

The Auction Model: How the Public Sector Can Leverage the Power of E-Commerce Through Dynamic Pricing



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The PricewaterhouseCoopers Endowment for
The Business of Government

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Foreword

October 2000

On behalf of The PricewaterhouseCoopers Endowment for The Business of Government, we are pleased to present this report by David C. Wyld, “The Auction Model: How the Public Sector Can Leverage the Power of E-Commerce Through Dynamic Pricing.”

We have seen the Internet revolutionize the way businesses interact with customers, and we are beginning to see its impact on the relationship between government and citizens. Now, with the focus of Internet commerce shifting to the business-to-business (B2B) model, Professor Wyld asserts that governmental leaders should consider ways to apply the auction model to the over half a trillion dollars in annual procurement activities performed by the public sector. There is an immense potential for cost savings, along with increased revenue streams, that can be achieved through better and more efficient acquisition, use, and disposition of governmental assets by using auction technologies.

Professor Wyld recommends that governmental leaders begin to consider practical ways to apply dynamic pricing concepts — the auction model — to their operations, on both the consumer and business-to-government (B2G) levels. He suggests the consideration of three potential applications of the auction model in the public sector: procurement activities, disposition of used/surplus/seized assets, and internal management.

The report also explores the specific challenges facing public sector managers and elected officials in implementing dynamic pricing concepts — the merging of e-business and “regular” business; public attitudes; intra/intergovernmental cooperation; and changes in culture, legislation, regulation, and technology.

We trust that this report will be helpful to public sector leaders considering how to bring the power of the new economy to bear in the arena of government for the benefit of citizens.

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Executive Summary

Way back in Internet time — 1995 — Bill Gates, the founder of Microsoft, envisioned the beginning of a new era of “friction-free” interactions in the marketplace. In his best-selling book *The Road Ahead*, Gates observed that the Internet has the potential to make the “invisible hand” of capitalism a virtual, operative one. The Internet would enable all buyers and sellers in a market to know each other’s price positions, making possible “a new world of low-friction, low-overhead capitalism, in which market information will be plentiful and transaction costs low ... and society’s resources would be distributed more efficiently” (pp. 180-181).

Hal Varian (2000a) commented: “One of mankind’s oldest inventions, the market, is being irrevocably transformed by one of its newest, the computer” (p. A42). As von Hoffman (1999) observed, with the relatively limitless information available online, “the Internet may finally create a free and fair world market” (p. 76). Queree (2000) sees that online auctions are fast becoming a “mainstream model” throughout the world of business. While auction sites have been derisively labeled as the ultimate way of “compulsively wasting time” on the Internet (Gibson, 1999, p. 156), eBay and Priceline.com were the first companies to show the power of how the Internet can be used to gather “bids” on products and services, bringing the concept down to the level of regular consumers (Bodow, 2000). The early success of eBay and other online C2C (consumer-to-consumer) and B2C (business-to-consumer) online auction sites demon-

strated prime evidence of the Internet’s role in economic evolution. This is the fact that “for the first time in history, these sites allowed buyers and sellers to convene without regard to geography” (Bayers, 2000, p. 212).

As Petersen (1999b) observed, “What a bunch of Pez traders started at eBay is fast becoming the preferred medium of exchange in the Internet Economy” (p. 30). Indeed, according to Professor Abraham Seidmann of the William E. Simon Graduate School of Business at the Rochester Institute of Technology, the development of both C2C and B2C auctions have moved us much closer to Gates’ vision of a “frictionless market” (cited in Sebastian, 2000, p. A1).

According to Busch (1999), while there has been much hype and development in C2C and B2C auctions, the so-called “killer application” for online auctions will be in the B2B (business-to-business) sector. Brakeman (1999) observed: “The true mind-boggling potential of online auctions lies in the business-to-business arena” (p. 48). Katz and Rothfeder (2000) state that for buyers and sellers alike, online auctions, unlike those in the real world, pose no constraints in regards to the time and place of the exchange. Thus, combined with the fact that the Internet serves to “disintermediate” the middlemen who have typically linked buyers and sellers, both in the B2C and B2B realm, online auctions can serve to transform pricing from a static to a dynamic model. Now, as auctions move to

the center of attention in the B2B realm, there is a new term for them — *dynamic pricing*, which is a “sophisticated term for environments where prices are not fixed” (Batstone, 1999, p. 140).

Much of the focus in the public sector to date has been on how to make government more accessible, more “user-friendly”— and thereby “friction-free” — for citizens. Much in the same way as has occurred in the private sector, the focus of policy-makers has been largely on citizen-consumers, enabling them to have easier, friction-free interactions with government. Today, at all levels of government, the Internet is making it possible for individuals to pay taxes and parking tickets online, even watch their legislatures and city councils at work. Indeed, as Rich Phillips, spokesperson for National Information Consortium (NIC), a firm that helps governments put transactions online — for a fee — observed: “E-government is going to be bigger than e-business” (quoted in Birnbaum, 2000, p. 242). At present, less than 1 percent of the over \$1 trillion in federal, state, and local government transactions take place online (Birnbaum, 2000).

Colvin (2000b), speaking about the power of online B2B auctions, commented: “This is genuine revolution” (p. 74). Now, with the focus shifting in the overall economy to the B2B model, governmental leaders should also begin to shift their thinking to how to apply the “auction model” to the over half a trillion dollars in annual procurement activities performed by the public sector. There is an immense potential for cost savings, along with increased revenue streams, that can be achieved through better and more efficient acquisition, use, and disposition of governmental assets by using auction technologies.

This report will examine the roots of dynamic pricing — the auction model — and how it can be applied to the business of government. Three potential applications of the auction model at all levels of government will be considered in the following areas:

- procurement activities
- disposition of used/surplus/seized assets
- internal management

Then we will look at the specific challenges facing public sector managers and elected officials in implementing dynamic pricing concepts and leveraging the power of “friction-free” government. These include:

- the merging of e-business and “regular” business
- public attitudes
- culture changes
- legislative changes
- regulatory changes
- intra/intergovernmental cooperation
- technological changes

Finally, we end with a call to action for all in the public sector to closely examine how they can apply the auction model to their specific situations, with a look at the absolute necessity for doing so as “e-business” *becomes* business.

Introduction

President Bill Clinton recently proclaimed: “The Internet has the potential to strengthen our democracy and to make government more open, efficient, and user-friendly” (quoted in Birnbaum, 2000, p. 244). While it may be hard to get true, bipartisan agreement on any matter, there is one area where politicians of all stripes are in agreement — that the Internet will change both governance itself and how citizens interact with the government. Thus, a new phrase has entered the political lexicon: “e-government.”

E-Government — The Final Frontier

Across the political spectrum, there is general agreement that, as Don Tapscott (2000b) remarked, paraphrasing President John F. Kennedy: “We should ask not what government can do to help the Internet, but rather what the Internet can do to help government” (p. 68). Former New York Governor Mario Cuomo, a member of the board of directors for ezgov.com, sees e-government as “an exciting prospect.” As he stated: “I am convinced that there is nothing gimmicky about it, nothing problematic about it, nothing even elusive about it” (quoted in Simpson, 2000, p. B1). Steve Goldsmith, former mayor of Indianapolis, Indiana, observed that applying e-business principles to government could mean nothing less than the “end of bureaucracy” (cited in Birnbaum, 2000).

Government has been labeled the “final frontier” of the e-commerce revolution (Simpson, 2000, p. B1). It is interesting to note that the trajectory for

“e-government” is following much the same path as the overall growth of commerce on the Internet. This is true, except for the fact that the governmental sector is largely playing “catch-up” in the application of Internet and e-commerce applications. Elaine Kamarck, former policy advisor to Vice President Al Gore and a director of ezgov.com, stated: “It’s clear to everybody that the public sector is behind the private sector when it comes to the use of information technology. It’s to the good of everyone if the public sector can catch up” (quoted in Simpson, 2000, p. B4). In the opinion of Farrell (1999), “governments may be the slowest to come to terms with the new world” (p. 128).

E-commerce, in regards to the private sector, can generally be classified as occurring in one of two general market segments:

- The *consumer segment* includes both *consumer-to-consumer (C2C)* and *business-to-consumer (B2C) commerce*.
- The *business-to-business (B2B)* segment includes the transactions conducted between businesses at various points throughout the supply chain (OpenSite Technologies, 1999).

Initially, most of the focus in the private sector has been on tapping the consumer sector through the Internet. Hence, while there has been tremendous volatility in the Internet sector of the economy, web-sites such as Yahoo, Amazon, and eBay have not

only become major forces in the economy, but they have also become major parts of people's lives.

Don Tapscott (2000b) observed that citizens are seeing and experiencing the "remarkable customer-centric changes" that are occurring in the private sector (such as one-click ordering, automatic reminders, online bill payment, etc.), and today they are "beginning to demand that government bureaucracies be equally user-friendly" (p. 68). According to Donna Morea, director of e-government solutions for the American Management Systems' State and Local Government Group, citizens are increasingly wanting the same 24x7 access to government as they are coming to expect in the private sector (cited in Harreld, 2000). Thus, much of the focus on e-government has been on the consumer side of the equation, looking at how to make governmental systems increasingly user-friendly via the Internet, so that people can do things like paying tickets or taxes in their pajamas.

Business-to-Business (B2B)

E-Commerce

For as long as companies have existed, they have sold to each other. Yet, today, there is "a need to coin a portentous new designation for it — B2B" (Diba, 2000, p. 142). Indeed, much of the focus today is on the burgeoning B2B sector of the economy, due to the larger size of this market and the potential cost savings that can be achieved by taking this segment of commerce online. According to Deloitte Consulting, online B2B sales will outpace B2C sales by a six-to-one margin (cited in Cohn, 2000). Through the availability of more complete information via the Internet, B2B e-commerce affords buyers the opportunity to find lower priced goods and services with quicker cycle times from order through delivery and with fewer errors (Menduno, 1999). In the view of McGarvey (2000), the move to conduct B2B activities online "represents a fundamental change in how companies purchase," and the primary driving force is the desire "to drive out costs" (p. 98).

Take, for instance, the simple act of issuing a purchase order, something that is done literally hundreds of thousands of times a day across America. According to both Dean Whitlock, a vice

president with ICL eBusiness Services Group (cited in McGarvey, 2000), and Bob Austrian, an analyst with Bank of America Securities (cited in Schwartz, 2000), purchasing via the Web can reduce transaction costs by 90 percent. This can save organizations billions in overhead costs annually. Chris Cogan, CEO of the Internet exchange GoCo-op.com, provides evidence of the dramatic cost efficiencies brought about by using online purchasing. His firm estimates that the average cost to a business of issuing a purchase order is \$115. Yet, when companies buy via the Web, the cost can be driven down to as little as \$10 (cited in McGarvey, 2000). Indeed, analysts estimate that many firms may be able to shave from 25 percent to 50 percent off their direct and indirect procurement costs by conducting purchasing activities through online e-marketplaces (Henig, 2000a).

As Gimien (2000) so aptly noted, the B2B boom still largely appears to be in the "Promised Land" stage of development, where "all charts trend upward [and] all numbers have many zeros" (p. 190). However, one cannot help but marvel at the overall trends and the promise of B2B commerce. As can be seen in Figures 1 and 2, the forecast growth in these markets over the next few years, both domestically in the United States and in the global marketplace, is staggering. The "New Economy" is indeed bringing about what Sawhney (1999) termed "the death of distance," as buyers and sellers can interact from anywhere around the globe with the click of a mouse (p. 10).

The image of procurement may thus be changing forever, as more and more purchasing activities are moving online. As King (2000) observed, one can now forever "erase the image of backroom purchasing agents thumbing through fat paper catalogs or haggling over prices with suppliers by phone" (p. 1). Suddenly, with the potential to streamline operations and cut costs, "the Internet has made procurement sexy" (King, 2000, p. 97).

The Business-to-Government (B2G) Marketplace

Just as the focus has shifted to B2B commerce in the private sector, so is attention beginning to shift to the decidedly less-than-sexy world of public sec-

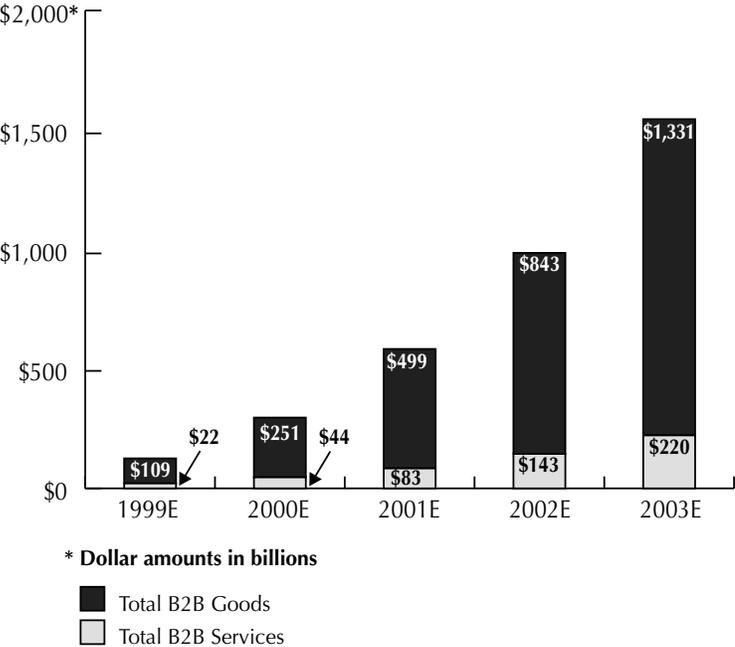
for procurement, the so-called B2G marketplace. Indeed, as Birnbaum (2000) predicts, "The biggest benefits to government agencies involve online procurement" (p. 242). The potential to "drive out costs" in this area is made all the more important by the size of the governmental marketplace. As can be seen in Figure 3, the size of the total governmental marketplace for goods and services has grown to over half a trillion dollars. While federal spending has stayed almost steady over the past seven years, the "growth market" is in state and local government procurement, as can be seen in Figure 4. Indeed, the share of total governmental procurement exercised at the state and local level has grown by fully 10 percent between 1993 and 1999.

The Bidding War

Gary Lambert, who is presently a senior principal with American Management Systems, commented earlier this year that, overall, those in the governmental sector are trying to grasp "what this New Economy is all about" (cited in Robinson, 2000, p. 39). One of the principal drivers of the Internet Age is the unmistakable fact that "the Web has become a giant bidding war" (O'Malley, 1998, p. 52).

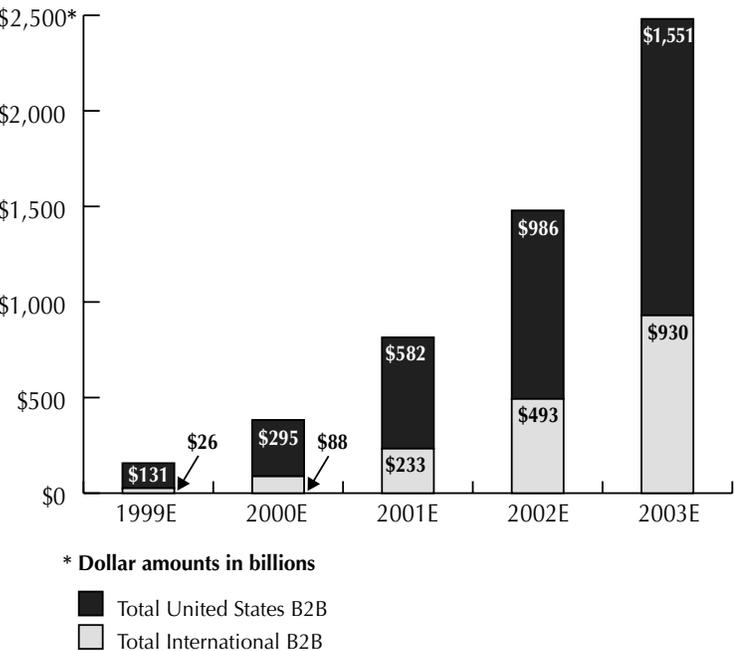
Nineteen ninety-eight was a long time ago in Internet time. However, at that juncture, Hamel and Sampler (1998) may have been the first to recognize the fact that because the Internet makes possible "real-time auctions for just about everything," there was an emerging "auction economy" being brought about by the Internet (p. 88). Queree (2000) sees that online auctions are fast becoming a "mainstream model" throughout the world of business.

Figure 1: Overview of the Domestic B2B Market, 1999-2003



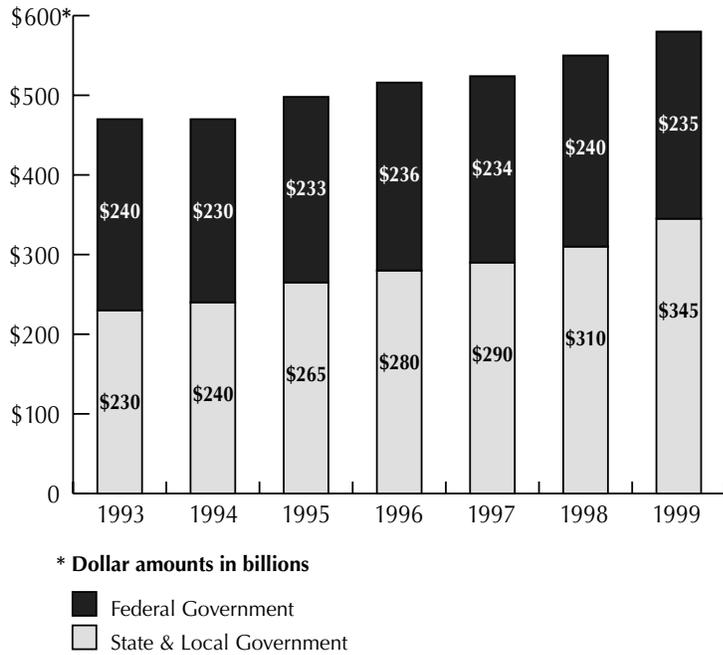
SOURCE: Data from Bowles (2000, p. S22)

Figure 2: Overview of the Worldwide B2B Market, 1999-2003



SOURCE: Data from Bowles (2000, p. 3)

Figure 3: Public Sector Procurement in Real Dollars, Federal vs. State & Local Government, 1993-1999



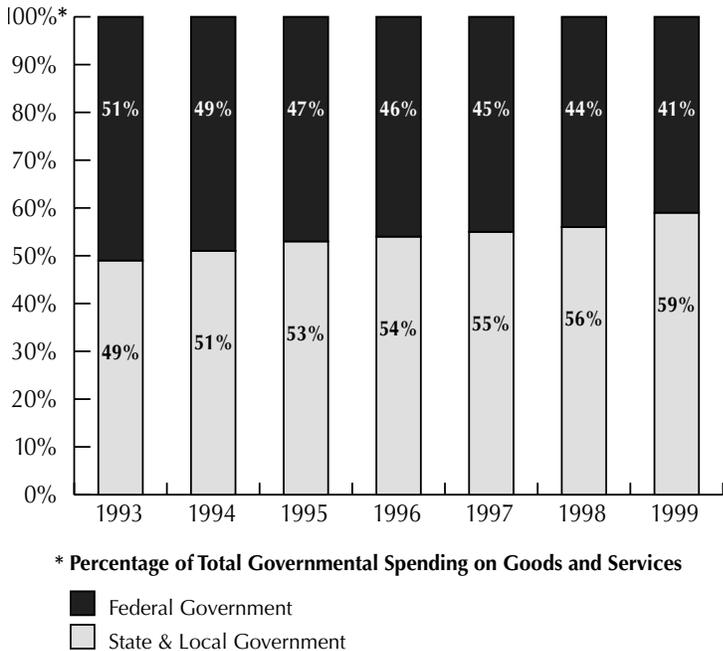
SOURCE: Data from Meagher (2000, p. 13)

This report will look at how the “auction economy” will affect the public sector. After an examination of the dynamic pricing concept and the “eBay model,” we will look at the potential for three specific applications of the auction model to e-government at all levels of government. These are:

- procurement activities
- disposition of used/surplus/seized assets
- internal management

At the end of this report, we will look at the specific challenges facing public sector managers and elected officials in implementing dynamic pricing concepts.

