

AUCTIONS AND BIDDING ON THE INTERNET: AN ASSESSMENT

BY EFRAIM TURBAN, CALIFORNIA STATE UNIVERSITY, LONG BEACH, USA*

ABSTRACT

Electronic commerce (EC) activities are growing rapidly on the Internet. One area that receives little publicity is that of auctions and bidding. However, these inter-related activities can become a major EC factor due to the creation of special online brokering services as well as electronic auctions and bids offered directly by private and public organizations. This paper provides a discussion of the benefits and a description of the goods and services traded.

INTRODUCTION

Auctions and biddings have been established methods of commerce for generations. These methods deal with products and services for which the conventional marketing channels are ineffective or inefficient. They can expedite the disposal of items that need liquidation or quick sale, they offer trading opportunities for both buyers and sellers which are not available in the conventional channels, and they assure prudent execution of contracts.

The Internet provides an infrastructure for executing auctions and bids much cheaper, with many more involved sellers and buyers. Individual consumers and corporations alike can participate in this rapidly growing and very convenient form of electronic commerce.

ELECTRONIC AUCTIONS

OVERVIEW

Traditional auctions have several imitations and deficiencies. For example, they generally last only a few minutes for each item sold. This rapid process may give buyers little time to make a decision, so they decide not to bid, therefore sellers may not get the highest possible price, and bidders may not get what they really

want or they pay too much. Also, in many cases, the bidders do not have much time to examine the goods. Since bidders must usually come to the auction site, many potential bidders are excluded. Similarly, it may be complicated for sellers to move goods to the auction site. Commissions are fairly high, since a place needs to be rented, the auction needs to be advertised, and the auctioneer and other employees need to be paid. Electronic auctioning removes these deficiencies.

Electronic auctions have been in existence for several years. Notable are the auctioning of pigs in Taiwan and Singapore (e.g., see Neo 1992) and the auctioning of flowers in Holland which was computerized in 1995 (see Van Heck et al. 1997), but these were done on local area networks. Auctions on the Internet started in 1995. They are similar to offline auctions, except for the fact that they are done on a computer. Host sites on the Internet act like a broker, they offer services for sellers to post their goods for sale and allow buyers to bid on those items. Most auctions open with a starting bid

** Efraim Turban (eturban@csulb.edu) is a professor of Information Systems at California State University, Long Beach. He has worked several years in industry (General Electric) and he has provided consulting services to many corporations and governments. His research interests are in electronic commerce implementation and the applications of emerging technologies to Management Support Systems. He is also interested in IT as an enabler for business process reengineering. Dr. Turban is affiliated with the International Center of Electronic Commerce in Korea. Recently, he completed several studies on smart cards.*

which is the lowest price the seller is willing to accept. Detailed information on every item for sale is available online. For high value items, additional information may be obtained via e-mail. Bidders look at the descriptions and then start the bidding by sending an e-mail or filling out an election form. The biddings, which may last for a few days, are shown on a page at the host's Website, updated continually to show the current highest bids. Names of bidders are kept coded to maintain privacy. Most auctions are live; there you compete in real time against others.

Many sites have certain etiquette rules that must be adhered to in order to conduct fair business. Hagggle Online (www.hagggle.com), which allows private individuals to put up their merchandise for sale (free of charge, Summer 1997), has a page dedicated to inform their users of these rules. As with many other auction sites, Hagggle Online offers a place where "honest, well-meaning individuals can offer their stuff for sale to other honest, well-meaning individuals." The emphasis on honesty is important. If misrepresentation is made one may sue the auctioneers as well, even though the auctioneers make it clear that they are not responsible for presentations made on the Website. The auctioning companies see the use of their services as an ideal channel for selling people's goods and warrant off any "spammers," con-artists or scammers. Since it is in the best interest of the well-meaning users of these sites to have a clean and efficient system, the companies make it the users' job to maintain an honest and orderly auction site.

There are several auctioning methods (see list at www.onsale.com). For example, some auctions use a "straight sales" method. The price for the good is listed and the first approved bidder gets the item at the listed price. In many cases, the Yankee method is used where sellers usually offer several identical items simultaneously. Bidding is increasing incrementally and the items are sold to the highest bidders. In the Dutch (or reversed) auction,

prices decline until a buyer makes a bid (e.g., Klie-Kloc.com for gold and jewelry sale).

