Teaching auction strategy using experiments administered via the Internet

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August 9, 2002

This article presents an experimental setup that has been used successfully to teach concepts in the economics of auctions, and implications for e-Business procurement. The experiment is easily administered and can be adapted to many different treatments. The chief innovation from an implementation point of view is that it does not require the use of a lab or class time. Instead, the design is implementable on any of the many web-based auction sites (here we use Yahoo!). The design presented here has been used to demonstrate how information is transmitted by bids in an auction, and how this can make it difficult for well informed bidders to profit from their information, leading to disincentives for relatively informed bidders to enter an auction. Consequently an auction may sometimes be an ineffective mechanism for procurement, compared to other options. The broad pedagogical contribution of the auction experiment is to show how information can dramatically affect market outcomes and bidder incentives.

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I Introduction

Auction design and bidding behavior have become increasingly important aspects of applied economics. The sale of mobile telephone licenses (and other uses of the electromagnetic spectrum) has brought the economics of auctions into mainstream policy debate. The issues involved in these complex auction designs have been the focus of much industry and academic discussion, in large part because the sums of money involved are typically in the hundreds of millions.[2] Auctions have also become increasingly important for smaller value transactions through e-procurement, and the many auction sites on the Internet.

We report a simple way to introduce students to elements of this strategic environment that have been important in the thinking surrounding auction strategy and design. Our implementation is designed to be conducted using an existing auction web site. No software needs to be developed for the experiment, and students can access the auction platform after class, from their own computers (or any computer lab with Internet connection). Other potential bidders who might access the auction but are not students of the class are excluded by the design of the experiment: the good that is sold is a voucher, which is worthless for anyone except for the class participants.

[2] See the Special Issue of the Journal of Economics and Management Strategy on the Spectrum Auctions, *Journal of Economics & Management Strategy, Vol. 6 (3), Fall 1997, 549-72,* for an introduction to this literature.

We use the Yahoo! web site to run our auctions.[3] The auctions offered by this site are ascending auctions that allow bidders to either enter a bid of whatever amount they choose or to enter a proxy bid. A proxy bid involves the bidder reporting her bid ceiling to the auctioneer. If another bidder tries to beat a bid entered via the proxy bid system, then his bid would be beaten by a new proxy bid unless the new proxy bid would be above the ceiling. Under proxy bidding, the bidder with the highest proxy bid wins the auction and pays one increment over the proxy bid set by the second highest bidder. Thus the Yahoo! auction can be viewed as an ascending second price auction.

In the experimental setting presented here, participants experience first hand the importance of information asymmetries in determining the outcome of the auction. In our auction, relatively better informed bidders have only a slim chance to make profits, since their bidding behavior is understood by their competitors as revealing the underlying value of the good. This encourages late bidding by informed bidders, as they try to hide information by bidding so late that other less informed bidders are unable to respond. This setting serves to promote class discussion of, among other things, the role of information in auctions, the impact of the rules of the auction, bidder entry into an auction, and the attractiveness of auctions as compared with other transaction protocols, such as private negotiations.

[3] Yahoo! auctions can be found at: http://auctions.shopping.yahoo.com/. Many of the other auction sites could also be used, but it is important to look at the specific rules for the auction site. In the following section we discuss, for example, a major difference between the closing rules for Amazon and ebay auctions; on Yahoo!, either of the options may be chosen by the seller.

A tool that has been used quite successfully to describe market mechanisms and the diffusion of information has been the double-oral auction (e.g. Holt, 1996 and Kilkenny 2000).[4] In this paper we present a simple implementation that draws out aspects of information economics that are important in the study of "single-sided" auctions. The design and resulting class discussion have also proved to be popular with students. The rest of this article is organized as follows. Section II presents the experimental design and procedures. Section III outlines a number of important economic principals that are derived from the experiment. Section IV shows a typical set of results. Finally, we offer a few concluding remarks which suggest ways to modify the design.

