AUCTIONS in OHIO REAL ESTATE

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Executive Summary

In this study we addressed the following three broad questions:

1. How is real estate auctions looked upon?
2. How do auction versus negotiation outcomes compare?
3. Is it time for a separate auction department within brokerage houses?

In addition to these broad questions, we looked at successful examples of real estate auctions in both commercial and residential real estate transactions not only in Ohio, but also in Chicago, Boston, New York and Atlanta. Furthermore, we compared auction types that the brokers used and identified the first price English auction to be the dominant and effective method in residential real estate transactions, and the sealed bid first price method to be the most commonly used mechanism in commercial real estate transactions.

This study involved both field study of commercial and residential real estate agents, brokerage houses, mortgage specialists, and developers; and empirical analysis of all 14,250 consummated real estate transactions in the state of Ohio between 1999-2005. The focal domain of commercial and residential transactions was: vacant land, agricultural land, industrial, retail, office, all residential/single family, condominiums, and subdivisions. All non-consummated deals and direct seller-buyer deals were excluded. During the interviews, subjects were asked open ended questions in a semi-structured format, and their responses were categorized into clusters around targeted topical areas. All interviewed subjects were guaranteed full anonymity and confidentiality. Several online and real time auctions were observed and few negotiation style transactions were followed through.

We had an unbalanced sample of panel data constructed for all Ohio transactions between 1996-2005. However, while we were verifying records of all consummated deals between 1996-1998 (inclusive), some discrepancies lead us to believe that the 1996-1998 data was not reliable hence these were excluded from the analysis. We analyzed the 1999-2005 data using several multinomial and bivariate regressions. To avoid sample selection problem, during the interviews brokers were asked specific questions to determine if there were any systematic differences between consummated and non-consummated deals. We matched the sample for each transaction and created subsamples based on zones, acreage, age, lot type, zip code, and approximate value. In the final step we used a rare event logit regression given the small number of auction transactions in the Ohio market, and a nested logit regression for the discrete choice analysis to analyze the differences in financial outcomes for the sale of two similar real estate properties: one sold in an auction versus one sold in a traditional negotiation.

At the beginning of the project, we compared how auctions have been used effectively in various other markets. The main thrust of this search was to determine the factors that made the Ohio market different. In Ohio, Cincinnati, Cleveland, Columbus and Toledo were identified as primary markets, and other smaller cities and towns as secondary markets. While the primary Ohio markets show similarities to the other metropolitan cities, the secondary Ohio markets were observed to be comfortable with the traditional negotiation market mechanism to govern the real estate exchange. Our interviews also established this difference. Although primary Ohio markets are ready for an increase in real estate auctions, the secondary markets are not ready for real estate auctions given the perceptions of auctions are still a "fire sale" of distressed property.

During the study we compared auction and negotiation results for all consummated deals. For distressed property sales, the auction results were lower than negotiated sale results as expected. For example bank foreclosure auction sales were 8% lower than average negotiated sale prices of similar type of properties. However for non-distressed property sales the auction results were slightly higher (5%) than the average negotiated sale prices of similar type of properties. However there is an empirical problem with this type of a comparison: the consummated auction sales in Ohio were primarily distressed property sales and non-distressed property sale numbers were significantly lower. This required us to use an extreme value analysis and compare to non-Ohio markets to establish a benchmark. For example while in Atlanta average negotiated house prices closed at 96% of their listing price, auctioned off properties closed at 104% of their reserve prices. However, the minimums and maximums for the transaction varied greatly, lowest negotiated sale to close at 85% of the listing price, and the maximum negotiated sale to close at 112% of the listing price. The variations in the auction sales were a lot less dispersed.

Regarding an auction division within the brokerage, the commercial real estate brokerage houses that are large in size and scope are closer to this goal. Many of these firms have an established group within the firm that does auctions, and/or outsources this function to an expert company. The residential brokerage houses on the other hand have to be grouped into two separate poles. The small scale residential brokerage houses that employ few agents or deal in small priced real estate deals are likely to wait for the industry leaders to establish an internal division within their operations before adopting the new market mechanism. On the other hand, the large scale brokerage houses are ready and will need to establish auction departments given the increase in the competition by the online market makers.

Especially during the interviews we have observed that small scale firms view the auctions to be for the distressed property sales and they dismiss the online auctions for residential real estate. In several comments made, they even referred to online auctions as a “fashion”, and argued that these transactions would decrease. When we provided them with statistical evidence that the increase in residential properties would result in about one-fourth of all transactions (in terms of value) to be done in auctions in about 7 years, they concluded that larger brokerage houses would probably adopt this new method. Almost all small scale brokerage house agents strongly argued that the competitive advantage of their firms was service to the clients and they were sure that the customers would prefer an experienced agent who provided great service. On the other hand, almost all commercial real estate agents interviewed were positive on the auction department idea and they investigated how they could incorporate this function within their organizations.

The major source of reactions from the secondary real estate markets for both residential and commercial real estate brokerage houses centered around three uncertainties about: commissions, complexity of the deals, and the reliability of the method. Those firms that said they would be incorporating an auction department were uncertain about: cost of training personnel, details about auction methods, online companies.

Conclusion

The real estate industry is going to face a business model change very similar to the auto industry, financial services and banking, and retailing industry business model changes. Currently the online market makers are allowing buyers and sellers to conduct transactions, and some residential real estate service providers as well as bank financed condominium developers are using auctions to sell similar item properties. However, as the NAR projections, we are expecting a very significant and fast increase in the growth of residential and commercial real estate transactions. This change requires the current real estate organizations to revise their business models and train their employees, and include a specialized business group within their organizations. We believe that the real estate brokerage houses provide very valuable and convenient services in the industry and their knowledge about the property, region, and experience about how to conduct the most optimal exchange for their clients are very useful. Given the change in the industry trends and the increase in competition in this new form of exchange mechanism, the real estate agents and companies will need to revise their business models.

A Historical Look at Auctions

Historically, in the United States, real estate auctions have been utilized for properties facing foreclosure or bankruptcy (Mayer, 1998). Distressed properties at auction, therefore, sell at a significant discount (Allen and Swisher, 2000). Wright (1989) has estimated the below "market value" discount to be as high as 37 percent. Stephen Tyler, a managing director for Horwath Hospitality Investment Advisors, claims that wine, art, and jewelry auctions "hold a cache of exclusivity, elegance and old money…" whereas real estate auctions invoke "'fire sale', courthouse steps and foreclosure" associations. Or so it used to be. In recent years the negative stigma linked with real estate auctions in the U.S. has greatly relaxed—as evidenced by a steady increase in residential and commercial real estate auctions.

Since the early 1980s real estate auctions have grown substantially as a result of severe declines in property prices (Mayer, 1995). According to The Gwent Group, a real estate consulting firm, $10 billion of residential, commercial and agricultural property was sold at auction in 1980 (Newman, 2004). Estimates show a 260% increase (dollar amount) in U.S. real estate auctions between 1981 and 1989 (Martin and Battle, 1991). By 2002, the number had increased to $58.5 billion (Newman, 2004).

As Stephen Tyler points out, auctions are becoming an attractive option for sellers of special-purpose or hard to value properties (i.e. hotels, luxury villas, commercial office space). The National Association of Realtors (NAR) projects that by 2010, 30 percent of all real estate property sold in the U.S. will be through auction. If the trend continues, as

Lusht suggests it will, U.S. real estate auction growth will follow a pattern similar to that of Australia and New Zealand where auction use is widespread (Mayer, 1995).

Current Trends

The latest trend in real estate might just be the appeal of the business itself. The industry is experiencing a big licensing boom. Membership in the NAR is at an all-time high. Single-family home sales outlook remains strong through the next decade with the homeownership rate expected to rise to over 70 percent (Realtor Magazine, 2004). In particular, minority homeownership is expected to account for about half of this gain. Sales of new and existing homes and condos are forecast to average 8.27 million to 8.85 million units a year (Realtor Magazine, 2004). The NAR suggests that shortages of developable land, concerns about sprawl, and environmental issues will constrain supply, ensuring property appreciation. Prices are projected to increase on average 5 percent annually. Income growth and real estate price appreciation will remain closely correlated allowing for sustainable growth over the long run.

Condominiums, once considered the stepchild of the real estate market, are quickly becoming the “hot-ticket.” According to NAR statistics, condos now account for 12.8% of the housing market, a 33% increase over the past ten years. In addition, condos have experienced double-digit appreciation in the last four years. Numerous multi-family units have also been converted into condominiums. Condominiums however are not the only new trend in real estate.

Sales of second homes in 2003 are estimated at about 445,000 (24% increase from 2001) and an all-time high, according to NAR. The main reason for such an increase in second home ownership is—baby boomers. Just recently, baby boomers reached their peak earning years, amassing enough capital to become prime buyers of second homes. Appreciation in the second home market has been quite impressive as well. NAR estimates show a median second-home price in 2003 was between $190,000 and $200,000 (57% increase from five years earlier). Tax law changes that have enable homeowners to downsize their primary residence without paying capital gains taxes has helped fuel the second home buying spurts.

Residential home are still getting bigger, thought at a slower pace than in the past couple of decades. New homes in 1970 averaged 1500 square feet, compared to 2300 square feet in 2004, and increase of over 50%.

The commercial real estate market is currently in a state of moderate economic expansion. Increasing interest rates have not yet negatively impacted long term investment in commercial real estate. In 2005 commercial real estate saw an unprecedented level of sale transactions (Real Capital Analytics, 2005). Office-, industrial-, and retail buildings experienced 30%, 70%, and 10% growth respectively. In addition, the number of loan delinquencies has steadily been decreasing since late 2001 (Federal Reserve, 2005). Investment type commercial property has also seen an increasing rate of return since 2002, with retail property showing the greatest rate at roughly 4.5% in 2005 (NCREIF). The retail office market has seen the lowest rates of vacancy since 2001, and the greatest increase in rental growth of any commercial sector.

The greatest investment in the office market continues to be in the West and Northeast. The industrial market has seen a positive impact from trade with China and the Central American Free Trade Agreement. The retail market has seen a sizeable number of foreign investors—particularly Australians. Consumer spending is holding steady despite rising oil prices and interest rate hikes.

The National Auctioneers Association (NAA) recently completed the largest independent research study on auction marketing. The funding for the study came through a donation from the National Auctioneers Foundation. The goal of the NAA study is to unify the myriad of information regarding auctions in a large, mostly independent, non-authoritative market (Auction World, July 2004). The NAA enlisted the help of two independent firms to conduct the studies. MORPACE International focused on the economic impacts of auction marketing while Harris Interactive focused on general consumer attitudes and motivations for attending auctions, classifying consumers as *auction enthusiasts*, *auction regulars*, or *auction potentials*. Armed with data compiled by the two investigative bodies, the NAA is better able to serve the auction community and suggest changes to improve profits.

The most fundamental discovery from the research was that auctions are not merely surviving, but rather thriving. Live auction sales exceeded $200 billion in 2003. The sharpest increases in sales were posted by land and agricultural real estate (12.9% increase) and residential real estate (12.6% increase). Automotive sales continues to be the largest auction segment comprising roughly 42% of the market ($79 billion) with land & farm real estate, residential, and commercial and industrial real estate next comprising 10%, 6.1%, and 6.2% respectively of the auction market. Real estate, in its various forms, is the fastest growing auction segment. For comparison, the larges segment, automotive sales grew less than 1% over 2002, whereas real estate categories grew on average more than 10% over 2002. In addition, online auction activity has also increased significantly.

More than 17% of auction companies now offer an on-line auction catalog, while 13% offer on-line bidding. On average, auction companies are small, employing few auctioneers. The employed auctioneers are most often contract auctioneers, not in-house auctioneers. More than one third of the companies offering live auctions reported revenues in excess of $1 million with a combined advertising and promotion effort totaling over $2.5 billion.

Who attends these auctions? One perhaps not-so-surprising finding shows that families see live auctions as "one of the best entertainment bargains around" (Ibid. pp 2). Four out of five surveyed consumers have in the past attended at least one type of auction, while 63% have done so in the past year. More shockingly, once a consumer has attended an auction, he is most often hooked. Virtually all surveyed consumers attested that auctions are fun to attend and more than half make and effort to seek out auctions. Harris Interactive indeed found that the number one reason for such high auction attendance is fun. The percentage of consumers attending auctions with a specific product in mind or business related is significantly lower than those attending for the sheer entertainment. How strong is the auction entertainment aura? The average consumer is willing to drive 1.3 hours to attend a live auction. That same consumer overwhelmingly brings the entire family as well. The attendance and driving time is even greater for the avid auction consumer.