Figure 4: Public Sector Procurement, Federal vs. State & Local Government on a Percentage Basis, 1993-1999



SOURCE: Data from Meagher (2000, p. 13)

“The Auction Economy”

Batstone (1999, p.140) posed an intriguing question for this decade: “Will the price of everything be negotiable in the future?” If so, we are well on the way to the predicted “auction economy.” This section of the report will explore the roots and nature of dynamic pricing. Then, we will examine the major ingredients in the eBay model, which together are making online auctions the driving force in the New Economy.

Dynamic Pricing

The Historical Roots of Dynamic Pricing

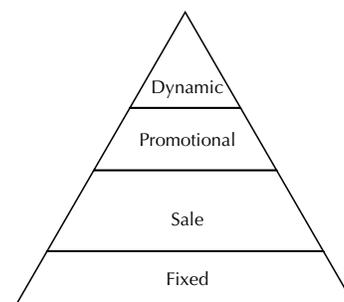
Auctions have been documented as occurring as early as 500 B.C., and today, in many cultures, haggling over prices is the accepted — and expected — manner of conducting business (Davidow, 2000). Tibbetts and Bernstein (2000) note that over the centuries, auctions have been the preferred method for auctioning everything from brides, slaves, war plunder, assets of the bankrupt, natural resource rights, and even government political appointments. In fact, the very concept of a “fixed” price for a good or service is — in historic terms — a relatively recent development. As Cortese and Stepanek (1998) noted: “A couple of hundred years ago, when a person went to the cobbler to order a pair of shoes, they negotiated the price face-to-face. It wasn’t until the arrival of railroads and canal systems, which allowed products to be distributed widely, that uniform prices came into being” (p. 75). Bodow (2000) suggests that since dynamic pricing has been the dominant mode for

economic transactions throughout most of history, “there’s always a chance that we will look back at price tags from 2050 as a historical anomaly — an economic growing pain on the path to perfect efficiency” (p. 17).

Dynamic Pricing Today

Pricing today can thus be seen as existing in a hierarchy (as shown in Figure 5) — from prices that are “fixed” and inflexible to prices that are truly dynamic.

Figure 5: The Pricing Hierarchy



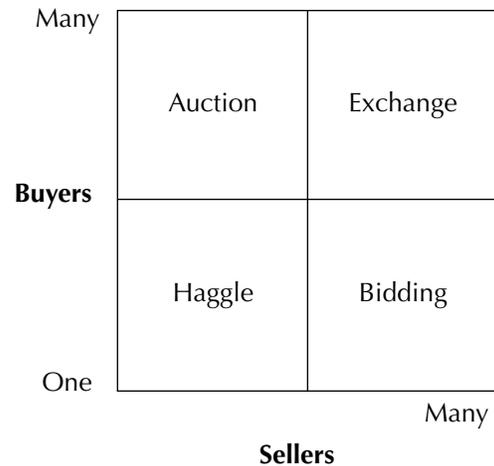
SOURCE: Adapted from OpenSite Technologies (2000, p. 9)

Depending upon the nature of the market in question, namely the number of suppliers and buyers in the market, there are four types of dynamic pricing that can occur, whether the setting is online or offline (See *The Four Types of Dynamic Pricing*).

The Four Types of Dynamic Pricing

There are four types of dynamic pricing that can be used in all online applications, including C2C, B2C, B2B, and B2G applications. As can be seen in the model above, these can be described in the following manner.

- **Auction** — one entity selling to many buyers
- **Haggle** — only one buyer and one seller bargaining, or haggling, to reach an agreed-upon price
- **Exchange** — many buyers and sellers negotiating prices
- **Bidding Process** — a single buyer with multiple sellers offering varying prices to supply goods



Source: Adapted from OpenSite Technologies (2000, p. 4)

Friedman and Lewis (1999) note that single, fixed prices predominate throughout both the consumer and wholesale levels of business simply because they are the easiest to administer and understand, both from the perspective of the seller and the buyer. Yet, this is unlikely to continue. In fact, Paul Saffo of the Menlo Park, California-based Institute for the Future foresees a time a decade or two in the future when “the notion of a standard retail price will be a scarcity, because there will be few standard things to sell” (quoted in Keegan, 1999, p. 78).

According to Bodow (2000), *dynamic pricing* represents “systems that adjust the value of goods in response to short-term changes in the market ... [and] the stock market is a prime example of it” (p. 16). Stock exchanges are often referred to as being the “most perfect markets,” as buyers and sellers on the stock exchange should have the same access to information. Therefore, the matching of their respective bid and ask prices represents an “ideal market price” for the security being auctioned. Likewise, the futures exchanges have served

as auction marketplaces for the most basic of commodities for many, many years — long before the Internet made online exchanges possible in many other areas of the economy (Tully, 2000). The challenge is to extend this market model to create liquid trading exchanges in all areas of business (Bayers, 2000). In a dynamic pricing environment, not simply stocks or futures but a wide range of goods — and services — can be “priced according to what the market will bear, instantly, constantly” (Hof, Green, and Judge, 1999, p. 30). Miller (1999) labeled this phenomenon “real-time pricing” (p. 4).

Personal Elasticities of Demand

The basis for dynamic or variable pricing is the fact that customers (at all levels) have varying sensitivities toward prices for goods and services. This is based on what, in economic terms, is known as the “price elasticity of demand.” This concept represents the fact that “customers who have more substitutes available to them, or who do not have as great a need for the product, will be more sensitive

(i.e., elastic) to price; customers with fewer substitutes and/or a greater need for the product will be less sensitive to price (i.e., inelastic) and be willing to pay more” (Friedman and Lewis, 1999, p. 9). Jay Walker, founder and chairman of Priceline.com, feels that we have entered an era of what he terms “personal elasticity,” in that customers can establish their own, unique “price/value trade-offs” in making their purchasing decisions (quoted in Rothenberg, 2000, p. 92).

When one thinks of dynamic pricing and personal price elasticities today, one first looks to the skies. Cortese and Stepanek (1998) stated that it was the airlines that “perfected the science of yield management, concocting complicated pricing schemes that defy comparison” (p. 84). As Hal Varian, author of *Information Rules*, recently observed, if one wants to see best how dynamic pricing works, one has to go no further than buying an airline ticket — “where a single coach-class ticket may spawn a thousand different price points in the span of a single week” (quoted in Schrage, 2000b, p. 84). Airlines have pioneered the yield management technology that today is being applied across the economy, affecting many areas of business (see *Taking Dynamic Pricing Too Far* for some unusual applications). In this environment: “Price is no longer the place where supply intersects with demand; it’s a vast continent of potential, where optimal opportunities interact with multiple inquiries” (quoted in Schrage, 2000b, p. 84).

Value as an “Amorphous Concept”

According to Anthes (1998), so-called “smart pricing” systems have a unique ability to improve profitability for companies that employ these dynamic pricing concepts (p. 65). That is why yield management programs and techniques are now routinely employed in industries ranging from lodging to insurance. According to Hermann Simon, CEO of Simon, Kucher, & Partners, a marketing consultancy based in Cambridge, Massachusetts, “The time of flat, uniform pricing is over” (quoted in Anthes, 1998, p. 66). He believes that companies’ profits and market shares can be improved through pricing structures that are multidimensional in nature and based on the value sought by the potential customers. Yet, in a dynamic pricing environment, *value* itself can be “an amorphous concept” (Turner, 1999, p. 202).

Taking Dynamic Pricing Too Far?

Can this theory of “personal elasticity” be carried too far, not only in the online world, but also in the physical realm as well?

Consider the following examples:

- Former Coca-Cola CEO Doug Ivester caused an uproar when he suggested a very practical application of dynamic pricing — vending machines that would automatically raise the prices for soft drinks with the rising temperatures of summertime (Colvin, 2000b).
- Paul Saffo of the Menlo Park, California-based Institute for the Future sees examples all around that further this notion of applying dynamic pricing in many different ways. He cites restaurants in two distant parts of the world as quintessential examples. First, there is a Tokyo restaurant that charges patrons not by the type or quantity of food that they consume, but rather by the number of minutes they spend in the restaurant. Next, there is a restaurant in Paris that has menu prices that change constantly by the ordering patterns of diners. In fact, this pricing system is so dynamic that the price for what a patron eats may change from the time the entrée is ordered to the time the diner is finished eating (cited in Keegan, 1999, p. 78).
- Evie Black Dykema, an analyst with Forrester Research, foresees even wilder and weirder developments in the future, which may include:
 - Babysitters auctioning off their services for high demand Saturday nights or holidays such as New Year’s Eve;
 - Air conditioner repairmen auctioning their services during heat waves; and
 - Restaurants auctioning off highly desirable tables or window seats (cited in Keegan, 1999, p. 78).

Online Auctions

The Bazaar: From Antiquity to Antiques

Glassman (2000) notes that “exchanges began as places — curbs, big halls — where buyers and sellers could get together and come to terms on shares of stock or cartloads of wheat” (p. A42). In this environment, the physical proximity of the buyer, seller, and the “good” in question was essential. However, with the advent of the Internet, Web-based exchanges “can instantly link buyers and sellers around the world, performing auctions with incredible speed and agility” (Glassman, 2000, p. A42).

According to Ward Hanson, the author of *Principles of Internet Marketing*, “We went away from the Mideastern-bazaar model for good reason: the cost of time” (quoted in Bodow, 2000, p. 17). In the physical world, dynamic pricing is nearly impossible to carry out in any meaningful way, because it is difficult simply “to get all the buyers and sellers together in the same place at the same time.” However, in cyberspace, “the Internet reduces these inefficiencies by allowing buyers and sellers to find each other, along with the information they need to make intelligent decisions” (Davidow, 2000, p. 42).

The eBay Model

In the view of Meg Whitman, CEO of eBay, what has made her company work — and is a necessity for any online exchange — is what she labels eBay’s “network effects business model.” As Whitman characterizes this phenomenon, more buyers attract more sellers in an exchange, and, in turn, this attracts more buyers and sellers to the auction site (quoted in Lenatti, 1999). As von Hoffman (1999) observed, with the relative limitless information available online, “the Internet may finally create a free and fair world market” (p. 76).

Tibbetts and Bernstein (2000) stated that “online auctions offer a prime example of a venerable institution with centuries of accumulated wisdom being retooled for the Internet Age” (p. 138). Bayers (2000) contends that much in the same way that the creation of village and regional markets transformed commerce, creating a capitalist society in Europe over 500 years ago, today “we’re getting a chance to reconstruct commerce” on a global scale. Yet, many of the same issues confront partici-

pants in online auctions today as those buyers and sellers 500 years before us — namely deciding just what the ground rules for the exchange and for the participants will be (p. 212).

eBay and Priceline.com were the first companies to show the power of the Internet in gathering “bids” on products and services at the level of regular consumers (Bodow, 2000). The early success of eBay and other online C2C and B2C online auction sites provided prime evidence of the Internet’s role in economic evolution. This is the fact that “for the first time in history, these sites allowed buyers and sellers to convene without regard to geography” (Bayers, 2000, p. 212). According to Forrester Research, online auction sales at the consumer level, which were only at \$1.4 billion in 1998, will reach \$19 billion by 2003 (cited in Gutner, 2000).

In the C2C marketplace, eBay has led the way in proving that online auctions are a viable format for all kinds of Web-based transactions (see *The Often Quirky Roots of the “Auction Economy”* on p. 16). Keegan (1999) noted that Pierre Omidyar’s undertaking, which began as a way for his fiancée to trade Pez dispensers over the Internet, may in fact prove to be not only — at present — “the most lucrative commerce strategy” on the Web, but also “the primary commerce model of the future” (p. 70). Hal Varian observed: “eBay was a blind spot for us economists. We don’t think in terms of flea markets (quoted in Schrage, 2000b, p. 93). “While auction sites like eBay blazed this trail for consumers anxious to dump excess Furbies, the ramifications of dynamic pricing go far deeper ... [as] the real impact will be felt in the business-to-business space” (Daly, 1999, p. 1). According to the San Francisco-based Internet analyst firm Keenan Vision, auctions — both on the consumer and business level — will account for almost 30 percent of all e-commerce by 2002 (cited in Hof, Green, and Judge, 1999).

Online Auctions: Formats and Problems

When one speaks of online auctions, there is not a single type of animal, either in the consumer or business marketplace. Rather, there are multiple formats that such events can take (see *The Six Major Types of Auction Formats* on p. 17). No format is superior, and none is without its faults. The two primary problems with online auctions are the poten-

The Often Quirky Roots of the “Auction Economy”

Gibson (1999) categorizes eBay as “a cross between a swap meet in cyberspace and a country auction with computer-driven proxy bidding” (p. 156). Quite derisively, and yet somewhat accurate in many cases, was Harvey’s (1999) observation that eBay has a way of making entrepreneurs out of individuals who “have a closet of crap to unload” (p. 74). As Quain noted (1999), online auctions have the reputation of being “endless virtual yard sales,” having endless “digital aisles filled with objects d’art to objects of ridicule” (p. 91).

Is this ridicule warranted? Consider the following headline-grabbing examples that have gone a long way toward contributing to the often quaint, often quirky reputation of online auctions — at least in the C2C arena:

- A rare American postage stamp sold for almost \$400,000 in an online auction on eBay (Goodman, 2000).
- People have reportedly paid over \$100 for a board game based on “The Munsters” TV show (Colman, 1999).
- At the height of the “Livin’ La Vida Loca” craze, someone paid an undisclosed, but absurd, amount for an (empty) Ricky Martin Pepsi can from Singapore (Kulish, 1999).

- An anonymous eBay user even tried to auction off one of his kidneys — before the site shut him down (Mannix, 1999).

In the next phase of online auction development, the so-called B2C marketplace, the same kind of unusual headlines have emerged. These include stories such as:

- Auctionvine.com conducts online auctions for fine and rare wines (O’Malley, 1998).
- By visiting RonsAngels.com, interested parties can bid on human eggs, harvested from supermodels (Petersen, 1999b).
- Playboy Enterprises announced that it will introduce online auctions on its website, where both the company and individual users can post Playboy memorabilia for sale (Anonymous, “Playboy Plans Online Auctions,” 1999).
- Even the venerable Goodwill Industries has entered the online auction market, setting up an online auction site at goodwill.com (Brakeman, 1999).

tial for collusion and the experience of the winner’s curse. Collusion can occur in an auction when two or more bidders work in tandem to manipulate the price of an auction or, alternatively, when a seller uses “shills” to enter fake bids and drive up the asking price. As Coy (2000) points out, B2B auctions are especially vulnerable to such price manipulation, because in most cases there are, by definition, few

buyers and sellers engaged in a given auction. Singh (1999) observed that the same supply and demand forces that shape markets in the physical realm, and the irrationality that sometimes accompanies them, will be present in e-marketplaces as well — making the winner’s curse a very real issue (see *The Winner’s Curse and a Nobel Solution* on p. 18).

The Six Major Types of Auction Formats

Over the years, various types of auction formats have evolved. The six major forms of auctions — used both in the offline and online environments — are as follows:

1. **English auction** (ascending price) — Here bidding begins at a relatively low price, and the price gets pushed up as bidders compete more intensely, with buyers bid anonymously bidding against one another.
2. **Yankee auction** — This is a multi-item version of the English auction (which involves only a single copy of an item). Winners in a Yankee auction are determined by ranking bids according to the highest bid price, then by the largest quantity, and lastly, by the earliest bid time. In a Yankee auction, participants can specify whether they will accept a partial quantity or not.
3. **Dutch auction** — The auction begins with the auctioneer setting a high starting price (one at which no one is expected to bid). Then, the price is gradually lowered until bids are received.
4. **Reverse auction** (descending price) — Buyer sets up auction to receive bids from suppliers. Suppliers anonymously bid down the price of fulfilling that order.
5. **Traditional sealed bid auction** — The bidders remain anonymous, and high bid (for sale of an item) or low bid (for purchase of an item) wins the auction.
6. **Vickrey auction** — The winner of the auction is the one who bids the highest amount. However, that bidder only has to pay the price submitted by the next-highest bidder.

Which is the “best” format? Maybe none of them. In fact, the Revenue Equivalence Theorem holds that all of the primary types of auction formats will, on average, yield the same results over the long term. According to Hal Varian, “The Internet is the greatest medium in the history of economics for testing all manner of hypotheses about which auctions work best under what circumstances” (quoted in Schrage, 2000, p. 91).

