Internet Auctions

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INTRODUCTION

Year 2005 marks the 10th anniversary of eBay (http://www. ebay.com), the most successful online marketplace for Business-to-Consumer (B2C) and Consumer-to-Consumer (C2C) Internet auctions in this decade. As of December 2005, eBay has a major auction Web site and 26 sister Web sites operating all over the world and is enjoying a 37% quarter-to-quarter growth in revenue (eBay, 2005).

Before eBay existed, Internet auctions were mainly held in Internet forums and newsgroups (Lucking-Reiley, 1999, 2000). Nowadays, people can auction goods in cyberspace through Web sites such as eBay, Yahoo! auction (http://auctions.yahoo.com), and Amazon auction(http://s1.amazon. com). Designated Web sites for niche markets, such as antiques or electronic products are also established.

With the rapid growth of Internet auctions, economists and information systems (IS) researchers are using these Web sites to conduct field experiments and to collect transaction records to support their research more and more frequently. They are also interested in analyzing new features developed by these Web sites, such as Peer Review System and Buy-It-Now (BIN) auction, and bidders' behaviors, such as snipping. This article aims to provide a brief review of the Internet auction research conducted in the past few years and to explore the future research trends in this area.

BACKGROUND

Auction is one of the most popular business activities in the world. Each year, goods worth hundreds of billions of dollars are auctioned online and off-line. The types of goods auctioned range from very expensive items such as land and properties, government permits/licenses, and antiques to relatively minor items such as used stuffs, toys, and food (McAfee & McMillian, 1987; Lucking-Reiley, 2000). Recently, even job openings are being auctioned via the Internet (see, Job Dumping, http://www.jobdumping.de.)

Before the Internet boom, people already auctioned goods on the Internet via forums and newsgroups (Lucking-Reiley, 1999, 2000), as well as in private networks (for example, AUCNET, http://www.aucnet.com) (Lee, 1997, 1998). On the contrary to the argument that the "frictionless" nature of electronic commerce would reduce the profit of sellers (Bakos, 1997), AUCNET shows that electronic marketplaces can bring a win-win situation to both sellers and buyers. AUCNET has, on the one hand, increased sellers' profit, and on the other hand, provided an efficient market for auction participants with the help of information technology and other supporting features (Lee, 1998).

In response to customers' suggestions and to improve its usability, new features have been developed in Internet auction Web sites in the past few years. While some of them are brand new auction mechanisms, others are new features which aim to build up the trust between auction participants. Among them, Buy-It-Now auction and Peer Evaluation System are the most important ones.

Before we start our discussion, readers are reminded that the terminologies used by auction Web sites are sometimes different from auction literature. The most significant difference is the definition of a "Dutch auction." Dutch auction is a descending auction commonly used for the auction of perishable goods such as fish and cut flowers (McAfee & McMillian, 1987). However, auction Web sites use the same term to describe multiple-item English auction (Bapna, Goes, & Gupta, 2001). Hence, readers are reminded to check with individual Web sites on the terminologies if they are in doubt.

CURRENT TOPICS IN INTERNET AUCTION RESEARCH

In this section, we will review the latest research findings in Internet auctions, including research on the Peer Evaluation System and Buy-It-Now auction, as well as how economists and IS researchers employ Internet auction Web sites to conduct field experiments.

Peer Evaluation System

Peer Evaluation Profile is a reputation profile of auction participants based on his/her behaviors in his/her previous transactions on the Web site. After each transaction, the auction Web site will invite auction participants to evaluate each other. Nowadays, nearly all Internet auction Web sites have developed their own feedback system to allow their users to evaluate each other. Most of them use a 3-point scale (e.g., eBay and Yahoo!) and the others use a 5-point scale (e.g., Amazon) to record participants' performance, supplemented with notepads to provide further comments

Figure 1. A sample of user profile of Internet auction

Bidder Profile: Auctioner (112)				
Feedback Score: 112 **Positive Feedback: 93.8%**	Recent Rating:			
		Past Month	Past 6 Months	Past 12 Months
	Positive	20	120	140
	Neutral	2	5	5
	Negative	0	8	8

on the Web. Figure 1 is a hypothetical user profile of an Internet auction Web site. A lot of research studies have been conducted to examine whether the feedback system can bring benefit to auction participants.

