targeting sellers' agents with a new online process attempting to standardize and streamline some of the sales transaction exercise. Other firms such as Offices2Share.com specialize in a particular customer or product niche (short-term sublets of office space in its case).

example, the specialist provider obviously will provide the basic data. The remaining researchers inside brokerage firms will have to work with and tailor that data to the firm's needs.<sup>11</sup> However, this alone should not affect the underlying business model of brokerages. After all, these jobs are often among the lowest paid ones in the firm. And, the direct impact on the highly paid brokers and what they do (i.e., on the brokerage process itself) is relatively small. For example, brokers still must be active in verifying key data, asking relevant questions about the data, and generally providing a framework for any data analysis (including utilizing relationships to fill in any gaps in the data).

We believe that the rise of successful specialist firms is likely to have a greater impact on the industrial organization of the sector. By lowering the infrastructure costs related to research and marketing, these firms make it easier for smaller, boutique brokerage operations to compete with the larger firms in the industry. Smaller firms, as well as smaller teams within firms (particularly those with an industry specialty or product niche), should be able to compete more successfully if everyone has access to essentially the same data and a similar ability to list or market electronically. All firms, larger ones in particular, will have to evolve and innovate to add value to their brokers. Areas in which larger firms should continue to have an advantage over smaller rivals would include brand and marketing, distribution (i.e., deal flow), and the ability to make significant technology and systems investments.

### **III. Change #2: General Effects on Existing Operations of All Brokerage Firms**

The rise of new information technologies will significantly affect the operations of the most

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<sup>11</sup>This has the potential to have wider ramifications for the training of brokers, as many were schooled in the basics of their market by performing market research functions. We suspect new agents will continue to work this function, focusing less on raw data collection and more on data verification and analysis of the basic data. If this is not the case, then brokerages will need to develop a new mechanism for building market knowledge in their new employees.

traditional of brokerage firms independent of the success of specialist firms. For example, it is difficult to envisage the corporate outsourcing trend developing the way it has in the absence of such technology. The execution of any brokerage transaction is, at its heart, a complex communication and project management task. Successfully managing the process for a national or international client would be very hard, if not impossible, without the Internet and related technologies and applications. Part of the future profitability of the larger brokerage operations with such clients is dependent upon their ability to use computing, wireless capabilities, and the Internet to make the process less expensive.

For instance, the process of searching for space (in the case of tenant representation) or buyers (in the case of investment sales) already has become less expensive through the advent of communications technology such as email, and the research, listing, and directory companies which largely were non-existent in their current form only a decade ago. It is noteworthy that making the process more efficient requires brokers to have certain skills associated with technology implementation and team management, in addition to the standard ones pertaining to real estate markets. The most successful brokers will be those most comfortable with the new technology and those who can make the client most comfortable with that technology. Hence, it is not just space that will be marketed, but a somewhat different management process.<sup>12</sup>

Even more important is the impact that increasing transparency can, and probably will, have on brokerage firms. Here, we do not just mean the fee compression that generally is associated with a business process that is more transparent to the client, although that is not insignificant. More broadly, we think it is possible that the basic way in which brokerage services are priced will change. Rather than

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<sup>12</sup> For example, NetStruxtr.com clearly believes that an auction-like process in which tenants post their requirements and respond to landlords directly will ‘work’. Even without a new entity such as NetStruxtr.com to house the system, this approach clearly would alter the process of finding space.

a pricing system that rewards brokers primarily with some percentage of the value of a contract signed, a more transparent model is to price by the hour worked with some type of performance or completion bonus. This would be closer to how other service professionals (e.g., lawyers, accountants, and consultants) are compensated. In effect, the issue is whether brokers will become more and more like virtual employees of their clients, paid more like employees than sales people.<sup>13</sup>

Real estate economists have concluded that a commission structure is preferable when the client cannot easily monitor how intensely the broker is marketing a property. In that case, paying the broker a percentage of the transactions price helps align interests between the broker and client. However, if at least some of the marketing process becoming more visible via electronic media, clients are likely to want (at least partially) to pay a specific fee for a specific service. In any event, that is the outcome in other service industries. We should emphasize that this need not be all bad for the broker. Having the security of a retainer-like feature as part of broker compensation with the upside of a bonus for success upon closing could be attractive to many brokers.<sup>14</sup>

Improved publicly accessible information also generally places clients in a better (i.e., a more informed) position to decide whether they want to use the available technology to substitute for broker time. For example, some tenants now may be more comfortable performing at least some of the initial search function previously undertaken by a broker with the assistance of a research person.<sup>15</sup>

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<sup>13</sup> There are a host of issues, mostly legal and tax-related, surrounding employee versus outside agent compensation. Our discussion is not related to those issues, but to the point of commission versus fee-based compensation.