The Winner's Curse and a Nobel Solution

Coy (2000) defined the “winner’s curse” as being “what people suffer when they win an auction by overestimating how much something is worth and therefore bidding too much” (p. 124). As Bayers (2000) so aptly put it, the ultimate illustration of the winner’s curse is “the sinking feeling you get when you realize you just paid \$500 for a Pokemon card that can be had at Burger King for 99 cents” (p. 212). Eisenberg (1999) recounts a story where Jeff Bezos, the billionaire founder of Amazon.com, had to drop out of an online auction for a pack of Star Wars trading cards because, in his opinion, the price had gone too high (*for him*)! As Tim Brady, a vice president at Yahoo, observed, “Anybody who’s the least bit competitive hates to be outbid. And that’s why sellers love it (the auction format) so much.” (quoted in Eisenberg, 1999, p. 65).

Just as in a C2C or B2C auction, most business auctions have the potential for a winner’s curse to occur, because of the very different values attached to a given product at a given point in time, both from the perspectives of the seller and potential bidders. English auctions, the style used by eBay and most other C2C and B2C auction sites, are especially prone to the winner’s curse. This is because, by definition, there is only one winner, as “the price keeps rising until all bidders but one drop out” (Coy, 2000, p. 126). The price in an auction may rise for a variety of reasons beyond a reasonable level, such as a potential special use for an item or a special sentimentality attached to an item. Likewise, in a reverse auction format — the kind most likely to be employed in B2B auctions, where buyers are promoting competitive bidding amongst potential suppliers — winning bidders may indeed experience a “reverse winner’s curse,” whereby they may find that they have gone too far in attempting to secure or retain the buyer’s business.

What is the solution to preventing the “winner’s curse” from occurring in any auction realm? Busch (1999) feels strongly that a “Vickrey auction” could work well in the online auction arena to prevent this downside from occurring.

This auction’s namesake, William Vickrey, won the Nobel Prize in Economics in 1996 for suggesting that a “uniform second price, sealed bid auction, where the winner pays the second-highest bid price, actually generates genuine bids, and usually the highest price for an item”

(cited in Busch, 1999, p. 165). A Vickrey auction allows buyers to adjust their bids upward in an ascending price auction, because they always know that another bidder would have to bid higher in order to win the auction (Busch, 1999). Conversely, it also allows participants in a reverse auction, where the price is descending, to bid in full knowledge that someone would have to undercut their own bid in order to secure the buyer’s business for the specific good or service.

The following is a Vickrey auction illustration, applicable to either an ascending or descending price auction format: If Bidder #1 bids \$10, Bidder #2 bids \$20, and Bidder #3 bids \$30, Bidder #3 “wins” the auction. However, that bidder will pay only \$20, which represents the next highest bid to their own.

The Vickrey auction model takes away some of the “frenzy” from the bidding, allowing prices to be set that are closer to the “true” market value of an item. This is because it allows bidders to be aggressive, while having the knowledge that their competitor(s) will determine the clearing price (Bayers, 2000). Thus, the Vickrey auction format may come to predominate in the business-to-business arena in auctions where factors other than price are not to be considered.

With governmental auctions, this may be even more important. This is because the use of the Vickrey auction format could help to alleviate most concerns over the propriety of auctions. Yet, the employment of this concept would mean that while protecting the rights of smaller companies to participate in governmental auctions with lessened fears that they would be undercut by larger firms, the government would also not be maximizing its savings from the use of supplier auctions or its return from auctions of used, surplus, and/or seized assets.

The winner’s curse is based on what is known as the “greater fool theory” (Busch, 1999). In simple terms, this means that there may always be someone out there foolish enough to bid more than you — the secret is for you not to be that fool! The Vickrey auction format may go a long way to preventing that sinking feeling from occurring in one’s stomach, whether you are bidding on a Beanie Baby for your six-year-old or overnight shipping services for your organization.

B2B E-Commerce: Managing in the Marketplace

The Marketplace

What makes online exchanges possible? Perhaps Priceline.com's Jay Walker expressed it best. He stated that for the first time, pricing in online exchanges means that the "information component of the economic activity is handled separately from the physical component." (quoted in Rothenberg, 2000, p. 92). As Sawhney (1999) commented: "Most products consist of a physical component and an information component. In the offline world, information typically is bundled with the physical product, and the core product is often sold along with complementary products.... The Internet enables the separation of information (bits) from the physical product (atoms), and the core product from complementary products" (p. 14).

This debundling idea was first set forth in a *Harvard Business Review* article, entitled "Managing in the Marketplace." In this article, Rayport and Sviolka (1994) stated:

One of the profound consequences of the ongoing information revolution is its influence on how economic value is created and extracted. Specifically, when buyer-seller transactions occur in an information-defined arena [which they labeled the 'marketplace'], information is accessed and absorbed more easily, and arranged and priced in different ways. Most impor-

tant, the information about a product or service can be separated from the product or service itself. In some cases, it can become as critical as the actual product or service in terms of a company's profits (p. 141).

According to Smith (2000), when their article was first published in 1994, Rayport and Sviolka's now prescient ideas were categorized as being "borderline delusional" at the time by many influential business academicians (p. 146). Now the ability to create and manage new marketplaces is seen as a source of competitive advantage for companies across the economy (Kim and Mauborgne, 1999). Thus, Rayport and Sviolka laid the groundwork for the "marketplace" concept, where the promise of the "information economy" met the future with all forms of e-marketplaces being made possible.

In this section of the report, we will primarily focus on the development of B2B exchanges, both for procurement and for disposition in the private sector.

B2B Procurement Exchanges

The Hype ... and the Reality

The concept of a "B2B exchange" has quickly gone "from a 'huh?' word to a buzzword" (Schwartz and Joseph, 2000, p. 41). Even in 1998, Hamel and Sampler stated that while "the Internet has been

hyped to the point of absurdity by its true believers ... The Internet is the foundation for a new industrial order.” The hype grew stronger in 1999, when Farrell (1999) commented that: “The Internet is a revolutionary communications technology driving a global transformation.... [and] at its most basic level, capitalism will work better than ever” (Farrell, 1999, p. 120). Specifically, earlier this year, online B2B exchanges were touted as being “the single greatest creation since Henry Ford invented the assembly line” (Henig, 2000a, p. 121).

Whatever the true reality works out to be, the future growth rate of such B2B exchanges is forecast to be exponential. While the consumer aspects of e-commerce have received most of the headlines, the size of B2B transactions already dwarfs both C2C and B2C commerce. According to AMR Research, the B2B marketplace is currently in the midst of an even more rapid expansion than many analysts had predicted, with companies of all sizes seeking to exploit the power of e-commerce. Their research shows that among the leading companies in many sectors of the economy, 60 percent to 100 percent of their B2B transactions can be expected to move online by 2003 (cited in Bowles, 2000). In fact, Forrester Research estimates that by 2006, almost 40 percent of all B2B commerce will be transacted online (Hof, 1999a, p. EB10).

Through the availability of more complete information via the Internet, B2B e-commerce affords buyers the opportunity to find lower priced goods and services with quicker cycle times from order through delivery and with fewer errors. Estimates for the total savings on procurement that can be gained through participating in e-marketplaces (inclusive of the internal processing costs, such as the purchase order savings discussed earlier) range from 18 percent to 45 percent (Menduno, 1999). According to Albert Pang, an analyst with Mountain View, California-based IDC, we are presently seeing only the proverbial “tip of the iceberg” in terms of the potential savings as companies move their procurement activities online. In fact, while he estimates that companies saved approximately \$200 million by engaging in online B2B e-marketplaces in 1999, that figure is set to rise exponentially — to over \$100 billion annually by 2003 (cited in Schwartz and Joseph, 2000). According to the Boston Consulting Group, B2B

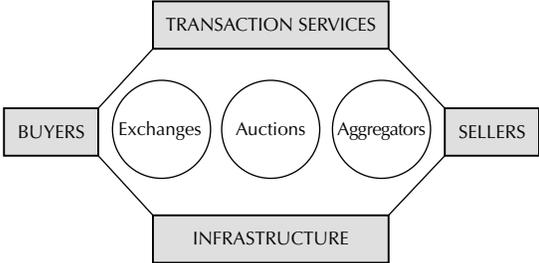
e-commerce will boost productivity by 9 percent over the next five years, while Goldman Sachs predicts that business costs could fall by 12.5 percent over the same time frame due to savings from lower labor, supply, operating, and transportation costs (cited in Cohn, 2000).

Essentially, Seybold (2000) believes that we will be witnessing “the transformation of virtually all business-to-business processes over the next five to 10 years.” This will occur as e-marketplaces “become the dominant players in the sourcing of both fixed-price and nonfixed-price goods and services for most businesses” (p. 135). Dynamically priced transactions will thus be an increasing share of the total B2B e-marketplace, as depicted visually in Figure 6. According to Forrester Research, in the year 2000, fully 71 percent of those engaged in B2B commerce will at least try online auctions for their sales or procurement activities (cited in Hof, 2000a, p. EB58).

The Move to E-Marketplaces

Procurement officers and big companies are taking the lead in moving towards purchasing through online marketplaces for two main reasons. This is because they want both to enjoy the cost savings involved in conducting business online (as discussed earlier in the purchase order example) and to take advantage of the liquidity and increased competition found in e-marketplaces to bring costs down (Seybold, 2000). Glen Meakem, founder and CEO of FreeMarkets.com, believes firmly that these “blue-chip buyers ought to hold all the cards” (quoted in Tully, 2000, p. 134). According to Dalton (1999a), online marketplaces have vast potential to make the purchasing process more

Figure 6: B2B Transaction/Information Flow



SOURCE: Adapted from Bowles (2000, p. S12)

efficient, “but they haven’t fundamentally changed the business equation yet” (p. 47). This is because much of what has occurred to date has been simply transferring existing contractual purchasing relationships to the Web, simply automating procurement processes that have been in place for years in organizations — and sometimes largely unchanged for decades (Baatz, 1999).

Most companies today have — and value — long-term relationships with their suppliers, and many are reluctant to risk these relationships by entering the online marketplace with competitive bidding for their business (King, 2000). According to Hof (2000), the advent of e-marketplaces is facilitating the change from a narrow range of suppliers to a “supply web.” This will yield faster procurement times and access to new suppliers and better prices. FreeMarkets.com’s Meakem feels strongly that auctions have a place in supply chain management — as a benchmark. He observed: “Although managing long-term supplier relationships is critical in some supply industries, buyers need an analytically rigorous way of choosing and benchmarking those suppliers. Partnership in purchasing is not partnership without measurement of supplier performance and open information” (quoted in Vigoroso, 1999, p. 86).

One of the profound changes brought on by the introduction of the Internet is the fact that it allows instant interactions between and access to suppliers, buyers, shippers, and customers. These communications are transforming supply chains into supply webs (Hof, 1999b). According to Jay Walker of Priceline.com, in the age of the Internet, information will almost vanish as a proprietary asset, being “reduced to a very low, almost commodity, level” (quoted in Rothenberg, 2000, p. 90). In the new B2B e-marketplaces, the power formerly held by brokers, wholesalers, and other intermediaries, whom Bowles (2000) categorized as having based their businesses on “information arbitrage” to keep buyers and sellers “in the dark,” is suddenly gone (p. S2). Today, through the power of the emerging exchanges, new buyers are finding new sellers and vice versa, creating opportunities and producing cost savings that drive the fast-paced expansion of these e-marketplaces.

The Auction Model at Work: Dynamic Pricing in B2B E-Marketplaces

The reality is that “the dynamic pricing model of auctions will shake up the buyer-seller relationship” across the economy (Schwartz, Neel, and Grygo, 2000, p.1). Electronic marketplaces — and particularly online auctions — have the power to “radically transform purchasing, effectively putting the power to set prices in the hands of the buyer” (p. 47). Dalton (1999b) cites as evidence the fact that for goods purchased through Internet B2B auctions, price markups have typically been in the 20 percent range, as compared to the typical 50 percent to 70 percent markups in traditional sales channels. Thus, in general, the central theme of e-business to date is that there has been “a startling shift in the commercial balance of power: To a greater extent than ever before, the ‘customer is king’” (Hof, 1999b, p. EB26), as now “the buyer runs the show on the Net” (Hof, 1999a, p. EB11). According to Jay Kingley, a partner with the Chicago-based e-commerce services firm, Diamond Technology Partners, online auction and exchange models are shifting power “away from those who manufacture to those who buy.” In the process, this is “transforming the supply chain into a demand chain” (quoted in Biederman, 1999, p. 17).

In this section of the report, we will explore both the early results produced by online B2B auctions and the various forms that the auctions and the auction marketplaces can take.

The Early Returns

Will dynamic pricing in the online B2B marketplace live up to the hype — perhaps the greatest hype since the experts heralded the last Super Bowl as the “game of the century”? As with sports, the real game may not entirely live up to expectations. However, we have seen striking results in terms of tangible cost savings achieved and the speed and efficiency of online B2B auctions.

In terms of procurement auctions, most take the form of a reverse auction. An example of a true reverse auction is where a buyer is seeking to purchase a specified quantity of office furniture — say 350 desk chairs. The buyer would set the necessary specifications, and then invited, interested (and most often qualified) bidders compete for the right to supply the furnishings at the best price (Rogers, 1999).

King (2000) reports several examples of how companies have saved great amounts by shifting to online procurement auctions with their suppliers. For instance, she notes that General Motors saved almost \$150 million in one single online auction event for rubber parts. Likewise, Quaker Oats reported saving over \$8.5 million in online auctions for necessary transportation services and raw ingredients.

Niul Burton, vice president for the management consulting firm A.T. Kearney, sees great promise for a specialized form of exchange that his firm, among others, offers to conduct for businesses seeking to save on their procurement costs. A reverse auction is held in a compressed time frame, and only invited, pre-qualified participant suppliers can take part. This format offers firms significant benefits over traditional negotiations in that the time frame is greatly compressed and brings competition to the process (cited in Queree, 2000). Therefore, the reverse auction format turns what would normally be one-on-one negotiations with an incumbent or prospective supplier into a more free-wheeling, interactive — and competitive — process. Examples of the use of such “invitation only” reverse auctions in the B2B arena include Visteon Automotive Systems auctions for circuit board suppliers and Sprint auctions for telemarketing services. In the latter case, the telecommunications company — in a four hour auction — shaved 5 percent off its average proposal price (Queree, 2000). Perhaps the leader in conducting such reverse B2B auctions is FreeMarkets.com (see *Taking Pennsylvania High-Tech: FreeMarkets.com* on p. 24), which has conducted “bidding events” not only for leading private sector firms, but also in the public sector arena (Brown, 2000a).

Beyond the actual cost savings experienced in online B2B auctions, buying organizations also save through the greatly reduced time spent dealing with suppliers and actually negotiating prices and terms of transactions (King, 2000). Schwartz and Joseph (2000) see that one of the great values of the independent exchanges will be that they can help companies “make sense of the online bazaar” and “the vast mob of companies wanting to sell supplies to you” — which can, in fact, be quite scary (p. 44). Meakem of FreeMarkets.com observed that with online B2B auctions, negotiations with multiple competing suppliers that might take weeks or even months can be compressed into just a few hours (cited in Vigoroso, 1999).

Forms of Procurement Exchanges

Even in these early days of their evolution, B2B online exchanges have already taken on a variety of forms and functions. Basically, however, there are two broad forms of B2B exchanges, each of

which can use market mechanisms ranging from fixed prices to auction environments. These are:

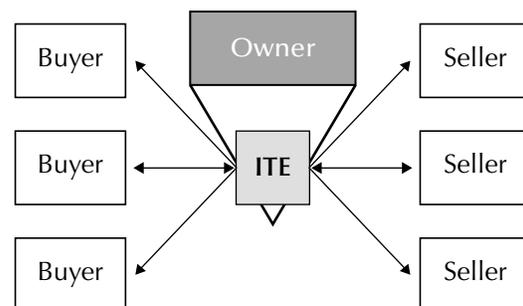
1. Independent-led exchanges
2. Industry consortium-led exchanges

Independent-Led Exchanges

As Bowles (2000) pointed out, quite literally, new industry-specific marketplaces are being announced every day. Most of the independent B2B exchanges are still in their infancy, with many having yet to conduct their first meaningful trade or establish firm partnerships with major industry players. As Henig (2000a) characterized the situation, many of these firms quite simply are at the “press release stage” of their business plan (p. 121). And the field is becoming especially crowded in some areas that would appear to be exceptionally lucrative. For instance, in both the health care industry and the chemical sector, at least 40 rival exchanges have been established — or at least planned.

These independent trading exchanges are seeking to gain a first-mover advantage in positioning themselves in the new online B2B marketplaces (Ariba, Inc., 2000). Dave Perry, CEO of Ventro, says that the goal of his and all the other start-up independent exchanges is to essentially place themselves “in the middle of a market that already exists and facilitate it by setting up an e-commerce site” (quoted in Hutheesing, 2000, p. 52).

Figure 7: Independent Trading Exchange



Taking Pennsylvania High-Tech: FreeMarkets.com

Perhaps the most recognized firm to date providing online B2B auction services is the Pittsburgh-based company FreeMarkets.com. While FreeMarkets runs 29 different types of auctions, its most widely used is the “reverse auction” format. This is where suppliers bid against one another for business from a single buyer. Through the competitive bidding, the price for the good or service will move downward (Hutheising, 2000).

CEO Meakem of FreeMarkets.com stated that the word “‘auction’ may be somewhat of a misnomer for FreeMarkets’ ‘bidding events.’” This is because the buyer is not required to accept the low supplier’s bid, having the ability to take other factors (quality, capabilities) into account in making their decision (quoted in Vigoroso, 1999, p. 86). One of the services that FreeMarkets.com provides to its clients is to actively recruit suppliers for its auctions, thereby expanding the field of potential bidders. However, to participate in a FreeMarkets.com auction, the prospective supplier must agree to abide by all terms contained in the RFP (Request for Proposal) for a specific auction. The RFP is very detailed, specifying everything from delivery and payment terms, acceptable quality levels, inventory arrangements, etc. Then, the purchasing organization can choose which suppliers to actually participate in the auction itself, based on additional criteria including ISO certification and other specific requirements. The actual “bidding event” occurs in as little as 20 to 30 minutes, in which participants engage in a “reverse auction,” bidding down the price for

the contract in a transparent process (Tully, 2000). Tibbetts and Bernstein (2000) note that FreeMarkets.com provides a living room with comfortable couches and refreshments where auction participants can watch the “action” in their auction unfold live on huge TV screens.

