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INTERNET AUCTIONS: Popular and Professional Literature Review

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Abstract: Given the strong interest in online auctions, we found it useful to survey the popular and professional (but not academic) press regarding the commercial and cultural development of the auction phenomenon on the net. The survey is based on about 700 articles that were published from mid 1996 to mid 1999 and point our several stylistic facts that deserve further attention from theorists, and provide solid background for further research on this topic. Given the fast pace of development of e-commerce, we are well aware of the fact that interesting expansions occurred since the end of the survey period. We hope to update the survey periodically and make the updated version available on line to the interested reader.

Keywords: Internet auction, negotiation, e-commerce

INTRODUCTION

The Internet is shaping industries and changing business models. It is argued that companies that don't commit fully to this new world today will be left behind (Karpinski, 1999) and only companies that develop and implement entirely new business models will succeed

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("E-Commerce," 1999). Unlike in the physical world, the diversity in shopping on the Internet lies not in the difference in selection but in the multiplicity of methods of purchasing. It's not a matter of what you want to buy, but how you want to buy it (Gaw, 1999). The most noticeable and attention grabbing model is the rebirth of negotiated and auction pricing mechanism on the Internet. It is interesting to note that whereas in 1992 *Business Week* (1/11/93) nominated the "no-hassle, no-dicker sales method" as one of the best ideas on 1992, in 1998 *Business Week* published an article titled "Good-bye to fixed pricing?" (5/4/98) and in 1999 declared that "online haggling is the hottest thing happening in e-commerce" ("Online Auctions," 1999).

PricewaterhouseCoopers in their "E-Business Technology Forecast" predicts that as more potential participants access the Web, the use of negotiated pricing mechanisms will grow and that the special-purpose technology available today to implement negotiated and auction pricing will be integrated into enterprise and specialty Web sites (PricewaterhouseCoopers, n.d.).

Given the strong interest in online auctions, we found it useful to survey the popular and professional (but not academic) press regarding the commercial and cultural development of the auction phenomenon on the net. We believe that both academics and practitioners will find the survey useful. In particular, the survey point our several stylistic facts that deserve further attention from theorists, and provide solid background for further research on this topic. The survey is based on about 700 articles that were published from mid 1996 to mid 1999. Given the fast pace of development of e-commerce, we are well aware of the fact that interesting expansions occurred since the end of the survey period. We hope to update the survey periodically and make the updated version available on line to the interested reader.[1]

For academic papers on Internet auctions we refer the reader to the reference section.

Popular Portrayal

Internet auctions are a new form of transaction that introduce variability into nearly all aspects of a commercial exchange. For the uninitiated, the process is mystifying. Prices are unpredictable, consumers and suppliers are strangers, and comparison is difficult because products come packaged with services, and items on offer may be unique or obsolete. "Auction" itself is an inadequate term for describing relationships powered by advanced algorithmic models. Yet interest in the form has been intense, whether due to the Wall Street buzz or the cult following by cyber-savvy e-shoppers.

In 1998, as evidence started growing that this new form of electronic shopping was here to stay, the popular media attempted to explain it. Newspaper and magazine reports generally drew on comparisons to familiar forms of shopping, often employing quaint images like flea markets and country auctions, as in an Associated Press report from September 1998:

> Imagine a huge yard sale, except the world is the neighborhood, the browsers set the prices, and the goods being offered aren't just junk (Breed, 1998).

The *St. Louis Post* called it a "high-tech twist to the age-old process of bargain-hunting," and continued the comparison:

> To buyers, Internet auctions resemble tag sales--allowing shoppers to scour thousands of items in search of the rare find or the real steal. To sellers, they are an inexpensive electronic Sotheby's--offering goods to thousands of potential bidders worldwide at affordable rates. Underlying the auction transactions is the thrill of the hunt and the excitement of bidding.
>
> "I like to say we've got the selection of Macy's, the bargains of Filene's Basement and the excitement of Las Vegas," says Keith Foxe, manager of communications for First Auction in Sunnyvale, Calif. (Moran, 1998).

Other media reports went back in time, evoking historical imagery to explain the new trend. *Business Wire* likened it to the California Gold Rush (B8) and the *New York Times* also relied on referents from days gone by:

> Technology, in short, is bringing commerce back to the bazaar. Ever since the railroad and the Montgomery Ward catalog extended the reach of big businesses from coast to coast, companies have largely sold their products at fixed prices. But now more and more goods and services are being sold through auctions or other forms of electronic negotiation (Hansell, 1998).

Professional Literature

But some experts flatly rejected attempts to compare the new negotiating tools with familiar purchasing forms, as in the Keenan Report, an influential assessment by the well-known technology research firm:

> Many people think the Internet Exchange is something old that is new again, assuming that market pricing is an age-old phenomenon that people gravitate towards. However, until the 1920's the common man was generally unaware of how exchanges worked unless he happened to participate in an auction for land, slaves or livestock.
>
> In fact, expanding the use of exchanges to set prices of common goods and services is a very new process that is being spurred on by the continual advance of communications technology, and especially the exponential growth of the Internet. The Internet Exchange represents one of those rare opportunities for entrepreneurs to participate in a revolution that will create new intermediaries, leaving the old middlemen as road kill unless they adapt to the new world of instant communication (Keenan Vision, Inc., 1998a).

Rather than looking backward, professional and academic literature heralded a new and revolutionary form of commerce that laid down the foundations of a perfect market. There was an effort to use precise language, and instead of the popular but vague "Internet auction," new terms were forged such as "Internet exchange," "dynamic trade," "frictionless economy," "exchange commerce," and "fluid pricing."

A widely quoted report by technology research firm Forrester Research presented the emergence of Internet auctions as an epochal transition with far reaching consequences for the future of commerce:

> The Internet economy is moving from the early Web to a new business trading model that Forrester calls dynamic trade. Dynamic trade will fundamentally alter products and services, how production schedules are determined, and what pricing models are used in which industries (Lief, 1998).

MODELS

Just as, early on, Internet exchanges were described using familiar metaphors, so the models themselves were based on tried and true, real life models. A wave of popular reports outlined the nuances of and differences between the English auction--an ascending bid process and the most familiar type--and its inverse the Dutch auction, as well as First-Price and Second-Price Sealed Bid auctions. Info World quoted Stuart Feldman, director of the IBM Institute for Advance Commerce, as saying the traditional auction was the best model:

> "Any software that is going to be serious is going to have to mimic the rules and ways of running an auction [in the real world]," Feldman said. "People have chosen to follow this way of doing things in the real world because they work" (Nelson, 1998).

But the primary focus of IBM architects was streamlining the process of exchange technology and searching for denominators common to a wide variety of models. A report in *IBM Research Magazine* showcasing IBM's research and development into Internet commerce, presented the quest by Watson Founda-

tion researcher Manoj Kumar for such denominators:

> The challenge is accounting for the many different types of negotiations that can take place over the Internet. "Every industry and subindustry has its own set of rules," Kumar says.
>
> To meet everyone's needs, he set out to find what negotiations, or "auctions," have in common from industry to industry. That common denominator enabled him to provide tools for individuals to modify the auctions to fit their particular needs.
>
> The Art of the Bid
>
> Kumar found that he could specify auctions roughly by specifying five parameters: Is the auction performed in real time or extended over days or even weeks? Does it involve sealed bids or "open cry"? Are the bids controlled by the seller (Do I hear fifty-five? Does anyone bid fifty-five?) or the buyer? Are the bids ascending or descending? And is the ultimate cost equal to what was bid? For instance, when five identical items are on the block, do the five highest bidders each pay what they bid individually or do all pay the lowest of the five successful bids? "We can support these five variations," Kumar says. "Beyond that, we will let people customize."
>
> Of course, the auctions will entail more than just price. People will need to negotiate availability and delivery dates, terms of payment, penalties for changing or failing to meet the terms of the contract, and so on; the software must be able to weigh all those factors in the way that the individual user decides is best (Poole, 1999).