Most auctions are open to the public. Items auctioned are: computers and other electronic parts, art work, antiques, rare coins, vacation packages, airline tickets, and many other products. A list of auction places is available at www.usaweb.com, and in each site there is a list of products sold. The usaweb site provides a search engine, Bidfind, where you type in the item you are looking for and the engine lets you know in what sites the item is auctioned. Some auctions are open only to dealers. These include used cars and foreclosed real estate sold by the U.S. government. There are about 100 companies that currently doing auctions on the Internet (a representative list is available at www.usaweb.com/auction.html).

BENEFITS AND LIMITATIONS

Auctions allow individual sellers or companies to sell their goods efficiently and with little action or effort required. The sellers only need to enter the information about their merchandise into a form and send it to the host. After that, all of the work is done by the auctioneer. This creates a greater range of potential buyers. Extra cash can be earned and excess inventories can be sold quickly through this process. The main benefits to buyers is that they can get a huge variety of goods, especially collectible and antiques which are not available locally. Also, buyers can find quality goods for largely discounted prices.

The major limitations of online auctions are the inability to physically see the items and the possibility of fraud. Also, a less competitive atmosphere may prevail on the Net since the elapse time is much longer.

REPRESENTATIVE EXAMPLES

The federal office of Housing and Urban Development (HUD) needed a way to ease the distance between its Fort Worth office, which handles real estate auctions, and the 3,000 Texas brokers who are licensed to buy the agency's properties. Now

it has one. Since November 1, 1996, brokers have been able to electronically place bids, monitor the bidding action, and receive notification of a bid's acceptance on JUD Homes Fort Worth Website (<http://www.hud.org/fwhud>). The site that also offers real estate news and notices and information about HUD's real estate owned (REO) properties. The Fort Worth HUD office now spends \$960,000 less per year in newspaper advertising and for printing the now discontinued 16-page weekly property listing. Duly impressed, HUD plans to equip 17 of its 40 U.S. offices that are on the Web with the same online bidding system by mid-1997 (see Row 1997).

Some online auctions are run by established auction houses, such as Frasher's Auctions (zipmall.com/frashers), a Palm Harbor, Florida outfit that has been in business for 27 years. Others have been set up by retailers or wholesalers trying to reach new customers or to unload excess inventory or outdated goods.

Given that Web surfers tend to be computer enthusiasts, it is no surprise that several auction sites are auctioning computer equipment. Onsale is an online auction house that helps companies to auction slightly outdated models to consumers looking for deep discounts. Onsale frequently buys the computers from the vendors at deep discounts and then auctions them. Intel, NEC, and Apple are a few of the vendors using Onsale to auction off refurbished items and/or products about to be replaced by newer models. The goods are delivered directly from the company to the buyer. Onsale auctions offer over \$1 million a week of refurbished personal computers and other consumer electronics items (see Stipp 1996).

The one-line descriptions of the products are hyperlinked to full pages with reams of data describing each item. Bidders are identified only by their first and last initials to ensure privacy. Almost all bidders are computer professionals, Web masters, and information systems administrators looking for a deal.

REFERENCES

Borman, M., Karcher, K., Taylor, J. A. and Williams, H. "Electronic Agricultural Auctions in the United Kingdom," *Electronic Markets Newsletter, Competence Center Electronic Markets, No. 9/10, October 1993, 27-28.*

Clemons, E., Reddi, S. P. and Row, M. "The Impact of Information Technology on the Organization of Economic Activities: The 'Move to the Middle' Hypothesis," *Journal of Management Information Systems (10:2), Fall 1993, 9-35.*

Clemons, E., and Weber, B. "Evaluating the Prospects for Alternative Electronic Securities Market," *Proceedings of the 12th International Conference on Information Systems, New York, 1991, 53-61.*

Del Valle, C. "Trekking the Web for Travel Deals," *Business Week, December 1996, 124.*