FreeMarkets.com claims it can save clients substantially through the use of online auctions — as much as 52 percent in one case (Aeppel, 1999)! Meakem estimates that the average savings experienced by FreeMarkets’ client purchasers in B2B auctions conducted on their site approaches 15 percent (cited in Machlis, 1998). All of FreeMarkets’ revenue comes from buyers paying not only subscription fees (often \$3 million to \$4 million on annual basis), but also reimbursing the company for a share of the cost savings they accrue through the auction process. In order to encourage the participation of small suppliers, the suppliers pay no fee to participate in the auctions (Tully, 2000).

As Tully (2000) noted, FreeMarkets is also rattling the “stodgy” public procurement marketplace. An early client of the Pittsburgh-based company was the Commonwealth of Pennsylvania. In 1999, FreeMarkets helped the state shave approximately 10 percent off its prior contracts for purchases of aluminum for license plates and coal for heating state office buildings. Most notably, however, in a recent auction to supply computer furnishings for the state’s Keystone building in the capital of Harrisburg, FreeMarkets saved the state fully 31 percent — just over \$4 million.

Tricky “Chinese Math”

Why this explosion of B2B marketplaces? Largely, it is a matter of what Lyons (2000) labels a case of “Chinese math,” namely being the entrepreneur’s dream of creating an exchange that could capture 1 percent or 2 percent of a market worth billions — maybe even hundreds of billions — of dollars. Yet, as Arno Penzias, an analyst with Menlo Park, California-based New Enterprise Associates, observed: “These B2B models, based on getting

a percentage of every deal, are wrong, because percentages don’t scale” (quoted in Lyons, 2000, p. 124). In short, as with most businesses in the traditional world, transaction fees inevitably must decline as volume increases.

Thus, as Schwartz and Joseph (2000) observed, as with most of the e-commerce world, actually making the promise of B2B pay will be “tricky” for those entrepreneurs who attempt to set up indepen-

dent exchanges. In fact, they believe that “only a few players will emerge from the scrum of hours-old e-companies as the marketplaces of choice.” With the consensus being that only one or two exchanges will survive in any given industry, “the race is on to become the de facto exchange” for every area of the economy (Henig, 2000b, p. 130).

Single-Industry-Focused Exchanges

As can be seen in the exhaustive list of industry-specific exchanges (see *Examples of the Emerging Independent B2B E-Marketplaces* on p. 26), there are many entrepreneurs seeking to become the recognized marketplace of choice across the American economy. Most of the single-industry-focused exchanges are founded on the belief that in order to be successful, the exchange operator must not only have the software and technology necessary to facilitate the connection between buyers and sellers in a specific sector, but also hands-on knowledge of the industry and its participants. John Sviokla, vice chairman of Diamond Technology Partners, stresses the need for those who originate B2B marketplaces to have “deep domain knowledge” (cited in McGarvey, 2000). As McGarvey (2000) stated: “To successfully peddle peaches to consumers, you don’t have to know much about farming, but to build an exchange for farmers, you’ve got to grasp the fundamentals drivers in the industry” (p. 103).

Multiple-Market-Focused Exchanges

There is, however, another approach being taken by companies such as FreeMarkets.com, VerticalNet, and i2. This is the multiple-market approach, whereby companies are seeking to establish markets across a wide variety of industries. As illustrated in the breadth of the reach of VerticalNet, these firms are quickly expanding to secure places in all corners of the economy, believing that they can achieve scale by spreading their technology and auction expertise across multiple markets (see *The 58 E-Marketplaces Established to Date by VerticalNet* on p. 27).

Industry Consortium-Led Exchanges

Another rival form of online B2B purchasing exchange is beginning to emerge. As brought out earlier, large purchasers are particularly drawn to the concept of bringing their procurement activities online and having their suppliers compete for their business.

Yet, take, for instance, the experience of FreeMarkets.com and the auto industry. After gaining experience using the FreeMarkets’ invited auction format for various purchasing activities, General Motors leapt to join an auto industry consortium for online procurement called Covisint, which now includes all of the “Big Three” automakers — Ford, General Motors, and DaimlerChrysler (Tully, 2000).

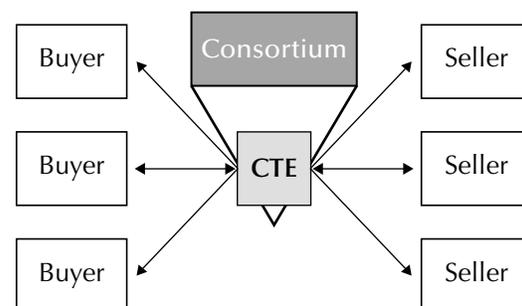
The biggest companies are thus now asking: “Why does anyone need a middleman at all?” (Schwartz and Joseph, 2000, p. 44). Looking at the emerging marketplaces being brought about by the Internet in B2B commerce, large purchasers increasingly see these newly established exchanges as simply siphoning off percentages of the cost savings achieved through auction-based transactions.

To date, at least 60 consortium exchanges, comprised of 278 companies, have been announced. These so-called consortium-led exchanges or Industry Sponsored Exchanges (ISEs) represent a combined \$3 trillion in annual purchasing expenditures spread out amongst the planned e-marketplaces (Bowles, 2000). The consortium model is depicted in Figure 8; for examples, see *Examples of Emerging Industry-Specific Consortium-Led B2B Exchanges* on p. 28.

The Superior Model?

Which model — independent or industry-led — will predominate? From a practical standpoint, it may well be the consortium-led exchanges. Lyons (2000) noted that since most companies will want to deal with only one or two e-marketplaces for their purchasing, if major players in an industry set up their own site, there may simply be no room for

Figure 8: Consortium-Led Trading Exchange



Examples of the Emerging Independent B2B E-Marketplaces

B2B auction sites are indeed “spreading like kudzu on the Web” (Batstone, 1999, p. 140). It does appear that almost every area of the economy is being covered (including government, with the emergence of gov-works.com and ezgov.com). Some other examples of these nascent online exchanges include:

- **Accompany.com** – aggregates buyers on an ad-hoc basis to secure volume discounts
- **Agchemical.com** - fertilizer
- **Altrade.com** – natural gas and energy
- **auction-it.net** - used or obsolete computer-related parts and equipment
- **Bidcom.com** – project management services
- **BizBuyer.com** – business services, supplies
- **BLiquid.com** – construction equipment
- **BuildNet.com** – building materials
- **Buildpoint.com** – online market for contractors and suppliers
- **Buzzsaw.com** – design services
- **Cattleofferings.com** – frozen cow embryos
- **Celarix.com** – logistics services
- **ChemAnalysis.com** – laboratory and research equipment
- **ChemBid.com** – chemicals
- **Chemdex.com** – pharmaceutical and biotech online market
- **ChemicalBid.com** – chemicals
- **DoveBid.com** – surplus merchandise, used capital equipment
- **eLance.com** – freelance work
- **Epylon.com** – institutional online market
- **EqualFooting.com** – construction materials
- **eSteel.com** – steel
- **Farmbid.com** – equipment, seed, chemicals, livestock, crops, and tractors
- **Farms.com** – farm products, including cattle, pigs, feed, and grain
- **FastParts.com** – circuit boards and computer components
- **FindMRO.com** (operated by W.W. Grainger) – industrial maintenance, repair, and operating products
- **FreeAgent.com** – freelance work
- **Freightquote.com** – shipping
- **GoCargo.com** – ocean cargo
- **going-going-sold.com** - used scientific and laboratory equipment
- **Guru.com** – freelance work
- **HoustonStreet.com** – oil industry equipment
- **lmark.com** – industrial equipment
- **IQ4hire.com** – freelance work
- **Marex.com** – marine products
- **Meatandpoultry.com** – livestock processing equipment
- **Medibuy.com** – used and surplus medical equipment
- **Mercata.com** - aggregates buyers on an ad-hoc basis to secure volume discounts
- **Metalsite.com** – steel
- **NetSeeds.com** – all forms of seeds for farmers
- **PackagingExchange.com** – plastic and paper transport packaging materials
- **PaperExchange.com** – paper products
- **PlasticsNet.com** – plastics
- **pl-x.com** - patent and licensing exchange
- **ProduceOnline.com** – fruits and vegetables linking farmers and institutions/stores
- **Questlink.com** – electronic components
- **Rooster.com** – e-marketplace for farmers (set up by Cargill, Dupont, and Cenex Harvest States)
- **SciQuest.com** – laboratory and scientific equipment
- **Shipping-auction.com** – multimodal shipping services
- **Sorcify.com** – online B2B general auction
- **Struxion.com** – construction materials, equipment, and project management service exchange
- **Techex.com** - licensable concepts and intellectual property
- **TradeOut.com** – selling excess inventory, used capital equipment
- **WorldOil.com** – oil drilling and exploration equipment
- **Xsag.com** – farm chemicals, seeds, and fertilizer
- **XSChem.com** – agricultural chemicals
- **Yet2.com** - licensable concepts and intellectual property

The 58 E-Marketplaces Established to Date by VerticalNet

Communications

Digital Broadcasting.com
Fiber Optics Online
Photonics Online
Premises Networks.com
RF Globalnet
Wireless Design Online
Wireless Networks Online

Energy

ElectricNet
Hydrocarbon Online
Oil and Gas Online
Power Online

Environment/Utilities

Pollution Online
Public Works.com
Safety Online
Solid Waste.com
Water Online

Financial Services

Property and Casualty.com

Food/Packaging

Bakery Online
Beverage Online
Dairy Network.com
Food Ingredients Online
Food Online
Meat and Poultry Online
Packaging Network.com

Food Service/Hospitality

E-Hospitality.com
Foodservice Central.com
Grocery Central.com

Health Care

E-Dental.com
Home Health Provider.com
Hospital Network.com
Long Term Care Provider.com
Nurses.com
High Tech
Electronics Web.com
Embedded Technology.com
Medical Design Online
Semiconductor Online
Test and Measurement.com

Industrial

EC Online

Manufacturing/Discrete

Aerospace Online
Auto Central.com
Machine Tools Online
Metrology World.com
Plant Automation.com
Surface Finishing.com
Tooling Online

Manufacturing/Process

Adhesives & Sealants.com
Chemical Online
Pharmaceutical Online
Pulp & Paper Online
TextileWeb

Public Sector

GovCom

Science

Bioresearch Online
Drug Discovery Online
Laboratory Network.com

Services

HR hub.com
Logistics Online
Purchasing Network.com

Source: www.verticalnet.com - July 2000

independent exchanges there. Mary G. Meeker, an e-commerce analyst with Morgan Stanley Dean Witter, stated that many of the online B2B exchanges are now facing the fact that the major purchasers and suppliers in B2B commerce are somewhat resistant to the new entrants. As such, for those seeking to establish independent exchanges, Meeker now believes that consortium exchanges will predominate, as now "it will be harder to 'Amazon' the entrenched players" in the B2B realm (quoted in Hof, 2000b, p. EB138).

Conversely, FreeMarkets.com's Meakem foresees that the independent exchange model will be the dominant type of B2B auction exchange. This is because suppliers will have distrust for consortium-

led exchanges, which he believes are akin to "a case of the fox running the henhouse" (quoted in Tully, 2000, p. 145). There are some signs of a supplier backlash against sites such as Covisint, as small suppliers in particular worry that such exchanges may simply be a mechanism through which these powerful buyers, who often have monopsony power to begin with, strive to extract lower prices from their suppliers (Hof, 2000b). Mark Walsh, CEO of VerticalNet, has a negative view on the consortium exchanges being set up by major players in key industries. Walsh sees that, in many cases, "they [big companies] create exchanges where everyone hammers ... their vendors and that's bad for the economy" (quoted in Hutheesing, 2000, p. 48).

Examples of Emerging Industry-Specific Consortia-Led B2B Exchanges

Automobile Industry

Name: Covisint

Partners:

DaimlerChrysler
Ford
General Motors
Renault/Nissan
Toyota

Aerospace Industry

*Name: Aerospace and Defense
Global Trading Exchange*

Partners:

BAE Systems
Boeing
Lockheed Martin
Raytheon

Computer and Communications Products Industry

Name: Hightechmatrix

Partners:

Advanced Micro Devices
Compaq
Gateway
Hewlett-Packard
Hitachi
Infineon Technologies
NEC
Quantum
Samsung
SCI Systems
Solectron
Western Digital

Electric Power Industry

Name: Pantellos

Partners:

American Electric Power
Cinergy
Consolidated Edison

Duke Energy
Edison International
Entergy
FirstEnergy
FPL Group
Pacific Gas and Electric
Public Service Enterprise
Group
Reliant Energy
Sempra Energy
Southern Company
TXU
Unicom

Energy Industry

*Name: Energy and
Petrochemical Exchange*

Partners:

BP Amoco
Dow Chemical
Equilon Enterprises
Mitsubishi Electric
Motiva Enterprises
Occidental Petroleum
Phillips Petroleum
Repsol YPF
Royal Dutch/Shell Group
Statoil
Tosco
TotalFina Elf
Unocal

Food and Beverage Industry

Name: Transora.com

Partners:

Coca-Cola
Diaego
Earth grains
Kraft Foods
Procter & Gamble
Sara Lee
Unilever

Forest Products Industry

Name: Forest Express

Partners:

Georgia Pacific
International Paper
Weyerhaeuser

Retail Industry

*Name: Worldwide Retail
Exchange*

Partners:

Albertsons
Auchan
Best Buy
Casino
CVS
J.C. Penney
Jusco
Kingfisher
Kmart
Marks & Spencer
Royal Ahold
Safeway
Target
Tesco

Trucking Industry

Name: Transplace.com

Partners:

Covenant Transport
J.B. Hunt
M.S. Carriers
Swift Transportation
U.S. Express
Werner Enterprises

Adapted from Henig (2000, p. 123)

Ultimately, as Henig (2000a) highlighted, the Federal Trade Commission (FTC) may take a hard look at oligopolies forming online B2B e-marketplaces for their industries. Indeed, the sharing of information amongst competitors in collaborative exchanges could lead to price signaling amongst participants and the potential for them to use their collective market power to effectively force prices and conditions for supplier participation. Already, both the FTC and the Department of Justice are investigating two of the industry-based consortia exchanges. These are Covisint (the auto industry exchange) and an as yet unnamed exchange amongst meat and poultry producers (Hicks, 2000).

Schwartz and Joseph (2000) note that the big consortium-based exchanges are likely to draw the attention of the government, specifically because of concerns that they may be especially unfair to small companies. As Jay Swaminathan of the University of California at Berkeley observed: “These new exchanges will have large muscle power ... [and] as the Microsoft case has shown, the federal government hasn’t been sleeping through the monumental shifts in the New Economy” (quoted in Schwartz and Joseph, 2000, p. 44). Yet, large consortium-based exchanges may actually be helping small businesses. Ironically, the development of these large, single-company proprietary e-marketplaces and the consortium-led, industry-wide exchanges may, in the end, work to help small business. Specifically, both out of interest in accessing as many suppliers as possible, and in the latter case, to alleviate fears of intervention by the FTC over the possible use of exclusionary tactics, these emerging exchanges are actively recruiting the participation of small suppliers in their online auctions. Specifically, Covisint, the nascent auto industry exchange, along with proprietary purchasing exchanges set up by General Electric and Nordstrom’s, were cited as leaders in this area (Schwartz, Neel, and Grygo, 2000).

Applications of Auction-Based Concepts in Bridge Areas

Just as interesting as what form such B2B exchanges will take in the future is where they can be applied, in areas that concern both the private and public sector. For instance, as Kranhold (1999) points out, as electric utilities begin to compete

with one another, customers — especially large institutional ones, both public and private alike — will look to online electrical power exchanges to purchase what for many is an item of great expense.

With ever-rising expenditures, health care is a prime example of just such a “bridge” area. We will briefly examine how online e-marketplaces can be used both for health care purchasing and for selecting health benefit coverages for private and public employers.

Health Care Industry Purchasing

The health care marketplace, which has annual purchases of approximately \$140 billion, has tremendous potential for savings through online exchanges (Menduno, 1999). Presently, fully 95 percent of all hospitals in the United States belong to so-called group purchasing organizations (GPOs). Through these GPOs, member institutions enjoy the benefits of collective purchasing power and negotiated contracts for equipment and supplies. In fact, today, fully 60 percent to 80 percent of all hospital purchasing is done on a contractual basis (Menduno, 1999). However, with the advent of e-marketplaces in the health care sector, this fixed-price environment is likely to dramatically — and rapidly — change. As noted earlier, at least 40 e-marketplaces aimed at procurement in the health care industry have been developed or are at least in the planning stages. Also, health care suppliers are banding together to create cooperative health care procurement portals through which hospitals and other health care entities can make purchases online (Fisher, 2000).

Health Benefits and HMOs

According to Brakeman (1999), the online auction model can be applied to the area of health benefits — an area of ever-increasing concern to employers and their employees alike — in one of two forms. An employer (or group of employers) can have managed care companies bid to attempt to become their health plan provider. However, alternatively, these same managed care firms can auction their services to employers and individuals.

Hewitt Associates conducted the first online auction for health benefits for three large employers,

inviting 17 competing insurers to enter the process. The HMOs participating in the process had to both prove that they met specified service and quality benchmarks and agree to a standardized benefit plan to participate in the auction (Anonymous, "HMOs Auction Themselves on the 'Net,'" 1999). Specifically, participating plans had to meet minimum performance requirements for a number of indicators, including clinical quality and employee satisfaction (Luciano, 2000). In the week that the auction was ongoing, the competing HMOs had the opportunity to review each other's bids and lower their prices accordingly. In the end, the results for the employers were health benefit costs fully 2 percent to 8 percent lower than what would have been expected through the typical, face-to-face form of negotiations, according to Kelly Zitlow of Hewitt Associates (cited in Luciano, 2000). While this was only a pilot project for Hewitt Associates, conducted in the San Francisco Bay Area, the firm expects to roll out the process nationwide this year. One can only expect that other large employers — and governmental bodies — will follow suit to save on their ever-growing health benefit expenditures.

The dynamic pricing model can be carried even further in the health care arena, to the point where provider groups can auction their services to the managed care organization or vice versa (Brakeman, 1999). Building upon this idea, providers of all types and suppliers of all forms of medical equipment and supplies could be linked together in dynamic e-marketplaces, on local and even regional levels, both within and amongst existing health care organizations and networks, in order to maximize the efficient use of health care delivery resources.