<sup>14</sup> Determining precisely who would benefit and who would lose from such a change is an extremely difficult task. Essentially, the risk-reward trade-off is changed under the new compensation scheme. Many brokers may value the trade-off because it reduces the 'feast or famine' nature of the present commission system. However, some risk-loving (and highly talented) brokers would not like the change, as they thrive the most under the current system.

<sup>15</sup> As is discussed in the next section, we believe some clients will, over time, choose to substitute technology for broker labor on smaller and more generic deals. It is in this sense that the rise of a discount model analyzed below is

Even more generally, new information technologies afford brokerage firms the opportunity to restructure or reallocate their personnel towards higher valued-added parts of the brokerage process. Brokers perform many tasks, and one way to break down their major activity areas is as follows: (a) sourcing new business; (b) pitching and winning new business; (c) executing business that is won; (d) managing the account; and (e) minimizing non-revenue time. We further maintain that task 'c', executing business that is won, takes the bulk of broker time (perhaps as much as two-thirds), but does not account for nearly that much of commission value. Tasks 'a' and 'b' are the reverse in that they generally account for a much greater fraction of commission value relative to broker time spent generating the commission.<sup>16</sup> The latter two functions are more balanced in terms of the fractions of broker time they take and the commission value they generate.

The point we wish to make from this is that a firm does not have to change business models in order to employ new technology to restructure how it implements the brokerage process. Because the sourcing, pitching, and winning of new business are relatively high value-added activities, it makes sense for brokerage firms to concentrate the high cost broker professional on those activities as much as possible. And, in terms of 'executing business that is won', technology and lower cost professionals should be used to substitute for as much high cost broker time as is feasible because broker value added is relatively low in that function. This can involve a myriad of tasks ranging from arranging initial tours and showing space to having an electronic interface that can answer the standard questions asked

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related to this change in pricing. That is, increased transparency, whether via publicly available data and documents or via better tracking of time spent on a deal, can influence brokerage pricing in a number of ways.

<sup>16</sup> We suspect that sourcing new business and then pitching and winning it is responsible for about half of commission value, while taking up less than a quarter of broker time. While reasonable people certainly can quibble with the precise numbers, we doubt that many would disagree that the value-added to brokers associated with sourcing and winning business outweighs the time brokers spend on those activities (in percentage terms, of course, and especially taking into account the 'hit rate' or the number of assignments won compared to the number of assignments

by all clients. However, we emphasize that technology alone should not be viewed as the answer here. New personnel arrangements with small teams of junior (and, therefore, less expensive) technical support people managed by the high value-added broker probably are needed to generate meaningful efficiencies. This suggests that brokers with good management and team building skills and broad familiarity with technology will become more valuable over time.

#### **IV. Change #3: The Possibility of New Types of Brokerage Firms**

In order to change the underlying business model by which commercial brokerages operate, a new type of brokerage operation is needed. A largely web-based firm of the type apparently envisioned initially by Zethus has attracted the most attention. While we discuss that model later in this section, we believe the development of a different type of firm, one based on an explicit discounting model, is a more relevant issue for the commercial brokerage industry in the near to medium term.

A brief review of some of the history in the stock brokerage arena illustrates why the development of a successful discount strategy could be very important. That story really begins in the 1970s with the ending of fixed commissions on stock trades. Prior to this, it literally was impossible for a stock brokerage to follow a discounting strategy. Following the end of fixed prices, Charles Schwab successfully entered with a discounting strategy. Schwab's model was a no frills approach that involved lower trading fees, with fewer services. The firm captured customers from the full service firms such as Merrill Lynch, but there still was no fundamental change in the business model by which the traditional stock brokerage houses operated. That said, those firms did respond by providing items such as WRAP accounts with subsidized trading costs. They also began to offer more financial advice, which with

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pursued).

hindsight can be seen as the beginning of a change in their business model. In this case, it involved a change from a trading-based strategy to a financial advisor/manager strategy.

The final stage of this story begins with the development of pure Internet-based companies such as E\*Trade, Ameritrade, and the like. Interestingly, recent research suggests these new, virtual firms drew their initial customers more from the discount brokers such as Charles Schwab rather than from full service firms such as Merrill Lynch.<sup>17</sup> Thus, it appears the presence of discount stock brokers facilitated the rise of Internet-based stock brokers. The fact that some clients had done well without a full service broker 'holding their hand' along the way may have led them to believe they could do well despite even less personal interaction. Ultimately, the underlying business model supporting brokerages changed, with the full service firms realizing that they could not rely on trading to generate significant profits. Hence, the decision by traditional firms to provide an enhanced array of data and advisory services to clients, with trading costs dramatically lower than before.<sup>18</sup>

While commercial real estate space is not nearly as homogeneous a commodity as (say) shares of Microsoft stock, we believe the Internet and associated information technologies will speed the development of a successful discount model in the commercial brokerage sector. This model almost certainly will utilize the web extensively, but it will not be a 'virtual' brokerage operation, in our opinion.