As Harris Interactive finds, greater attendance does not necessarily translate into more bids and increased revenue. As it turns out, the bidders at live auctions are a very concentrated group. One third of live auction attendees contribute 96% of total revenue. Harris Interactive classifies these consumers as *auction enthusiasts*. These consumers attend roughly 10 live auctions and 40 online auctions each year, though they are much more likely to bid at live auctions than at online auctions. They learn about these auctions primarily through local newspapers and direct mail advertising. Harris Interactive finds that regional differences play a significant role in attendance, activity and revenue at live auctions.

In general, the most active region is the Midwest, with the highest levels of participation and purchasing. The total amount spent at live auctions, however, in the Midwest region is significantly lower than in the other three regions. The West region leads the nation in the average spent at live and non-live auction but boasts the lowest attendance rate. One would assume, based on Harris Interactive findings that the average spent at non-live auction would be significantly lower than at live auction for all four regions, as bidders are highly more likely to bid at live auctions. The data does not support that conclusion. In the West and Northeast regions, the average spent at non-live auctions was actually higher than at live auction—13% and 38% higher respectively. In the Midwest region the two averages were roughly the same, while in the South region consumers spent 58% less at non-live auctions.

Harris Interactive also unearths a surprising discovery regarding the link between live and online auctions. Many live auctioneers may falsely assume that online auction houses such as eBay are taking away consumers from the live auction market. Harris Interactive finds that quite the opposite is true. Consumers who attend and online auction are actually more likely to attend a live auction, not less likely. Lack of information and understanding of rules are the main barriers to entry. Many consumers, not having a firm grasp of where, or most importantly, how to participate in a live auction, are weary of participating at all. These consumers are much more likely to participate in an online auction ***first***, where the learning process is not quite as frightening at first. As previously mentioned, consumers learn about auctions through newspapers, radio, and other secondary sources. EBay thus becomes a viable option for the less-involved consumer. Consequently, the online consumer morphs into a live auction consumer once his grasp of rules and information gathering improves.

Lets take a closer look at the live auction vs. online auction relationship and the impact e-commerce has on auction market. In recent years, participation in live, online, and charity auctions has both changed and increased tremendously. Many auctioneers still regard online auctions as competitors, stealing away consumers from the live auction market. The reverse is in fact true. Online auctions initially attract new consumers who, with gained confidence, are later more likely to attend live auctions. Harris data shows that the most active online auction participants are also the most active live auction participants.

Lets take a closer look at the three basic consumer groups as outlined by Harris Interactive. They are: auction enthusiasts, auction regulars, and auction potentials. All consumers are not equal. Understanding the habits and behaviors of these three groups is essential in maximizing auction revenues. Auction enthusiasts are the active core of the live auction market, willing to travel 2 hours to attend a live auction. Though they represent only a third of the market, they are responsible for virtually all (96%) of the auction revenues. The vast majority of the consumers are auction regulars. As regulars, they currently attend auctions, are interested, but spend little. Auction potential are those consumers who don't currently attend live auction but have in the past or are likely to in the future. Most of the potentials, roughly 20% of consumers, are however well educated about the live auction process. Naturally, the potential for increased revenue in the live auction market lies with the *potentials*.

The *potentials* are predominately white married females with some higher education. Although they are not currently attending auctions, they have in the past and have expressed and interest in attending in the future. Appealing to their interests is critical in increasing auction revenue. According to Harris, the potential group has some reservations (intimidated) about attending a live auction. The best way to alleviate those fears is to hold a bidding tutorial or pre-auction certification seminar (Ibid. pp 4). Topics included should educate the consumer about product quality and authenticity. In fact, the greatest barriers to bidding across the board are associated with the difficulty in verifying quality and authenticity. Advertising efforts targeting the potentials should have a slightly different slant as opposed to those targeting the enthusiasts and regulars. Since the vast majority of auction potentials see auctions as fun, advertising should focus on the fun and exciting aspects of live auctions.

In terms of spending, live auctions still dominate the auction market, taking in roughly 50% of the industry revenues. The other fifty percent is evenly divided between Internet auctions and charity auctions. Interestingly, attendees at Internet auctions are twice as likely to bid, buy, and sell yet spend only half as much as attendees of live auctions. One of the main factors of course is the uncertainty involved in Internet auctions. Consumers are naturally more confident when the item for auction, this is especially true for big-ticket items such as real estate, is physically present and available for inspection. Auction houses that wish to increase the level of participation in both their live and online auctions can best achieve this goal by cross-reinforcing the two auction formats. Meaning, auction companies holding a live auction even should advertise their online auction events and vice versa. This method tends to reinforce consumers' tenancies to shop both. Participation is key. Auctions tend to generate such excitement, as evidenced by the NAA study, that many who participate once, become lifetime participants.

What do these findings suggest about the future of auctions, both live and online? A need for real estate brokerage firms to integrated an in-house auction department within the firm. We will discuss this topic shortly.

The U.S. Real Estate Market vs. Others

In most real estate markets (U.S. included) almost all sale of nondistressed residential properties occurs through private negotiations (Lusht, 1996). The notable exceptions pointed out by Lusht are Scotland, Australia (Melbourne in specific), and New Zealand. Maher (1989) estimates that between 25% and 50% of all properties in Melbourne, Australia's strongest ***auction*** real estate market, sell at auction.

As Wright (1989) and Gau and Quan (1992) have found, auctioned real estate in the U.S. sells at a significant discount. Conversely, in Australia, auctioned real estate sells at a premium (Lush, 1996). One fundamental difference between the two markets lies in how auctions themselves are perceived by buyers and sellers. In the U.S., auctions have typically been associated with downturns in the real estate market selling distressed real estate properties significantly below market value; In Australia, where no such historical stigma exists, auctions are widely accepted and used for desirable properties in booming markets (Mayer, 1998). Lusht argues that as long as U.S. real estate auctions are promoted as "bargain hunting opportunities," the negative stigma will remain. Conversely, Australian sellers perceive that desirable properties sell more quickly in auction versus private listing.

Although Australia's housing system is predominantly private, governmental policy and sustained assistance through fiscal and monetary incentives has had a significant impact on homeownership (Kemeny, 1983). Governmental policy stimulating homeownership in Australia in the post-Second World War period had a similar effect as the GI Bill in the U.S. Auction popularity in Australia boomed after the passing of the 1983 Land Sale Act that relaxed certain selling restrictions.

The compensation structure of the real estate agent (the roles are quite similar) is the major difference between the U.S. and Australian real estate market and thus auction popularity. The agent is relied on heavily for property value advice and information regarding other available opportunities (Maher 1989). Crowston and Wigand (1999) argue U.S. agents strongly oppose real estate auctions, namely because they feel the erosion of the long-standing information monopoly they previously enjoyed. Australian agents have a much different disposition towards auctions.

The advertising costs (typically befalling the agent in the U.S.) and payment structures are set up in such a way that auctions become quite profitable for the Australian real estate agent (Lusht, 1996). In fact, seller-paid advertising is one of the ***main*** reasons Australian agents are such strong proponents of auctions. Australian agents generated on average 7% higher selling prices though auctions than private listings (Real Estate Institute of Australia, 2005). In addition, the Australian print media generates four times the revenue from an auction listing as it does from a private sale listing (Lusht, 1996).

Real estate auctions are quite frequent in several parts of the world, including Australia, New Zealand, Ireland, Malaysia, Great Britain, and Singapore, but have ubiquitously been absent, for the most part, from the U.S. market. Only in the past fifteen years have we seen a rather rapid increase of real estate auctions in the U.S. Also important to note is that the auction format in the U.S. is no longer exclusively employed for distressed properties as it has been in the past. The structure of the U.S. real estate market must therefore provide insight into why auctions have not been so widely used as in other parts of the world.

One argument explaining the lack of auction use relies on the assumption that the U.S. real estate market is currently very efficient. The Multiple Listing Service (MLS) as used in the U.S. is a service not available in many other foreign markets. The MLS provides great incentives for real estate brokers to participate. An MLS is an organization that collects, compiles and distributes information about homes listed for sale by its members—real estate brokers. For sellers, listing a home with the MLS remains one of the best ways to expose a property to a wide range of potential buyers. In addition to broker related MLS serviced, sellers now have the option of using a "For Sale By Owner" MLS services without having to hire a real estate agent. The U.S. mortgage system is also very good providing many with an opportunity at affordable housing. It is understandable that auctions would be more favorable in markets that lack the quality systems like those in place in the U.S.

The real estate transaction process in the United States can be divided into five stages called listing, searching, evaluation, negotiation, and execution (Crowston and Wigand, 1999).

The listing stage is the first step in the process. The owner places the house on the market and decides how best to price and emphasize the positive aspects. The owner can either list the property alone or through a seller's agent. Roughly four out of five homes in the U.S. are listed with the help of an agent. An agent is customarily entitled to a 6% commission contingent on a finalized sale. The agent, if enlisted, lists the house in a database called the Multiple Listing Service (MLS). The MLS is a vast database of properties for sale in a local area. For sale by owner (FSBO) properties are not listed in the MLS and thus incur a drastic reduction in number and quality of prospective buyers. In addition houses listed in the MLS are not directly available to the buyer The MLS is only the first example of both the importance and asymmetry of information in real estate transactions.

The second step in the transaction process is searching. Searching is a relatively simple process that can prove to be quite time consuming. Potential buyers consult traditional sources such as newspapers and advertising journals to find suitable options. More commonly, a buyer enlists the services of a buyer's agent in finding suitable options. By enlisting a buyer's agent, the buyer gains access to information in the MLS database previously unavailable to him.

The third stage in the transaction process is evaluation. Buyers narrow down the prospects to several options. They often walk through the house conferring with the owner about various specifics. Crowston and Wigand (1999) point out that the key difference between auctions (specifically web-based) and negotiations is ability and ease of inspecting the property prior to purchase. They add that most consumers are confident in purchasing a book or CD based solely on a review, but few have the same confidence making a decision involving large sums of money typically associated with real estate property. The advantage of evaluating prospect with an agent is the ease with which the agent can show property.

The fourth step in the transaction process is negotiation. Having decided on a home, the buyer usually extends an offer to purchase the property. The offer is contingent on financing, inspection, and various other factors. Here again, the agent assists the buyer and seller in devising negotiation strategies. Eventually the two parties come to agreement and begin work on a binding contract.

Finally, the transaction process reaches the execution stage. Barring any contractual problems the parties exchange money and ownership of the property. A mutually trusted third party attorney usually handles closing. The respective agents (seller's and buyer's) collect commission (split) and the transaction is finalized.

Recently however, the growth of commerce on the Internet has allowed consumers to practically circumvent the agent in virtually all five stages of the transaction process. Many services such as www.homehunter.com allow the seller to list their home directly. Sellers pay for the advertising on the service rather than commission associated with paying agents. As with listing, numerous free databases are available on the Internet for potential buyers to browse. Virtual tours are alleviating some of the apprehension involved in evaluating a home. Even though virtual tours are no replacements for physical walk-through, they are a step in the right direction. The Internet also provides help to buyers and sellers in the negotiation step of the transaction process. Web sites like www.experian.com provide some of the advice and guidance usually provided by a real estate agent. Furthermore, instant loan approval is now available through a myriad of online sources such as Ditech and LendingTree. More reputable mortgage lenders who operate nationally by various mortgage brokers are also giving emphasis to online marketing of their products. Some of these firms use the Internet mainly for knowledge dissemination, whereas others use this tool to get more information about the potential mortgage customers. Unfortunately, legal regulations provide some obstacles to online closings. However, many agree that these regulations will be relaxed in the near future. Crowston and Wigand warn that with all these changes, the real estate agent must become more adaptive and innovative. The current problems or inefficiencies in the principal-agent relationship mush be addressed, and perhaps the auction format is just that solution.

Real Estate Auctions

Auctions in general can be grouped in four overarching categories: English ascending-bid auction; Dutch descending-bid auction; first-price sealed-bid auction; and the second-price sealed bid auction—also known as the Vickrey auction (McAfee and

McMilan, 1987). The English auction is the predominant method of selling commercial and residential real estate (Mayer, 1995). Auction structures, or bidding rules, have a significant impact on expected revenues (Kagel and Levin, 1993). Three auction structures dominate real estate auctions: absolute, reserve, and minimum bid.

The absolute auction is closest to the true essence of an ascending-bid English auction. The property is sold to the highest bidder regardless of final price. A guarantee of sale at the end of the bidding process heightens buyer excitement and participation, usually resulting in increased revenue for the seller. It is widely agreed that absolute auctions offer the best results for the seller (selling price closest to true market value), despite the risks associated with a sale *guarantee* and is thus the most frequent form of real estate auction (Mayer, 1995).

As suggested by auction theory, a reserve price increases the selling price but decreases the probability of sale (McAfee and Vincent, 1992). Therefore, reserve auctions are essentially reduced to a "best offer"—not a sale. The minimum bid, or the reserve price, is not published and the seller reserves the right to accept or reject the bid, usually up to 72 hours from close of auction. No guarantee of sale severely cripples buyer excitement and participation. In tern, the final selling price (if accepted by the seller) is not as closely correlated to true market value as in absolute auctions.