Whatever the final form, this evolving model for dynamic pricing in the area of health care and medical benefits should work to drive down the costs of providing both — an area where heretofore there have only been marked increases in costs. Truly, the application of this model could revolutionize the area of health benefit coverage and free up resources, in both the private and public sectors, due to the efficiencies that can be achieved. In an era of cost cutting and decreased reimbursement rates, this could be a particularly important area for dynamic pricing concepts to take root.

B2B Auction-Based Exchanges: Used and Surplus Assets

Undoubtedly, the predominance of the focus on B2B e-commerce has been on the development of online exchanges involving buyers and sellers of new equipment, supplies, and commodities. But, there has been a less-recognized yet fast moving development involving the use of Web-based auctions and exchanges for used or obsolete items.

The Size of the Problem

Anne Perlman, CEO of Moai Technologies, a company that develops online auction software, stated that “excess and obsolete equipment is a big and painful problem” for most organizations. In the aggregate, U.S. businesses generate around \$18 billion in excess inventory, which represents approximately 10 percent of all finished goods (quoted in Cortese and Stepanek 1998, p. 80). Worldwide, the problem is even more staggering. According to the founder and CEO of TradeOut.com, Brin McCagg, the global market for surplus goods and equipment is a \$350 billion market, which up to the present has been run by “an often Byzantine network of industrial liquidators, brokers, and business auction companies” (quoted in Wilder, 1999). As Vallone (2000) commented, online auctions give small and large businesses alike the opportunity to make money off an item that has simply sat unused in a warehouse for too long, yielding “a way to profit from it rather than throw it away” (p. 90).

Replacing the Estate Sale

Indeed, one of the greatest areas of potential growth in using the Internet to create new e-marketplaces is actually in the area of capital asset disposition. Formerly, when used capital equipment was sold, the buyers and the equipment had to be physically brought together. Often this was handled at the site of a closed factory for manufacturing equipment or a failed farm for usable machinery and implements. This meant both a limited audience and reach for the auction, as well as the fact that the auctions had to be large enough in scale to make them cost-efficient affairs for the facilitating auction company. Tully (2000) likened the present state of organizations’ sales of surplus or used equipment, materials, and finished goods to corporate versions of the venerable tradition of “estate sales.” As such, the events draw an uncertain number of participants and will produce unknown returns on the items put up for sale.

Moschella (1999) believes that in the long term, Internet auctions in the B2B realm may work best for surplus items — either items sitting idly and being unused by a business or assets that must be sold by a certain date on a “use-them-or-lose-them” basis. Initially, the returns from such auctions have been impressive. Estimates are that the average organization can realize approximately a 25

percent gain on liquidated assets by using online exchange mechanisms (Queree, 2000). Nee (2000) reports that these online capital equipment auctions in the B2B sector are already delivering higher prices than the traditional, in-person, “estate sale” form of auction. Schwartz and Mendel (1999) commented that dynamic-priced auction environments for used and surplus equipment can actually bring higher prices, specifically due to the elimination of the asymmetry found in real-world auction markets. Further, the fees being paid to the auction facilitators by the companies selling the equipment have dropped by approximately 50 percent.

The One-to-Many Model

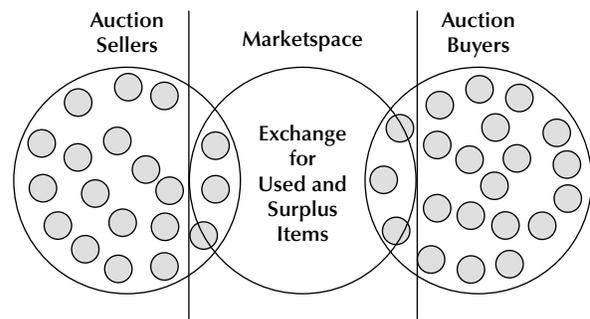
At present, many traditional firms’ efforts in this area are aimed at employing software solutions (from companies such as Moai and Ariba) to set up auction marketplaces where they can auction off their excess inventory and obsolete equipment. This means that many companies are not yet participating in true B2B e-marketplaces, working instead in a business model that is based on one reaching out to the many (Henig, 2000a). Such ongoing auctions will mean that companies can sell off items on an “as needed” basis. This is because these new software technologies allow for small lots of used and surplus equipment to be moved through these emerging online marketplaces, rather than in the large lots required for “physical” auctions.

Virtual eBays

Rather than the “one-to-many model,” entrepreneurial and technological developments are making possible the development of truly new marketplaces, which can be either industry-specific or category-specific exchanges, for used and surplus items in the B2B arena. Indeed, as Moschella (1999) pointed out, across the B2B, B2C, and C2C sectors, auctions can and have served to set current market prices for all kinds of items for which it is unclear what a “fair” price would be — which is what eBay pioneered in the consumer market by essentially creating new markets for many types of used goods.

Thus, in this area, there will likely be the development of “virtual eBays,” which will serve as exchange marketplaces for surplus equipment and products, bringing together auction sellers and

Figure 9: The B2B Marketplace for Used and Surplus Items



buyers as shown in Figure 9. By bringing these auctions online through general exchanges such as DoveBid.com, suddenly a worldwide audience can be reached. Already, such exchanges have been developed both in computer-equipment-related areas, including ITParade.com and the United Computer Exchange (uce.com), as well as used scientific and laboratory equipment (going-going-sold.com) (Methvin, 1999).

Once again, the health care sector may be especially ripe for such exchange marketplaces. John Birks, senior vice president of marketing and information for Novation, an Irving, Texas-based group purchasing organization comprised of over 2,000 health care institutions, remarked that “the auction capabilities of the Web hold great promise ... to rapidly move used equipment among parties in the health care sector” (quoted in Menduno, 1999, p. 56). Already, health care executives are reporting some success with this approach (Anonymous, “Hospital Disposes of Its Used Equipment the High-tech Way, With Online Auction Site,” 1999).

Capital equipment may be particularly suited to such exchange development, and there is a great model to follow already — the used car market (Brown, 2000b). As unlikely as it may seem, the used car marketplace, with its use of auction technologies with regional auctions, combining both live and online bidding, could be the model upon which to build such e-marketplaces for everything from construction equipment and road machinery to precision equipment and implements on a nationwide, or even worldwide, basis.

Blending Live and Online Auctions

The ability to blend live and online auctions will only be increasing in the future. Already, as Stone (1998) reported, there are online auctioneers, such as livebid.com, that have begun to conduct live “Webcasts” of auctions over the Internet, allowing remote bidders to participate in the auction. David Redden, executive vice president of Sotheby’s, predicts that within another couple of years, through the development of powerful software, the increase in bandwidth, and the perfection of live, streaming video, there will be a “complete convergence” of online and real world auctions (cited in von Hoffman, 1999).

According to DoveBid.com President and Chief Operating Officer Jeffrey Crowe, his company has seen greatly improved asset recoveries through combining its in-person auctions with Webcasts of these events. By adding online bidding, DoveBid.com has been able to increasingly reach end users for used capital equipment, as opposed to dealers who only wish to purchase equipment for resale. With the addition of the Webcasts of its auctions, DoveBid.com has seen the number of bidders rise by 50 percent and the returns from auctions increase by up to 30 percent (cited in Petersen, 2000). While dealers in the used and surplus equipment market may get hurt in the short run (being outbid by end users), they also benefit greatly. This is because they can literally buy and sell from anywhere, whereas formerly they had to physically travel to all the auctions in which they wished to participate. As one dealer stated, where he would formerly have had to spend thousands of dollars and invest a good amount of time to attend a single auction, now: “Anywhere I am, I can just hop online and buy” (quoted in Petersen, 2000, p. 22).

Applying the Auction Model to Government

In the previous sections, the dynamic pricing model and its applicability to private sector operations have been outlined. In this portion of the report, we will examine the three realms in which the auction model can be applied to governmental operations:

- Governmental procurement
- Disposition of used/surplus/seized governmental assets
- Internal allocation of resources

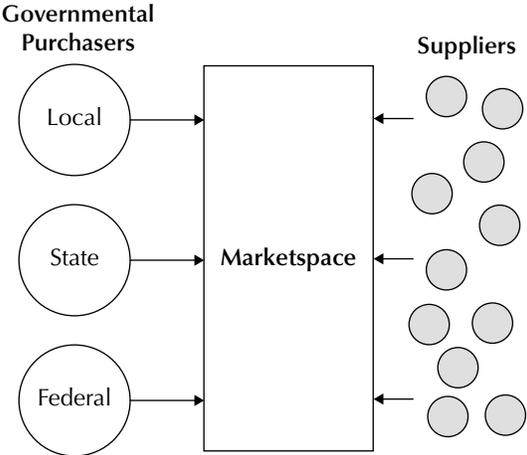
Governmental Procurement

Fundamentally, the challenge present today is how both governmental purchasers and their interested suppliers can make use of online e-marketplaces to make connections with each other. In the area of governmental procurement, the players currently interact much in the fashion shown in Figure 10 below, entering the marketplace — whether that is a physical marketplace or an electronic one — as independent entities.

Based upon the models that have evolved thus far in the private sector, it is likely that three different types of exchanges will develop in regards to governmental procurement. These will be:

1. Independent exchanges
2. Government-led consortium exchanges
3. Industry-led consortium exchanges

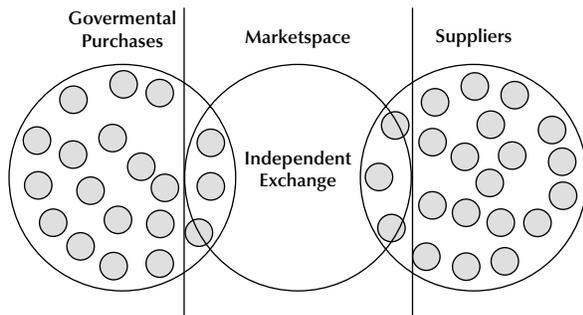
Figure 10: The B2G Marketplace



Independent Exchanges

Following the pattern that has been occurring in B2B e-commerce — and with governmental procurement being an over half-trillion-dollar marketplace — it is likely that the first wave of exchange development may come from entrepreneurs seeking to link governmental purchasers and private sector suppliers of goods and services. They will take the form shown in Figure 11, whereby these exchanges will essentially insert themselves into the existing market for governmental procurement between potential buyers and suppliers. In doing so, entrepreneurs will seek to create governmental

Figure 11: An Independent Exchange in the B2G Marketplace



procurement portals, marketplaces where procurement officers and suppliers could meet, with the reward being the transaction fees (Lyons’ “Chinese math” analogy discussed earlier). The only examples of such today are govworks.com and ezgov.com, but these sites are concentrating on putting consumer-level governmental transactions online, and as such, their volume of B2G transactions has been minimal to date (Meagher, 2000)

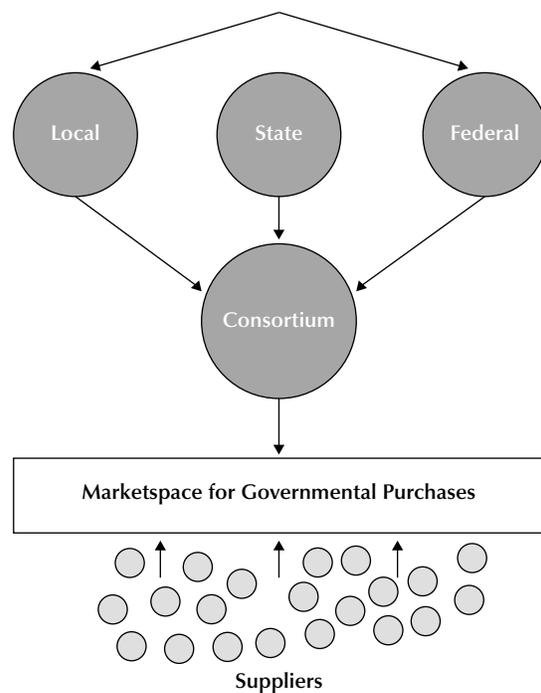
Like any of the private sector marketplaces, the key factor to success will be whether or not such marketplaces can achieve the liquidity necessary for them to be viable exchange marketplaces. Thus, the entrepreneurial types that will form these exchanges will have two basic choices as to what form their marketplaces can take. First, they can choose to establish very specialized marketplaces (à la the independent marketplaces listing on p. 26). Such exchanges could be either based on governmental procurement needs (i.e., medical equipment, computers, furniture) or on governmental agency types (i.e., health care, safety, interior). Whatever the basis for the exchange, the defining characteristic of either the buying or selling side would be the central need, which would make such exchanges readily identifiable. On the other hand, independent exchanges could be established by firms desiring to operate across a wide variety of governmental interests and purchasing needs (à la the strategies of both FreeMarkets and VerticalNet). Like VerticalNet (see p. 27), such exchanges could seek to be essentially “one-stop” shopping for almost all governmental purchasing needs and a single point of entry — or procurement portal — for those seeking to become governmental suppliers.

If independent exchanges are developed, an open question would be whether or not over the long term, there would be a place for them. As has occurred in the private sector already, once such exchanges prove their viability to produce cost savings, would there not be a push to take such exchanges “in house” to save the percentage of savings rebated to the exchange operator? In like fashion, would this also be perceived as “the fox guarding the henhouse” and discourage supplier participation? These are questions that will come of the likely success, at least initially, of such independently led exchanges in the governmental marketplace.

Government-Led Exchanges

The second form of exchange that could be formed in the B2G marketplace would be led of consortia made up by combinations of governmental agencies and levels. Such consortia would resemble the model depicted in Figure 12.

Figure 12: A Model for a Government-Led Consortium for the B2G Marketplace



Like in the private sector, purchasing power can be vastly increased through such combinations — creating more “blue-chip” buyers in the public sector. Further, suppliers wishing to do business with the government can enter this marketplace through a single point of contact, rather than having to deal with multiple agencies and even multiple levels of government.

How might such governmentally developed exchanges be created and work? One of the likely models will be the so-called “E-Mall.” Although it did not progress beyond the pilot stage as a collaborative effort, the E-Mall project was successful in demonstrating the power and potential of collaborative online procurement efforts. E-Mall was started as an online procurement system by the state of Massachusetts in 1998 in an effort to pool the purchasing power of multi-state governments in a collaborative marketplace. According to Thomas Meagher (2000), an analyst with BB&T Capital Markets, the multi-state E-Mall project demonstrated that collaborative purchasing arrangements among state and/or local governments will become more common in the very near future. The pilot E-Mall project demonstrated that such collaborative purchasing could:

- Markedly cut administrative costs
- Secure more favorable prices from suppliers
- Reduce purchasing cycle times from weeks to days
- Slash the time required to issue purchase orders.

While Massachusetts has continued the E-Mall project for its state purchasing, the other participants in the program (Idaho, New York, Texas, and Utah) have all opted to develop their own procurement marketplaces, either in house or with private-sector support (Robinson, 2000).

Such combinations could occur at both the intra- and intergovernmental levels. For instance, health-care-based purchasing consortia could be established both within and among local, state, and federal government agencies working in that area. Likewise, local governments could seek to combine their purchasing power by establishing

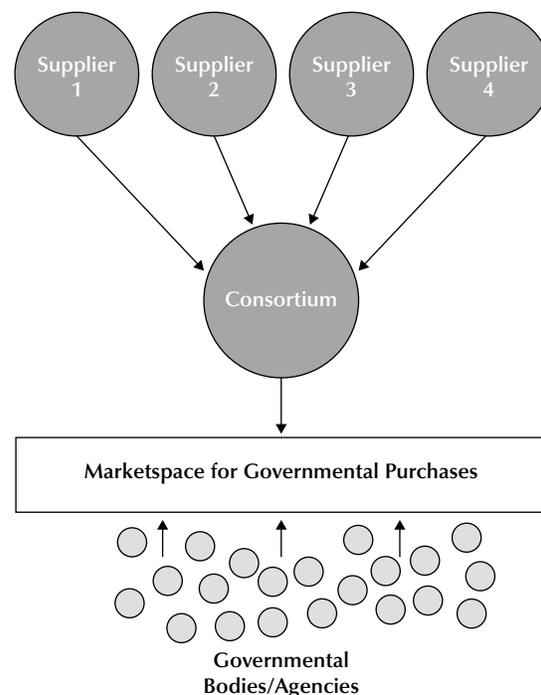
cooperative consortia both among the various levels of local governments (i.e., municipalities, school districts, county, or parish governments) and the agencies within them. The potential combinations are virtually limitless. The only limitation on the development of such procurement consortia in the public sector will be the amount of intra/inter-governmental cooperation on purchasing activities.

Industry-Led Exchanges

The third form that such exchanges may take in the B2G marketplace will be consortia, led by current and potential suppliers to governmental purchasers. These exchanges will take on a form similar to that shown in Figure 13.

Indeed, one of the main lessons from the E-Mall project might be that the real push for a centralized e-marketplace procurement portal may come from governmental suppliers. Gary Lambert, a senior principal with American Management Systems, was a prime mover behind the multi-state E-Mall project when he was employed by the state of Massachusetts. He believes that while all levels of government have an interest in the savings and efficiencies that can be gained through collaborative

Figure 13: A Model for an Industry-Led Consortium for the B2G Marketplace



procurement efforts, the main push towards setting up such e-marketplaces may come from suppliers themselves. Indeed, as states move toward various forms of online procurement, suppliers will push for a common platform through which to do business with government, as opposed to having to deal with each government's — and perhaps each government agency's — procurement systems (cited in Robinson, 2000). One can envision that various supplier groups will take a great interest in forming such supply-side e-marketplaces in the near future.

Disposition of Used/Surplus/Seized Governmental Assets

As discussed earlier, in the private sector, while most of the attention paid to creating online exchanges has thus far been in regards to new items, there is vast potential for applying dynamic pricing concepts and creating new marketplaces for used and surplus items as well. In the public sector, this could include the burgeoning sale of seized assets as well, making this an area worthy of specific attention for governmental leaders.