Hess, C.M. and Kemerer, C. F. "Computerized Loan Organization System: An Industry Case Study of the Electronic Markets Hypothesis," *MIS Quarterly, September 1994, 251-274.*

Lee, H.G. "Electronic Brokerage and Electronic Auction: The Impact of IT on Market Structures," *Proceedings, HICSS 29th, Hawaii, 1996.*

Lee, H.G., Wrigley, C. and Wagenaar, R. "Electronic Market Place with Multimedia Representation: SEA of Flowers," *in Proceedings on Pan Pacific Conference on Information Systems, Singapore 1995.*

Downloaded By: [German National Licence 2007] At: 12:22 11 March 2010

About 500,000 visitors have come annually to the Onsale site, registered with a credit card, and bid on computer products. About 25 percent of the traffic is driven by banner ads which the company has placed at other Web sites. Another 25 percent comes from being listed on Cool Sites of the Day. The rest are repeat customers.

Airlines have begun auctioning off unsold seats in 1996. According to a study done by Maldutis and Donofrio (1996), U.S. airlines could have earned \$8.3 billion last year—more than three times the \$2.6 billion they actually reported—if they had used an auction system for the unsold seats. Airlines spent a total of \$12.6 billion, which is 18.6 percent of their total operating expenses on sales and ticketing. And while there is little airlines can do about labor and fuel expenses, they could cut sales and ticketing costs which is their second largest expense.

Cathay Pacific, for example, which flies in Asia and between the U.S.A. and Hong Kong, conducted several auctions since 1995. Cathay's auction in May 1996, for example, attracted nearly 15,000 bidders for 387 first-class, business-class, and economy-class seats for flights between Hong Kong, Los Angeles, and New York. Visitors to Cathay's Website (<http://www.cathay-usa.com>) made bids May 15 through July 31. Bidding for economy seats started at \$300 round trip versus \$800 for Cathay's lowest restricted fares. Winning bids ranged from \$550 to \$775 (see Rosato 1977). In June and July 1996 some airlines (e.g., American) conducted auctions for a limited number of seats and the proceeds were donated to charities.

Donna Rose, a small but well-known Beverly Hills art dealer, added online auctions to her successful business in August 1995. About half her sales now come through her Art Brokerage site (www.artbrokerage.com) "Having a gallery on the Net is perfect," she says. "My customers are able to look at photos of the art in the Art Shopping Mall before they buy."

Lindsey, D., Cheney, P., Kasper, G. and Ives, B. "TELCOT: An Application of Information Technology for Competitive Advantage in the Cotton Industry," *MIS Quarterly*, December 1990, 347-357.

Maldutis, J. and Donofrio, S. "Are Ticket Auctions the Wave Of the Future for Airlines?" *Travel Agent (279:8)*, April 22, 1996, 8.

Mardesich, J. "Onsale Takes Auction Gavel Electronic," *Computer Reseller News*, July 8, 1996.

Massimb, M.N. and Phelps, B. D. "Electronic Trading, Market Structure and Liquidity," *Financial Analysis Journal*, January-February 1994, 39-50.

Neo, B.S. "The Implementation of an Electronic Market for Pig Trading in Singapore," *Journal of Strategic Information Systems (1:5)*, December 1992, 278-288.

Rosato, D. "Other Fare Discounts are up for Bids," *USA Today*, January 13, 1997, 3B.

Row, H. "Texas Tech," *Webmaster Magazine*, February 1997, 16.

Stipp, D. "Infotech Special Report," *Fortune Magazine*, December 9, 1996, 159.

Van Heck, E., et al. "New Entrants and Role of IT: The Tele Flower Auction in the Netherlands," *Proceedings, 30th HICSS, Hawaii, Jan. 1997*.

Warbelow, A. and Kokuryo, J. "AUCNET: TV Auction Network System," *Harvard Business School Case Study*, 9-190-001, July 1989.

Art dealers and auction houses are exploring the Web as a medium for art auctions. The big two auction houses, Sotheby's and Christie's, have Websites and are exploring strategic uses of the Internet. Sotheby's (www.sothebys.com) believes that moving its auction process online is a natural fit for their business.

Christie's (www.christies.com) presently employs the Internet mainly as a marketing tool, selling subscriptions to catalogs, brochures, and auction databases through its Website. The auction house is looking into taking online bids.