Before proceeding to an analysis of that business model, we need to distinguish between the development of an explicit discounting model and the discounting that already occurs in the industry. Presently, discounting by commercial brokerages is tied more to the value of sourcing and 'volume

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<sup>17</sup> See "Online Investors: Do the Slow Die First?" University of California at Davis Working paper, October 2000, by Brad M. Barber and Terrance Odean.

<sup>18</sup> A recent research report from Salomon Smith Barney (2000) estimated that 30 percent of all retail stock trades on the NYSE and NASDAQ exchanges are now done by on-line brokers. While this includes the electronic trading arms of traditional exchanges, it illustrates how much the industry has changed since virtual trading became

discounts' than it is to the idea that less cost can equal less service in a revamped brokerage process. Stated differently, one of the concepts presently driving discounting is that if someone else sources the business, that someone, not the broker, should get the benefit. This often occurs when large users negotiate some type of discount with brokerages in return for a certain pipeline of transactions whereby the client receives a portion of the value of the deal (or commission) related to the sourcing portion of the brokerage process.<sup>19</sup>

So, the question for us is whether a purely discount model along the lines pioneered by Charles Schwab in the stock brokerage sector will be developed for commercial real estate brokerage. Our Phase II research found TenantWise.com, a New York City-focused firm, to be one of the first in the commercial sector to attempt to restructure and streamline the process by which brokerage is done. This company is a good example because it is attempting to put some or all of the three primary parts of the tenant rep process (from the tenant's perspective) – search, negotiation, and execution – online. For example, a tenant can do a targeted search and select spaces or buildings for one's shopping basket. Also online are a schedule of tours, analytical tools such as market comparisons and equivalent lease templates, and offer sheets.

The firm's profit model is based on transactions fees and our Phase II report provides the details for the interested reader. For our purposes here, the key point is that fee compression is possible is due to the use of technology as a substitute for some of the human element in brokerage. It is our understanding that only relatively small transactions presently are being completed in this fashion. This is

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possible.

<sup>19</sup> From the broker's and brokerage firm's perspective, a volume discount is given since the work to execute a small transaction often is not materially less than that required for a larger one. In other words, there is a fixed cost to executing any transaction. Additionally, the broker and brokerage firm highly value "delivered business" and so are willing to negotiate the price in return for an exclusive pipeline of work from one client.

not surprising to us, as many experienced brokers will not put much time into such deals, particularly in a strong market environment, so that the quality of service from 'traditional' brokers may be relatively low in this market segment. Also, users in this segment may be less sophisticated and more willing to do some of the work themselves in order to save money.

Our previous research also found that another clear attempt to disintermediate the commission flow to tenant rep or landlord brokers is being made by NetStruxr.com. NetStruxr's auction-based system was developed with the assistance of a consortium of large institutional and corporate owners (Prudential, IBM, and Bank of America). Unlike most other electronic leasing sites, on NetStruxr.com, prospective tenants post their space needs online, and then field responses from landlords (and, ultimately negotiate) online. While many tenants and landlords presumably still will need a broker to participate in the interaction, more knowledgeable landlords and sophisticated tenants could use the electronic process to reduce their brokerage expenses by not using brokers in some transactions and reducing their role (and, therefore, their fee) in others. NetStruxr's model certainly is not identical to the more classic discounting strategy of TenantWise. In fact, it is more akin to converting a true middleman into the role of a niche advisor or consultant. Still, the goal of capturing business by fee compression made possible through the use of new information technology to restructure the brokerage process is the same.

Since we cannot tell which of the various new firms will survive, a more fruitful effort for us is a deeper analysis of the benefits and costs of a discount commercial brokerage model. The potential benefits to clients are obvious – reducing the brokerage costs associated with the leasing and releasing of space. Our Phase I research estimated the commission flow on this space to range from \$8.5-\$9.5 billion annually, so it is not difficult to imagine entrepreneurs wanting to capture a share of such a flow.

Even a 10 percent decrease in commissions would result in well over \$500 million in cost reduction for clients. That said, we suspect that decreases at least three times that amount will be needed to attract clients to a discount model.<sup>20</sup>

The full costs associated with the brokerage process could fall for two related reasons. Already noted is the ability to substitute relatively inexpensive technology for more expensive broker time. Another important reason is that adept organizations should be able to make their key brokerage personnel more productive by permitting them to focus on activities more highly valued by clients. Presumably, the benefits of such restructuring would be split with clients in a competitive industry such as commercial brokerage.