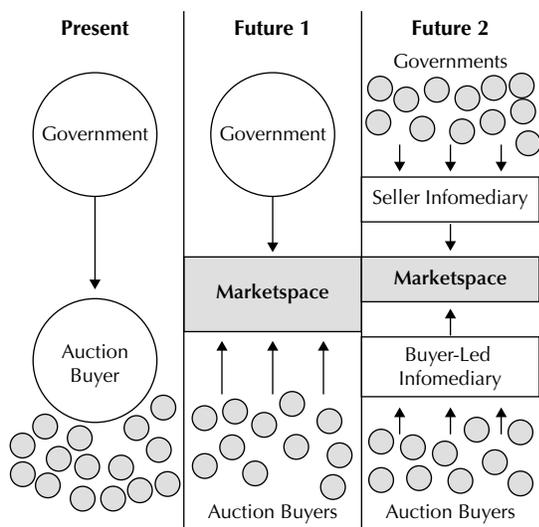
The transition of the marketplace for used, surplus, and seized governmental assets is likely to develop in the fashion shown in Figure 14. Nothing could be less technical at present than the typical governmental auction, where buyers have to physically

gather at a specific time and location for the auctioning off of used and surplus equipment and other assets. Whether it is noon at the courthouse steps or the storage yard of the local municipality, the asymmetry of the auction event means that the eventual auction winner must emerge out of the actual interested parties who are physically present at the auction.

Initially, governments at all levels should seek to do what firms in the private sector are seeking to do, simply offering their auctions online through the “one to many” model (as depicted in the “Future 1” portion of Figure 14). As discussed previously, with streaming video technology, the merging of the physical auction with cyberbidding produces positive results, namely increased returns from auctions of such assets. With examples from industries as diverse as the worlds of fine art and used cars, local, state, and federal governmental leaders should examine how they can employ this technology to expand the reach — and consequently the financial impact — of their auction activities.

Indeed, what may develop in the near future is something much more complex — and yet more beneficial for governmental bodies and auction participants alike. We may see new forms of enterprises develop to specifically either the seller or buyer of governmental assets — or both (as depicted in the “Future 2” portion of Figure 14). As has occurred in the private sector, “infomediaries” may develop to facilitate transactions between auctioneering governmental bodies and interested potential bidders. According to Emigh (1999), the growth of the Internet is “creating a new class of Web-based middlemen” (p. 53), and this would certainly be one opportunity. Such emerging companies can aggregate and integrate large amounts of product information from a variety of vendors, bringing buyers and sellers together in a way heretofore impossible (Dalton, 1999a). In this way, information about auctions can be pooled to create “virtual eBays” in this undernoticed sector of governmental activity. We may also see governmental bodies — particularly at the county or parish and state levels — create such “virtual eBays” for their own internal and interagency use. The saying that “one person’s trash is another’s gold” would hold true here. Perhaps even before such auctions go “outside” the government, other agencies and/or levels within

Figure 14: The Marketplace for Used/Surplus/Seized Governmental Assets



such a governmentally driven operation could be allowed a “first-look” opportunity to “claim” (or bid on in an interagency competitive environment) such items before they went outside.

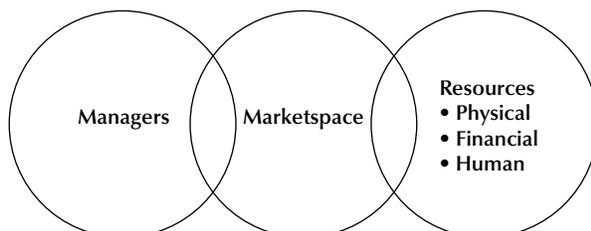
Internal Allocation of Resources: Management-by-Auction

Michael Schrage (1999), a fellow at the MIT Media Lab, proposed a potentially far-reaching paradigm shift in the management of organizations. Schrage posited a new, alternate meaning for the MBA acronym, “*Management by Auction*,” namely applying dynamic pricing concepts to the internal allocation of physical, financial, and human resources within a firm. Schrage thus foresees the development of such internal dynamic pricing for the allocation of not only physical assets, but also personal services within organizations, as illustrated in Figure 15.

Under Schrage’s MBA model, managers, both within and between parts of a larger organization, may go to internal e-marketplaces, essentially engaging in online auctions to acquire or retain both physical and human resources. As Schrage (1999) remarked:

A firm is a marketplace, so why not exploit market mechanisms like auctions as network technologies make them cheap and easy to use.... In a marketplace that insists on ever-increasing efficiency and effectiveness, the “Priceline-ification” of processes and the “eBaying” of opportunities inside the firm seem a logical economic response. The best way of conquering external markets may be to create better internal ones (p. 134).

Figure 15: Internal MBA — Management by Auction



Schrage (1999) observed that internal auctions cannot be any less rational a way to allocate resources than the much-used yet “troubled transfer pricing mechanisms” in use in many large organizations today (p. 134). Auctions thereby would afford companies a way to essentially set a “market price” for internal resources inside their corporate economy.

What form will such internal auctions take? Schrage (1999) observed that what auction form a company’s internal e-marketplace will follow will be dependent upon the culture and needs of the specific organization. Certainly, however, both “sell-side” and “buy-side” models will have their applicability. As Schrage (1999) said, “Companies will evolve their own auction cultures, à la eBay, Priceline, or Sotheby’s” (p. 135).

Already, leading companies have put the power of e-marketplaces — if not auctions — in place to best use their human resources. For example, Carly Fiorina, CEO of Hewlett-Packard, reported that her company has put in place an internally developed “Web agent” that helps managers to allocate employees where they are most needed within the firm’s business units (cited in Corcoran, 2000).

Digital e-marketplaces are also being set up on the Web where employers and contract workers can make connections for project work. Today these emerging exchanges include:

- eLance.com
- Guru.com
- FreeAgent.com
- IQ4hire.com

In these exchanges, independent contractors have the opportunity to find client companies, based on RFPs posted by the worker-seeking companies on the site. In return for a small transaction fee paid to the exchange, organizations have the opportunity to draw upon literally a worldwide pool of independent contractors to accomplish necessary projects (Alexander, 2000).

Most of the exchanges employ dynamic pricing concepts. Through reverse auction mechanisms, interested contractors, in effect, bid against one

another on the basis of hourly rates and overall fees for the specific projects. This helps to drive down costs for companies as competition among contractors has already crossed international borders. While there may be a role for traditional staffing agencies for permanent employees and executive talent, increasingly organizations will turn to these talent exchange marketplaces (Alexander, 2000). From the perspective of Hof (2000a), such e-marketplaces could function as “departments-for-rent.” Using this strategy, when a company needed a product produced or a service performed, it could simply “plug into an e-marketplace to assemble a team — then just as quickly dissolve it when the project is over” (p. EB62). As Hof (2000a) concluded, today “it could prove fatal for companies to keep doing things at which they’re merely adequate” (p. EB62).

Masuda and Whang (1999) proposed a dynamic pricing model for using such auctioning concepts for the internal allocation of limited computing services within an organization. The researchers studied how those needing the services exercised their “buying behavior” for these services, both where the pricing structure is centrally controlled (by a manager allocating resources) and where it is decentralized (determined by users engaged in bidding for the services). In more complex and volatile environments, the latter, dynamically driven environment proved much more beneficial.

While there are constraints present in the public sector that are not in the private sector (i.e., budgeting guidelines, civil service rules, public sector unions), there will be elements of the internal MBA model that can be applied to governmental functions. This is a topic that is potentially far larger than the scope of this project. However, there are several questions that will shape how these auctions may play out and develop as a mainstream method of allocating both physical and human resources in and between governmental agencies. These include questions such as:

- Will the “marketplace” be solely an internal one, or will, for project work and forming teams, public employees and independent contractors be “bidding” and “supplying” in the same talent pool?

- Will such auctions be able to allocate resources in ways that have not been possible before, perhaps not only between agencies but also even between levels of government?
- Is there a role for independent exchanges to conduct internal auctions within the public sector environment?

Information Rules author Varian sees two alternate visions for the future of organizations and work based on the development of these e-marketplaces for talent. In the first view, organizations will hollow out and get smaller, assembling talent from both inside and outside the organization for specific projects. While this is a popular perspective today, Varian also envisions an alternate future that can be brought about by the same technologies. From his perspective, Varian observed:

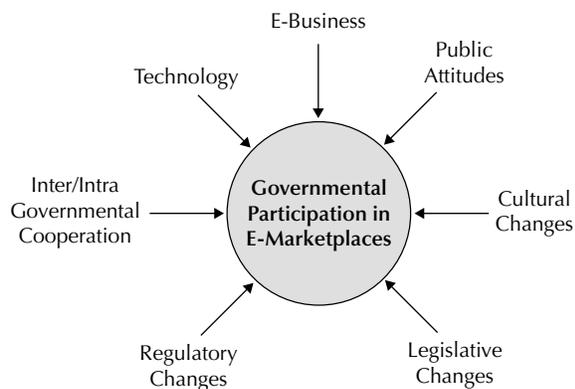
Technology enables coordination and collaboration on a scale undreamt of by global conquerors from Alexander the Great on. The “Command-and-Control Corporation” can come back with a vengeance. It’s back to the future, courtesy of the Internet. History favors the second model ... [as] history likes “thick” markets and “thick” institutions (quoted in Schrage, 2000, p. 93).

Conclusions

As shown in Figure 16, seven factors will influence the level of governmental use of and involvement in online e-marketplaces. These are:

- E-Business
- Public Attitudes
- Cultural Changes
- Legislative Changes
- Regulatory Changes
- Intra/Intergovernmental Cooperation
- Technology

Figure 16: Factors Influencing Governmental Participation in Online E-Marketplaces



E-Business

Inarguably, the most important factor in how much of governmental activities will move online is actually a derivative one, as the degree of public sector involvement will likely hinge on the extent of e-business activity in the overall economy.

As was depicted in Figures 1 and 2, the overall growth of online B2B commerce over the next few years is anticipated to be quite stunning. Specifics of the forecast include the following prognostications:

- By 2004, the worldwide online B2B market is projected to grow from \$145 billion in 1999 to \$7.29 trillion by 2004, representing 7 percent of total worldwide commerce (Bowles, 2000).
- By 2005, it is estimated that B2B e-marketplaces — both consortia (industry owned) and independent — are expected to account for over a third of all business-to-business transactions (Hicks, 2000).
- By 2006, Forrester Research anticipates that almost 40 percent of all B2B commerce will be transacted online (Hof, 1999a, p. EB10).

E-Business Becomes Business

The most likely scenario for this decade is that e-business will become *business*. As Stewart Alsop (1999) declared:

The “e” in e-business will soon be irrelevant.... E-business is not so much e-anything as it is figuring out how to use

technology to move stuff around efficiently. In the next wave, in other words, businesses will make “e” such a core part of their business that the difference between “e” and everything else will be nonexistent. Or they won’t be businesses anymore (pp. 86-87).

As Seybold (2000) predicted earlier in this report, we will likely see the transformation of *almost all* business-to-business processes during this decade as B2B e-marketplaces become the dominant mode for both fixed and dynamically priced transactions between businesses.

There will remain, however, an open question as to whether or not the auction model will take hold in the overall B2B arena. While this report has shown there is great support for the growth of auction-based exchanges, contrary opinions do exist. There can be no doubt that, from both the buyer’s and seller’s perspectives, there is a “learning curve” involved in engaging in online auctions (Dalton, 1999b). In the opinion of Hof, Green, and Judge (1999), auctions will not sweep through every aspect of the economy, simply because “it takes work to haggle” (p. 33). Also, as Taschek (1999) points out, unlike in most cultures today and civilizations throughout history, Americans have a bias towards fixed prices. Thus, he foresees particular difficulty for Americans to adapt to a dynamic pricing environment. In the end, Moschella (1999) believes that “business pricing online won’t be all that different than it’s been offline for centuries,” feeling that fixed-pricing models will predominate B2B e-marketplaces (p. 33). He feels that the only areas where dynamic pricing will take hold online will be in the C2C arena — where it all began with “the eBay model.”

At present, we are in a period of both great expansion in the B2B area and great instability in terms of the “market” for B2B services and marketplaces. Pfeiffer (2000) sees a coming era of e-failures with “a lot of dying dot.coms” (p. 68). In fact, analysts estimate that failure rates among all e-commerce ventures may range as high as 75 percent (Scannell, Nelson, and Briody, 1999). When asked about the future of B2B, Jay Walker of Priceline.com commented, “I think 95 percent of it is nuts!” (quoted in Rothenberg, 2000, p. 92).

The Not Unprecedented Internet Revolution

Hal Varian (2000) observed that in the long view of history, the “feeding frenzy” surrounding the development of the Internet is really nothing new. Even though it may be a mania unique to our own lifetime, the Internet revolution is following — albeit at a faster pace perhaps — the same trajectory as earlier technological revolutions, including the introduction of:

- steam engines
- telegraph
- telephone
- radio
- television
- airplanes

Varian (2000, p. 73) sees such technological revolutions as progressing through five stages, which he outlines as being:

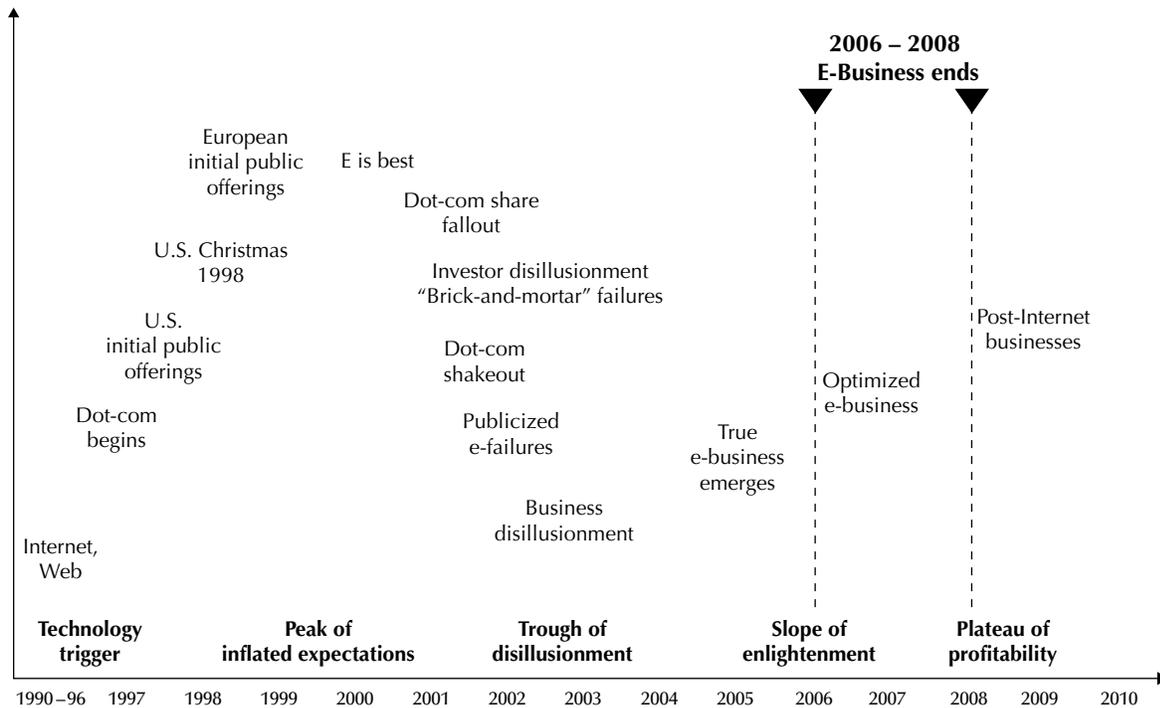
1. Experimentation
2. Capitalization
3. Management
4. Hypercompetition
5. Consolidation

At present, Varian has determined that we are just now entering the stages of management and hypercompetition. In online e-markets, characterized by hypercompetition and price transparency, there will be pressure on companies to be “perpetually cost-effective” in order to survive (Singh, 1999).

A Sweeping Change of History

At this juncture, it does appear that we are collectively riding the unmistakable curve of a sweeping change of history. As can be seen in Figure 17, we are fast approaching the point — projected by Scannell, Nelson, and Briody (1999) to be between 2006 and 2008 — where e-business as such will end and become, as Alsop (1999) observed, simply the way things work.

Figure 17: The Wave of the Future: E-Business Becomes Business



SOURCE: Based on Scannell, Nelson & Briody (1999, p. 37)

The message in this graphic should serve as a stark wake-up call for *all* in the public sector. Over the next few years, as e-business becomes the norm, government officials must investigate *all* e-commerce applications that might be adaptable to make government more efficient, more effective, and more user-friendly, from both the citizens' and the employees' perspectives. Adopting dynamic pricing concepts and the auction model in some form of the three applications outlined in this report may well become the "norm" in governmental operations. Gimien (2000) observed that "strategic creativity" is what really defines the New Economy. Public sector leaders will be challenged to apply this type of "out-of-the-box" thinking as they adapt dynamic e-marketplaces to their operations, both internally and externally.

A Potentially Dismal Alternative Future for Government?

What is the alternative future? Don Tapscott (2000b) foresees a coming era of "market meritocracy," where specialized suppliers who are the most adept at what they do and alert to changing

market conditions will be able to offer their goods and services to vastly more potential buyers than today. If governmental leaders cannot adapt to and take advantage of e-marketplaces in procurement, the true downside risk is that as e-business *becomes* business, the public sector will be left to deal with *only* those suppliers who have not adapted to their role in an information-based, dynamic, and increasingly dynamically priced economy. Those governmental entities and their leaders who do not adapt will find themselves on the fringes of the New Economy. And what should be even scarier is the future. Indeed, the final point made in Figure 17 is that the end of this decade — 2010 — will bring us into an era of post-Internet business. Public sector officials must take action *now* in order to avoid falling further behind.

Public Attitudes

It is strongly believed that while the public may enjoy the various service aspects of e-government by being able to transact business *with* government online, they will also appreciate the tangible cost savings and efficiencies that can be produced

through the application of the auction model to public sector management. Headlines will undoubtedly be made when each state introduces programs to renew driver's licenses over the Internet and when municipalities announce ways to obtain building permits and pay water bills online. Yet, as Don Tapscott (2000a) remarked:

These are still early days in e-government, but the landscape is changing daily. As governments leverage the power of the Internet, they are discovering that the process of transformation doesn't stop at government services. We are at the cusp of an era of profound change not simply in how government works, but in what government is all about (p. 70).