According to its home page, Numismatists Online (<http://numismatist.com>) is "the premier service for coin and currency collectors on the Web." Thousands of collectors from over 50 countries regularly participate in auctions and fixed price sales of coin dealers and auction houses. Coins, currency, and tokens are ranging from beginner coins to elite coins for investors. "Numismatists Online introduced SmartFind, an intelligent search agent to help finding items. The company has implemented an "immediate response" feature giving it a big advantage over other online auction sites.

Ebay (www.ebay.com/aw) takes daily bids on everything from hotel rooms to luggage. Ebay collects a 10 percent buyer's premium on travel packages (see Del Valle 1996). Ebay's Auction Web resembles a classified section of a newspaper. There is a wide variety of goods for sale. The company acts solely as a listing agent. They do not get involved in the actual transaction. Sellers must set up an account with a credit card in advance of listing items for sale.

Why sell at Ebay's Auction Web? Here are just a few reasons cited by Ebay:

- ◆ Over 1,000,000 items were listed since its inception in October 1995
- ◆ Over 6,000 items are added daily
- ◆ Tens of thousands of unique visitors daily see the listing

- ◆ Unique auction formats create excitement for your merchandise and get you the "market" price
- ◆ You receive free daily updates on all items you have listed
- ◆ Very low listing fees compared to traditional auctions
- ◆ No additional fees if your item receives no bids!

Manheim Auto Auction's "Cyberlot," is known for its used car auctions to dealers. Manheim allows the company sponsoring the sale of vehicles (e.g., Toyota) to choose a number of vehicles that will be shown on the Internet. These vehicles are usually the cream of the crop and are associated with firm pricing. A dealer is free to browse these vehicles online and reserve the vehicle they want to purchase at a fixed price. The potential buyer is shown numerous facts about the vehicle along with four to six pictures of the vehicle. The transaction is concluded offline.

A realtime online auction allows Manheim to significantly increase their vehicle throughput. Unlike the Cyberlot method of selling vehicles at fixed bids, online auctions hold the promise of getting a bargain buy so more cars can be sold quickly. Auctions generate greater interest than viewing a vehicle with a firm price. Bidding dealers could be located locally, across the country, or around the world. Auctions held online could be tailored for target markets, which would contribute to increased excitement among potential buyers much as it is the case with antique cars whose auctioning on the Internet is growing rapidly.

COMPETITIVE BIDDING

BACKGROUND

Competitive bidding is a special case of auctions, where buyers are usually limited to one bid per auction rather than unlimited rebids as in regular auctions. Before the introduction of online capa-

bilities, bidding for contracts was a tedious process. The bidders were required to inquire with the companies or government agencies for which their services would be requested. They would then place a sealed bid for a contract on a job and the lowest bidder on a job would more than likely get the contract. Sometimes other criteria, such as timing, may determine the winner. Since the bidders had no idea on competing bids, they have had the tendency to bid too high. So the actual cost of the projects for those who put them for bid was higher than anticipated. Also, the bidding process has taken a very long time, especially when the bidding contractors did not have an access to the proper channels of getting the contracts' paperwork to move rapidly. Some contractors lost bids because of the potential fraud in the process. The high administrative expenses of preparing bids and the time required for preparation caused some smaller bidders, especially in remote locations, to miss or lose contracts because of their limited access to the bidding process.

BIDDING ONLINE

The ability to bid for products, jobs to be done, and contracts online has revolutionized the way companies do business. Many companies and government agencies are reengineering their bidding processes and procedures. They feel that the use of the Internet to post contract opportunities provides a chance for many vendors that were not participating before.