That said, an explicit discount brokerage model certainly need not be an unmitigated benefit for those paying brokerage commissions. And, that point is helpful in isolating where and how a discount model first must prove itself. Extensive, if not complete, knowledge of the market place is very valuable and it would take a truly extraordinary electronic system to replicate the insights and judgment of an experienced, high-level broker. While tenants and landlords may not like to pay what they perceive to be high commissions, the fact is that a poorly negotiated lease or inappropriate space can cost a company far more than can be saved by lowering (or even eliminating) brokerage commissions.

This suggests that an explicit discount model is least likely to work (initially, at least) on larger and more complex transactions. Broker value added (and the downside risk per decision) is greatest on those deals and the best brokers work on them. In addition to smaller deals on which high quality brokers do not want to commit much time, a discount strategy that substituted technology for labor also will tend to work best the more standardized the product (e.g., the rollout of twenty 5,000 square foot sales offices).

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<sup>20</sup> See the discussion below and the model in the Appendix for more details on this.

The downside risks from not having a good broker for the search and lease negotiation parts of the process generally will be lower the more generic the product and the smaller the transaction.

The ultimate success of a discount model almost certainly will depend upon the quality of data collection and data storage, as well as the electronic interface that substitutes for broker labor and expertise. It is here that the ability of firm management to use technology to make their most valuable employees as productive as possible is critical. The first requirement speaks to the need to have software that is user friendly from the client's perspective, all while providing information that at least approaches what a human would provide in the normal brokerage process. The second requirement for success speaks to the need for new personnel combinations and skill sets that lower overall labor costs while (hopefully) increasing the productivity of the high value brokers in the firm.

The technology required for easy interface among the parties to the transaction already exists. And, the data needed to provide as complete a set of listings as possible for tenants to search through are being amassed by the CoStar's and LoopNet's of the industry. In this sense, the success of specialist research firms is critical to the viability of an explicit discount model in commercial brokerage. While it is not perfectly clear how that will work out, we do not believe this will be an insurmountable barrier to meeting the first requirement of a successful discount brokerage model.<sup>21</sup>

Restructuring the labor force of the brokerage is needed to meet the second requirement for success (i.e., profitability). This strikes us as the more difficult of the two, but by no means should it be impossible. Essentially, the technology must substitute for labor so that there are fewer and/or less

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<sup>21</sup> In addition, it should be possible for an electronic system to go beyond the provision and listing of standard market data. For example, search software could provide ratings for the quality of the landlord/owner, a subjective criteria based on the broker's past relationship with the landlord and on knowledge of the landlord's current circumstances (i.e., is the landlord in danger of going bankrupt or actively trying to sell the building). These ratings could, for instance, be compiled through surveys similar to Bizrate's ratings of websites using customer feedback.

expensive employees overall. And, the new labor force configuration must function to make the key broker personnel (i.e., those few who can win the business, exercise good judgment at critical times, and lead a team) more productive. This is likely to involve the need for more technically trained personnel comfortable with new information technology who can support the more experienced brokers with the necessary experience, relationships, and talent to make good real estate judgments for clients (and who have relationships with clients in the first place). Given the technical proficiency of younger people in particular, we would expect a growing share of the workforce accustomed to utilizing technology on a daily basis.

A second skill set required in the junior, less experienced members of the brokerage team is a strong customer service ethic. For those tasks absolutely requiring human intervention, it will be critical that the front line team members be able to communicate in a high quality, service-oriented manner, not dissimilar to the way customer service representatives are trained to perform in a wide range of other industries.

A discount model already exists in the residential sector, and we think it could be transferable to the commercial sector.<sup>22</sup> We have outlined in Appendix I an analysis of how a commercial discount brokerage might function financially. Our example obviously is hypothetical, as there are many unknowns regarding what it would take to produce a successful explicit discount brokerage model. Nevertheless, it does illustrate many of the key factors needed to make the model work. While we leave the details in the appendix for the interested reader, we would like to call attention to the three key unknowns and unresolved issues listed at the end of Appendix I, as they seem critical to the future success of the

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<sup>22</sup> We know of at least one such firm in our home area of Philadelphia. IMS Discount Realty charges a flat \$4,500 commission per home sold. The company employs the Internet to email new availabilities to clients each day. Clients then drive by the homes and let their broker know which houses they wish to see.

business model. One is whether it is feasible to combine senior and junior brokers and associates in a way that increases the volume of business done over what typically occurs in a full service firm with similar experience and staffing. A second is what size discount will be needed to create marketing momentum. We assume a 30 percent discount is sufficient. The model will work with different assumptions, but profitability suffers quickly if greater discounts are required. Finally, can expenses really be reduced to permit incremental discount revenues to generate the 20 percent pre-tax margin in our analysis? In terms of our *pro forma*, the equivalent of a 20 percent reduction in incremental overhead load on payroll costs is required.