Minimum bid auctions are the least common form of selling real estate. The auctioneer sets a price minimum below which the seller will not release the property. The auction is often limited to buyers *willing* and *able* to meet the minimum price. The number of participants will decrease with barriers to entry, such as the minimum bid (Johnson, 1979). Furthermore, it is often very difficult to set the minimum price and the seller potentially creates an artificial anticipated value for the property, which may be quite different (low or high) from actual market value.

The foreclosure auction in real estate occurs when the mortgagor, through a legal procedure, forces the property to be sold thereby removing all existing deeds of trust on the property. This procedure, among other things, requires the sale to be promoted in the legal notices of the local newspaper several times prior to the sale and also requires the sale to take place within a time frame of several hours on a designated day on the courthouse steps. Although this procedure may resemble an auctioneer's method in some ways, it simply can be a legal maneuver to allow the existing mortgagor to reacquire the title of the property.

Let's look at a more detailed analysis of each auction type. An absolute auction is an auction that has no contingencies. The property offered at this type of auction is thus guaranteed to the highest bidder free of any liens, mortgages, infringements, or title problems. As McAfee and Vincent (1992) suggest, auction rules determine auction outcomes. Auctions for identical residential properties, such as condominiums, with different auction *rules* will often display sizeable variance in final selling price. The following basic rules govern absolute auctions:

(1) The decision to sell real estate at *absolute*, versus *minimum bid* or *reserve price* auction is always the sellers. An agent cannot decisively contribute to this decision.

(2) An absolute auction must be announced as such. By default the auction carries the protection of a reserve price.

(3) Once the bidding has opened, the item cannot be withdrawn unless no bids have been placed in a reasonable amount of time.

(4) A bid is binding contract for sale. While the bidding is open, only a higher bid voids the previous bid/contract.

(5) Neither the seller nor the seller's agent may bid.

(6) The property is sold to the highest bidder—regardless of final price.

In fact, many parties to the absolute auction process believe that nothing could be simpler. Typically, prior to the sale, the auctioneers prepare due-diligence packages. Prospective buyers then have a period of time to investigate the property on their own. If certain discrepancies are found, they can be resolved prior to the auction. During the actual auction, the auctioneer describes the lot, opens the bidding, calls the bids, and closes the auction by selling to the highest bidder. However, absolute auctions, especially live, open-outcry auctions are quite susceptible to several dishonest practices artificially inflating final sales prices.

Auctioneers often use *phantom bids* to (1) initialize the bidding process if it has a tough time starting or (2) stalls out midway through. These phantom bids used to start the "real" bidding are often called "off the wall" or "from the chandelier" bids (Ashenfelter, 1989). A smooth auctioneer can rattle-off phantom bids so convincingly, leaving inexperienced bidders completely unaware. Open-outcry auctions are also susceptible to *shills*, or bidders co-conspiring with the auctioneer to raise bidding interest. When a bidder sees a shill biding on an item, he believes that the item does indeed have higher value and bid. A shill essentially induces bids from inexperienced or unsuspecting bidders. Lastly, many sellers bid themselves on their own auctions. These fraudulent practices are common in absolute value auctions because the auctioneer and the seller want to use the drawing power (many interested bidders) of the absolute auction without incurring the risks such an auction carries.

Australian authorities are attempting to correct the problem. According to *The Australian*, (Secret "auction police" to crack down on dummy bidders, AUG 28, 2003) undercover government agents have started showing up at property auctions in an effort to crack down on the dummy bidder practice. A recent blitz in Queensland revealed that roughly 10 percent of auctioneers and agents failed to comply with standard auction practices. Individuals violating fair trading laws governing auctions could face fines of up to $22,000, while corporations violating same laws could face fines of up to $110,000 (Ibid). Under the new regulations of the Property Stock and Business Agents Act, bidders supply more personal information to the auction house that previously required.

A reserve price auction has one major contingency—reserve price. The seller sets the reserve price higher than the minimum starting bid, and is not obligated to complete the sale if the highest bid does not meet or exceed the reserve price. The reserve price is hidden from buyers; however, they are informed that the auction is indeed a *reserve price* auction. Bidding in a reserve price auction results in one of three possible outcomes:

(1) If the reserve has already been met, then your bid will be submitted at one increment above the next highest competitor.

(2) If the reserve has not been met, and your maximum bid is also less than the reserve, then your bid will be entered at one increment above the next highest competitor.

(3) If the reserve has not been met, but your maximum bid is enough to meet the reserve, then your bid will be entered at exactly the seller's reserve price.

If at the close of the auction, the reserve price has not been met, neither party is obligated to the transaction. Auction theory predicts that implementing a reserve price decreases the number of bids received, thus decreasing the probability of sale, and increases the selling price of goods actually sold (McAfee and Vincent, 1992). Low-value bidders are screened out (Riley, 1995, 2005). Therefore, a seller has to carefully evaluate the costs and benefits of a *reserve* versus an *absolute* auction.

Setting a reserve price is a way of protecting an investment. Situations can and do arise where the bidder turnout is extremely low (minimal competition is bad for the seller) or bidders are in collusion. In such instances, the reserve price saves the investment from a below-market value sale. However, reserve prices tend to significantly reduce the number of bidders ***and*** number of bids placed. Riley (2005) found that with the imposition of the reserve price, the number of participating bidders in an experiment dropped from 19 to 7, and number of individual bids placed dropped from 565 to 71.

Some sellers actually disclose the reserve price. Milgrom and Weber (1982) argue that if a seller has some information about an object at a common-value auction, he can expect to increase his profits from the sale by disclosing that information. They argue that by revealing the reserve price, the seller is able to alleviate some costs associated with the winner's curse. Vincent (1994) counterclaims that disclosing the reserve price may actually reduce the incentive to bid, and lower expected revenues. If the reserve price is announced, the value of the item is essentially declared, limiting the incentive to bid higher. Still, most auctions are held with the reserve price undisclosed.

At a minimum bid auction, the auctioneer only accepts bids at or above a disclosed price. The minimum price, unlike a reserve price, is advertised in the auction and ***always*** announced before any bidding takes place. The minimum bid cannot change throughout the auction. In minimum bid auctions, similarly to reserve price auctions, the seller has means of controlling, to some extent (lower bound), the final sale price of the property.

Minimum bid auctions have often been used by the government for farmland, urban housing, and offshore oil drilling.   Particularly, minimum bid auctions are quite useful when similar items are auctioned off over a long period of time. For example, the Federal Deposit Insurance Corporation (FDIC) has auctioned off thousands of houses over a very long period of time (McAfee, Quan, and Vincent, 2002). Such extensive historical data allows the FDIC to maximize seller revenue by more accurately determining the minimum bid price.

It is often very difficult for individual sellers to correctly set the minimum price. The minimum price must be set low enough to act as an inducement to bidding rather than a hindrance. The seller may in essence create a barrier to entry by allowing potential buyers to bid only if they are prepared to bid the minimum price. Therefore, interest in a minimum bid auction may be limited since buyers know they can only acquire the property at or above the minimum price. Furthermore, the seller runs the risk of setting an expected value for the property by using a minimum price figure. The incentive to bid above this price is rather low.

For potential buyers willing to perform extensive research and take risks, the foreclosure market offers some of the best opportunities available in real estate. However, buyers should be forewarned that foreclosure auctions are typically the domain of the professional investor. Many properties sell anywhere from 10 to 30 percent below market value while some, though rarely, sell at 50 percent or more below market value. Some web-based services provide buyers with access to foreclosure information that was previously available only to real estate brokers.

Foreclosure properties fall in three basic categories: notice of default, notice of trustee sale, and real estate owned. However, foreclosure properties that make it to the auction block are all formally considered in default. Unless the buyer is previously familiar with the particular property, there is little or no time to examine the property prior to auction. Buyers must be physically present at the auction and must be prepared to immediately pay 100 percent of the sale price. Foreclosure auctions typically begin with a minimum bid that includes the loan balance, accrued interest, attorney's fees and any costs association with the foreclosure process. In order to bid at a foreclosure auction, you must have a cashier's check in your hand for the full amount of your bid.

In many cases, the amount owed to the bank is higher than the value of the property. Thus, it is not uncommon for a foreclosure auction to close unsuccessfully. In addition, excluding government auctions (HUD), foreclosed properties are sold “as is,” meaning that sometimes there may be liens against the property and even residents who refuse to leave. Let’s take a look at detailed specifics of a government foreclosure auction through the Department of Housing and Urban Development.

Not all types of property enjoy a high success rate in the real estate auction market. Factors such as transaction costs, carrying costs, and taxes have a significant impact on the likelihood of a successful real estate auction (Case and Shiller, 1989). Of course, other commonsensical factors play a role as well. Adequate advertising and publicity through various media outlets is critical in attracting a healthy number of potential buyers. Bidders are encouraged to visit and carefully inspect the properties prior to auction. Specifically, for Housing and Urban Development auctions, a buyer's awareness seminar prior to auction outlines the general HUD facts and rules. In general, distressed, homogenous, and centrally located properties all increase the probability of a sale (Ong, Lusht, and Mak, 2004).

Historically, U.S. government auctions of distressed properties, HUD Auctions, have been quite successful with the auction format. Several steps in the foreclosure process must take place before the Department of Housing and Urban Development (HUD) becomes the possessor of foreclosed property. First, if a borrower defaults on a Federal Housing Administration—insured (FHA) mortgage loan, the lender acquires the title to the property. Next, the lender files a reimbursement claim with the FHA for the remainder owed on the property and relays the title to HUD. Finally, HUD then attempts to recover as much of the remainder owed on the property as possible by listing the property locally, with a clear title and no liens. Often, when numerous unsold properties accumulate, HUD will conduct a public auction (Allen and Swisher, 2001).

Mayer (1998) shows that auction discounts fall, while sale probabilities rise for homogenous properties. The logic follows that a seller has little incentive to keep the property on the market waiting for a perfect match when virtually all buyers have a similar valuation of the property. Ong, Lusht, and Mak (2004) look at several property types including, apartments, condominiums, semi-detached, and detached homes, and compare their success rate in auction. They find that semi-detached and detached properties are not as likely to sell at auction as apartments and condominiums. Furthermore, centrally located properties generate greater revenue because they are usually very limited in supply.

Certain commercial real estate property also qualifies as potentially good candidates for auction. Highly sought after commercial properties, often called “hot” properties, tend to create fierce bidding wars at auction and thus bring a hefty premium to the seller. Properties that are difficult to appraise are as well better suited for auction that private negotiation. Sellers of one-of-a-king hotel, resort, or vacation club run the risk of either setting the selling price too high or too low due to the lack of consistent and reliable data on the sale of such properties. Therefore, a prudent seller would opt to list the property at auction, where a group of bidders can flesh out the true market price. Listing such unique property via traditional means may result in a very long period of time before a willing buyer is found, or conversely, seller’s remorse for selling the property too cheaply. Sellers with high-carrying costs may also opt to list the property at auction in hopes of a quick sale relieving the burden of high monthly mortgage payments, maintenance expenses, or other financial obligations. For such sellers, time is a critical factor and the auction format alleviates the time-frame uncertainty associated with private negotiations. Finally, extremely expensive properties also tend to bring greater revenue at auction than at private negotiation. In general, the more expensive a property is, the longer it takes to sell it. The auction format speeds up that process by bringing together a group of bidders that might otherwise not even be aware of the property sale were it listed simply through conventional methods.

Buyer/Seller Attitudes

The driving force behind the auction industry is speed. A typical auction takes less than ten weeks from start of advertising to final closing. The speed of the transaction is one of the most appealing aspects of the auction for both buyers and sellers. Traditionally, buyer satisfaction is inversely proportional to search time. Auctions attract buyers and sellers alike who favor expediency and transparency. Furthermore, commercial property investors use auctions to decrease the turnaround time between past and future investments. Multi-national corporations also often employ auctions when they need to quickly rid themselves of surplus real estate for certain tax considerations. Auctions, especially on-line auctions, can be a great tool for marketing to an international audience. Such auctions are able to quickly reach a global marketplace and minimize the transaction costs.

The real estate industry is an information-driven industry. Unfortunately for the buyer and the seller, the real estate agent has severely disproportional access to vital information compared to the other two. Crowston and Wigand (1999) highlight that many sellers still utilize the help of a real estate agent because houses are expensive, diverse, and infrequently bought or sold. Williamson (1981) adds that these factors also tend to increase transaction costs. In this information-driven industry, agents (and real estate firms) are intermediaries. The role of the agent is primarily effective matchmaking. Therefore, the value added by agents and firms is simply informational in nature. The agent's position is thus quite vulnerable if the buyers and sellers develop new ways to connect (Crowston and Wigand, 1999).   Recently though, web-based real estate sales are slowly eroding the long-standing information monopoly enjoyed by real estate agents. Transaction costs on the web are approaching zero, essentially circumventing the agent.