PRICE

Death of the Fixed Price?

In the Internet auction, dynamism permeates all aspects of the commercial transaction but first is the element of price. While merchant-customer haggling is historically the rule, it seems Americans had come to treat "list price" as sacrosanct. Reports for the general public undertook to reacquaint readers with the slippery nature of prices. The New York Times quoted Stuart Feldman, director of IBM's Institute for Advanced Commerce, reminding us that "[t]he idea that there are fixed prices you have to accept is not actually ingrained in human nature."

Not everyone has kissed fixed prices goodbye. *The Economist* said auctions thrive only when conditions are ripe:

> Needless to say, fixed prices are not going to disappear. Taking part in online auctions is time-consuming (and nerve-wracking). Economic theory suggests they are most useful in particular circumstances: when there is uncertainty about what is the right price. This could be for one of two reasons. Either the value of a product is a matter of private taste and opinion--such as a Van Gogh painting or a rare Spice Girls doll. Or the value is likely to be similar for everyone, but it is not obvious to the seller what it is--such as a rail-operating franchise or a radio-bandwidth licence ("The Heyday of the Auction," 1999).

A Revolution

In a piece titled "E-Commerce: Good-bye to Fixed Pricing?," *BusinessWeek* portrayed price fluidity as a dramatic change.

> Forget sticker prices. Forget sales clerks, too. There's a revolution brewing in pricing that promises to profoundly alter the way goods are marketed and sold. In the future, marketers will offer special deals--tailored just for you, just for the moment--on everything from theater tickets to bank loans to camcorders.
>
> Behind this sweeping change is the wiring of the economy. The Internet, corporate networks, and wireless setups are linking people, machines, and companies around the globe--and connecting sellers and buyers as never before. This is enabling buyers to quickly and easily compare products and prices, putting them in a better bargaining position. At the same time, the technology allows sellers to collect detailed data about customers' buying habits, preferences--even spending limits--so they can tailor their products and prices. This raises hopes of a more efficient marketplace (Cortese & Stepanek, 1998).

The *BusinessWeek* article saw Internet auctions as the vanguard in a transformation of pricing throughout the economy:

> The pricing revolution, though, goes beyond the Net. Companies also are creating private networks, or "extranets," that link them with their suppliers and customers. These systems make it possible to get a precise handle on inventory, costs, and demand at any given moment--and adjust prices instantly. In the past, there was a significant cost associated with changing prices, known as the "menu cost." For a company with a large product line, it could take months for price adjustments to filter down to distributors, retailers, and salespeople. Streamlined networks reduce menu cost and time to near zero (Cortese & Stepanek, 1998).

Accuracy

Echoing the view of many economists, InternetWorld portrayed the new Internet auction technology as a mechanism for an unprecedented level of accuracy in pricing.

> The idea behind fluid pricing is that things are worth such different amounts at different times or in different circumstances that price tags need to find their own levels. In perfect markets, people pay what a product is worth because they can offer anything and sellers can accept anything.
>
> The reason this doesn't work in the retail world is that the people who set prices are not present at the point of sale to accept or decline an offer. Set prices usually must be honored, and when too-high prices make sales suffer, the price must be lowered in an across-the-board action.

The same report warns that those who cannot adapt to this new business paradigm will be left behind in its dust.

> The notion of a base price may actually vanish. This will infuriate some consumers, and businesses in particular may demand that fixed prices stay in place to aid them in predicting expenses, forcing contracts, as many do already, to lock in commodity prices. (.).
>
> "Being able to weather the turbulence of fluid prices to get the right price will be a crucial skill" ("Net's a Breeding Ground," 1998).

Impact on Retail

It became clear that fluid pricing would shake up retailers by transforming their power relationships with their customers. A Red Herring "Catch of the Day" dispatch compared the process to lubricating oil:

> The online auction is clearly the WD-40 of pricing: It reduces (price) friction, and it spreads over everything. And while I don't see many existing online stores going to an auction model, I would not be surprised to see just about every commodity retailer adopt a technology to allow them to dynamically adjust prices based on competition--essentially, the sites will be holding auctions for buyers' business. Good news for consumers...but trouble for retail (Red Herring Direct, 1998).

THE MIDDLEMAN

Revising Power Relationships

In fact, a great deal of attention and speculation was paid to the fate of distributors or traditional middlemen. In October 1998, The Keenan Report gave notice of the sweeping change to come.

> The power of instant communication destroys the power of middlemen to hide the real price from buyers and sellers, creating new intermediaries who will control the distribution of basic goods. Distribution channels that are inherently inefficient, such as wholesale-retail chains, may be re-intermediated by a new middleman

equipped with Internet Exchange technology (Keenan Vision, Inc., 1998a).

Active Agent vs. Passive Host

Attempts to reconfigure the retailer's role ranged from taking a more active stance by offering more value through providing new services, to a hands off approach in which the new intermediary was a passive host. The latter was the position taken by mega-fleamarket eBay, which took pains to distance itself from the role of auctioneer. EBay's public policy director, Brad Handler, was often quoted as insisting the site was not an auction but rather "a person-to-person trading community. As such, individual users are legally responsible for their listings" (Moran, 1998). EBay had to slightly modify its laissez-faire approach when fraudulent deals generated bad publicity.

When book seller Amazon.com added person-to-person trading to its site, it did build in certain safeguards against fraud. But by jumping into the chaos of auctions, Amazon relinquished considerable control over the quality of service on which it had built its reputation.

> "Amazon always has always had a great deal of control over the customer experience," said Ken Cassar, an analyst at the Internet research firm Jupiter Communications.
>
> "But now they are moving from a retailer to a broker," he said. "With that, they take on the risk that one party or another will not live up to their commitment and that can hurt Amazon's reputation" (Beck, 1999).

The Service Provider

Other auction sites revised the middleman role by adding responsibility that ensured greater protection for buyers and sellers, as with the Teletrade auction site. "Teletrade is unique from other Internet and telephone auction companies," said the company's president, Julie Abrams.

> We take possession of all lots offered in auction, describe each lot accurately by in-house experts, collect payments, and professionally package, fully insure, and ship all winning bids. We truly are full-service, a "total" solution for the possible pitfalls which are becoming much more apparent every day with unsupervised Internet auctions. We always assure both buyers and sellers prompt, reliable settlement.

In addition to offering protection, Teletrade, like many others in the field, also saw its role as providing information.

> Teletrade's new auction supersite offers a variety of onsite resources, including the first online "Real Price" guide for certified coins, sports cards/memorabilia, and certified diamonds. The price guide is updated as soon as an auction closes and visitors can search the online price guide for specific items. It will be the first online source and guide that shows real prices paid by real buyers for specific items over the past 24 months of Teletrade auctions. This information is available free of charge.[2]

BUSINESS-TO-BUSINESS

The Pioneers

"Retail auctions are booming. Are biz-to-biz auctions far behind?" was the rhetorical question posed by a December 1998 piece in Excite.com's *Tech News* (Elgin, 1998). But, in fact, while eBay and other consumer sites were dominating the limelight, dynamic electronic marketing had already emerged as an efficient solution to warehousing and inventory problems for business. In April 1998, CNET News.com, drawing heavily from a report by Forrester Research, noted the start of business-to-business auctions in the relative obscurity of intranets:

> "This is already a very big market. It's surprising how extraordinarily large they are," said Forrester analyst Varda Lief, noting many business-to-business auctions are conducted in closed communities like extranets, not on the public Internet, so they haven't been very visible. [.]