A Continuously Improving Government

As the overarching trends regarding e-business continue through this decade, it is felt that, more and more, public officials and public sector managers will be judged on how they leverage e-commerce technologies in operating government. We may be entering an era where the public will be looking for a more efficient, continuously improving government. To do so, the auction model may indeed play a large role. Indeed, the cost savings on the procurement side and from improved internal operations, along with the increased revenue from better disposition of assets, could reach staggering proportions. According to Borrus (2000), the overall economy could benefit from the fact that "as the cost of delivering government declines, governments might be better able to hold the line on tax increases, despite population growth" (p. 76).

A Government for a "Nation of Traders"

Indeed, public attitudes toward governmental use of the auction model may be particularly favorable, especially in light of the overall trends of e-business. This stems from two sources. First, as evidenced by the explosive growth of both C2C and B2C auction marketplaces, individuals, by and large, are comfortable with the format as a means of transacting *their own* commerce. As Bodow (2000) observed, the growth of the dynamic pricing model in the overall economy is occurring in tandem with another major change. This is the unmistakable fact that we have become "a nation of

traders," as an unprecedented proportion of U.S. citizens now own stock. Today, through the advent of Internet auctions of all types, "Wall Street-style commerce — frenetic, efficient, and calculating — is spreading like a computer virus" (Bodow, 2000, p. 17). Thus, using online auctions, both as part of the emerging B2G e-marketplace and in improving the methods for auctioning and making use of governmental assets, will fit with the public's own experiences and mindsets.

The Triumph of the Business Culture and the TQM Voter

On a second point, Colvin (2000a) observed that much of the focus on business today reflects the triumph of the "business culture," which can be seen in almost every facet of society. As such, individuals are expecting their governmental leaders to look to business for ideas and expertise. How many millions of workers have been exposed to quality concepts at work? Anecdotal evidence would certainly suggest that a *majority* of today's employees have worked — in some form or fashion — with quality tools and methods on the job. Thus, it would be reasonable to conclude that we are likely to see the emergence of the "TQM voter." Holding to the principles of Total Quality Management, voters will increasingly encourage and expect government to benchmark the best practices of business and apply them to governmental operations. Taxpayers will want to see government at all levels to engage in online e-marketplaces as this becomes the norm in the rest of the economy.

Former Speaker of the House Newt Gingrich observed that "e-customers will begin to carry (Internet-inspired) attitudes into their relationship with bureaucracy, and as e-voters, they will favor politicians who work to make their lives easier and therefore more convenient" (quoted in Swisher, 2000, p. B1). As such, we will be moving towards an era where political officials and governmental managers may be evaluated by the outcomes they produce in terms of speed, efficiency, savings, and increased revenue, instead of paperwork and more bureaucracy.

Cultural Changes

For organizations of all types, operating in the online environment will mean that learning cycles

will be much shorter and compressed than those in the offline world. This makes creating a true “learning environment” more important than ever. As Hamel and Sampler (1998) noted: “Companies that are quick to try, quick to learn, and quick to adapt will win. Those that learn the fastest, and keep learning, will stay ahead. Companies that take months to assess what they’ve learned, whose internal processes don’t run on Internet time, will get left behind” (p. 92).

A Learning, Entrepreneurial Government

Which word best describes government today: learning or entrepreneurial? Most people inside and outside the public sector would likely respond that the latter is more descriptive. Yet, as Hamel and Sampler (1998) observed, the Internet “is a noose for mediocrity” (p. 92). In an increasingly knowledge-based economy, we will need a knowledge-producing, learning government.

Following and building upon the trends in the private sector, we will need a more entrepreneurial government to fully leverage the power being brought about by the Internet revolution. This will mean promoting “intrapreneurial leaders” within government at all levels and forging partnerships with those persons and companies that can help the public sector take advantage of opportunities present. Newt Gingrich observed that government leaders need to bring a more entrepreneurial approach to governance, being willing to take chances and learn from mistakes. He also believes that the American people are more in this mindset and will be willing to embrace change and those politicians who adopt the “Silicon Valley model” as a way of doing things, as opposed to the Washington way of doing things (cited in Swisher, 2000). This paradigm shift raises a number of organizational-culture issues facing governmental leaders.

An Agile Government Bureaucracy?

First and foremost, there is the notion of bureaucracy. Simpson (2000) observed: “Bureaucrats can be a difficult lot, jealous of their turf and generally reluctant to make binding commitments or do anything quickly with people they don’t know well” (p. B1). Yet, the demands of the e-marketplace will challenge our fundamental notions of what it means to be in the public sector, from the highest elected

and appointed officials to the front-line employees in all agencies at all levels of government. Once again, speaking of the role of government in the Internet Age, Newt Gingrich put forth a challenge that would have seemed paradoxical and unapproachable just a few years ago, observing that government needs to “find a way to behave with the agility of tech companies” (quoted in Swisher, 2000, p. B1). Gingrich believes that, overall, “the government had better reorganize itself fast, because most people are finding it irrelevant as the language of politics and government is increasingly isolated from the language of everyday life ... [as] the Internet economy will drown out the government class if it does not learn to adapt” (p. B12).

While e-government may indeed reduce the need for middle management and clerical positions in government, it may simultaneously create new functions and roles for government and new types of job opportunities. According to Birnbaum (2000), “people who spend time online tend to see a need for an active government to equip them for the new economy” (p. 244).

Unions

One of the major issues to be confronted to create a more “agile bureaucracy” is the role of unions in the public sector. In an era when the push for efficiencies most often equals the loss of jobs — or even entire job categories — Birnbaum (2000) observed that “governments also will face resistance from public employees’ unions that oppose the inevitable job reductions” (p. 242). Rebecca Feaster, a representative of the American Federation of State, County, and Municipal Employees (AFSCME), contends: “Our view is that electronic tools should augment, not replace, government employees. When technology is seen as a replacement for workers, service, quality, and flexibility are bound to suffer” (quoted in Birnbaum, 2000, p. 242).

Wired Citizens and E-Government

According to Feaster, AFSCME also fears that those who need government the most, namely the lower-income and disabled populations, are disproportionately not online (cited in Birnbaum, 2000). As Borrus (2000) pointed out, the potential for virtual government will remain limited for the time being, because approximately half of the U.S. population

lacks Internet access. With the move toward e-government, however, there will likely be increasing support for universal Internet access, for both the public in general and the public sector. While there have been moves to bring Internet access to public places to provide equal access to online opportunities, the marketplace is quickly resolving this matter, as the cost of not only Internet access but computers themselves continues to decline, making access to the Internet more affordable for all.

Likewise, there will likely be support for the notion that e-government needs e-workers. Monroe (2000) observed that in the public sector, just as is true across the private sector, the preponderance of the best ideas to improve the efficiency and effectiveness of governmental operations will come not from information technology specialists, but rather from the people “in the trenches.” He remarked that “the people doing the day-to-day work have a familiarity with the foibles and flaws of government operations that a chief information officer can never acquire” (p. 6). This being the case, Monroe (2000) believes that governments at all levels will need a technologically literate workforce and that, they should take seriously proposals such as the Federal Workforce Digital Access Act, proposed by Rep. Elijah Cummings (D-Md.). Representative Cummings proposed that the federal government should take a step toward mirroring actions beginning to be taken by Ford and other leading companies to provide free computer systems and Internet access.

Conclusion

In the end, it will truly be a challenge to produce a culture of innovation and an agile bureaucracy for governance in the 21st century. Yet, what is the alternative? In an era that will likely produce more fluid marketplaces — both within and between organizations — the paradox is that posed by Varian (2000) earlier. Namely, it is whether the traditional “thick” structure of government will be adapted — and adaptable — to the needs of the New Economy and the new citizenry being enabled by it. As Varian conceded, history indeed favors the survival of both the bureaucratic mentality and the bureaucrats themselves. However, the power of the Internet economy and the emergence of dynamic models for resource allocation will

combine to press the governmental class for responsiveness and results, or else the predictions of former Speaker Gingrich about irrelevancy and isolation of government may well come true.

Legislative and Regulatory Changes

One of the most pressing tasks of those in leadership positions at all levels of government is to examine rules, regulations, laws, and legislation that might hinder the development of the respective marketplaces for online procurement and asset disposition activities. Almost every agency at all levels of government will find that they have guidelines in place that will either hinder or completely prevent involvement in the emerging marketplaces. Just on the procurement side, policy manuals for purchasing are often measured by the number of binders they take up. These guidelines, along with the legislation and regulations behind them, will need to be updated, if not completely revised and “down-sized,” for the New Economy.

Danger in the Transition Period

One of the real pressures facing public officials and governmental managers stems from the very real dangers involving the transition from a highly regulated, static purchasing environment to the emerging dynamic marketplaces, on both the procurement and asset disposition sides. As we move into these budding forms of B2G commerce, there will certainly be the potential for the same kinds of improprieties and corruption to occur in e-marketplaces as has occurred in the physical realm. These irregularities may take on new forms in cyberspace, as the unscrupulous will be working just as hard at “finagling” the new systems as those who are attempting to set them up.

New Ethical Problems — “Truckloads of Ham”

Indeed, new types of ethical questions will invariably arise, such as the situation noted by Gimien (2000) whereby purchasing agents are given warrants or stock options for doing business with certain online B2B firms. Warner (2000) reported on the advent of these so-called “technical advisory boards,” a way in which corporate purchasing decision makers can be rewarded with stock options for steering business to new suppliers. Joseph Badaracco, an ethics professor at the Harvard

Business School, categorized this development in the following way: “In the old days, you could give a ham to the purchasing agent at Christmas. This looks an awful lot like driving up with 16 22-wheel trucks full of ham” (quoted in Warner, 2000, p. 140).

Certainly, there will need to be guidelines set up governing what constitutes a conflict of interest, especially if an independent exchange is involved in the marketplace. Indeed, such an infomediary may have an especially tenuous situation, representing and having access to both suppliers and buyers in the marketplace.

The Transparent Marketplace

Yes, by 2010, it is very likely that graft, fraud, and corruption will have occurred in the B2G marketplace. Yes, there will be steps taken to prevent this from occurring. Yet, the greatest preventative measure to such improprieties in B2G e-marketplaces is a characteristic that is inherent in them — the *transparency* of the process. Indeed, price transparency and the full sharing of information are inherent elements of the emerging online B2B exchanges (Schwartz and Mendel, 1999). Transparency should also be a part of all e-marketplaces established for the sale of governmental assets to ensure the propriety of these as well. In the end, the fact that these cybermarkets operate with an openness not generally found in the physical realm should be a great deterrent to any corruption of the processes that will be put in place. Thus, the transparency of the cybermarketplace may well produce a paradox in that less oversight may actually produce more legitimacy in pricing in the public sector.

The Demise of the ‘Good Old Boy’ Network?

Finally, the transparency of the online marketplace may especially work to the advantage of both small businesses and minority firms, as it may mean the demise of the “good old boy” network. As more and more purchasing moves online and as more procurement is conducted in a dynamic pricing environment, according to Richard Rierder, CEO of Weirton Steel, “the winner is not going to be the guy who’s the best backslapper or the guy who unloads the most money at the golf course” (quoted in Brown, 2000a, p. 160). Indeed, as Tapscott (2000b) warns, suppliers who base their business

on personal relationships and clients who are too busy to shop the market will find that their days are numbered. “The world has changed — power is shifting from schmoozy salesmen to the buyer,” observed Glen Meakem of FreeMarkets.com. (Aepfel, 1999, p. B1)

Intra/Intergovernmental Cooperation

This will be a critical area in order to foster greater governmental participation in e-marketplaces. Not only is it critical that public sector leaders network and share best practices in all three applications of the auction model, but this also will be true in all areas of e-government. Undoubtedly, there will be numerous conferences held and articles published on the emerging involvement of the public sector in e-marketplaces and the application of dynamic pricing concepts to both the procurement and disposition sides of the equation. Public officials and governmental managers will be well-advised to stay on top of the emerging knowledge base in this area and to share their own expertise in this area with others.

Consortia-Based Learning

One exciting facet of the emerging marketplace is the potential consortia that will develop for procurement, disposition, and perhaps even internal auctions between members for the use of both physical and human resources. Truly, this could foster levels of inter-agency and inter-governmental cooperation that have been heretofore unseen.

Knowledge Exchange

Finally, as discussed earlier, the role of independent exchanges in governmental e-marketplaces will be interesting to track as developments occur. Certainly, governmental leaders will be able to build upon the expertise of exchange partners, experienced in the B2B and even B2C marketplaces, in order to enter new marketplaces and to establish consortia. However, the knowledge exchange need not be simply one way. In time, it is indeed likely that public sector officials and managers experienced in setting up government-led consortia or internal MBA applications may find themselves in demand for their knowledge, not only by other governmental agencies, but by

private sector vendors and exchanges as well.

Technology

The whole concept of the emerging online market-spaces is a technologically driven phenomenon. As discussed previously, making dynamic pricing a workable concept in online marketplaces is driven not just by the Internet itself, but also by the software necessary to develop and administer the auction process. Thus, technology will surely be a factor — if not the most important— in the future development of online marketplaces, in both the private and public-sector marketplaces.

Inherent in the further development of the New Economy itself is the assumption that both computing power and the Internet will continue to grow at a rapid rate, in line with both *Moore's Law* (that computing power will double roughly every 18 months) and *Metcalfe's Law* (that the value of a network squares as the number of users grows) (Fishburne and Malone, 2000). Yet, in addition to these “givens” regarding increasing bandwidth and computing power, it is believed that four primary drivers will specifically impact and facilitate the growth of online marketplaces, in the private and public sector. They are:

1. The linking of e-marketplaces
2. The compatibility of ERP and accounting systems with dynamic pricing
3. The emergence of shopping technologies
4. The development of metamarkets and metamediaries

The Linking of E-Marketplaces

As explained in the discussion of the “eBay Model” and the development of online auction marketplaces, the driving force is the power of the network effect, which brings about the necessary liquidity for e-exchanges to actually work. Today, the goal, at least conceptually, is to create exchange-to-exchange (E2E) e-commerce “where buyers and sellers conduct transactions not only within exchanges, but also between them ... for if you link two exchanges, you double their liquidity; more liquidity means more gravitational pull for market participation” (Henig, 2000b, p. 130). Keith

Krach (2000), CEO of Ariba, sees a future in which there will be literally “thousands of marketplaces segmented by industries” (p. 26). Krach foresees the rapid development not only of business-to-business marketplaces, but also “marketplace-to-marketplace” linkages, which will enable players to move amongst and between specialized exchanges. In this environment, “everybody’s going to be able to take advantage of the specialization in the different marketplaces and huge economies of scale” (Krach, 2000, p. 26). Speaking in regards to the power of these “metaexchanges,” Mark Hoffman (2000), CEO of Commerce One, observed, “It’s a powerful thing when you can really have exchange-to-exchange communication” (p. 27).

For buyers and sellers alike, the principal advantage of E2E e-commerce is the fact that they can greatly expand their reach — finding more selection and more competitive bidding, more than can be provided by a single exchange site. Thus, we will likely see “metaexchanges” develop, on both the purchasing side and the asset disposition side of governmental operations. As Varian (2000) remarked, bigger, interlinked markets provide enhanced liquidity, but they also make the market more complex. In the end, however, “bigger markets are better” (p. A42). Thus, no matter the exact breakdown of government-led consortia and independent exchanges, the more important factor may be how these exchanges can be linked to become E2E exchanges.

While this may prove to leverage the benefits of dynamic e-commerce applications for the involved governmental units, it may just as importantly serve to benefit the suppliers as well. Hoffman of Commerce One feels that the E2E — where exchanges are linked to each other in a way that they become “interoperable” — will be very appealing, especially to suppliers. In his opinion: “Suppliers don’t want 10,000 exchanges. They just want to plug their data in once and have access to all the portals” (quoted in Hutheesing, 2000, p. 50). Thus, the development of E2E meta-exchanges may serve to be especially beneficial to small businesses and minority-owned firms seeking to crack into this marketplace. The nascent online B2B exchanges have been, in the opinion of Seybold (2000), “a boon for the sellers” (p. 135).

This is primarily due to the fact that these exchanges have brought speed and liquidity to many areas of the economy where industries have been fragmented and the processes for conducting transactions has been laborious and time intensive.

With 50 state governments and a myriad of city/county governmental bodies across the nation, the public sector is just such a fragmented marketplace. Indeed, there is no central point of contact — often even within a single state government — for purchasing. As government moves to adopt more commercial-like purchasing practices, including online exchanges and metaexchanges, it will make it easier for vendors that have never done business with the government to become suppliers and service providers through the construction of e-procurement portals (Meagher, 2000). These procurement portals will enable a small supplier to reach a far wider potential audience of governmental buyers through a single point of contact.

At the other end of the equation, E2E metaexchanges may help governmental agencies create much wider markets for their used, surplus, and seized assets. By linking together such disposition auctions in a metaexchange format, governmental agencies and levels could work to create virtual “eBays” for these assets, both for individual and business buyers. In doing so, it is very likely that the interagency and intergovernmental cooperation (alone or in combination with private vendors and exchanges that may work to facilitate such E2E environments) will generate even greater returns on these items. Perhaps more importantly (even if such E2E e-marketplaces do not “maximize” returns for individual governmental units), such metaexchanges may serve to foster transfers of assets between governmental agencies and even levels of government. Indeed, what may be surplus to one agency, division, or level of government may be “gold” to another.

The Compatibility of ERP and Accounting Systems with Dynamic Pricing

One of the profound changes brought on by the introduction of the Internet is that it allows instant interactions between and access to suppliers, buyers, shippers, and customers. These communications are transforming supply chains into supply

webs (Hof, 1999b). As is the case in the private sector as well, state and local governments are increasingly interested in Web-based procurement systems that will allow them “to electronically search and configure products from multiple vendors, get automatic approval, and create purchase orders” (Harreld, 2000, p. 30). Menduno (1999) stressed that common database linkage will be essential for e-marketplaces to truly succeed. As Joseph Miccio, executive director of the Rancho Margarita, California-based NCI Consulting, put it: “Anyone can do online ordering. The real challenge is to simultaneously connect all of the players in the supply chain” (p. 55).

Thus, a very practical matter comes into play when discussing the “workability” of dynamic pricing concepts in organizations of all types, in both the private and public sectors. The challenge posed by auction marketplaces — and the variability in pricing and flow through the organizational system — is intense for both the managerial accounting systems of an organization and its ERP (Enterprise Resource Planning) system. To that end, as Taschek (1999) observed, in order for online B2B auctions to truly become a part of the overall operations of a single company, let alone a supply web, accounting and inventory systems must be adapted to handle variable prices.