In the case of online bidding, contractors can access lists of available jobs on the Web pages of companies or agencies and scroll through the list until they find a job appropriate for them. These jobs are highlighted with links to complete descriptions of the jobs and their requirements. After selecting the appropriate job from the list, the contractors can enter their bid for the job. The list of outstanding bids are available on corporate and

WEBSITES

AUCTIONS

AuctionWeb Classified.
www2.ebay.com/aw/

First Auction (Home Shopping Network); www.firstauction.com

Haggle Online.
www.haggle.com/cache/

ONSALE - Auctions of computers, peripherals and consumer electronics.
www.onsale.com

SportingAu.
www.sportingauction.com

u-Auction-it Online Interactive Auctions. www.uacution.com

3W Auction.
www.vsn.net/auc/

A&A Auction Gallery
(www.bonk.com/auctions)

BIDDING

Commonwealth of Kentucky - Division of Purchases.
www.ky.gov/kybids.htm

The WorldSource USA.
www.worldsource-usa.com

government sites so that vendors can see the most recent updates on the status of any particular job. Once the bidding time has ended, a decision is made by the company or agency as to whom the contract is awarded. This process is much like auctioning online except that the bids are sealed.

**BENEFITS AND LIMITATIONS OF
ONLINE BIDDING**

A common benefit for both the awarding companies and vendors is that they save much time and money in the administrative side of the bidding process. The main benefit to the companies posting contracts is that they are able to solicit for services in a wider pool. This allows them to pick the ones that give them the lowest prices and provide the best value of service. Boeing Inc., for example, announced in 1997 that they found on the Internet some vendors that charge 10-30% less than what Boeing used to pay, and they also get the job done faster. Contract awarding companies or government agencies also require less employees and assets to carry out their outsourcing processes. The benefits to bidders is that they have a much greater opportunity of participating in bids. They are no longer overshadowed by larger companies; they have as much chance of getting a contract as any other company.

The major limitation of closed bids is the inability to rebid. You submit an offer once and you do not know what the other bidders do.

REPRESENTATIVE EXAMPLES

**THE COMMONWEALTH OF KENTUCKY'S
FINANCE AND ADMINISTRATION CABINET
DIVISION OF PURCHASES.**

This system allows any qualified vendor with computer access, the ability to compete for contracts with the Commonwealth of Kentucky. The "Bidding Opportunities Web Site" allow vendors to view and download current bidding opportu-

**WHAT ITEMS ARE AUCTIONS MOST
FREQUENTLY**

any collectible item

antiques, glassware, coins, oriental rugs

jewellery, unclaimed property

gold, silver, health products, ayarreda

antique photos, rare books, furniture

art, graphics, posters, fine art

celebrity autographed collections

stamps, sports cards

*antiques maps, documents, stock
certificates, old money, letters*

old toys, wines

*computer hardware, test equipment,
accessories peripherals
(new and refurbished)*

old records (LPs)

liquidation of any surplus merchandise

flowers, sporting equipment

pigs, horses and livestock, special coffee

*airline tickets, travel packages,
hotel rooms*

petroleum equipment

*real estate: government (HUD), private,
time sharing*

aircraft

boats

nities though it does not yet (September 1997) have the capability of electronic form registration, it does use e-mail for vendors to register their bids with the agency. The site also has the Vendor Information Program, where vendors that are already registered with this program can download monthly updates for contracts. The updates include long and short descriptions of "Invitations to Bid" and "Requests for Quotes."

For many companies and agencies, such as the Commonwealth of Kentucky, online bidding has saved much time and money. Therefore, many agencies are phasing out their traditional bid mailing processes. These agencies are trying to gain access to the vendor community and get their feedback on these new processes.

**GENERAL ELECTRIC'S TRADING
NETWORK.**

General Electric set up a trading process network (www.tpn.geis.com) in 1994 allowing its vendors to make bids on GE electronic component contracts easily and quickly. The TPN service has expanded considerably since then. Today, the GE Web site focuses on industrial commodities such as metalwork, plastic parts, chemicals, packaging, computer parts, and electronics. In 1996, for example, GE put close to \$800 million worth of business up for bid to approximately 1,000 participating suppliers. GE benefits from this process with reduced purchasing costs (10 to 15 percent) and reduced purchasing cycle (from 14 to 7 days).

The procurement Web site links, via GE's intranet, to GE's Lighting Manufacturing Resource Software, allows purchasing agents to post up-to-date product blueprints directly from the factory floor. This creates an extended supply chain automation from the supplier to the factory to the buyer. Prior to TPN, suppliers used EDI with proprietary software—an inflexible and expensive process.