Michael Arnold (1992) outlines the main problems plaguing the principal-agent relationship. As stated, the seller's task is to design a contract that induces the agent to adopt a marketing strategy that maximizes the seller's revenue (Arnold, 1992). Meaning, what payment structure motivates the agent to generate the greatest revenue for the seller. Arnold considers three different systems of payment: fixed-percentage commission, flat-fee, and consignment. Difficulties in all three systems foreshadow the resulting success and growth of real estate auctions.

The real estate agent, acting as a middleman, is central in providing information to both sellers and buyers. The listing contract establishes the broker as the legal agent acting on the owner's behalf. The broker or agent then seeks potential buyers through various marketing means. Arnold argues that the principal-agent problem appears in two scenarios:

First, if left unmonitored, the agent may have no incentive to exhort large search efforts. Zorn and Larsen (1986) conclude that once enlisted by a seller, in both the flat-fee and fixed-percentage commission payment system, the broker has little incentive to engage many potential buyers and actually solicits fewer offers than is optimal for the seller. Second, the informational asymmetry between the broker and the owner regarding market conditions may provide and incentive for the broker to misrepresent current market conditions in favor of a quick sale. The agent, knowledgeable of current market conditions, may simply under represent the value of the property when advising the seller on the reserve price. A lower reserve price reduces the timeframe in which an acceptable offer is received, thus facilitating a quick sale. The quick sale may not be the optimal outcome for the seller as other potential buyers not sought by the agent may have had a higher valuation of the property.

The seller usually incurs cost associated with holding the house while actively trying to sell it. These costs include but are not limited to opportunity cost, interest, taxes, and maintenance costs (Arnold, 1992). In fixed-percentage commission systems, it turns out that depending on the situation, either the seller or the broker is more patient with the sale. An important factor to consider is the practice of commission splitting. If a different broker represents the seller and buyer, the two brokers usually split the customary 6% commission. A broker wishing to retain the full 6% commission may be more patient with sale, even though seller revenue is irrelevant of who actually gets the commission and if it is split or not.

The flat-fee payment system obviously presents significant incentive problems. The agent has little incentive to maximize the selling price of the property since his payment is irrelevant of final selling price. The agent does not benefit from the increased profits of a higher selling price. Therefore, the agent often favors the lowest possible reserve or asking price, minimizing his search costs and the time the property is on the market. The agent most successfully accomplishes this by persuading the seller to accept a valuation of the property that is significantly lower than market value. Flat-fee payment systems usually result in two equally inefficient search mechanisms. If the seller orchestrates the selling strategy the system results in too much search, and if the agent organizes the selling strategy the system results in too little search. Either way, the flat-fee payment system presents significant incentive problems resulting in search inefficiencies and ultimately selling price discrepancies.

The consignment payment system is simply the converse of the flat-fee system. The seller receives a fixed amount and the agent receive the difference between the final selling price and the agreed upon fixed amount. The owner and agent incentive positions are switched in relation to the flat-fee system.

In general, Arnold (1992) summarizes: sellers with a high cost of ownership ($N<0$) and a high level of impatience relative to the broker ($\beta \leq \delta$) are most interested in a broker who can sell the house relatively quickly. Under these conditions, the fixed-percentage system best serves the interests of both the seller and the agent. However, if the opposite is the case and the seller has a low cost of ownership and is relatively patient, no payment system can optimize the participants' incentives. However, the lack of a truly optimal system naturally lends itself to the exploration of other selling/payment formats such as auctions, which more affectively alleviate search cost discrepancies and informational asymmetries.

Some sellers prefer auctions after growing dissatisfied with the traditional listing method or the principal-agent relationship. Sellers enjoy auctions because the "window-shopping" effect is minimized and buyers at the auctions are most often willing and able to purchase the property. A good advertising campaign before the auction can actually create a greater pool of potential buyers that would be available through traditional listing methods. By quickly selling the property, the seller reduces his carrying costs associated with elapsed time. The benefit of the reduced carrying cost gets passed on to the buyer in terms of a lower purchase price. In the auction format, the seller may actually recoup a sizeable premium, as there is no upper bound on the final selling price. Negotiation selling prices move downward to a deal, whereas auction selling prices move upward to a deal.

It is then understandable that buyers with high search costs will naturally choose auction format whereas buyers will low search costs will participate in negotiations. Each real estate transaction carries with it several associated costs. Both buyers and sellers incur various costs associated with real estate transactions. Holding and transaction costs are directly related to the sale of the property. Holding, or carrying costs include maintenance, depreciations, interest, and taxes (Quan, 2002). According to the *Wall Street Journal* (1991), annual holding costs can be as high as 20% of appraised property value. Search costs are associated with the process of matching up buyers and sellers. Arguably, the auction format is better at attaining equilibrium between the buyers (search costs) and sellers (holding costs). Quan (1992) defines this equilibrium as the existence of a quoted price distribution which is consistent with sellers maximizing expected profit and buyers following a sequentially optimal search strategy.

Let's look at some specific selling strategies. The seller's strategy in setting a price is a tradeoff between a quick sale (low holding cost) and a high price (high holding cost). As seller who chooses relatively high selling price p (relative to similar properties) can anticipate a high holding cost. The tradeoff in the example involving a high p is the high probability of a low final price vs. the low probability of a high final price. A high p also increases the likelihood the property will remain on the market. A high offer price effectively reduces the field of potential buyers making a match less likely, which means the property remains on the market longer—incurring holding costs for the seller.

Like sellers, buyers have optimal search strategies when purchasing real estate. Each buyer has a different cost associated with searching for property. For instance, a buyer looking for investment property has as much lower search cost as compared to a buyer seeking a residence while incurring increasing rent. Time plays a critical role in determining search costs. The more uncertain the buyer is about the exact time the sale will be finalized, the higher his search costs rise. Therefore, time-sensitive buyers (and sellers) will prefer auctions to negotiations. A high search cost means that optimally the buyer would like to purchase property as soon as possible. The auction format provides much of the certainty. Likewise, participants that have low holding costs and low search costs can afford to spend time in private negotiations in an effort to seek maximum profits. A seller that is not time-sensitive can hold out for a "perfect match."

Online Marketplaces and Real Estate

The number of real estate transactions and the resulting value added to the national GDP has steadily increased since 1998 (Bureau of Economic Analysis, NAICS Data). According to Department of Commerce statistics, total retail e-commerce in the United States in 2002 exceeded $45 billion; auctions being one of the most successful forms of e-commerce. The Census Bureau estimates a total of $21 billion U.S. retail e-commerce sales for the second quarter of 2005 ***alone***. Still, at 2.2 percent of total retail sales, e-commerce represent but a small fraction of total retail sales. However, e-commerce is gaining popularity rather quickly. Fourth quarter 2004 total e-commerce sales increased 23.9 percent from the same quarter in 2003. Retail e-commerce sales are increasing at three times the rate of total retail sales.

According to statistics in the Portland Business Journal, real estate is the fastest growing segment in the auction market and accounts for about 25 percent of the $200 billion auction industry. Many private real estate auctioneers like Tim Stewart of Portland, Oregon credit the rise in real estate auctions to eBay. EBay changed the perception of auctions—they are not exclusively seen as venues for bargain-hunters picking through under priced items.

The impressive growth of online marketplaces is traditionally attributed to three factors. First, online markets, such as eBay and Amazon, facilitate a cost-effective meeting of buyers and sellers of specialized goods (Bajari and Hortacsu, 2004). They point out that in 1997, roughly $500,000 worth of Beanie Babies was sold on eBay—almost 7 percent of overall sales. Second, because of reduced transaction costs, online markets have essentially replaced the specialty dealer whose transactions costs remain high. Third, online auctions have an allure of excitement. Sites such as eBay have successfully created a sense of community, which retains current clients and attracts potential future participants.

The Real Estate section of eBay is subdivided in the following six categories: land, residential, commercial, manufactured homes, timeshares, and other real estate. Advertising of real estate property on eBay is provided by eBay Real Estate Inc., a wholly-owned subsidiary of eBay Inc.

Listings are ***not*** binding offers to buy/sell. Rather, eBay serves as a forum for interested sellers and buyers to meet and has no role in the actual transaction between sellers and buyers. Even though eBay offers two auction formats, non-binding and binding, eBay cannot guarantee the consummation of a sale in a binding auction. Binding auctions are a good faith initiative at best. Besides the traditional auction format, eBay also offers a conventional Ad listing (similar to newspaper listings), a "Buy-It-Now" hybrid feature, and a "Best Offer". EBay also offers a fixed-price option through its "Buy-It-Now-Only" feature, which is intended to catch the impulse buyers or those who want the item right away.

In fact, of the 1558 properties listed in the "residential" category as of 10/23/2005, only 232 properties (15 percent) were listed as auctions. Of those listed as auctions, less that 10 percent were listed as "No Reserve," absolute auctions. This is quite surprising, since even *binding* auctions, according to explicit eBay rules, cannot guarantee as sale. Bajari and Hortacsu (2003) point out this phenomenon, even though in the real estate case it seems illogical based on the rules of the game. Properties listed in the "commercial" category had an even lower auction-format listing rate—10 percent (45 out of 450).

Real estate auctions on eBay are overwhelmingly ascending auctions implementing proxy-bidding. In a comprehensive study of online auction sites, Lucking-Riley (2000b) found that of the 142 auction sites surveyed, 121 used the ascending bid format. The most prevalent explanation is that the presence of the common value element yields higher expected revenues for the seller (Milgrom and Weber, 1982).

Proxy bidding is an important concept and crucial in determining bidding patterns and participation. Let's have a closer look at the proxy-bidding structure in the eBay model. EBay uses an automatic bidding system to make bidding more convenient and time consuming. This bidding system does not apply to multiple item auctions (Dutch). When a user places a bid on an item listed on eBay, he enters the **maximum** amount he would be willing to pay for the item. The maximum amount is usually much higher than the opening bid, but is not necessarily so. The bid is kept confidential from other bidders and the seller. The eBay system then automatically places bids, up to the user's maximum bid, on his behalf to maintain the "Highest Bidder" status. If two maximum bids are identical, the bid that was placed earliest takes precedence. If the user is outbid, eBay sends a "You Have Been Outbid" notice to the user, usually prompting further action. Perhaps the easiest way to conceptualize proxy bidding is through example.

Suppose a seller lists an antique dresser on eBay[1]. The seller limits the auction to seven days, starting on Monday 8:00 AM PST (eBay uses the Pacific Standard Time as the official time), sets NO reserve price, and sets the starting price at $100. The minimum bid increments are determined by eBay and are based on current price. In our example the current bid increment is $2.50. Meaning if bidder A has placed a bid of $100 on the antique dresser, he may not be outbid by bidder B placing a bid of $100.01. Bidder B must place a bid of at least $102.50 to become the highest bidder. The minimum bid increment reduces the number of trivial bids such as the one-cent increase in the two-bidder example. Let's run through the antique dresser example using proxy bidding and three distinct bidders.

Shortly after the item is listed on Monday morning, an antique dealer in Houston (***A***) spots the item on eBay and places a maximum bid of $250. Since ***A*** is the only

[1] This sale actually took place on eBay, while the authors were watching several real estate transactions to be conducted (one of them in Toledo, OH). It is representative of similar real estate transactions, but the advantage of this particular auction is that the increments were also released in detail to the public unlike the real estate transactions.

bidder, he is also the current highest bidder at $100. If anyone else enters the bidding, eBay will automatically bid on behalf of ***A*** up to his maximum bid of $250. On Wednesday, a collector in Seattle (***B***) spots the item on eBay and places a maximum bid of $125. What happens next? EBay automatically increases the current price of the item to $125, ***A*** remains the highest bidder, and ***B*** is sent an outbid notice. The entire step is automatic. The current price of the dresser essentially increased from $100 to $125 in one smooth stride. Bidder ***B*** now has the option to enter a higher maximum bid or simply look for another dresser—one perhaps within his price range (≤ $125). Lastly, minutes before the close of the auction, a dealer in New York enters a maximum bid of $170 on the antique dresser. Once again eBay automatically increases the current price to $170, ***A*** remains the highest bidder, and ***C*** is sent an outbid notice. Assuming no further bidding on the item A wins the auction at a final price of $170. Even though the price jumps from $100 to $125 and from $125 to $170 appear as one transaction, ***Table 1.1*** shows each incremental step. Notice how earliest maximum bids take precedence.

The same basic bidding format applies to auctions with a reserve price with one small difference. The current price of the item will be set to the reserve price once the first maximum bit that exceeds the reserve price is placed.