> The biggest category in online business auctions is what Forrester dubs "commodity sales"--online auctions of oil, gas, and electric power. In fact, the Federal Energy Regulatory Commission requires that surplus electricity be sold among utilities and traders in auctions that use Internet technologies (Lief, 1998).

When that article appeared, business-to-business sales had already begun turning up in more mainstream Web sites:

> Onsale, which began today running a ticker of its prices on Yahoo's new computer marketplace, also serves business buyers. Sixteen percent of its sales are to resellers, an Onsale spokeswoman said, and half its customers are buying for business purposes. About 75 percent of products auctioned off via Onsale are items the company itself has purchased (Clark, 1999).

In fact, some sites started out purely as business-to-business tools and evolved into consumer sites. Such was the destiny of a Canadian company that began as Internet Liquidators International:

> Internet Liquidators has strong appeal as a brand in the business-to-business segment, where an online environment expands the audience for conventional auctions of used equipment and the liquidation of distressed assets.

In making the crossover to consumer sales, the name was changed to the far snappier bid.com:

> "We started as Internet Liquidators," Mr. Godin continued, "because our initial approach to the product supply chain was to assist in the sale of slow-moving and end-of-line merchandise. Our subsequent experience has seen suppliers embracing the Internet as a new channel. As a result, our product mix is predominantly front-line goods from national brand manufacturers, under full warranty. BID.COM is a more appealing destination to the mass consumer market and sends a message that is consistent with our product mix" (Internet Liquidators International, 1998).

An Explosion of Applications

Context Magazine, in its Fall 1998 issue, put the number of business-oriented auction sites in the hundreds:

> The gun has already sounded for businesses selling to other businesses. Many companies now auction goods over the Internet, simply establishing a deadline and then letting customers post their bids. Already, more than 200 commercial Web sites hold auctions for everything from lab equipment to used factory equipment to airplanes. Media Auction and AdAuction both auction off unsold advertising space at the last minute so that media companies can unload unbooked space.
>
> While used or perishable goods lend themselves to auctions because the value of what's being sold is so uncertain or can change as the deadline nears, the idea is being extended. General Electric, for instance, has a Web site that lists supplies it needs, such as steel for turbine blades in airplane engines. Any supplier can bid to sell to GE. Because auctions are more likely than negotiations to yield the best price and because GE has opened the bidding to so many more suppliers, GE saves tens of millions of dollars a year.
>
> Similarly, shipping companies are experimenting with Web sites that would let them use auctions to line up extra cargo capacity when they need it. These companies expect that they'll not only get a better price but will be able to find capacity within minutes rather than spend a whole day making several rounds of phone calls to other shippers (Flynn, 1998).

Electronic Auctions Take Over

Claudia Deutsch, writing in the *New York Times*, concluded that businesses stood to gain from the Internet's ability to sidestep the strictures of time and geography. She was comparing electronic auctions to live ones and listed their advantages:

- They obviate the need to transport equipment to a live auction. "I'll happily

take a lower price for the convenience," said William Nagy, president of Technik Machine Tool Inc., which hopes to sell surface grinders at Norman Levy's auction.

- They let equipment dealers buy and sell goods without moving them to their own warehouses. "I can buy equipment in Vermont once our auction is up," said Peggy Skelly, a sales representative at HK Equipment, in Wilmington, Mass.

Deutsch also noted how electronic auctions address the problem of conducting business in different time zones.

> Indeed, since bidders can participate without leaving their desks, and since business cyberauctions often operate round the clock, their potential audience is huge. "When you're holding a live auction at 4 p.m. in Detroit, it's rough for someone in Paris to bid," said Robert Levy, Norman Levy's president (Deutsch, 1998).

CONSUMER SITES

Person to Person

"You say you want an e-commerce revolution?" asked *Forbes* in December 1998, "Well, we've got it--without the retailers. The latest trend in online shopping is person-to-person auction sites where you can buy and sell everything from used Barbies and Beanie Babies to 20-gauge Berettas" (Patsuris, 1999).

The seeds of one-to-one trading were probably planted in early bulletin boards and chat rooms, where Netizens sometimes offered items for sale. Combine the Internet's vast reach and easy access with the American penchants for bargains, flea markets, and.stuff, and someone, it seems, had to come up with eBay. Not that there aren't other person-to-person sites, but:

> If you are going to talk about online selling--you've got to mention eBay. The online auction site is all about sales. At the start of 1999, it had 1,294,150 items for sale in over 1,000 categories, and it has put a total of 38 million items up for sale since it began--and there have been more than 142 million bids for those items. Talk about action. Online or off, the world has never seen such a buying frenzy ("Top 10 Sites," 1999).

Business to Consumer

In the business to consumer realm, traditional auction houses were slow in joining the fray. Computer equipment vendors, on the other hand, got in early, largely because they catered to a crowd of techies. Some retailers on the Web discretely introduced fluid pricing on overstock and out of season items. There are those who say, however, that sooner or later "online retailers need to embrace auctions as a new platform for discounts" ("Jupiter," 1999).

Jupiter Communications, an Internet commerce research firm, forecast that by 2002 online business-to-consumer auctions will move $3.2 billion worth of merchandise annually. Auction shoppers, predicted Jupiter, would comprise an increasing share of online consumers in the United States, growing to 6.5 million in 2002 from 1.2 million in 1998, representing 11% of the total online shopping population in 2002.

> Jupiter research also shows that 1999 will be the year that business-to-consumer auctions move beyond limited technology product offerings to a more diverse product mix. While online auction purchasers have been mostly male, technology-savvy users, the availability of other merchandise, including toys and apparel, will attract a more mass-market consumer to the interactive sales format ("Jupiter," 1999).

THE BIDDER

Forming a precise profile of the Internet exchange customer is impossible, as millions of people have participated in auction-style transactions of one kind or another. But who they are, what motivates them, and what will keep them coming back for more has certainly

received a great deal of attention. This literature illustrates what journalists, analysts, and the auction companies themselves believe to be true about those who engage in this new kind of commerce.

Addicted

The first, second, and third thing we hear about retail Internet bidders is that they're hooked. Or likely to get hooked. They lose control while bidding and buying. They get cheap thrills (and not such cheap thrills) from winning contests. The vocabulary of addiction threads through, whether in industry reports or the popular press. The addiction reference may come in the form of a passing reference, as in a *Forbes* piece that said:

> The secret to eBay's success? It's fun, it's easy and, well, you get hooked ("Top 10 Sites," 1999).

Or it can be a humorous confession, as with a *New York Times* article by Julie Newman in which she describes her ecstasy at snagging a size 10 pair of Chanel shoes on e-bay: "[If] I can capture it for me, me, me--I become possessed." Newman concludes that eBay's real selling point is "that it allows for--indeed, encourages--the consumer version of road rage" ("Top 19 Sites," 1999).

Cautionary tales abound of hapless shoppers, unable to control their obsessions, as in a *Los Angeles Times* article:

> [M]any online participants have stories of being caught up in a bidding war and usually for items they didn't really want. Gerard McCallum learned this painful lesson in his early days of online bidding several months ago. Now, the Los Angeles pastor has an electric air freshener for his car to show for it ("The Impact of the Online World," 1998).

In a *New York Times* piece, Michelle Slatalla confesses to her own online auction habit:

> "A day later, I emerged gingerly from my post-shopping trauma to take stock. I had set out to buy a used system for $800 but ended up with a new one that cost nearly $2,300. Why me?" (Slatalla, 1998).