Nobody really knows if a pure discount model will succeed, but there seems little doubt that the rise of new technology has created the conditions for it. And, the factors that will determine its ultimate success are becoming clearer by the day. From our perspective, they do not seem insurmountable. That said, we do not see an explicit discount model dominating the commercial brokerage sector. First, we do not see all the key constituents (including clients) in the brokerage industry adopting the necessary technology at the same pace. For the full efficiency benefits to be realized, most if not all parties must participate. Essentially, the bigger the network of participants, the better the process.<sup>23</sup> Second, a lack of standardization, both in the product and in the documents needed to transact, prevents the discounting model from becoming widespread in the near to intermediate term.

This lack of technology adoption and information standardization also are the key factors making an electronic or virtual brokerage very unlikely to be successful in our opinion, certainly in the near to

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<sup>23</sup> This is true for a number of reasons. Not only will the data and listings be more complete, but better support services will develop if the pool of participants is larger. This is an example of what is termed a 'network externality' in economics—the bigger the network, the more valuable the network.

intermediate term.<sup>24</sup> The fact that commercial real estate is heterogeneous really is what makes the broker relevant. The value added a good broker brings to a deal includes, among other things, the ability to understand the market beyond the published statistics, the ability to deeply understand a client's position relative to the competition (in the case of a project leasing broker), and the ability to know when to be (and when not to be) aggressive during a negotiation.

As suggested above, this value added is greatest when the deal is large and complex, and technology cannot easily replicate these features because they are truly human in nature. Even ignoring the problems with non-standard documents (and we do not wish to minimize the difficulty of managing the document flow in a brokerage transaction), it is here that the analogy with stock brokerage truly breaks down. Simply put, lack of standardization makes the cost-benefit trade-off involved in removing the high cost human from the transaction different for commercial real estate versus stock brokerage. The downside risk from making a mistake on a large, complex (i.e., non-standard) space decision or large sale transaction is very large relative to commission costs in the real estate arena. Hence, totally removing a high cost broker without effectively replacing that person's expertise, judgment, and relationships will not make sense in such cases.

So, under what future circumstances might a largely electronic brokerage firm exist? First, assets, owners, and users will have to be much more fully described with consistent, quantitative measures, not unlike public companies today. Definitions for things as simple as usable square footage would have to be agreed upon and universally employed. Second, the individuals within the real estate industry need to adopt the appropriate technology and then agree on standard systems and procedures. Third, related

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<sup>24</sup> Technology adoption will increase as more technically proficient workers enter the workforce, and ultimately become the decision makers for brokerage firms and their customers and vendors. However, without widespread standardization across the industry, we still believe a successful virtual brokerage is unlikely.

services would need to be developed to augment a largely automated system. For instance, some new type of licensing or certification similar to that found in the securities industry would need to be developed.

Thus, in the near to intermediate term the closest the commercial brokerage community is likely to get to a virtual firm is a discount broker that relies heavily on technology to substitute away from high cost labor. And, that will be economically feasible, and valuable from the client's perspective, only on smaller and more generic spaces and properties initially.

We close this section with a note of caution for those who believe the development of a successful discount brokerage model is not relevant to them. While we acknowledge that many brokerage operations quite sensibly will choose not to become discount firms (or even to offer the alternative as part of a package to clients), much experience in other industries suggests that the development of new technology and business processes to serve clients from the 'bottom of the market' can have a huge influence on the industry in the long run. The classic example is from the mini-computer and mainframe computer business. The Digital Equipment Corporation's (DEC) of that industry concentrated on highly complex and expensive computing equipment sold to high margin, high value-added business clients; they made sizeable profits in the process. When the personal computer (PC) was developed, DEC and its peers did not view it as a threat because the early PC models had limited computing power and they appealed only to low margin clients that the firms did not want to service anyway. DEC and others ignored the PC initially largely because they listened to their customers who reiterated the PC's shortcomings.

As we all know, over the long run, the technical capabilities of the PC increased substantially and ultimately did appeal to DEC's high margin business clients. The PC maker's cost advantage proved

impossible to overcome and the rest is history. In general, the process that is developed to serve the lowest margin clients in an industry should be closely scrutinized by all industry participants. By definition, that process has the potential to serve higher margin clients on a cost basis alone. And, if the process can be improved or adapted to the different needs of higher margin clients, it can be a formidable threat to all (including the most profitable incumbents) in the industry.<sup>25</sup>

## **V. Summary and Conclusions**

The rise of new information technologies makes possible three broad categories of change in the commercial brokerage industry. One, the development of a distinct discount model, involves a fundamental change in the business model of the brokerage. While not all firms will pursue such a strategy (and for good reason), the combination of new technology with a new combination of skills among employee teams seems ripe to allow a new type of brokerage operation to more efficiently service what presently are viewed as relatively unattractive, low margin transactions. While this is important in itself, we believe its true significance will not be realized for many years until it becomes apparent whether the new brokerage process employed by discount firms can be adapted to serve the needs of higher margin clients. Until that happens, and it is not at all clear to us that it will, those high end clients will remain with the traditional, full service firms.