Like any bidding system, the proxy bidding has its own advantages and disadvantages. The most notable advantage is that the user has to only bid once. The rest of the bidding is done automatically by eBay. By placing a maximum bid, the bidder does not have to keep checking the auction progress and verifying his status. He can only lose the auction if another bidder outbids his maximum bid—meaning, has a slightly higher valuation of the item. One of the greatest disadvantages of proxy bidding is the possibility that a less than scrupulous seller bids on his own auction (often with an alias username) to raise the final selling price and expose the true bidder's maximum bid. This practice, often called 'shilling' is present in live auctions to some extent as well. Another concern with proxy bidding is the fact that eBay provides as public information each bidder's bidding history. That valuable information may subsequently be useful to competing bidders in future auctions for similar items. Lastly, by placing a proxy bid on a specific item, the bidder is essentially tied to that item until the final outcome of the auction, or until he is outbid. Often, similar items are available at the same time. Bidding (proxy) on multiple similar items at the same time incurs the risk of wining them all, which is clearly opposite from the goal of winning one item for the cheapest price possible.

When listing an item on eBay, the seller incurs two mandatory fees, an insertion fee, and a final value fee. The insertion fee is based on the starting or reserve price, while the final value fee is a percentage of the closing price. If the item does not sell, the insertion fees associated with the reserve price are refunded to the seller. Naturally, eBay has several optional listing features, which carry with them individual fees.

Some sellers are taking bids for a down payment only, with the intention of owner-financing the property after the auction closes. In some auctions, the bid becomes the first payment in a lease agreement. Other sellers are simply trying to sell a property outright.

The Future of Auctions (U.S.)

Even before the Internet became a tool of commerce, nontraditional business models were gaining ground with some consumers. But widespread use of the Internet and fast-paced real estate markets have spawned a spate of new models—from brokerages that operate mainly on the Web to fee-for-service companies that charge separately for different components of a real estate transaction. The role and marketing strategy of the real estate agent has changed drastically. The expected market reach has grown. Agents are expected to be familiar with an ever-widening regional area. With the aid of the Internet, the consumer has access to information spanning a large regional area. Many consumers almost explicitly require more and more knowledge from their broker. This widening of the market coupled with readily available information is systematically decreasing the appeal of enlisting the service of traditional real estate brokers. A market in which information is readily available is quite appealing to those selling property through auction.

Informational asymmetries are not as large as they used to be just 10 years ago. Traditional brokerage firms are adopting new models with regard to real estate sale and marketing. Is there a need for traditional brokerage firms to "go virtual" or establish in-house auction departments? At the very least, realtors who are not doing business on the Internet are losing money, and lots of it. Listing and search costs associated with traditional listing methods are several times higher than those done online. Firm-organized online property auctions allow the broker to engage viable potential buyers regardless of where they live. Companies like Binswanger Realty Group that have adapted its real estate departments to meet demand and face change have proven quite successful. The company is classified as a "full service" real estate organization. Binswanger has advisors and consultants capable of expert guidance on an array of real estate projects including complete portfolio management and cost reduction strategies, to analyzing the impact of individual real estate holdings on balance sheets.

Brokerage firms that can cater to both traditional sellers/buyers and those more technologically savvy will inevitable get a larger client base. The firms must realize the growing trend in auction use and internalize the potential associated with their use. Traditional principal-agent problems are likely to increase in the future as information asymmetries decrease and those clients soliciting services begin to wonder what exactly it is that they are paying for. Available information coupled with structured, standardized auction use will surely put pressure on the traditional model of doing business. Quan (2002) stresses the importance of a structured, centralized exchange forum in which real estate transaction time is greatly curtailed. A growing interest in real estate auctions, specifically those with structured and standardized transaction processes, will reveal their comparative efficiency over more traditional listing methods.

Table 1.1

Highest Bidder	Current Price ($)
A	***$100.00***
B	$102.50
A	$105.00
B	$107.50
A	$110.00
B	$112.50
A	$115.00
B	$117.50
A	$120.00
B	$122.50
A	$125.00
B **Max**	***~~$125.00~~***
A	***$125.00***
C	$127.50
A	$130.00
C	$132.50
A	$135.00
C	$137.50
A	$140.00
C	$142.50
A	$145.00
C	$147.50
A	$150.00
C	$152.50
A	$155.00
C	$157.50
A	$160.00
C	$162.50
A	$165.00
C	$167.50
C **Max**	***~~$170.00~~***
A	***$170.00***

Streamlining the Real Estate Buying Experience

A Need For Change?

Presumably, the posted-price negotiation model for real estate transactions can be considered quite concise and straightforward. Superficially, for the buyer, the entire purchasing process may be reduced to simply finding the right property, acquiring sufficient financing and settling on a sale price. This marginalized version however hides many intricate and time-consuming steps in the real estate transaction process. Before we look at the basic framework of a detailed and complete transaction, let's keep in mind that the focus of this section is to evaluate the need for a streamlined real estate buying experience. Can the buying experience be structured more efficiently, and if so, does the ***auction*** model best lend itself to that purpose? Assuming that it does, how should the ***negotiated sale*** model transition into the ***auction*** model? We'll look at an actual ***negotiated sale*** real estate transaction and see if there is any room for improvement—that is, streamlining—and if such streamlining brings any added benefit to the buyer. Lastly, we'll suggest steps real estate professionals might take in establishing in-house auction departments. But first, for those readers not convinced the buying experience is in need of streamlining, we present the following basics of an agent-assisted negotiated sale transaction. We urge the reader to pay attention to the time and effort required in simply selecting a suitable agent, and thus appropriately extrapolate the timeframe for the entire transaction.

A Broker-Assisted Negotiated Sale Transaction

(i) Any search for a home begins with an assessment of individual borrowing capacity from banks or financial institutions. An individual's home loan borrowing capacity can vary significantly amongst various lenders. This is due to the fact that each traditional lender calculates borrowing capacity using completely different formulas. So, if a particular lender denies an individual's requested amount, a good chance exists that another lender may figure otherwise. As anyone that has ever applied for a home loan can attest, the amount of "paperwork" is often quite daunting. This first and crucial step can further be broken down (we will refrain from that in this analysis) into several time-intensive and stressful sub-parts.

(ii) The next several crucial decisions, or a phase in the buying process, facing a buyer can be grouped under the subheading of ***due diligence***. The most important of which is the property location. Naturally, buyers have varying valuations of amenities associate with property location, but virtually all consider several key characteristics such as neighboring property values, crime, schools, access to public transportation, and proximity to place of employment, to name a few. Immediately following price, property location is the second most important aspect a buyer considers. Next, the buyer usually researches property sale history in his chosen area and obtains information such as median sale prices for houses in the neighborhood. The Internet is often the most useful resource with an amazing volume of publicly available information on finding and buying property.

(iii) Buyers and sellers often require the assistance of a licensed agent, and welcome the myriad of resources available only via the broker service. Choosing an agent from the vast number of candidates in the business is often a very difficult task. In fact, an industry saying brilliantly illustrates that very point: *If you don't have any friends who are agents, then you probably don't have any friends at all*. Several key rules apply in choosing the best representation.

First, buyers should always look for an agent with at least two years of experience. Anyone still in the business after two years has probably mastered at least the fundamentals of real estate. The industry is *plagued* by a high turnover rate. This creates a workforce that is made up of mostly newcomers. While many new agents possess skills backed by good intentions, why entrust such a large investment to someone with little or no experience?

Second, buyers should seek committed agents. The industry is also plagued (obviously looking at the situation from a buyers/sellers perspective) by a large number of part-time and recreational agents. These agents are either seasonal or post-retirement workers. Many full-time agents argue that no matter how long they have been in real estate, their lack of full-time commitment makes it impossible for them to keep up with the vast changes in law, marketing and business practices that are continually re-defining the profession. Another industry saying clearly illustrates that point: *If an agent isn't working at least thirty hours a week, fifty weeks a year, look for someone else*.

Last, buyers should seek well-educated agents. It is widely known that in most states, the requirements for real estate licensing are substantially less stringent than those for cutting hair. Unfortunately, licensing does not always indicate competence. The only technical and competence based program available nationwide is the Graduate, Realtors

Institute (GRI) series, administered by the National Association of Realtors. Needless to say, buyers and sellers should seek agents with a GRI certification.

(iv) The next stage in the transaction process is the ***inspection*** phase. The buyer physically performs a walk-through and inspects the property for and damage or other factors affecting price. Often, certain appliances are not included in the selling price and little should be left to chance or assumed. The inspections allow the buyer to both verify the integrity of the property, and gather "ammunition" for later price negotiations.

(v) The next step, ***appraisal***, is an important part of real estate transactions. Quite simply, an appraisal helps establish a property's market value—the likely sales price it would bring if offered in an open and competitive real estate market. A more strict definition is as follows: appraisals establish a well-researched, impartial and carefully documented estimate of property value, thereby protecting the interests of all involved parties. Lenders require an appraisal because they seek to protect their investments in case of default. Appraisal feels, usually between $200 and $400, are often incorporated in the home loan. Buyers should be aware that final loan approval categorically hinges on satisfactory appraisal.

(vi) The next step in the transaction process involves price negotiation and offer presentation. Countless literature exists outlining various strategies in price negotiation, and once again, the Internet has an abundance of information on the topic. Serious buyers should tap all available resources given the fact that virtually all individuals grossly overestimate their negotiation acumen. We will demonstrate some savvy negotiation tactics in some detail in our ***negotiated sale*** example later on. In negotiations, information is the key. The party with the greatest amount of information often “comes out on top.” Buyers dealing with selling agents will not have access to information readily available in the CMAs and are thus at a disadvantage from the get go. The price negotiation process can be quite lengthy as the parties go through respective agents. Furthermore, all offers are considered binding contracts and should thus be reached only after careful consideration.

(vii) Lastly, the parties agree on closing cost responsibilities and attorneys finalize the transaction. The closing cost is an estimate based on past experience. It is a “good faith estimate” of costs associated with purchasing property. The two main types of closing costs are non-recurring and recurring closing costs. Non-recurring closing costs are a one time cost while recurring costs, such as property taxes and homeowner’s insurance are paid over the course of ownership. It has become common practice to negotiate the percentage (if any) of closing costs each party contributes even though custom states that paying closing costs is a buyer responsibility.

Transaction Options…Auction!

Any reader previously skeptical of the need for streamlining the real estate transaction process should without much difficulty conclude, that the real estate transaction process is indeed complicated and wrought with numerous participants and hired specialists. This conclusion leads us to the argument of this section, that is, that *there is room for streamlining the transaction process*. A streamlined process benefits both the seller and the buyer by simultaneously reducing carrying and search costs, and shortening the transaction time. The auction model is precisely the vehicle that is best suited for effectively streamlining the transaction. At first glance, it may seem that choosing the appropriate auction format and pricing method might prove to be just as complicated as choosing an appropriate real estate agent and attorney for closing purposes. We will demonstrate that despite several competing options, choosing an appropriate pricing format is not as difficult as it may appear.

First, we will take a very brief historical look at auctions and then in some detail highlight some of the basic auction formats and their respective advantages and disadvantages. We'll look how the auction model and technology reduce informational asymmetries, and thus diminish the role of the real estate agent. Why are traditional brokerage firms adopting new models with regard to real estate sale and marketing? Is there a need for traditional brokerage firms to "go virtual" or establish in-house auction departments? At the very least, realtors who are not doing business on the Internet are losing money, and lots of it. Listing and search costs associated with traditional listing methods are several times higher than those done online. Firm-organized online property auctions allow the broker to engage viable potential buyers regardless of where they live.

Then, we will look at a real ***negotiated sale*** example and see how the process could have been streamlined and how the auction model would have benefited all parties involved. The example will prove particularly useful because of its recent occurrence and available data. It will serve as a blueprint for answering the question presented in the introduction of this section: *How can this market be made more efficient?*

Finally, we will examine how companies such as eBay, Lending Tree, and CarMax implement business models that provide a blueprint for streamlining the real estate transaction process.

Historically, in the United States, real estate auctions have been associated with properties facing foreclosure or bankruptcy (Mayer, 1998). In recent years the negative stigma linked with real estate auctions in the U.S. has greatly relaxed—as evidenced by a steady increase in residential and commercial real estate auctions. The 1980s witnessed a 260% increase in real estate auction (Martin and Battle, 1991). In 2004, the National Auctioneers Association (NAA) completed a massive independent research study on auction marketing and found that auctions are ***thriving***. According to the study, live auction sales in 2003 exceeded $200 billion, with the largest gains posted by land and agricultural real estate (12.9% increase) and residential real estate (12.6% increase). Some auction companies are starting to adapt. Over 17% of those surveyed by MORPACE International, a research firm hired by NAA, claimed they now offer an on-line auction catalog, while 13% offer on-line bidding. It seems quite apparent, and is supported by NAA findings, that auctions are on the rise and many auction companies are beginning to incorporate the model into daily practice. Let's now look at particular auction types and associated pricing methods.