In an ode to the sinful pleasures of eBay, Stephanie Zacharek blamed her habit on her mother. Writing in Salon.com ("the website for intellectuals") she spun out the addiction comparison:

> I discovered eBay last July and immediately fell in love with it, though I hesitated before turning any of my other obsessively thing-loving friends onto it. That may seem like selfishness on my part, but I'd like to think of it as a kind of generosity. I immediately sensed that it would be like turning someone onto junk: I may as well have said, "The first hit is free." As it turns out, I did initiate a few friends--one who collects bobbing-head dolls and Hawaiian souvenirs and who, she'll be the first to admit, has had a blast (Zacharek, 1999).

Despite the kidding around, some have started examining the darker side of the comparison. An MSNBC article titled "Bidding till You're Broke" asked "are online auction sites addictive or just great shopping?"

> For most users, auction sites are simply a place to find collectibles or rare and unusual items at a good price. But for a few, they evoke a high that can lead to financial and psychological despair.

It is hard, acknowledges the article, to know whether the addiction label applies. In the words of Maressa Hecht Orzack, a psychologist who in 1996 founded the Computer Addiction Service at McLean Hospital in Belmont, Massachusetts:

> "Some people say that it's an impulse-control disorder [like gambling] [...] Other people say it's a symptom," says Orzack. "I don't care what it is [...] something happens to these people and they have to be treated" (Goldberg, 1999)

Competitive

In contrast to the portrayal of Internet auctions as emotionally charged and therefore conducive to irrational behavior, a piece in the *Los Angeles Times* put forward the view that the Web auction environment was less pressured than that of live actions.

> "On the Web, there's nobody beating you over the head," said Alex Talalayevsky, a professor of information systems at Chapman University in Orange. "Consequently, you see much less of the irrational buying behavior that can occur when someone is screaming 'going, going, gone'" ("Headline: Cyberworks," 1998)

But few Web-bidders are choosing between a virtual auction and a live auction. They come to auctions from the traditional fixed-price retail environment. So even a measure of 'going going gone' pressure can increase sales. And, indeed, one of the main attractions, according to many reports, is the challenge of playing against a rival. Winning is the aphrodisiac that gets the shopping juices flowing. Especially, says Vernon Keenan, if the shopper is male:

> Using an exchange to set the price of a transaction plays into the human penchant towards competition. Promoting the competitive and playful aspects of an auction boosts the popularity of an Internet exchange. ONSALE, the leading Internet Exchange, demonstrated a tendency of male Internet users to compete for winning an auction, like the desire to win a race or any other contest (Keenan Vision, Inc., 1998a).

Keenan said it more bluntly in a *New York Times* article:

> "Onsale is the perfect shopping experience for men," said Vernon Keenan, an electronic commerce analyst with Zona Research. "Not only do you find a bargain, you have to hunt it and kill it before you take it home" (Hansell, 1998).

Or, as Gary Gentile put it with less gender specificity in foxmarketwire.com, auctions take "the human desire for a bargain and pair it with the human need to deprive someone else of the same bargain" (Gentile, 1999).

Isolated

In addition to being obsessive and competitive, the users of Web auctions are also thought to be searching for the bonds of friendship and community. This is a key assumption about the Web in general and is certainly at the heart of the eBay phenomenon. EBay's own executives and press releases repeatedly touch on communal themes and values. They set forth a philosophy:

> eBay was founded with the belief that people are honest and trustworthy. We believe that each of our customers, whether a buyer or a seller, is an individual who deserves to be treated with respect ("Company Overview," 1998).

They also give eBay a particular identity by giving it a history, or what *Wired* magazine refers to as the site's creation myth. The hackneyed tale is told in eBay's own literature and in nearly every news story about the mammoth site:

> eBay was conceived initially as a result of a conversation between Pierre Omidyar and his girlfriend (now his fiancée), an avid Pez™ collector (she currently covets a collection of more than 400 dispensers). She commented to Pierre how great it would be if she were able to collect Pez dispensers and interact with other collectors over the Internet.
>
> As an early Internet enthusiast, Pierre knew that people needed a central location to buy and sell unique items and to meet other users with similar interests. He started eBay to fulfill this need.
>
> Pierre launched eBay on Labor Day in September 1995 ("Company Overview," 1998).

The community atmosphere has turned out to be a gold mine for eBay. And indeed, financial writers and analysts like those at the Red Herring investor Web-zine point out that the commitment of such a "community" member translates into valuable brand loyalty.

> What you really need to make a consumer-to-consumer auction site work is a critical mass of repeat buyers and sellers. It's the same as with any customer relationship--because it costs a fortune to get shoppers to come into your store, you have to keep those who do (Needleman, 1999).

Red Herring goes on to note that a key reason for eBay's success is that buyers' comments about each eBay seller are posted on the site. "A seller with dissatisfied customers is unlikely to get much business," continues the article. "This public feedback inspires trust--one of the key reasons that people are more attracted to online auctions than to traditional classified ads."

On this score, Red Herring gives higher marks to CityAuction for the degree to which it zeroes in on the right people in the right places:

> [I]n the area of building community, CityAuction's feedback on sellers is even better than eBay's because it identifies the specific auctions that inspired the comments, which makes it harder for sellers to post fake buyer commentary. CityAuction also can locate goods in particular geographical locations, which makes the service attractive for people selling large items like automobiles that can't easily be shipped. Finally, the site aggressively posts auctions to the appropriate Usenet news groups. For example, if I were selling a barely used performance exhaust system for a Saab 900 (cheap!) in the Bay Area, CityAuction could send word of it to the appropriate local news groups (like ba.forsale) as well as to topic-specific groups (like rec.autos.marketplace).[3]

PRODUCTS

Introduction

It may be easier to list the items that cannot be peddled via Web auction than to try summarizing all those that can. Goods ranging from the intangible to the unwieldy, are being sold this way or will be in the near future. Rather than simply listing the products, it is instructive to examine how the Web reorganizes the categories: why one auction model sells movie tickets and pianos, another pitches fine wines and oriental carpets, why one supplies coffee beans and natural gas, and another offers plane tickets and home mortgages. Whether an Internet auction exchange's organizing principle is rooted in means of delivery, pricing model or demographic of the target consumer, the literature suggests an explosion of concepts and models for organizing the sale of different products.

Best Bet Lists

Market experts and web commerce technology companies have been trying to predict which goods will be the most likely merchandise for Web auctions. Forrester presented its list of favorites for Web auctions, or what it calls "exchanges":

> By examining industries that sell commodities or intangible goods we have identified opportunities for Internet architects to build business-to-business exchanges for Computers, Peripherals, Software, Industrial Supplies, Telecom Services, and Advertising. In the consumer realm, we see the collectibles and classifieds business continuing its march towards using the Internet to aggregate buyers and sellers. Internet architects seeking to design other exchanges for consumers should look

> towards helping people buy and sell intangible goods, where the purchase and delivery of the good or service may be completed on the Internet (Keenan Vision, Inc., 1998b).

E-commerce technology company, CyberQuest Inc., offered a list of vertical markets it considered to be ideal candidates for implementation of its bid4it Exchange:

- airline seats
- chemicals
- coffee beans
- collectibles
- computers
- freight capacity
- industrial supplies
- integrated components (licensed)
- natural gas
- lumber
- oil
- oil field equipment
- paper
- penny stocks
- peripherals
- plastics
- software
- steel
- wine
- utilities & energy
- other "spot" markets ("E-Commerce Leader," 1998)

Fine Art Etc.

A high-society crowd bidding on a Rembrandt, flashing hand signals at the rapid-fire offers of the auctioneer. For many people, this is the scene that comes to mind when they hear the term "auction." The traditional art auction house parlays that mystique of wealth to draw its well-heeled clientele.