The second broad area of change is that involving the implementation of new technology in all

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<sup>25</sup> See Clayton M. Christensen's *The Innovator's Dilemma -- When New Technologies Cause Great Firms to Fail* (Harvard Business School Press, 1997) for the classic statement and analysis of this principle. His book speaks to 'disruptive technologies' that ultimately kill off market leaders. And, he provides examples outside the computer industry (e.g., the rise of mini mills which initially produced rebar, the lowest margin product in the steel industry, before 'moving up the food chain' and driving the integrated steel companies out of product segment after product segment. Today, the integrated companies are left with only the most complicated steel products.

commercial brokerages. Big brokerage firms with complex portfolio assignments can be more efficiently managed with the clever use of new information technologies, thereby helping counterbalance the effect that specialist data providers provide for smaller, boutique brokerage operations. Better technology generally should allow greater outsourcing opportunities with more flexible execution strategies. For example, a full service brokerage firm need not bring in-house all the expertise needed to provide its portfolio of services. This is a direct consequence of the brokerage process becoming more transparent to its users and its practitioners, along with the greater capability to coordinate different parties, whether individuals or companies or both, through the use of technology.

The potential for new technology to make more transparent (i.e., visible) the underlying brokerage process to clients is particularly important. It is almost certainly the case that the present commission structure in the industry arises out of the fact that it is difficult for clients to monitor broker marketing effort. Paying a percentage of the ultimate transactions price helps align the interests of the client and broker. However, a percentage commission structure is rare among other service professionals. If clients can more readily monitor the underlying brokerage process, we would expect to see a move, at least partially, to a fixed fee per hour worked, akin to how lawyers, accountants, and consultants typically are compensated.

The third broad change involves the rise of specialist firms that perform a single function—research or listings, for example. While we cannot be sure whether these functions ultimately will be provided by stand-alone, for-profit firms or an entity akin to a MLS, we believe they will continue to be largely outsourced by traditional brokerages as time passes. This does not change the underlying business model by which such firms operate, but it does help level the playing field across competitors, thereby providing an advantage to smaller, boutique brokerage operations.

Finally, all of this has implications for the development of commission revenues in the industry. Our Phase I research estimated that there were from \$10.4-\$13.3 billion in annual brokerage commissions on office and industrial properties alone. Virtually all of the changes we envision would affect the tenant rep and project leasing areas first, so it is important to break down the commission flows by category. We estimated that about \$9 billion, or just over 75 percent, of the aggregate commission flow arose from the tenant rep and project leasing business. Going forward, we would expect the most pressure on commissions to be here.

We see no reason why the rise of new information technologies would have much of a short-term impact on the share of investment sales and corporate disposition brokerage in the overall economy. These services tend to deal with relatively larger and more complex transactions, which increase the downside risk for clients should the deal go poorly or perhaps not happen at all. Therefore, we believe the investment sales and corporate disposition sectors of the commercial brokerage business will continue to grow commensurately with the expansion in the economy at large over the near to intermediate term. This is not the case in the tenant rep/project leasing arena. The rise of a discount model in particular will squeeze fees, meaning that the size of this sector should shrink somewhat in relative terms if and when a discount model emerges.

The state of the economy largely will determine the long-term commission flow for the industry. The change in the nation's gross domestic product (GDP) probably is a good benchmark for determining how commission flows will change on average over a number of years. That said, in the shorter run, it certainly is true that brokerage business revenues (commissions) can and do experience substantial volatility for reasons not related to aggregate growth in the economy. For example, leasing and sales activity can increase because a few large industries are changing materially. Companies in rapidly

growing industries often consume new space far in excess of the nation's growth rate, and those in rapidly declining industries often are in a sublease or sell mode independent of when their leases are up or whether it is a truly desirable time to sell and owned property. Both sets of activities generate brokerage commissions.

On the other hand, the brokerage business can experience slowdowns in activity and commissions due to events not directly tied to the national economy. One recent example was associated with the Russian default and ensuing currency crises in the late summer and fall of 1998 which virtually shut down the investment sales market for several months. A second example would occur in a market in which demand outstrips existing supply, requiring new construction that only occurs with a lag. Until the new space becomes available, tenants cannot take occupancy and no commissions are paid.

Thus, in any given year the distribution of industries experiencing great change can lead to changes in brokerage activity that differs substantially from the change in overall national economic activity. However, we would expect these events to cancel out one another over the long run. Assuming this canceling out does in fact occur, we use GDP growth to provide a simple example of how commission revenue growth may change in the next five years.