Auctions in general (real estate auctions included) can be categorized as follows: English ascending-bid auction; Dutch descending-bid auction; first-price sealed-bid auction; and the second-price sealed bid auction—also known as the Vickrey auction (McAfee and McMilan, 1987). Fortunately, for a seller listing a property through auction, as Mayer (1995) points out, the English auction is the predominant method of selling commercial and residential real estate. Therefore, our discussion of auction formats will predominately focus on the ascending-bid auction. In addition, auction structures, or bidding rules, have a significant impact on expected revenues (Kagel and

Levin, 1993). The three predominant pricing (bidding) structures in real estate auctions are absolute, reserve, and minimum bid. Each pricing structure inherently embodies different safeguards and drawbacks.

Auction Types

Let's begin with a theoretical examination of the English open outcry auction. This is the auction format predominately used in real estate auctions. Groundbreaking theoretical work on this auction format, and others was done by William Vickrey (1961) and is nicely summarized by Milgrom and Webber (1982). The auction generally begins with a set price. The price is the opening bid and is considered the reserve price (not to be confused with the reserve price generally associated with eBay auctions). The auction continues soliciting progressively higher and higher bids until no participant is willing to bid higher. The item is then "knocked down" or sold to the highest bidder. The dominant bidding strategy in English auctions, given the private value assumption, is for each individual bidder to bid until the price exceeds his willingness to pay (Milgrom and Webber, 1982). Therefore, at equilibrium, the item is sold to the bidder with the highest valuation and the outcome of the transaction is *efficient*. The larger the pool of bidders—that is, auction participants—the closer the final price reflects the true property value. If the reader will recall, we are trying to improve the lack of efficiency in traditional negotiated sale real estate transactions.

The simplicity of the English auction and the strategically equivalent Vickrey auction lies in the fact that the dominant (optimal) bidding strategy does not depend on competitors bids. For instance, the profit maximizing strategy in a Dutch descending-bid auction and first-price sealed bid auction depends entirely on the bidding strategies of competitors, or competitor valuations.

In a first-price sealed-bid auction, each bidder independently sets a maximum price he is willing to pay for the auctioned item. The bidder with the highest price, and thus the highest valuation for the item wins the auction. The Dutch descending-bid auction proceeds in the opposite "direction." The auction starts with an "unreasonably" high price and successively decreases until a bid is placed at the current price. In the Dutch example, the only optimal strategy for the bidder is to select the maximum price for the item and bid when the price reaches (drops to) that level. Theoretically then, the bidding strategies and outcomes in both the Dutch and first-price auctions are identical. However, the strategy in both reaches an inefficient equilibrium. Let's derive this inefficient equilibrium with the aid of a discrete example. Then, having demonstrated the superior outcome, with respect to efficiency, and applicability of the English auction to real estate transactions, we will focus on the three pricing structures: absolute, reserve, and minimum bid.

To illustrate the inefficient equilibrium, let's assume two bidders competing over and auction item. We must also keep in mind that each bidder has some knowledge (probability) of how the other will bid. Let's look at the problem from *Bidder A*'s perspective. *Bidder A* has an individual price valuation of $100 for item *X*. *Bidder B* values item *X* at $50 (p=0.75) OR $75 (p=0.25). *Bidder A* does not know the valuation of *Bidder B*, but he does know his distribution. So, if *A* bids $51, his expected profit is: ($100-$51) (0.75) = **$36.75**. Furthermore, if *A* bids $76, his expected profit is: (($100-$76) (0.75) + (($100-$76) (0.25) = **$24**. In fact, A will never bid above $63.25, as any bid above that price returns an expected profit of less than $36.75. A profit-maximizing bidder in this situation will thus never bid above a price which will lower his expected value. The highest *Bidder A* will ever bid is $63.24 (given that 1¢ increments area allowed). What implications does Bidder A's bidding strategy have for the efficiency and equilibrium of such an auction format? Given that *Bidder A* is ***never*** willing to bid above $63.25, *Bidder B* will win the auction 25% of the time with a bid of $75 despite the fact that *Bidder A* actually has a higher valuation for the item ($100).

The outcome of the auction did not produce an efficient equilibrium. The bidder with the higher valuation does not with the item a sizeable 25% of the time. One might assume that for instance, in the first-bid auction model the final selling price would be higher than in the Vickrey or English auction. The assumption is however incorrect due to the phenomenon know as "bid shading." A bidder in a first-price auction will actually bid slightly lower than his real valuation in an effort to create a profit margin. Given that all bidders follow this basic bidding strategy, and they do so to avoid winner's curse, the outcome proves *inefficient*. In contrast, bidders in an English auction will bid their full valuation thus creating an efficient outcome. Now that we have established that the English, second-bid auction is the preferred auction for real estate transactions, let's look at the various pricing types.

The most common type of auction, the absolute auction is closest to the true essence of an ascending-bid English auction. The property is sold, free of any liens, mortgages, infringements, or title problems to the highest bidder—regardless of final price. A guarantee of sale at the end of the bidding process heightens buyer excitement and participation, usually resulting in increased revenue for the seller. With a large enough pool of bidders, the absolute auction offers the best results for the seller, fetching a selling price closest to true market value. In fact, auction theory suggests that classic posted-price negotiation with *N* potential buyers is always inferior to an auction with *N-1* bidders. Certain risks do arise (for the seller) by placing a property on absolute auction. For example, once bidding has opened, the item cannot be withdrawn unless no bids have been placed within a reasonable amount of time. The seller is therefore foregoing all control as to the final selling price. Other risks include phantom bids, and shills—a topic that has already been discussed in the previous section. Despite the risks, the absolute auction is the most frequent form of real estate auction, and one that maximized both buyer and seller revenue (Mayer, 1995).

Most parties to the absolute auction process believe that nothing could be simpler. Typically, prior to the sale, the auctioneers prepare due-diligence packages. Prospective buyers then have a period of time to investigate the property on their own. If certain discrepancies are found, they can be resolved prior to the auction. During the actual auction, the auctioneer describes the lot, opens the bidding, calls the bids, and closes the auction by selling to the highest bidder.

Minimum bid auctions are the least common form of selling real estate. Government farmland, urban housing, and offshore oil drilling auctions are virtually all minimum bid auctions. The auctioneer sets a price minimum below which the seller will not release the property, and the price is announced prior to auction. The auction is limited to buyers *willing* and *able* to meet the minimum price. In essence, the seller is from the get go establishing profit margin. Because the minimum bid requirement is barrier to entry, number of participants will decrease. A decreased number of participants are a tradeoff for the added security of a minimum bid auction format. Setting an appropriate minimum bid is often a very difficult task. Individuals setting minimum bid prices tend to grossly overvalue or undervalue the property and thus create an artificial anticipated value. The artificial value often doesn't reflect the true market value. Besides, a preset value leaves little incentive for bidders to bid above it.

A reserve price auction is the middle ground between the other two types. The major contingency in this type of auction is the price. The seller sets the reserve price higher than the minimum starting bid, and does not complete the sale if the highest bid does not meet or exceed the reserve price. The reserve price is hidden from buyers; however, they are informed that the auction is indeed a *reserve price* auction. If at the close of the auction, the reserve price has not been met, the auction is unsuccessful. Auction theory predicts that implementing a reserve price decreases the number of bids received, thus decreasing the probability of sale, and increases the selling price of goods actually sold (McAfee and Vincent, 1992).

Setting a reserve price is a way of protecting an investment. Situations can and do arise where the bidder turnout is extremely low (minimal competition is bad for the seller) or bidders are in collusion. In such instances, the reserve price saves the investment from a below-market value sale. However, reserve prices tend to significantly reduce the number of bidders and number of bids placed.

Negotiated Sale Example

By looking at various aspects of a negotiated sale in Alpharetta, GA, we will see what areas stand to have efficiency improvements. Furthermore, we'll see if it's possible to consolidate the entire transaction, including lenders, appraisal, closing fees, etc. The problem currently lies in the fact that buyers require services from various specialists to complete the transaction. It's highly unlikely that lenders, appraisers, and closing attorneys could be one institution. It's quite possible to streamline the process by providing buyers under one roof, the resources they need to complete real estate transaction. Successful real estate firms in the future will be those that establish and integrate an auction department with the traditional real estate department. Ultimately, what we want is a simple and streamlined process of buying and selling real estate. Let's first look at an example of such a process so it becomes clear what we're striving for.

An instance of such a streamlined setup is the eBay Motors listing section. Besides the obvious bidding structure, item description and pictures, several features make the entire bidding and purchasing process effortless, consolidated, and uncomplicated. The first important feature is the Live Help feature. Bidders may contact eBay Motors specialists and discuss various aspect of the vehicle they may be interested in purchasing. The feature is important because it creates a connection between the user and eBay. The connection is important because it alleviates bidder fears of "being alone out there with 1000s of options." eBay has its own financing center. Before bidding on an item buyers can get financing straight through eBay. The site has as guided process and decisions are made almost instantaneously. Buyers also have the option of a vehicle purchase protection plan of up to $20,000. The protection plan is a safety net. Furthermore, through the plan, bidders can get vehicle history reports and $99.00 professional inspection. Many of the features listed so far closely resemble the corresponding aspect of a real estate transaction: financing, due diligence, inspection, and appraisal. Vehicle shipping is finally offered through supporting vendors such as National Car Shipping and DAS. Now let's go into the Alpharetta example and see where we can find room for improvement with respect to financing, due diligence, inspection, and appraisal. Let's also keep in mind that besides streamlining the experience, we propose that the auction model lowers both buyer and seller cost and speeds up the transaction process.

A Specific Real Estate Transaction in Ohio

One real estate transaction in Columbus, OH was closely wathed during the search and execution phases of the deal. We apply the traditional auction versus negotiation models to explain the consummated deal.

Columbus resident (Resident) has already acquired financing through some a local lending institution[2], completed the paperwork for prequalification process and

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[2] Acquiring a home loan was traditionally a long drawn-out process. The Resident considered booth online sources as well as nationally reputed mortgage institutions. The resident first applied for a loan online, got an answer and numerous phone calls following up on the deal details. Since the mortgage amount was high, and given the short time frame for which he was searching for a desirable loan, his real estate agent informed him that his credit ratings would not be adversely affected if he shopped for a better deal. Each lending house followed a slightly different grading criteria and resulting disparity was large. Lending institutions such as Lending Tree and Ditech, coupled with the Internet, have revolutionized the way buyer get financing. Both of the mentioned institutions provide a lending service that is convenient, pre-approval is done on-line, easy, and free (no application fees). Furthermore, the presence of so many competing lenders insures that each willing buyer will have access to a line of credit and that the applicable interest rate will be as low as possible. It should come as no surprise that virtually anyone can get loan approval; the more crucial element is the interest rate, though laws do exist to prevent the practice of predatory lending. In the Ditech Five-Step overview, buyers can get pre-approval after a preliminary review of income, credit, and debit. This pre-approval demonstrates buying power to appropriate real estate agents. This is the first step in our goal of streamlining the real estate transaction. Fast and efficient, and often on-line, lending institutions increase the general accessibility of home ownership for all and greatly speed up the process eliminating the often dreaded stack of "paperwork." Because of federal regulations regarding lending, it's obviously impossible for a real estate brokerage firm to directly extend credit to interested buyers. What they can do however is provide simple and easy access to those institutions from their own auction department. The perfect example is the eBay model in the eBay Motors section. As mentioned previously, financing is available through eBay-affiliated lenders and buyers need little else outside of eBay to complete high-value transactions. What could have been done to make the first step of the home purchase a little more convenient for our Resident? Perhaps there is not much an integrated auction

secured some down payment funds as well as goodwill payment to the broker. Given that, the Resident has determined the amount he is able or willing to spend on a home purchase in a suburban area based on approximate appreciation rates and real estate agent feedback.

Next, Resident embarked on the search phase or the due diligence phase[3]. Arguably, this is the phase in which the buyer's agent truly is of service. Let's see how and why they (agents) might be quite reluctant to streamline or outsource the service and what consequence that might have on the classic principal-agent relationship. Resident, having chosen a maximum buying price of $350,000, chose not only a fitting home but also one whose secondary attributes were suitable as well: school quality, crime rates, commute to work, and surrounding home values, etc. As the list of secondary considerations grew, so did the matrix of possibilities, and along with it the time incurred in searching for a home. It's quite possible to imagine that some buyers might have more than 30 of such secondary attributes. Some might be quite vital like access to major highways. In our case, the Resident was quite concerned with having easy access to the airport, major shopping malls, perimeter interstate, etc. Likewise it's not unusual to see buyers with trivial secondary preferences such as proximity to Kroger or fast food restaurants, coffee shops, etc. Whatever the case may be, buyer preferences and their corresponding importance can result in long and arduous search times. Let's look at a couple of options that the Resident considered.