One of the earlier studies on the Peer Evaluation System was conducted by Lee, Im, and Lee (2000). Through regression analysis using auction data of monitors and printers collected from eBay, they observe that the negative feedback score of a seller will have negative impact on the final auction price. This effect is more significant to used and refurbished products than to brand new items. Standifird (2001) used eBay auction data of 3Com Palm Pilot V to show that while both positive and negative feedback scores affect the final price, negative feedbacks are more influential than the positive ones. McDonald and Slawson's study (2002) suggests that the peer evaluation profile could be used to measure the expected performance of the seller whereas Ba and Pavlou (2002) suggest that the profile can induce and build up trust between bidders and sellers.

A comprehensive review has been conducted by Dellarocas (2003). He suggests that Peer Evaluation System provides an opportunity for sellers and bidders to build up their word-of-mouth profiles in electronic marketplaces. Yoo, Ho, and Tam (2006) propose that as there is a large number of positive feedback when compared with the number of negative feedbacks, the per-unit effect of negative feedback becomes more influential when bidders evaluate the reputation of sellers. This may explain why some Web sites highlight the net feedback (i.e., the number of positive feedback minus negative feedback) of auction participants as this can minimize the adverse effect of negative feedbacks.

In conclusion, as shown in Table 1, the Peer Evaluation Profile can induce and build up trusts between buyers and sellers. For bidders, they can use the profile to evaluate the trustworthiness of sellers before they decide whether they should join the bidding competitions. On the other hand, sellers can use this system to boost up the auction price by building up their word-of-mouth profile.

Buy-It-Now and Buy-Price Auctions

BIN auction and Buy-Price (BP) auction are two similar variations of English auction developed by eBay and

Yahoo! respectively, in the late 1990s. In BIN auction, the seller posts a BIN price and indicates that he/she is willing to close the auction at this preset price. This BIN price is valid until a bidder submits a bid which is higher than the reserve price. After that, it will disappear and the auction will convert to an English auction. BP auction operates in a similar way except it will not convert to English auction in any circumstances. This counter-intuitive arrangement, that is, capping the maximum profit of an auction by sellers themselves, creates an interesting research topic. Table 2 summarizes the result of several representative studies on BIN and BP auctions.

Most of the analytical studies are developed based on the assumption that bidders are risk averse. For example, Budish and Takeyama (2001) show that with risk averse bidders, BP auction can generate more revenue than First-Price Sealed Bid and Dutch auctions. Mathews (2004), on the other hand, shows that BIN auction is useful only when either bidders, sellers, or both of them are time impatient. Onur and Tomak (2003) also analyze whether bidders would prefer to use the BIN option or to snipe in an Internet auction. Their model, supported with empirical data, shows that the low value bidders prefer to snipe, and the high value bidders prefer to exercise the BIN option in a BIN auction.

To compare the difference between BIN and BP auctions, Reynolds and Wooders (2003) develop an analytical model to examine their differences. Similar to Budish and Takeyama's (2001) model, their model also predicts that both BIN and BP auctions will not bring any additional benefit to sellers if bidders are risk neutral. However, if bidders are risk averse, BIN and BP auctions will raise the revenue when compared with English auction. Furthermore, BP auction will have a better performance, that is, generate more revenue, than BIN auction. More recently, Hidvegi et al. (2006) have further extended the discussion and show that the social welfare and utilities of all participants can be improved if BP is properly set.

Empirical and experimental studies have also been conducted to examine the property of these auctions. Standifird et al. (2005) conducted a field experiment on eBay using American Eagle silver dollars. They observe that some eBay users do not exercise the BIN options even when they are set at a price lower than the market price. Hence,

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