The World Wide Web, plebeian and anarchic, clashes with the art auction's exclusive, aristocratic image and upscale auction houses were initially squeamish about boarding the Internet auction train. When, perceiving the potential increase in customers and sales, Sotheby's did go on line, eyebrows were raised. "Sotheby's Joins the Fray," jeered a Reuters headline:

> Venerable Sotheby's is launching an Internet auction business, joining the flurry of companies rushing to capitalize on electronic commerce. The news triggered a 28 percent jump in its share price ("Sotheby's Joins the Fray," 1999).

Sotheby's was especially eager to distance itself from a ragtag flea market like eBay, which was considered its natural competitor.

> "Their average lot value is $40 and ours will be a multiple of that," Brooks said. "We guarantee the authenticity (of the items), and on eBay it is seller to buyer. We will also handle the payment mechanism" ("Sotheby's Joins the Fray," 1999).

In an article entitled "Independence Day," *Forbes* magazine called the day of Sotheby's announcement it was venturing on-line "the aesthetic equivalent of July 4."

> Soon anyone with a computer and a modem will be able to shop like a Greek shipping tycoon--bidding on baubles like vintage Cartier earrings and Picasso drawings--without leaving Steubenville, Ohio. No longer will you have to put up with the icy glare of that snooty intern in the old master's department as he corrects your pronunciation of Titian (it's Tishin).
>
> Sotheby's announcement is just the most dramatic manifestation, although not the most interesting, as it turns out. In mid-February Yahoo Auctions and the venerable San Francisco auction house of Butterfield & Butterfield will mark their collaboration with an on-line auction, which includes O.J. Simpson memorabilia (see sidebar). Nothing like this has been done before. Within a year auctions on-line will no longer be just a flea market of Beanie Babies and fake Civil War swords, but a place where you might find a Picasso lithograph or Lalique vase (Goff, 1999).

With the quality and price of online merchandise rising, according to *Forbes*, it was

inevitable that the big auction houses would participate. In the high-end market, Sotheby's and Christie's have been able to answer customer demands for accountability and assurances of authenticity.

> "I don't think this is a choice," concedes Dede Brooks, Sotheby's chief executive, of her decision to sink $25 million into sothebys.com in its first year. "We can't afford not to be on-line" (Goff, 1999).

Charity/Publicity Auctions

The Internet auction has also been employed to auction off single high-profile items, often to generate money and publicity for charity, especially around Christmas time. Rare holiday ornaments and celebrity artifacts were auctioned to benefit the Sweet Relief Musicians Fund; equipment once belonging to the great American photographer Ansel Adams went to help a pediatric AIDS foundation and the Center for Creative Photography; and the one millionth box of Flutie Flakes, named for Buffalo Bills quarterback Doug Flutie, was auctioned to raise funds for an autism foundation named after Flutie's son, Doug Junior.

In other instances, the online auction of a single, highly desirable item, was seen as a way to draw attention to new Web sites and to traditional or hybrid auctions (online and offline).

A bidder paid $2.7 million, for example, when Guernsey's auction house sold the baseball that St. Louis Cardinals slugger Mark McGwire smacked for his record 70th home run in 1998. The auction began on the Internet with the final round broadcast from New York's Madison Square Garden on a cable sports channel. The winning bid was from a live bidder.

Niche/Collectibles

Collectors--highly motivated and geographically scattered--are a natural demographic for Web auctions. The Internet is ideal for disseminating information far and wide, and is proving to be an effective mechanism for financial transactions. In February 1999 foxmarketwire.com noted the proliferation of sites selling collectibles.

> One trend that has already begun in online auctions is the emergence of niche sites. These sites target an already well-established community of collectors, car enthusiast, say, and allows them to broaden their reach through the Internet. As these sites proliferate, they will likely begin to draw die-hard collectors away from the broad-based sites, or force places like eBay to start their own niche companies (Gentile, 1999).

Unity marketing, which serves the collector market, backed up that assessment with some data described in a report called "The Internet Collecting Boom: A Trend Report on the Emerging Internet Collector." Surveying 1,800 collectors during the fourth quarter of 1998, Unity found:

> Over one-third of the collectors surveyed said they had used the Internet to buy, sell or trade collectibles or to gain information about their collections, compared to only 8% in 1996.
>
> The survey reveals that Internet collectors spent 34% more on their collections last year than traditional collectors--$1,394 for Internet collectors, compared to $1,040 for traditional collectors.
>
> Demographics are a key distinguishing characteristics between the two different types of collectors ("Over One-Third," 1999).

Software

One critical bottleneck in Internet commerce has been the need to deliver goods to the consumer. One exception comes when the Internet is itself a delivery mechanism for the product being sold, as is the case with downloadable software. Awareness of this fact came early on, and some of the first bidding on the

Web was for software. One early example: In October 1997, the Canadian company, Internet Liquidators International Inc. ("a rapidly growing provider of electronic commerce services") and the online game company WorldPlay Entertainment announced a strategic alliance, targeting highly-sought after PC gamers:

> This partnership offers gamers a quick, easy connection from their favorite multiplayer games to a secured environment where they can purchase related entertainment products via the Internet. Effective immediately, PC game enthusiasts who play games offered by WorldPlay on AOL (keyword: WorldPlay), can now link to Internet Liquidators' online auction Website (keyword: Auction) to purchase, and bid on, numerous PC games and other entertainment-related accessories ("Internet Liquidators," 1997).

Information

Just as it is a delivery channel for software, the Internet is also an outstanding conduit for information-based and information-rich services and products. These include advice, rights, contractual arrangements, airline and entertainment tickets, and financial instruments. All are easily, perhaps optimally, delivered via Internet, and some are best sold in a fluid pricing model. Priceline.com became famous for bringing airline tickets to the Web auction block (though its model uniquely allows sellers to reject bids deemed too low). Priceline then moved into, as Reuters put it, the somewhat daunting and complex field of home mortgages:

> "We have two things going for us," [Priceline.com Chairman and Chief Executive Richard] Braddock said. "The Internet as a medium is a natural for the access of information-based services like mortgages. E-commerce as an envelope for things like this is going to grow substantially on the Internet over time."
>
> "Secondly, I remember from my old banking days that mortgages is a particularly consumer-unfriendly product, largely because of the processing complexities," Braddock said. "It's a cumbersome product for the consumer to get their hands on. We have an ability to use the Internet not only to deliver the different buyer proposition we do, but also to deliver ultimately a better service."
>
> "Our fundamental proposition from the buyer side of the equation is that the individual gets to name their own price for whatever goods and services we offer, on the assumption that they will realize savings and establish a greater sense of control and empowerment--which in some respects is what the Internet is all about," Braddock said.
>
> Braddock sees Priceline expanding into other areas before too long. "We'll have vacation homes, cruise lines, rental cars, credit cards, a wider range of loan opportunities, insurance, and maybe hard goods like computers," he said ("Mortgages on Priceline.com," 1999).

Financial instruments also fall into this category, and certainly there is logic to electronically auctioning stocks sold on Wall Street, the ultimate fluid pricing system:

> W.R. Hambrecht, an online investment bank, is using auctions to sell initial public offerings of shares. Investors submit secret bids; the price is set at the highest level at which all the available shares can be sold; and they are allocated at that price to everybody who bid that amount or more.
>
> According to Peter Cramton, an economist at the University of Maryland, many IPOs display classic signs that shares are being sold too cheaply, and to the wrong people (i.e., not to those who value them most highly). Typically, there is a sharp rise in price on the first day's trading, and a huge volume of shares changes hands ("The Heyday of the Auction," 1999).