According to Morea of the AMS State and Local Government Group, these sectors of government are moving away “from agency-oriented systems to enterprise-wide customer-facing solutions” (quoted in Harreld, 2000, p. 27). Krach (2000) of Ariba observed that the move toward Internet-based exchanges poses a particular challenge in the wake of the former heavy emphasis on and large monetary investment in ERP systems. Hoffman (2000) of Commerce One observed that it will become increasingly important for organizations’ ERP systems from different vendors (i.e., SAP, PeopleSoft, and Baan) to be able to communicate with one another in a seamless fashion. He stated bluntly that “ERP systems are still very, very client/server-oriented and they have a big job to move into the Internet area” (p. 27).

Analysts thus see that a huge issue in the adoption and implementation of e-commerce concepts will

be the ability of an organization's internal ERP system, including its manufacturing, financial, and human resource applications, to handle the necessary shifts (Vizard, 1999). While beyond the scope of this report, this matter of systems compatibility will be at the forefront as both governmental agencies and private sector suppliers and buyers work to integrate their enterprise-based systems via the Internet. The best advice is for information technology (IT) professionals, both within the involved governmental agency and from outside sources, to become involved early and often in the process to monitor the systems implementation and modification issues that will inevitably arise. Biggs (2000) observed that there are many complexities in deciding to engage in B2B commerce. Indeed, since many core business practices can be affected, those organizations seeking to make the leap "need to take a common sense look at (their) existing and evolving business processes" (p. 8).

One more note. As difficult as the integration is and will likely continue to be, the IT problems only escalate when the move is made to link single exchanges into E2E metaexchanges. As King (2000) commented, the complexity of E2E will only complicate the challenge in integrating ERP systems with the e-marketplaces.

The Emergence of Shopping Technologies

One of the criticisms on all forms of online auctions is the time-intensive nature of the activity. Remember that auction sites such as eBay have been derisively labeled the ultimate way of "compulsively wasting time" on the Internet (Gibson, 1999, p. 156). Yet, this reputation may carry over into the B2B and B2C realms as well. For buyers, beyond the actual cost savings experienced in online B2B auctions, buying organizations also save through the greatly reduced time spent negotiating prices and terms on transactions (King, 2000). As cited earlier, while there is certainly preparation time to be taken into account, Meakem of FreeMarkets.com observed that with online B2B auctions, negotiations with multiple competing suppliers that might have taken weeks or even months can be compressed into just a few hours (cited in Vigoroso, 1999).

For all the opportunities for suppliers to reach new markets and new buyers, there is a time cost

involved. While a supplier could not reach the potential online market as quickly and efficiently in the physical real, cybermarket participation does come at a time and monetary cost. Indeed, suppliers — at least initially — may not experience the same level of time and cost savings as the buying organization. Paul Post is the purchasing manager for J.R. Wald Co. in Huntingdon, Pennsylvania, which sold the aluminum for license plates to the state of Pennsylvania in the much-touted FreeMarkets.com auction discussed earlier. He noted that there may actually be a cost associated with participating in such online auctions, which may be particularly applicable to small suppliers:

It took a lot more time for us because you've got to get the software from the auction company, load it and train people to use it. Then, you've got to tie someone up the whole time the bidding is going on. For suppliers, it's a lot more time than writing it (a bid) down on a piece of paper and sending it in (quoted in King, 2000, p. 97).

There are, however, automated "shopping technologies" being developed that will decrease the time investment necessary for online auction participation. Mark Rodin, CEO of Marshall Industries, predicted: "Before long, software agents will comb the Web for product and price information.... Ultimately, there will be some new agent technologies that will begin to change the value stream of online marketplaces" (quoted in Dalton, 1999a, p. 48). Singh (1999) sees intelligent software agents playing an increasing role in online exchanges, as buyers and sellers will seek to arbitrage information to gain the best prices and product configurations in perhaps many exchanges at once. Such "agent-based commerce applications" can find the best transaction matches for one or even both sides of the buyer/seller dichotomy.

Don Tapscott (2000b), author of *Digital Capital: Harnessing the Power of Business Webs*, sees that the presently predominant form of B2B exchange, which is a price-based reverse auction, will "mature quickly, allowing a further dialogue between buyer and seller" (p. A38). This is due to his belief that "many transactions between companies cannot be reduced to a series of reverse auctions ... [when]

factors like product quality, customer support, credit terms and shipping reliability often count for more than price” (Tapscott, 2000b, p. A38).

One of the inevitable developments accompanying the growth of online B2B e-marketplaces will be the advent of what Ron Paulson, general manager of FindMRO.com, termed “industrial personal shoppers.” These “bots” will scour all forms of e-marketplaces — including both fixed and dynamic pricing environments — to find the best prices and the best terms for needed equipment, supplies, and services in shorter cycle times (cited in O’Connor, 1999, p. 19). While the first generation of shopping “bots” were concerned only with price comparisons, soon there will be “bots” that will compare goods and their suppliers and services and their providers on many dimensions and levels (Bayers, 2000). Indeed, Owen Jelf, a partner with Anderson Consulting, sees the development of “dynamic pricing engines” that will allow buyers to specify and sellers to bid on variables beyond price in a dynamic environment. These factors may include all facets of a B2B transaction, including:

- Price
- Quality
- Time
- Supplier performance history and reputation
- Transport costs
- Lead time
- Warranty lengths and coverages
- Acceptable usage of scrap items
- Restocking periods (cited in Queree, 2000).

With the advent of such smart technology, “It’s like an arms race, where you give a more powerful weapon to both sides,” stated Yanni Bakos, a professor at MIT’s Sloan School of Management (quoted in Cortese and Stepanek 1998, p. 74).

The Development of Metamarkets and Metamediaries

One final technological point to consider is a conceptual one. Up till now, we have looked upon the marketplace as defined by those in government or

by those supplying goods, services, or themselves (as employees or contractors) to government. Even though this is a report focusing on the application of the auction model to governmental activities by public sector officials and managers, there is one supposition that should be considered. This is the concept of metamarkets and their metamediaries, framed by Mohanbir Sawhney (1999), which is explicated in *Sawhney’s Concepts of “Metamarkets” and “Metamediaries”* (p. 51).

Sawhney’s (1999) ideas applied would seem to indicate that what we will see is not the “either/or” development of independent and consortium-led marketplaces. Rather, we will see — in all forms of online commerce, both in and between the private and public sector the development of cognitively defined markets in which groupings of activities are matched to the needs of the buyer. Metamediaries will manage the process of information, product, and service flow — as defined by the buyer — through the marketplace, as was depicted in Figure 6. Such metamediaries would go a long way toward promoting the kind of “friction-free” environment that was forecast centuries apart by the noted capitalists Adam Smith and Bill Gates.

Finally, is there a metamarket for governmental services? This remains to be seen, although companies are attempting to create contact portals for citizens to reach out to the government. These include firms such as:

- Ezgov.com
- Govworks.com
- Govonline.com

These rather all-inclusive sites encourage citizens to use their “portal” as a means to reach the government — from their own perspective (Birnbaum, 2000).

“Government of the people, by the people, and for the people.” Wow! We have come a long way from those simple words to the complicated concept of metamediaries for the public sector.

Sawhney's Concepts of "Metamarkets" and "Metamediaries"

Whereas wholesalers and distributors played a role in the "Old Economy" by providing spatial assortment and temporal utility to customers, Sawhney (1999) sees a new breed of intermediaries developing to facilitate transactions in the "Network Economy." Rather than "disintermediation" doing away with middlemen, "infomediation" needs will bring about a new form of intermediary, which Mohanbir Sawhney labels as "metamediaries." These exchanges, which will operate in what he terms "metamarkets," "have no parallel in the analog world and have little or no physical presence. They are the 'switches' and 'routers' of networked commerce" (p. 11), explained Sawhney.

Sawhney (1999) compared the exchanges to the invention of the VCR, which allowed a television viewer to separate in time the transmission and the viewing of a specific program. "In the Network Economy, the flow of information can be shifted away in both time and space from the physical flows in a distribution channel.... The Internet allows customers to shift the time and space of channel exchanges. Hence, integrated intermediaries can be replaced by a combination of specialized market-space intermediaries who manage information flows (the bits) and a set of specialized market-space intermediaries who manage physical flows (the atoms)" (p. 14). Sawhney (1999) thus sees a coming opportunity for what he labels "market deconstruction," which will enable buyers to "mix and match" the best providers of information, product, and transportation services — services that were formerly handled by vertically integrated middlemen.

In this market deconstruction, Sawhney (1999) sees a new breed of intermediary institutions developing — "metamediaries" — who will exist "to inform and advise customers and to simplify their dealings with product and service providers." (p. 18). In turn, these metamediaries will "redraw the boundaries of markets" by creating new marketspaces — "metamarkets" — which are simply defined as "clusters of cognitively related activities that customers engage in to satisfy a distinct set of needs ... whose boundaries are derived from activities that are closely related in the minds of customers, and

not from the fact that they are created or marketed by related firms in related industries" (p. 18).

In the consumer realm, examples of metamarkets could be all the activities and costs associated with purchasing a car or home ownership. For example,

- **The Automobile Metamarket**

- Auto manufacturers
- New car dealers
- Used car dealers
- Newspaper classifieds
- Auto magazines
- Peer and expert opinions
- Financing companies
- Insurance companies
- Mechanics
- Service shops
- Spare parts dealers

- **The Home Ownership Metamarket**

- Real estate agents
- Private individual sellers
- Banks
- Mortgage companies
- Newspapers
- Plumbers
- Electricians
- Lawn care services
- Maid services
- Home improvement stores
- Home remodeling contractors
- Architects
- Interior designers

(Sawhney, 1999, p. 11, 18).

Sawhney sees the development of disintermediation as bringing on the era of frictionless commerce. Indeed, rather than seeing all transactions being "point-to-point" between buyers and sellers without intermediaries in the online realm, Sawhney (1999) instead sees disintermediation occurring rapidly, but with the development of a large number of new metamediaries to enable the transactions. As such, in Sawhney's view, "Metamediaries represent the death of friction and the birth of frictionless commerce" (p. 22).

Recommendation

A Call for Governmental Participation in the Internet Revolution

In the view of Jay Walker of Priceline.com: “The starting gun (for the Internet Revolution) hasn’t fired. The race hasn’t even begun” (quoted in Southwick, 2000, p. 91). Ira Magaziner, the head of President Clinton’s policy studies on the Digital Economy, in an interview for *Forbes ASAP*, conducted by Fishburne, Frankel, Jeffers, Lajoie, and Patterson (2000), stated:

This revolution is going to play itself out over a couple of decades — a much more intense period of change than other revolutions....We haven’t gone 10 percent of the way. And this revolution will be every bit as profound as the Industrial Revolution. But because it is happening more quickly, the effect is going to be more intense on people’s lives. It’s going to alter the way we organize human societies, as well as the basis of our economy, and it is going to take us to a new level of material well-being. The United States has a three- or four-year lead on this. Other governments could slow this down. They can’t prevent it, but they can hinder it. The question mark is whether they will do that (p. 84).

Where it will all end — and it will not “end” — is still largely a matter of speculation at this point. Pfeiffer (2000) believes that the revolution being

brought about by the Internet is not “a floating bit of ephemera that will burst, then disappear” (p. 70). It has truly revolutionized how both individuals and organizations interact, creating new forms of commerce along the way. However, while the hype surrounding the Internet is intense, it is not unprecedented, as Pfeiffer (2000) commented: “Hype was present at every other major technological revolution in the past. The telegraph, the telephone, electricity, and the railroads were all going to increase democracy around the world, create a new utopian society, and build Eden on earth. They were going to make the world and America more American” (p. 70).

As highlighted earlier, Varian (2000b) has postulated that the Internet Revolution is not without precedent, as its impact on the economy is following the same basic course as prior technological innovations. Hof (2000a) observed that history has also taught us, by nature, “revolutions aren’t pretty, and this one could mean more wrenching changes than the Industrial Revolution — maybe a whole lot faster” (p. EB59). Thus, we can expect that we are entering a period that will be characterized by great industry consolidation. In fact, analysts estimate that failure rates among all e-commerce ventures may range as high as 75 percent (Scannell, Nelson, and Briody, 1999). Pfeiffer (2000) foresees that the current 400+ publicly traded Internet companies could be reduced to 50 or less in a decade. In e-marketplaces, a Darwinian environment is highly likely to develop, as there is likely room for only one or two e-marketplaces in each specific

industry. This is because buyers and sellers will want to be “where the action is” (Hof, 2000b). According to UBS Warburg, the current roster of several hundred B2B exchanges will swell to over 5,000 by 2002. However, by the end of this decade, only a relative handful — between 10 and 30 — will still be operating (cited in Henig, 2000a, p. 132). This shows how dramatic the expansion, consolidation, and, ultimately, the contraction of B2B exchanges will be in the coming years.

We are thus at a point of great risk and volatility in the development of the Internet economy. Stock prices for all forms of Internet companies, and particularly for firms in the online auction marketplaces, both on the consumer and business levels, have been beaten down in the recent stock market correction. However, as Pfeiffer observed, the hypercompetition stage of technological revolutions typically is where one can: “Say goodbye to pie-in-the-sky musings and say hello to blood on the walls. History tells us that this is where things get ugly, but it is also where the real money is made.” (Pfeiffer, 2000, p. 68). Thus, for entrepreneurs in the private sector, the risks of the Internet game are rising. In regards to B2B online exchanges, there remains an open question as to whether the dominant mode of these e-markets will be independently operated exchanges or private or consortium-led marketplaces. Also, how much of online B2B transactions will be based on the auction model, rather than conducted on a fixed-price basis, will play out over time.

Likewise, for public sector officials and leaders, the advent of online auction marketplaces poses enticing yet risky propositions. The potential savings in purchasing activities that can be gained through entering online e-marketplaces is potentially quite large. Recall that the projected savings that can be achieved by private sector firms has been forecast to range between 18 to 45 percent (Menduno, 1999). If the public sector could reach *simply half of the forecast savings potential on the low end* of Menduno’s estimate, this would mean that government — as a whole — could shave over \$50 billion off total procurement costs for federal, state, and local government shown in Figure 3. Likewise, through applying the online auction model to the sale of governmental assets, governmental agencies

could recoup greatly increased revenue from these sales. Finally, employing the Internal MBA concept could result in untold cost and operating efficiencies through the more effective use of both capital and human resources. Taken together, citing Borrus’s (2000) opinion discussed earlier, all this could mean that a more efficient government could actually do more in the 21st century.

The challenge for those in the public sector over the next few years will be to explore the opportunities — and weigh the benefits and risks — that will be available to them by employing dynamic pricing concepts. As e-business becomes business, as Bayers (2000) notes, with the computing technology and mathematical models being developed today, what might have previously remained as “idealist” academic theories is actually being implemented today in the form of dynamic pricing. “Today’s scholars — thanks to the pure, dumb luck of being alive in today’s economy” are becoming the innovators in the economy, able to not just say how things should work but to actually put their concepts into practice (p. 218). *Information Rules* author Varian observed that one of the most phenomenal aspects of the development of the auction-driven e-marketplaces is how “theory that was once considered the purest of the pure is now becoming the basis for new business models.” As such, “Economic theory is accelerating from the descriptive to the prescriptive at an Internet-driven pace” (quoted in Schrage, 2000, p. 93).

It is a fun — yet risky — time to be in business and in the public sector. The true challenge will be to create the entrepreneurial mindset among public leaders called for by Newt Gingrich and others to create the “agile bureaucracy” and “learning government” that will be increasingly needed — and expected by digital-age voters — in the New Economy. Elected officials, along with leaders throughout all levels of government, must be willing to learn about the possible applications of auction marketplaces for their agencies and to explore partnerships in this area, both with other public sector organizations and with private sector vendors and operators who will enter the governmental marketplace. “Try it, test it, do it” should be the mantra of the public sector in regards to the application of all e-commerce concepts, including

the auction model. The idea should be to see where not just e-business ideas can be applied to governmental functions, but also the entrepreneurial, even “weird” ones. As Green (1999) noted: “Let’s face it, a lot of the [new] ideas will be duds. But amid the dozens of wacky proposals, propositions, business makeovers, and other e-business madness, ideas are taking shape that will define commerce for decades to come” (p. 22).

At this point in the Internet Revolution, the worst possible course of action would be *inaction*. Ross Perot’s famous quote comparing the company he founded, EDS (Electronic Data Systems), to GM (General Motors), quintessentially captures the difference between the entrepreneurial and bureaucratic mindsets. He stated: “The first EDSer to see a snake kills it. At GM, the first thing you do is organize a committee on snakes. Then, you bring in a consultant who knows a lot about snakes. Third thing you do is talk about it for a year” (quoted in Peters, 1987, p. 221). With the accelerating pace of change in Internet time, a year is far too long to wait to act in regards to e-commerce applications, in both the private and public sectors. Right now local jurisdictions need to be exploring e-commerce applications— whether it’s the ability of citizens to pay parking tickets online or to view legislative committee meetings on the Web.

Today, governmental leaders across the board should begin to consider practical ways to apply dynamic pricing concepts — the auction model — to their operations, on both the consumer and B2G levels. Will college students be willing to engage in auctions for limited slots in college courses? Will hunters do so for limited hunting rights for specific prized animals? Will real estate investors do so for limited numbers of opportunities to develop lands near high-traffic or environmentally sensitive areas? Such possibilities should be seriously investigated.

Will we ever get to the point, foreseen by former Speaker of the House Newt Gingrich, that one day the federal government will be “buying weapons systems via the Internet with an open bidding process that everyone can see” (quoted in Swisher, 2000, p. B1). Maybe or maybe not. However, we are already a long way from the \$1,000 hammers and toilet seats. If live auctions do happen, with real, live streaming video technology, we will be able to view these auctions from both our boardrooms and our living rooms. As taxpayers, we might just want to watch!

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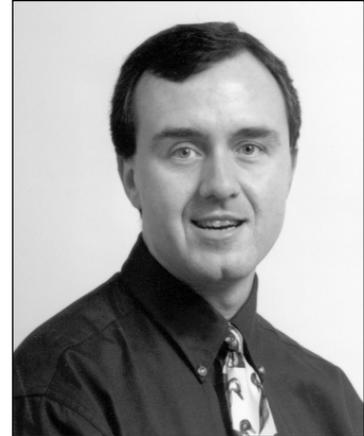
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