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department within a real estate firm could have done in this first step. Most of the help here was provided by on-line lending. Let's remember that with four competing lenders, as provided by Lending Tree, home loan approval is as intimidating and long process as in the quite recent past. So, in establishing an auction department, the agency should *directly* provide the buyer with access to lending institutions.

[3] Commercial real estate agents and companies usually use the term "due diligence", to determine the credit worthiness of the tenants, borrowers and potential aspects of the property in question.

First, a lot of information regarding homes and home prices in the Columbus-area is available on-line. City-specific and regional databases of information are becoming increasingly more available to individual buyers “going at it alone.” What’s problematic with all of these sources of information is that few provide a consolidated picture of the local market, and even fewer take secondary preferences into consideration. As we’ve discussed, those secondary preferences can be quite influential. For buyers, the time spent searching for a home has multiple costs. If the buyer is renting, each additional month spent searching is a month that payments towards as mortgage could have been made. In addition, searching for a home implies either taking leave of absence from work or working overtime. In either case, the exercise can be quite taxing financially and physically. This then is where the buyer’s agent steps in and provides the greatest service to Resident. The agent acts as an intermediary between buyers and sellers and fills in the information gap.

By enlisting an agent Resident gains access to a powerful database exclusively available to real estate agents. The Multiple Listing Service is in essence a service created and run by real estate professionals which gathers all of the property listings into a single place so that buyers may review all available properties from one source. The MLS also deals with commission splitting and other relations between brokers and agents. The MLS allows a broker to quickly narrow down properties based on buyer preferences, including some secondary preferences. Let’s assume that primary schooling is of importance to our Resident, which in fact is, and see how one might narrow possible homes through independent search versus through an agent.

Independently, the process can get lengthy. Some home listings may include what school district the property *feeds* into but others may not. For those others, the buyer that has to determine that on a case by case basis. Of course, the task is not that monumental. The point illustrated is that thought the time incurred for searching individually may not be much longer for this one secondary preference, aggregate search times can increase drastically as other preferences are added into the search matrix. This highlights the fundamental problem facing buyers. The informational asymmetry between buyers and agents regarding the local real estate market almost necessitate the aid of a buyer's agent in searching for a home.

The real estate agent, on the other hand has a much simpler time sorting out all the buyer preferences and narrowing down the search to only suitable options. By accessing the MLS the agent can quickly limit the search to homes within certain school districts or various other inputs when prompted by the buyer. Now, it quickly becomes clear that access to the MLS is one of the major benefits of acquiring an agent and that without exclusive rights to access the MLS, the agent's role is greatly marginalized. The agent will thus not voluntarily relinquish those rights.

Let's see if there is a benefit to releasing those rights to individual buyers through access via the auction department in the real estate firm. It's not difficult to visualize a matrix in which buyers pick preferences from pull-down menus. For each item, the buyer then assigns an importance value ranging from 1 to 10 for instance. Having entered all such preferences, an algorithm could easily display a resulting list in decreasing level of relevance. The list would then in essence be a best match list. If an auction department within a firm provided this service to registered users, it's not circumventing the agent, simply decreasing his work load. The service would not be totally deregulated as access to it would be restricted to those buyers registered with the auction house. This would allow the buyer instead of the agent to fine tune the search. In our example, Resident conveyed his preferences to his real estate agent who then performed an MLS search among other things and found potential leads. The process can take some time as the two parties remain in contact during the search. Meanwhile buyer preferences might change slightly or quite significantly. Therefore, by providing the service directly to the buyer, the agent can focus on more buyers at the same time and show only property that is deemed highly compatible—meaning property with a high probability of a sale.

The next step after the buyer has narrowed down the list of possible homes to a few would be the mailing out of due diligence packages. Due diligence packages are quite customary in Australian open-outcry auctions. The auction house usually provides this package to interested buyers days before the auction. The packages contain vital information about the property including defects, liens, neighborhood demographics, etc. and also bidding structure and rules. The buyer then has several days to inspect the property and resolve any further issues that may arise. But that's Australian-style open-outcry auction.

The concept of these due diligence packages is easily adaptable to our auction department model for selling real estate. The agent's role now would be to create these packages which would instantaneously be made available to buyers after they narrow down their search via the preference matrix. Since the agent would much less frequently physically take out clients, once again, the agent would be able to take on more clients. Since the due diligence packages are quite information laden and their preparation is no small task, a reasonable per-request charge could easily be applied. The charge creates revenue while allowing the agent to focus on other tasks or clients and it also prevents package abuse by data miners or parties not truly interested in purchasing a home.

So this second step in the transaction process requires drastic changes. The traditional principal-agent relationship needs to be redefined. The agent needs to take on more of a secondary role in the search process allowing the buyer (with the aid of the now available MLS-type preference matrix) to fine tune the search. These redefined roles fit nicely within our goal of streamlining the process and establishing an auction department. So far, the auction department should make available to buyers direct access to various lenders and implement a change in the agent role. With a heavy reliance on on-line service and buyer-driven search, it's not unconceivable that *individual* and *independent* real estate agents could open up their own auction sites. In fact, according to the NAA study, 15% of real estate agents currently offer some type of on-line auction for residential real estate. Furthermore, the study concludes that the number is rapidly increasing and those independent agents or real estate firms not providing the service will swiftly be surpassed by competition. Let's move on to the next step, the inspection phase, and see what can successfully be incorporated into the auction model.

Resident settled on a home in New Albany, a suburb of Columbus with easy access to downtown. The home is located in a country-club community with properties ranging in price form $300,000-$750,000+. The property values were a factor of several determinants. Some homes had unrestricted access to "parks, the green" while others did not. Some homes were surrounded by neighboring property while others were more isolated. Even different sides of the street had an effect on property value—in this case, a rather large effect. We'll go in to price negotiations in detail later on, but for now let's assume a property value of $350,000 (price listed). Our Resident settled on this property for a handful of reasons some of which were our discussed secondary preferences. As we have outlined above, this process could have been made simpler and more efficient by restructuring the role of the real estate agent.

In this phase, Resident physically examined the property for any defects, problems or issues to discuss with the owner. The inspection phase is actually quite important since this is the opportunity for the buyer and seller to go in detail over what is included in the sale (appliances, club membership, etc.) and what may need attention. In our case, several issues did arise. The home in question has several non-functioning toilets, and inoperable garage door, fading paint on several ceilings among other things. Our Resident used these defects as powerful negotiation tools in knocking down the final selling price of the property. We'll address negotiations shortly. For now, how can we incorporate the inspection process into our auction model?

A good model to follow would be the Kelly Blue Book method of pricing new vehicles and valuing used ones[4]. The process begins quite simply by entering the vehicle year, make and model. The process gets more involved as various check boxes are available for additional equipment such as leather seats, cruise control, and premium wheels. Naturally, each amenity increases the price of the vehicle. Likewise, each defect decreases the final price of the vehicle. The power of Kelly Blue Book is that the increases and decreases are not simply model-specific, rather they are standardized.

[4] New and used auto trades, and auto industry has gone through a significant business model change in the past 10 years and most of the transactions have been transformed from the traditional haggle-negotiation model to certified used and single price sale format, with large consolidators acquiring products at auctions and selling these at single item sales in negotiations after various aspects of the products are serviced. As far as industry characteristics, this industry segment closely resembles the real estate industry.

This is exactly the valuation procedure that should be used in our auction model. Along with the due diligence package, each buyer should be presented with a checklist of extra amenities and defects present. Furthermore, the value for such variable should be standardized. For instance, an inoperable toilet is an automatic $250 deduction from property value, while included washer/dryer might be a $500 bonus. The goal in standardizing amenities and defects is to create a uniform and level playing field. Of course, in the auction format, the price of the home is determined by the winning bid, but the deductions and additions could greatly help the seller estimate true market value or even set a reserve price or opening bid price. Naturally, the inspection checklist is not a substitute for physical inspection. Unscrupulous sellers may purposefully omit incriminating information about the home. However, there are options. As done on eBay Motors, the inspection (with a standardized price) can be certified providing potential buyers with added security that the property is indeed in the conditions the owner claims.

It now appears that a sizeable portion of choosing a property can be done on-line, given that a real estate firm establishes an auction department as prescribed so far. Lending services, property search, and inspection could all be executed at one source. The concentration of these tasks greatly reduces the total transaction time and allows the real estate agent to become more efficient and independent, potentially seeking out more clients. Next let's look at the negotiation process, the heart of an auction, and see how it will differ in auction and who benefits.

As it turns out, Resident was quite good at negotiation. The average person however is not. Most buyers and sellers greatly overestimate their negotiation skills. Consequently a myriad of information is available on-line with regard to negotiation tactics. In American culture, the only two arenas where negotiation is common practice are automobile sales and real estate. In general negotiations tend to be very time consuming. The price negotiations are customarily done with the aid of an agent. The two parties are in essence communicating through agent. Each offer and counteroffer must be made with careful consideration, since each offer is considered a binding contract if ratified.

All of those defects that were discovered during the inspection phase proved to be valuable tools, and with the motivated seller, Resident successfully negotiated down the property price. As we go through this one buyer-seller negotiation, it is ***critical*** to keep in mind that this same exercise was happening between the seller and ***all*** other interested buyers in non-overlapping time periods. Our Resident opened the negotiation at $290,000—a figure well below the listed price of $350,000. At this stage, neither party is seriously considering coming to agreement but the process has started. The seller responded with a counteroffer of about $325,000. The seller has drastically dropped the price. In tern, the Resident came back with a higher offer—though quite marginally—of $291,000. The seller thus dropped the price to little over $305,000, and conveyed his final take-it or leave it offer. The deal was consummated upon acceptance of this final price by the buyer. Why was there such a huge difference in the closing price? There were three main reasons for the major decline in the price:

1. The seller had put the property for sale 4 months ago, and all of the interested parties had offered above $305,000 but lower than $350,000. After the seller had relocated to a different state and filed for divorce, the seller was "very motivated".

2. The longer the property stayed on the market, the longer it reflected an incomplete transaction for the real estate agent who wanted to maintain a high price and fast closing reputation.

3. Incurred taxes on the property, as well as update and upkeep of the unoccupied property was a fixed cost item for the seller.

Conventional auction theory suggests that any auction with *N-1* bidders is always preferable to negotiation with *N* bidders. Could the seller have extracted a higher price from a pool of bidders than he did by individually negotiating with potential buyers? The question is difficult to answer definitively, but most probably he could have. In an absolute auction, the bidders compete among themselves continually bidding up the price of the property. Each bidder naturally has a different valuation of the property and the auction format ensures that, of those present, the buyer with the highest valuation wins. The competition increases seller revenue. What does it do for the buyer? In our case, the Resident could easily have been outbid, given that the final price including closing costs was much lower that the listed $350,000[5]. Each individual buyer does not need to be better off in the auction format for the model to prove more efficient. The auction format in general does two things for the buyer. Auctions greatly reduce the search cost associated with the transaction and it allows the buyer to actively pursue multiple properties at the same time. One could argue that auction create poor matches between

[5] In fact, a run-down downtown property in Columbus was put on eBay for 24 days, with an opening bid for $1,000. Since the location and the quality of the property became public knowledge after the listing, the information cascade which could have resulted in a negative cascade did not occur, and the property was sold for $78,000. UBid for example is the clearing house of Sony and Toshiba (among few others), and this company sells refurbished electronic items online in auctions, with bids staring at $1.00. since this takes away the negative cascade problem and the products are covered under the manufacturers' warranty for a period of time, the closing prices are close the posted sale prices but provide a lot more commodities to be cleared compared to the sales in outlet centers.

sellers and buyers due to lack of time (the highest bidder is "somewhere). However, this occurrence is offset by the benefit of reducing carrying costs associated with a quick sale. The auction format particularly attracts seller who value expediency and transparency. As Thomas and Wilson (2002) point out, there is little difference in outcome with a small *N*, transaction prices are generally higher in multilateral negotiations. Wang (1993) adds that disregarding auctioning costs, auctions are always optimal compared to posted-price selling. He introduces a theorem stating properties with large values are more likely to be auctioned if they have a fairly steep and uniform marginal revenue curve.