Patents are an interesting example of information-rich products that appear suited to Web auctions. The Patent and License ExchangeSM patent auction market was founded by Nir Kossovsky who, in a press release, said:

> "[P]atents are the most valuable asset a business can have today--they fuel the global economic engine." Currently, more than 600,000 patents are available for license or sale. An additional 265,000 patents join that global inventory annually. On average, a patent will be three years old before it is sold or licensed. Kossovsky adds, "currently, everyone in the value chain loses: inventors, patent owners, businesses, and the public, as they are all deprived of the benefits of novel products and the associated revenues." The cash value of this loss is more than $500 million annually.
>
> "The Patent and License Exchange [plX] global auction market will do for patents what the Chicago Board of Trade did for grain in the late 19th century," said Kossovsky at the AAAS symposium. "Patents are not commodities--they are a set of rights which in an efficient market, could be nearly as liquid as financial instruments."
>
> There are two reasons today why the patent market is inefficient. First, buyers and sellers can't find one another. Second, when they do, buyers end of up assuming most of the risks. plX solves these problems through a sophisticated searchable database with standard disclosures, a transparent pricing model, and new patent insurance products (Ludowitz, 1999).

For Local Markets

The Internet's global reach is irrelevant when long-distance distribution is too costly or impractical. But the Internet has other qualities that make it an effective vehicle for commerce in local markets. Ticketmaster, with its clustered urban audiences, was one company that came to understand the connection between going to the theater and owning a kitchen table, as reported by *Bloomberg News* in January 1999:

> Ticketmaster Online-CitySearch Inc., which offers entertainment-event tickets over the Internet, plans to buy closely held Internet auctioneer CityAuction Inc. for about $54 million in stock to offer local auctions of bulky items such as furniture, the companies said ("Ticketmaster," 1999).

Overstocks

The Web auction has been viewed as a boon for companies that fail to move their stock in time, and few are not faced with such a problem.

> "Every single company that has overstocks, refurbished or returned goods, has inventory issues," said Michael Brader-Araje, president of OpenSite Technologies, a maker of the underlying software that powers some of the biggest online auction sites. "An auction is going to become a natural latch-on to every company's e-commerce initiative" (Gentile, 1999).

Companies that want to unload stock at a reduced rate recognize the auction model as the way to get the best price. They can do it without worrying about the harm holding a fire sale would do to their image or to the prices on their front line stock. Being anonymous on the Web is easy. You can protect your image while selling under a different name, creating a shadow site, or distributing on another site.

> [M]ore companies like Student Advantage Network are realizing the bottom-line benefits of using Net-based business-to-business auctions to unload expiring inventory, distressed merchandise and other hard-to-sell goods. Other businesses are setting up extranets to conduct private auctions with their dealers or vendors (Rafter, 1998).

Commodities

There has been a quiet revolution in the business-to-business sector, as commodities are increasingly sold via Internet and Intranet exchanges.

> Buyers can search MetalSite to see what steel is for sale. They can see how much of a product is available and who produced it, as well as its width, thickness and composition.

> Sellers can offer their metal at either a fixed price or through bids that are posted and awarded daily. The seller decides whom to sell to and pays transactions fees of 0.25 percent to 2 percent depending on whether the sale is through an auction or a fixed-price offering. MetalSite also intends to generate revenues through advertising, setting up sites for sellers on the exchange, and providing other services (Boselovic, 1998).

Hen Weirton Steel Corp. sells excess inventory through MetalSite and reports that the auction generates higher revenue than non-electronic sales:

> "By moving product to more customers, we've increased revenues by 10 percent on the same amount of volume," says Weirton Steel Vice President Earl Davis (Fickel, 1999).

An industry like agriculture has a long tradition of actions, and the moving on line is more of a hop than a leap. MBT International Inc. brought the Web auction format to agricultural products and services that included equipment, horses and livestock. The American Angus Association, "the nation's largest beef registry association" launched CyberStockyard in October 1998. According to the *Angus Journal*, CyberStockyard's debut event, a feeder-calf sale in Burwell, Nebraska, drew the attention of bidders and buyers from Texas, Kansas, Nebraska, Iowa, Colorado, and Mississippi.

> "Without the Internet auction, dealers who want to buy or sell cattle long distances apart have to videotape the cattle and rely on satellites to broadcast the pictures to dealers, which can get pretty expensive," says Sanders. "With the Internet, you can video the cattle one time and can look at them anytime that's convenient for you. Then all the buyers can just congregate on a certain day. .Plus, it's great insurance against inclement weather" (Bible, 1998).

Perishables

An unsold plane or theater ticket is a marketing time-bomb: As the clock ticks, the value of such items changes by the moment and then, at a given moment (take off, curtain), the value completely self-destructs. The Internet auction offers the fluidity needed to reach an optimal price as zero hour approaches. That is the reasoning behind priceline.com, which markets unsold flight tickets. But well before William Shatner was flogging cheap flights, plane tickets were auctioned off in Hong Kong. In mid-1996, the territory was poised for its long-awaited transfer of power from British to Chinese rule. When it became evident that the expected flood of tourists pouring in to witness history would be only a trickle, flagship air carrier Cathay Pacific responded by offering bargain basement flights on an Internet auction.

> Beginning May 15, 1996 we'll be auctioning off AN ENTIRE 747-400 worth of seats (387 First, Business, and Economy Class seats to be exact) for round-trip travel to Hong Kong during 1997. You can choose to fly from either New York or Los Angeles. Once the auction has concluded, you'll find out whether or not your bid was successful, sometime in August. This gives you plenty of time to plan the rest of your 1997 trip to Hong Kong.
>
> Minimum bids for round-trip travel are amazingly low: USD$300.00 for Economy Class, $600.00 for Business Class, and $1,200 for First Class. The potential savings to you range from several hundred to several thousand dollars![3]

Two years later, along came Priceline.com. Chairman Jay Walker said he hoped the service, which allows consumers to name the price they are willing to pay for airline tickets, would revolutionize the way people shop for airline tickets, and eventually other products.

> Walker concedes that few, if any, companies have as yet harnessed the Internet into huge profits, but he is convinced he has hit upon a compelling idea.
>
> There are about 500,000 airline seats that fly empty every day, and the airlines would just as soon fill them with leisure travelers at bargain prices, he said.
>
> Customers can go to Priceline.com's website, insert their dates and destinations, as well as the price they can afford, and Priceline.com will respond within an hour, Walker said.
>
> If a customer offers $300 to fly from New York to Los Angeles, Priceline.com will try to buy a seat for $280, and keep the difference as profit, Walker said.
>
> The service is not for business travelers. "When you use Priceline, you must agree to let the airlines pick the flight and the routing," Walker said. "You can't change the tickets, and there are no frequent flyer miles" ("Firm Lets Users," 1998).

EVOLVING TECHNOLOGY

Supply-side Data integration

The leap forward in technology for gathering and organizing data has made dynamic trade far more possible, especially as such electronic information can increasingly be integrated into the transaction process. *Context Magazine* summed up the trend:

> The reason that pricing is finally starting to become more dynamic is that buyers and sellers have access to so much more information. For instance, sophisticated databases let suppliers track the buying patterns of individual customers. "Companies that capture data about customers can behave much more efficiently," says Valda Lief, an analyst at Forrester Research, a technology market research firm. "They can get rid of their inventory at the highest price the market can bear" for each item, rather than setting a single price for the whole lot.
>
> In addition, suppliers know more about their own situations. A relatively new class of software called ERP, or Enterprise Resource Planning, lets suppliers keep track of inventory, component prices, etc., as never before (Flynn, 1998).

The Keenan Report, in its prescription for keeping pace with dynamic trade, also urged businesses to integrate their bookkeeping:

> To successfully integrate auction technology into an e-commerce application, Internet architects must plan to link the object into a robust and manageable network design. Internet architects today are choosing the "n-tiered" approach that uses application servers to manage all display and transactional logic in an e-commerce application. For Internet Exchanges, the auction objects are built into application servers, where they are lashed to the back-office systems using enterprise system integration techniques (Keenan Vision, Inc., 1998b).