We begin by assuming an average nominal GDP growth rate of four percent per year for the next five years. While we obviously cannot know what economic growth actually will be over the next five years, four percent is a reasonable assumption. It reflects a one percentage point increase from underlying population growth (which has been occurring for the past decade and looks steady given birth rates, death rates, and recent immigration), a 1.5 percentage point increase from real productivity growth, and then another 2.5 percentage points from inflation. If productivity is lower, growth will be lower;

if inflation is higher, then nominal growth also will be higher. Given this, we would expect commissions in the investment sales and corporate disposition areas to grow at something close to 4 percent per annum over that time period.<sup>26</sup> Using the midpoints of the ranges estimated in our Phase I paper, this implies an increase in commissions from investment sales and corporate dispositions of about \$600 million from \$2.7 billion to \$3.3 billion.<sup>27</sup>

We expect lower than average growth in commission revenues associated with the tenant rep and project leasing businesses. While impacts from discount brokerage and the like may not be felt immediately, we do expect them to have a dampening effect on commission growth over a 3-5 year period. We cannot predict with any accuracy by how much commission growth will lag general economic growth due to the pressures associated with new information technologies, but even if it does so only by one-half percentage point per year<sup>28</sup>, the commissions will have increased by approximately \$300 million less than they would have otherwise over the five year period.<sup>29</sup> Naturally, one can arrive at larger numbers if one assumes that cost pressures will cause tenant rep/project leasing commission growth to

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<sup>26</sup> To reiterate, this presumes nothing special occurs in terms of rapid growth or decline of key industries to generate abnormal brokerage activity. In addition, even though we do not expect developments in information technology to materially impact the investment sales and corporate disposition areas in the near term, we do believe they will help prevent disproportionately large increases in commissions. Hence, we conclude that the percentage increase in commission growth for those activities is capped at the rate of increase in the overall economy (which is 21.7 when compounded over the five year period).

<sup>27</sup> The one thing that could increase this figure is an upsurge in corporate dispositions. If corporations decided that owning real estate was an unwise use of scarce corporate capital, there would be a one-time surge in such dispositions. However, that issue is well beyond the scope of this paper.

<sup>28</sup> This translates into a 12.5 percent shortfall if commission growth is 3.5 percent per annum while the overall economy grows at 4 percent per annum (i.e.,  $0.5/4.0=0.125$  or 12.5 percent).

<sup>29</sup> This figure is arrived at as follows. A 3.5 percent growth rate in commissions leads to 18.7 percent growth when compounded over five years. Using the \$9.1 billion base estimate for tenant rep/project leasing from our Phase I research implies that commissions will grow to \$10.8 billion after five years. However, absent any cost pressures associated with the rise of new information technologies, commissions would have reached \$11.1 billion if they had grown commensurately with the broader economy. The \$300 million figure simply is the difference between \$11.1

lag general economic growth even more severely.

One final note of caution is that, even if the relative economic size of the tenant rep/project leasing sector shrinks as we believe it will, the income of all its brokers need not fall or even fall on average. This is because new labor force arrangements and new technologies almost certainly will lead to individual brokers doing more deals in this area.<sup>30</sup> Thus, the brokers that remain could receive even greater compensation on average. This is more likely if they are able to spend a higher fraction of their time on the higher value-added parts (to them) of the brokerage process. Additionally, broker compensation should become more stable as retainer and fee-based payments partially substitute for commission-based payments.

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billion and \$10.8 billion.

<sup>30</sup> To be more specific, we are not predicting that the absolute number of brokers will decline, as more will be needed as the stock of buildings increases with the size of the economy. Our conclusion does imply that the growth in brokers doing tenant rep and project leasing work will not grow as fast as does the industry overall.

## Appendix I: Analysis of the Profit Model for a Discount Brokerage Firm

**Overview.** This document looks at the so-called “lone wolf” model in which each broker works alone (which is fast becoming rare), the traditional team model whereby a senior broker builds a team – usually totaling 2 or 3 individuals – who can split up the work, and finally, a discount model focused on smaller transactions.

The numbers for the discount model assume an in-place traditional team model, and the discount revenues and staffing required are incremental to the base business. We suspect the number would work on a stand-alone basis, although some modification clearly would be needed in order to incorporate a senior broker into the staffing.

### Hypothetical Pro Forma (Traditional/Team Model):

<b>Revenues</b>	\$4,800,000
<b>Expenses</b>	
Payroll	\$2,000,000
G&A	\$2,000,000
Acctg, IT, mkg	\$200,000
	(\$4,200,000)
<b>Profit Before Taxes</b>	\$600,000 (12.5% margin)

### Key Assumptions:

- Revenues for 3 teams (each covers a separate major submarket/product/service):
  - Assume each senior broker can do \$700,000 gross in old lone wolf world, net comp = \$350,000.
  - Assume each junior broker (senior associate) can do \$200,000 gross, net comp = \$100,000.
  - Assume each analyst can do \$70,000.
  - Total = \$1.0 million in lone wolf world.
  - With leverage in the new team world, these 3 can generate \$1.6 million as a team. Assuming, on average \$25 rents and commission rates of 4% for the first 5 years and 2% for the second five years, commissions are as follows:
    - One – 100,000 SF, 10 year lease. Commission = \$750,000.
    - One – 50,000 SF, 10 year lease. Commission = \$375,000
    - One – 25,000 SF, 10 year lease. Commission = \$185,000
    - Four – 10,000 SF, 5 year leases. Commission = \$200,000
    - Four – 5,000 SF, 5 year leases. Commission = \$100,000.