So if auctions are optimal, why are there so few real estate auctions in the U.S.? As we've discussed, the answer has mostly to do with historical context and auction format connotations. The associations are changing though. No longer are auctions linked only with distressed properties; in fact, real estate auctions are beginning to gain some of the exclusivity and romanticism associated with estate wine auction. If National Association of Realtors projections prove accurate, nearly 30% of all real estate property sold in a few years will be through auction. Will auctions in the U.S. ever reach stellar popularity like in Australia or New Zealand? Probably not, however business savvy real estate agents and firms should be aware of upcoming changes in trends. Those agents that wish to capture the largest slice of the new market should begin the process of establishing an auction department as soon as possible. With few critical changes to the role of the real estate agent, the transition can be smooth. Technology, and especially the Internet, has changed the nature of all transactions including those in real estate. Buyers are faced with more possibilities than ever and are able to formulate decisions much quicker. Consolidating many of the services that buyers need in completing a real estate transaction under the roof of one auction department is a move traditional real estate firms need to embrace. Department of Commerce statistics suggest that auctions on the whole are on the rise and have been for a couple of years. To find businesses that have succeeded implementing the auction format one need not look far. Of course the first one that comes to mind is eBay, followed by Amazon, uBid, Yahoo!, Overstock, etc. For those firms unwilling to transition from negotiation to auction, it will prove difficult to maintain a blind eye to revenues topping $200 billion a year.

Empirical Analysis

We had an unbalanced sample of panel data constructed for all Ohio transactions between 1996-2005. However, while we were verifying records of all consummated deals between 1996-1998 (inclusive), some discrepancies lead us to believe that the 1996-1998 data was not reliable hence these were excluded from the analysis. We analyzed the 1999-2005 data using several multinomial and bivariate regressions. To avoid sample selection problem, during the interviews brokers were asked specific questions to determine if there were any systematic differences between consummated and non-consummated deals. We matched the sample for each transaction and created subsamples based on zones, acreage, age, lot type, zip code, and approximate value. In the final step we used a rare event logit regression given the small number of auction transactions in the Ohio market, and a nested logit regression for the discrete choice analysis to analyze the differences in financial outcomes for the sale of two similar real estate properties: one sold in an auction versus one sold in a traditional negotiation. Less than half of all properties in the sample (40%) were commercial real estate properties.

The average closing price of auctioned off properties were around \$1M, which is lower than the whole sample's average of \$1.5M. This is also consistent with the fact that auctions are associated with distressed property sales. The values of these properties were lower to begin with. However, the standard deviations of the auctioned off properties were significantly lower than that of the negotiated sale properties, which is consistent with the predictability of the auction outcomes. In other words, the negotiation sales did not have a predictable well established upward trend in closing prices, but on the contrary, some negotiated sales ended up at lower than average closing prices for similar properties that were negotiated around the same time period.

Increase in the square footage of a property increases the likelihood of the transaction to be concluded using an auction. A percent increase in the average square footage of a property, resulted in a 1.22 increase in the odds of choosing the auction mechanism. For commercial real estate transactions, capitalization rate defined as the net operating income divided by the sales price, and expressed as percentage has also explanatory power in determining transaction type. A one percent increase in the capitalization rate decreases the odds of auctions by 1.1. One year increase in the age of the property increases the odds of the auction 1.5.

Table 1. Descriptive Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
Capitalization Rate	5686	3.42	4.80	-2.86	22.45
Sqft	12703	30,930.23	90,712.84	0.00	4,000,000.00
Land (Sqft Gross)	13671	475,513.00	8,105,956.00	27.00	888,000,000.00
Price/Sqf Gross	14042	$ 62.66	$ 169.65	$ 0.03	$ 15,625.00
Price/Land Sqf Gross	13989	$ 15.12	$ 48.88	$ -	$ 1,991.45
Price/Acre Gross	13866	$ 42,604.38	$ 145,670.20	$ -	$ 4,788,160.00
Sales Price	14250	$ 1,536,993.00	$ 4,600,627.00	$ 1,000.00	$ 224,000,000.00

Table 2. Descriptives for Land Square Footage (Gross)

Property Type	Obs	Mean	Std. Dev.	Min	Max
Apartment	1987	118,762.70	322,689.00	27.00	6,621,120.00
Commercial Land	1666	396,981.00	1,013,966.00	1,722.00	14,800,000.00
Hotel/Motel	205	4,482,466.00	62,000,000.00	2,835.00	888,000,000.00
Industrial	2429	247,246.20	549,725.60	2,178.00	11,100,000.00
Industrial Land	382	932,521.50	1,571,076.00	4,356.00	13,100,000.00
Mobile Home Park	25	964,629.80	1,843,399.00	86,452.00	9,553,993.00
Office	1803	97,317.53	255,063.60	1,330.00	6,053,097.00
Residential Land	1800	1,440,215.00	1,926,829.00	6,098.00	17,400,000.00
Retail	3056	249,626.50	5,595,090.00	1,440.00	307,000,000.00
Special	318	543,619.90	2,797,506.00	4,000.00	46,300,000.00

Interviews

Extensive interviews with real estate agents and companies were conducted during this project in both commercial and residential real estate segments. In this section, the findings will be summarized and analyzed.

Interviews with agents, company executives revealed certain biases for and against auctions. Three basic questions were asked in semi-structured interviews:

1. Is your business suitable for an auction format?

2. What would you need to do differently to convert your business into an auction format?
3. What are the advantages and disadvantages of auctions over negotiations in your particular segment?

Interview subjects were selected in random from the national database in random, several major metropolitan cities were identified as the potential drivers of the change in the industry and of course the Ohio market. Namely, Chicago, Boston, New York, and Atlanta were targeted metropolitan cities; and Toledo, Cleveland, Columbus, Cincinnati as well as several smaller cities around these large settlements. In all major metropolitan cities the commercial real estate company executives, and in targeted residential segment real estate agents, owners of agencies were interviewed for about an hour during each interview. Industry constituents, such as mortgage brokers and real estate appraisers were also contacted and few of them were interviewed to establish several parameters.

Residential Real Estate Segment

For single family housing segment, real estate agents who did not have prior auction experience, and who were interviewed all agreed that auctions would be an interesting and refreshing new way of approaching the transactions, but few of them actually agreed to try this format out. Major points of concern were:

a) lack of market mechanism knowledge,
b) perceptions of the properties on auction block to be "fire sales",
c) perceptions of low closing prices,
d) potentially lack of service and expertise would lead to unwanted outcomes.

Most real agents summarized the real estate buying experience as “the most important investment of a person’s life”, and “a very emotional time”. These individuals strongly argued that the role of the real estate agent was more than the person who finds and tours the property but a “guide” during a “very emotional time”, for “the most important investment of a person’s life”. Almost all real estate agents had colorful examples of how emotional the process could be, and how they were guiding their clients through the buying and selling process. Our main goal was to determine whether the these industry experts were ready to accept the new business model that is emerging in the US, fueled by online auctions, and whether traditional real estate agencies would adopt the proposed changes. Our follow up questions about how and to what degree they had observed auctions of condominiums (products of common value attributes more than traditional sense private values), and for the properties that had very unique characteristics (products with more private values attached), most of them referred us to “specialists” who deal mostly with auction market mechanism type. They clearly explained that they were very experienced and talented in negotiations, and no real estate agent ever said they were not good or proficient in negotiations. On the contrary, they provided examples of how they succeeded in particular transactions. Regarding the low closing prices, they referred to low end or fire sale attribute products as auction type properties, and concluded that these items would be sold because of some sort of distressed sale, usually in an open outcry, English, first price, auction format. Almost all perceived these sales to result in lower than negotiation outcomes.

Those real estate agents who were experienced in auctions, most of them referred to their distressed property sale items, or a few of them talked about their “very unique home sales”. A very unique home sale is a private value sale, much like the auctions of rare antiquities, rare cars, and items of very unique values to potential bidders. These homes were sold for high amounts of money, usually in 3-4 fold prices because of their history, architecture, previous ownerships, or attributes that made them “one of a kind”. On the other hand, auctions of condominiums represented a different type of value, more common to all potential bidders, who at the time of bidding did not know the actual value, but all knew the value after the auction. These type of sales were very rare in OH and Atlanta markets, but were of interest in New York and Chicago. In general the Ohio market did not have condo auctions, but simple posted price market transactions that were negotiated sales, where most negotiations for new condos were based on property features between the builders and the potential buyers. For older condominium sales, the transactions usually resulted in 98% or 99% of the asking price closes, since the late sellers took the values of the earlier sold properties as benchmark, and it was in their best interest not to discount. In these types of sales the buyers also did not feel the remorse common in these types of deals.

In our interviews with the real estate appraisers, the appraisers said they considered the square footage of the house, relative neighborhood values and the appearance of the property, comparisons of the previously sold similar type of properties within a certain radius near the property; and in few extreme cases, comparisons within a year in remote locations of the city that displayed similar attributes. The appraisers in general concluded that auctions would be a useful way of approaching the transaction after the properties were appraised, and not before.

Depending on the market the interview was held at, interview findings varied significantly. Ohio brokers said the market was not ready for auctions and auctions would be seen in “obscure” locations for “unconventional” types of houses, and after some examples on eBay, people would stop using auctions and return back to the real estate agents since customers needed service and expertise and auctions would take away the “expert agents” out of the equation. On the contrary, New York and Chicago real estate agents welcomed the idea, gave couple of examples that either them or agents in their offices were involved in. These agents said the eBay auctions would be over once the real estate companies started getting into this segment. Except small sized operations, large real estate brokerage houses said they needed to get into this segment once it became the industry trend, but none of them said they would be one of the first firms to get into this segment. Instead, they said they would hire auction experts in real estate and try to cover transactions until the auction format became an industry trend.

Commercial Real Estate Segment

Our interviews in commercial real estate segment revealed more information that we could analyze due to the quantifiable nature of the information. Although most real estate companies and developers did not want to give financial figures, they outlined the process and the closings in terms of percentages, which were very useful.

The process in commercial real estate segment is closest to the auction format, and in most cases, they are using the sealed bid first price auctions but with a lot more information feedback loops to update the bidders and participating parties. Once a property is put on the sale block, it is announced to about 100 interested parties, and these firms or major investors are all known, repeat firms/individuals. A period of few months is given to these firms along with some information about the property's previous use, tenants, occupancy, tax value, income generating abilities and other financial factors. The commercial real estate companies we interviewed mentioned that they were not involved in transactions that did "flips": to buy and sell the same property after few structural and architectural changes, or changes in management. The properties that our interviews based on were all for long term investment purposes. After a two month "due diligence" period, firms are asked too make a bid on the property. Those investors who are interested in making an offer send the seller (or the seller's agent) a quote in writing. Lowest 25% and highest 25% of these quotes are selected out, and in some cases known bidders are asked to revise their quotes and they are notified as their offers either being too high or too low. After a short time period, the seller (or the seller's agent) reviews all revised quotes and asks top ten-twenty firms to submit sealed bids. In the third round of the transaction, top 5 firms are notified that the target price is met by one or two firms, and these firms are given a chance to make one more final revision to their quotes.

The commercial real estate segment is applying this format with some variations in all the metropolitan markets that we interviewed. When the investors are known and are repeat players in the market, the price differentials are caused by misjudgments or simple errors and the firms correct these mistakes in the three step revision process.

During this revision phase of transaction, a lot of valuable information is released to the bidders[6].

Due to the fact that most bidders in commercial real estate segment represent a known set of investors, their information processing is quite similar to each other and deviations from the mean are quite unlikely. In the case that this deviation occurs, firms that are running the auction ask their customers to make corrections.

In the commercial real estate segment, most interviews resulted in two main findings:

1. Commercial real estate companies are considering two vital functions to be in-housed, instead of their current practice of outsourcing: appraisal (valuations) and due diligence.
2. Firms that specialize in specific type of properties are considering starting a separate auction department within the brokerage.

Commercial real estate brokers specialize in asset valuation, due diligence and financing. The financing side of the business needs to explanation. For the purposes of this report, valuation and due diligence components are seminal. The valuation specialists (similar to appraisers) place an approximate value on the property based on market trends, number of tenants and occupants, past and present usage, as well as future potential influenced by potential demand and city-municipality ordinances, taxes, competitors, etc. Some company executives interviewed clearly singled out the reason of their firms as having “above industry average valuation capabilities”. Naturally, some firms outsource this function to outside firms that are reputed to employ high quality experts. The second important and related function is due diligence component. This is a

[6] In financial-capital markets, market makers and investment banks quite often resort to the same method of information exchange between repeat industry players characterized as a double auction (Welch, 1995). During initial public offerings book building can be related to this information exchange.

very time consuming process for firms so they have noted that most firms outsource this function especially when the market size grows bigger (especially in New York and Chicago).

The second interview item was about starting a separate auction department within brokerage firms. Firms that specialized in office space or in hospital space commented on their intentions to start separate departments within the firm given the need for specialized personnel and the monetary value of the projects they were involved in. The commercial real estate brokerage houses emphasized their need to training in various auction models and their lack of knowledge except the sealed bid style. These firms argued that by giving advice and update on the bids while the auction is taking place they are ensuring they will maintain a competitive environment. On the other hand this way reveals too much information and may act against the seller. Similar transactions in commercial industrial tool industry will provide a good example for the new business model.

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