Demand-side Data Integration

Just as data integration empowers suppliers to track inventory, customers and pricing, so too, buyers gain unprecedented access to information. One simple example is the opportunity to know the winning bid in a previous auction for a desired article.

> Teletrade's new auction supersite offers a variety of onsite resources, including the first online "Real Price" guide for certified coins, sports cards/memorabilia, and certified diamonds. The price guide is updated as soon as an auction closes and visitors can search the online price guide for specific items. It will be the first online source and guide that shows real prices paid by real buyers for specific items over the past 24 months of Teletrade auctions. This information is available free of charge ("Greg Manning," 1998).

But the biggest drag on auction shopping was the inability to compare prices across different auction sites. Large industrial buyers and suppliers, in particular, were viewed as natural customers for a more robust yet streamlined form of shopping, as *E-Commerce News* foresaw:

> So many variations on the marketplace business model--smart catalogs, auctions, marketplaces, and vertical market sites--are already beginning to try the patience of

> major suppliers and buyers. The year ahead may see the beginning of the shakeout, with some buyers and suppliers picking a single player with which to cast their lot.
>
> On the other hand, a promising new wave of agent technology might make it possible to sell or buy supplies regardless of where your products are listed (Andrews, 1999).

The spread of on-line retail had already spawned a whole new field of smart shopping technology, or "price bots," capable of conducting Internet-wide product searches and price comparison. Early comparison shopping sites were graphic-poor and limited to culling information on products and prices and, perhaps, offering some product reviews. The growth of Internet auctions generated a demand for more such services and in more sophisticated forms.

Late in 1998, that wave of advanced search technology did roll in, care of such companies as Excite, Product Finder, my Simon, Bottom Dollar, Yahoo! Shopping, and CompareNet. There were jumps in the share prices of companies that introduced the technology. For example, in early November, shares of Lycos Inc. jumped nearly five percent the day the Internet portal company announced it was offering "AuctionConnect," described as a free service that obtains deals from numerous Net-based auction sites.

> Lycos' new service is powered through an exclusive agreement with Bidder's Edge, which uses proprietary technology to scan the various Web auction sites.
>
> To use the service, users enter the desired product and press the "Go Get It" button at the site. AuctionConnect then provides a list of where the desired product is being auctioned with links to the bidding area within those auction sites.
>
> When the Web surfer clicks on the link, they leave AuctionConnect for the auction site they've selected, where they can then directly participate in the auction.
>
> Lycos' new service maintains a product history and lists the average selling price for a specific item at a number of auctions, which helps the user determine if an item's current price is a good deal.
>
> AuctionConnect also provides the "DealWatch" service, which notifies a user as soon as an item they want comes up for auction. With this instant notification, users can enter their bid shortly after the product's introduction, letting them take advantage of rules that favor people who bid early (Woods, 1998).

Several weeks later, Red Herring was paying close attention to OpenSite Technologies' new online auction hub, Bid.net. (later BidStream.com) because of its capacity to search all auctions, and aggregate the auction sites running on OpenSite software.

> Over half of the real-time live Internet auctions run on OpenSite Technologies's software, but at the moment all the auction sites using the software function independently of one another. Bid.net could change all that.
>
> The Bid.net network, to be launched in the first quarter of 1999, will provide added value to both the users and the auctioneers. Users will be able to search the entire network and get real-time results on auctions being held and current bids. And by aggregating the auction sites that run on its software, OpenSite will leverage the traffic of its larger customers for the smaller sites (Mittner, 1998).

Despite the fanfare, this search and compare technology is not a panacea. A Reuters piece on price bots raised some concern about the reliability and thoroughness of some search engines, as well as their integrity:

> As with any shopping experience, buyers who use price bots and comparison services need to beware. Though sites are expanding their databases, the product categories they cover still are limited to consumer electronics and other items that sell well online. In some cases, price bots only link to merchants they have revenue-sharing arrangements with, or give preferential treatment to merchants who pay for ads or sponsorships.
>
> There's a trade-off for all this information: privacy. Price bots and comparison-shopping sites don't always ask shoppers to register to use their services, but they track how long shoppers stay on their site, what pages they visit and whether they end up buying anything. That information is aggregated and sold as market research to manufacturers interested in learning about online buying habits and patterns (Rafter, 1999).

Technology Integration

The trend in data integration is mirrored in moves to interconnect Internet applications and communication technologies. One example is a service introduced in early 1999 that pages bidders:

> Unlike any other online auction service today, Auction Universe has incorporated Internet paging services into its technology. There is no longer the need for bidders to be tied to their computers all day during a heated auction. All bidders need to do is enter their pager number on their Auction Universe information profile and they will be paged anytime they are outbid. This means that if someone is intent on being the highest bidder on a must-have item, they will know immediately if they need to increase their bid, without having to actually sit by a computer all day ("Two Technologies Converge," 1997).

Also illustrating the trend toward technology integration is California-based @Home Network, which distributes high-speed interactive services using its own network architecture and a variety of transport options including the coaxial cable lines. @Home partnered with other related firms to beef up connections and exposure to auction sites:

> @Home's "always-on" connection eliminates the lengthy dial-up process, enabling bidders to continuously monitor the status of their bids and react quickly to price changes.
>
> The auction companies will also benefit from @Home's recent acquisition of Narrative Communications, whose Enliven technology enables auctioneers to drive impulse purchases through product advertisements that contain real-time bids. Additionally, users also will have direct access to Egghead.com's auction site and First Auction's services through contextual links in @Home's editorial content ("@Home Network," 1999).

PITFALLS

The "perfect market" picture sketched by Internet auction cheerleaders has been marred by a variety of problems, from technical failings to human error or deliberate mischief. In April 1998, CNET News.com noted that prices could be far from ideal for average shoppers.

> "The other auctions have too many people buying in there. They're bidding the machines up to the retail price. In fact, they bid it higher than retail," Rich said. Bidders at consumer-oriented auction sites often live in areas with few computer stores (Clark, 1998).

Name-brand manufacturers also complained their products were being ripped off by on-line counterfeiters. "Sellers have more anonymity online than they do at a flea market or swap meet, making it harder for manufacturers to track down the origin of the goods" (Sprenger, 1998), noted a December 16, 1988 item in *Wired*, reporting on an eBay auction of bogus Viagra.

In late 1998, a flurry of reported abuses on eBay threatened to rain on the auction behemoth's parade. "You can get anything you want on the auction site eBay. But proceed with caution," warned Newsweek.com in a December 16 dispatch titled *Risky Bidness*, "when you're hosting millions of dollars of transactions from semi-anonymous players, things can and sometimes do go horribly wrong" (Levy & Stone, 1998).

The article cited a software glitch that downed the site for hours, described a prank

that threw cold water on a celebrity charity auction, and went on to tell the tale of Sonny Stemple, a con artist who bilked site users out of thousands of dollars.

> Stemple apparently knew how to manipulate the eBay game. In October he set up his identity, and began purchasing items, making sure that the sellers posted praise for him after the transactions. This built him a reputation. Then he put items up for bid; at one point he had 30 auctions going. The prizes were prime e-bait: Mark McGwire rookie cards, Nintendo 64 units and some hot sporting goods. When approximately 80 high bidders like Tracie Kimrey of Dayton, Ohio (Nintendo, $137), and Steve Mendez of Brooklyn, N.Y. (1985 Topps packs, $305), sent off money orders, they were guided by catmuuzic's perfect record. Mistake. After weeks of calls, all they got was promises. Then silence...
>
> EBay's response? Suspending Stemple from the service. No refunds (Levy & Stone, 1998).