- Eleven deals totaling \$1.6 million.
- Total Payroll (assumes brokers are paid with salary/bonus):
  - 3 transaction teams led by 3 senior brokers (\$400,000 each) = \$1.2 million
  - Each team has a Senior Associate (5 years experience - \$150,000) = \$450,000
  - Each team has 3 analysts (\$70,000 each) = \$210,000
  - One graphics support person = \$50,000
  - Reception/office manager = \$40,000
  - Administrative support = \$30,000
  - Total = \$2.0 million
- Accounting, Additional IT, Marketing - \$200,000 (this could vary substantially by firm and situation)
- Note that other overhead costs such as rent, telephone, and the like are captured by a 2.0x payroll factor

In this team-based model, each member of the team makes more money as a teammate than he/she would as a 'lone wolf' broker. [The "house" could be a firm owned by the senior brokers or by someone else.]

Compensation Table	<u>Lone Wolf</u>	<u>Team</u>	<u>Team w/ Profit Sharing*</u>
Senior Broker	\$350,000	\$400,000	\$600,000
Senior Associate/Junior Broker	\$100,000	\$150,000	\$150,000
Analyst	\$70,000	\$70,000	\$70,000

\* Assumes 3 senior brokers own the firm and split profits equally.

**Discount Model.** Starting point for the discount firm is the team model described above with these changes:

- Processes are automated, human interaction reduced for discount clients.
  - Clients fill out space questionnaire, which creates search screen for listing database.
  - Search finds all spaces that fit client requirements per questionnaire.
  - Space list is automatically e-mailed to client. Client drives by buildings and e-mails broker all buildings that appear suitable.
  - Questionnaire also fills out standard RFP, which is sent to top 10 buildings.
  - Landlord responses are automatically compiled on spreadsheet and criteria matrix. Top 5 choices receive e-mail requesting showing.
  - Project management tool shows suitable dates and times for showing – junior broker will accompany client to each space.
  - Conference call with team and client post showings to discuss alternatives and strategies.
  - Top 3 landlords are sent ‘best and final’ request.
  - Responses are automatically compiled.
  - Conference call with team and client to discuss responses and prioritize choices.
  - Top 2 choices are sent standard lease form.
  - Legal negotiations, tenant work letter are likely to be semi-automated but will require significant analyst time (follow up) and some junior/senior broker time especially as issues arise.
- Teams are expanded to include 1 junior broker each at cost of \$150,000 each plus 1 additional analyst and 1 additional administrative person each at cost of [ $\$150,000 + \$70,000 + \$40,000$ ] x 3 = \$780,000.
- Deal volume that each expanded teams can handle in addition to those described above assuming same general rent and rate parameters on 5 year terms:
  - 5 – 10,000 SF. Undiscounted Commission = \$250,000.
  - 10 – 5,000 SF. Commission = \$250,000.
  - 40 – 2,000 SF. Commission = \$400,000.
  - Assumes then that 3 people with technology can process 50 deals with gross undiscounted commissions = \$900,000.

## Hypothetical Discount Brokerage Pro Forma

	<u>Traditional/Team Model</u>	<u>Incremental Discount Model Revenues</u>
<b>Revenues</b>	\$4,800,000	\$2,700,000
Less Discount @ 30%		(\$900,000)
Net Revenues	\$4,800,000	\$1,800,000
 <b>Expenses</b>		
Payroll	\$2,000,000	\$780,000
G&A	\$2,000,000	\$780,000
Acctng, add IT, mkg	<u>\$200,000</u>	<u>\$0</u>
	(\$4,200,000)	(\$1,560,000)
 <b>Profit Before Taxes</b>	\$600,000	\$240,000
<b>Profit Margin</b>	12.5%	9.0%
	 <b>Desired 20% Incremental Margin</b>	 \$540,000

## Key Unknowns and Unresolved Issues

- Can a senior broker doing his/her own deals with a team, also lend spot expertise to the junior broker who is leading a 3 person team doing 55 deals per year, even given significant technology and limited service?
- Will a 30% discount be sufficient to create marketing momentum?
- Can expenses be reduced to allow incremental discount revenues to generate a 20% margin? This would require expense reduction of \$300,000 or an incremental overhead load of 1.6x payroll costs (versus 2.0x).