EBay initially tried sticking to its position that transgressions were few in number. The site's executives, who were adamant the site be called a "person to person trading community" rather than an auction, espoused a shop-and-let-shop attitude, and urged "Caveat Emptor."

> "EBay is a community that is working hard to create an environment of open, honest trade," said Handler (Beckett & Swartz, 1998).

But eBay's booting of customers who complained when the site went down drew fire with headlines such as "Online Auction Site eBay not Always Open to Criticism" ("Online Auction," 1998).

That same month, as carried by PRNewswire, Public Eye, the Alliance of Certified Safe Shopping Sites launched eSafeExchange Trade in which "all parties who register to sell or buy merchandise on the site will be required to agree to execute transactions through TradeSafe Online Corporation--the oldest and most trusted general merchandise escrow service on the Web" ("Web Alliance," 1998).

A few weeks later, despite its uncontested position as king of the electronic flea markets, and evidence of deep user loyalty, eBay did respond to fraud fears. In January 1999, eBay adopted the SafeHarbor 2.0 and Legal Buddy Program 2.0 programs, and widely touted their value in helping to "promote safe online trading, as well as protect the overall community from fraud, the sale of illegal or infringing materials and people that would misuse its system" ("EBay Thwarting Fraudsters," 1999). Respected traders were provided with free insurance from Lloyd's of London. Among the other features of the new systems were "verified eBay user identification status, an enhanced feedback forum area, tougher deadbeat bidder and shill bidding policies, clarification of illegal items that are not permissible for sale and strengthened anti-piracy and anti-infringement protection" ("EBay Thwarting Fraudsters," 1999).

ESCROW AND INSURANCE

An electronic transaction takes place in a controlled, virtual environment. But when it comes to exchanging payment for goods, there is a measure of risk that deters many--consumers and businesses alike--from participating in auctions. The distance and anonymity that characterize the buyer-seller relationship severely reduce the trust factor and increase risk. Hence the need for third party assurance of delivery and payment, and hence a boom in escrow and insurance services for Internet auctions. The *Detroit News* cited an estimate from one auction site that put the incidence of cases where sellers collect payments without intending to send the merchandise at less than 1% of its transactions:

> But "accidental fraud," where a seller is simply late in sending merchandise or a child orders something he doesn't intend to pay for, is as high as 10 percent. To combat such problems, Auction Universe allows shoppers to pay for auction items with a credit card and offers a money-back guarantee when they do. Other auction sites are affiliated with Internet escrow companies like I-Escrow (www.iescrow.com), TradeSafe Online Corp. (www.tradesafe.com), and Trade-Direct (www.trade-direct.com). These companies act as intermediaries to make sure buyers get merchandise and sellers get paid. For a modest fee, both parties get added assurance and buyers get the chance to inspect in person goods they've only read about online (Seebacher, 1998).

The above-mentioned services, aimed as they are at the private consumer, collect small fees based on some form of percentage of the purchase item. But security arrangements get more complex at the upper strata of electronic transactions. For example, when Patent and License ExchangeSM patent auction market announced plans to open a business-to-business Internet-based auction for the transfer of patents and licenses, it made sure to emphasize what sort of protections it would be offering:

> Providing patent insurance creates a more risk-free marketplace by reducing the risk that buyers and sellers bear in each patent sale. The company is currently talking with Swiss Re Group about creating a complete package of patent validity, infringement, and enforcement insurances. According to Bill Hoffman, Associate Director of Integrated Risk Solutions, Swiss Re New Markets, "pending the approval of our executive board, we will provide innovative patent insurance products for plX to facilitate the safe and efficient commercial transfer of quality patents and licenses. Patent insurance is a new area for the insurance industry and one we believe has significant growth potential" ("PLX Announces Plans," 1999).

SOCIAL IMPLICATIONS

The social impact of electronic exchanges has received little direct treatment. It may be too soon. But in a consumer culture, transformations in commercial relationships and different concepts of pricing are likely to have wide-ranging impact. An article in *USA Today* raised the question, although here the focus was on Internet commerce in general:

> Chet Bowers, an education professor at Portland (Ore.) State University, says it didn't take all that many sales dollars moving from downtown to suburban malls to destroy America's city centers. He wonders whether the Web will have a similar effect, and explores such questions in an upcoming book called *Let Them Eat Data.*
>
> The Web is a new kind of global supermall that will make it even more difficult for local stores to compete.
>
> For every store that closes, Bowers says, "we lose another opportunity for face-to-face interaction" (Weise, 1999).

Esther Dyson, president of EDventure Holdings and the doyenne of social theory and the digital world, was troubled by what she saw as ambitions of turning the Net into the ultimate efficient market. "Put Friction Back in Cyberspace!" demanded Dyson in the title of a *Forbes* magazine editorial:

> Bill Gates sees the digital world as a place for friction-free capitalism. That's wonderful: Markets function best when they are friction-free. The absence of friction makes for efficient markets and efficient business. More people get what they want; things cost less to make and distribute; scarce resources are allocated to those who want and value them most.
>
> But all the world's not a market. We'll be seeing friends in cyberspace, shopping for things by browsing around, asking for peers' advice, watching for what others buy and how much they pay. There's more to shopping than efficient transactions. We'll also be negotiating in cyberspace, intentionally losing a proposal, taking a little time to get back to the so-far highest bidder, trying to get some opinions from third parties. We'll be floating around looking for information in hopes of finding stuff we didn't ask for. We'll be living there (Dyson, 1996).

Dyson presented her proposals to technology developers for putting friction, and distance, and perspective back into the Net, saying there is no single solution, but rather "a lot of little attempts:"

> For example, a building manager would like to use a diagram of his building as an interface--in which case, forget Windows--that would give him a physical model of his world, with distances from room to room, and tenants organized by location rather than by a "virtual" feature such as alphabetical order. But with a specific application, each room would have links to the tenants and their payment records, and the basement would have links to the plumbers.
>
> The point is to build virtual space and friction rather than create a dimensionless world where everything is close to everything. Instead of a search engine that fetches what you need but doesn't tell you where it is, let's have a map. Each person's own hierarchy of folders within folders within folders is a do-it-yourself version of such a content-oriented map (Dyson, 1996).

CONCLUSION

Internet auctions have been big news in recent years and much has been written about these compelling old/new exchange models, the eBay phenomenon, and the dazzling Wall Street performances. The popular press has concentrated on explaining the new trend and helping buyers avoid getting ripped off. Business news, much of which is generated by the companies themselves, has kept its eye on the steeply rising trend lines. Technology writing has taken for granted the goal of the "frictionless market."

There is a dearth of material about the potential impact of this kind of commerce on the economy as a whole, on society and even on the individual. Some of these questions apply to all Internet commerce. But the Internet exchange is even more interactive and uses even more sophisticated data tracking and integration technology. On one hand it allows sellers to know buyers' needs and wants, purchasing behavior, buying power, habits. On the other hand it dramatically increases consumers' access to information. Surely the impact of this data explosion deserves more attention.

More study is also required of what happens to businesses when they cannot be certain of the price will they fetch for what they sell and the price they will pay for what they buy. How does this affect accounting, planning, earning expectations?

Relatively little attention has been paid to the legal questions that arise from increased use of electronic commerce in general, and exchanges in particular. Questions of jurisdiction, liability, accountability, and taxation abound, though perhaps the territory will only be explored when more real cases are litigated.

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NOTES

1. The set of all articles is available upon request from the authors as a Netscape mail folder.

2. The Product Line--Why eBay works--and why other auction sites may work even better.

3. Cathay Pacific Airlines press release, May 14, 1996.

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