II Experimental Design

The experiments described below have been run in classes of executives attending short programs (typically one week) at The Harvard Business School. The numbers of students ranged between 40 and 80 per class. In the following, we illustrate the setup for a class of 74 students, each of whom participates as a bidder in an auction with, typically, 4 other bidders. The experimental design is best explained through the following excerpt from the instructions.[5]

[4] For other classroom experiments using an auction framework see Bernard and Schulze (2000) as well as Swanton (1999).
[5] Complete instructions are presented in the appendix.

In this exercise you will be bidding for an envelope that contains cash and a coupon. The amount of cash will either be $40 or $70, each equally likely. The coupon will have a different value to each bidder. The value to a bidder *i* of winning the envelope will be the amount of money in the envelope (*Y*) plus his/her individual value (*Z(i)*).

In each auction there will be four or five eligible bidders. Some of them will be *Informed* (about how much money (*Y*) is in the envelope) and the others will be *Uninformed*. In each auction there will be one or two informed bidders and three or four uninformed bidders.

Informed: Informed bidders know the value of *Y*. Furthermore, the coupon value, *Z(i)*, of informed bidders can be any of $ 2,4,6,8, where each of these numbers have equal probabilities. (So the item is worth no more than $ *Y*+8 to any informed bidder.)

Uninformed: Uninformed bidders do not know the value of *Y*. Furthermore *Z(i)* of uninformed bidders can be any of $ 14,16,18,20,22 where each of these numbers have equal probabilities. (So the value of the item is always higher for every uninformed bidder than for any informed bidder.)

There are two ways in which you can bid in Yahoo!. In each case you are asked to enter a price in the field "Maximum Bid". You then have to choose between "Bid up to this amount on my behalf" and "Bid this exact amount". In the first case Yahoo will place a bid on your behalf, at the lowest possible increment. That means the new "current bid" equals the previous bid in the auction plus the bid increment. Essentially these are the rules of a second price auction, where the person with the highest maximum bid wins the auction at a "current bid" of one bid increment above the second highest maximum bid. (However, the current bid will never be higher than the price you entered in the field "Maximum Bid"). If you chose "Bid this exact amount" the "current bid" jumps to the exact amount you entered.

Your earnings are determined in the following way. If you do not win the auction, your earnings are zero. If you win the auction, your earnings are the value of the item to you minus the "current bid" in the auction. That is, we will pay the winner of each auction *Y+Z(i)* and the winner will pay us the winning final price in the auction, i.e. the final "current bid". (Note that the difference between the two payments can be positive, in which case you earn money, or negative, in which case you lose money.)

Thus informed bidders have precise information as to their valuation of the object, but have a lower value than their less informed counterparts. This makes it very hard for the informed bidder to win in the auction. If the amount of cash in the envelope is only $40, then the maximum value the envelope can have is $62. The auction is a second price auction. Hence, an uninformed bidder with a coupon value of $22 can confidently bid $62 and expect to pay the second highest bid submitted (if his is the highest bid). If a price above $62 is observed, other bidders may infer that an informed bidder has placed

the bid knowing that there is $70 in the envelope, i.e. the value of *Y* is equal to $70. Therefore, the parameters of this auction make it difficult for the informed bidder to make a profit, since if there is $40 in the envelope he will always be outbid, and if there is $70 it is likely that his bid will reveal it, since he must bid above $62 to outbid the uninformed bidders.[6] As discussed in Roth and Ockenfels (forthcoming), this gives informed bidders the incentive to try to place their bids very late in the auction, so as to win in the closing seconds before the deadline, and give uninformed bidders too little time to react.

The item to be auctioned was posted in the "Other: Other" category in order to make it unlikely for anyone other than the class participants to bid.[7] The auctions were called "ChTG1" through to "ChTG15" (adopted from the title of the one-week course "Changing the Game"), again to make it unattractive to external bidders. On the site itself the "item" was described as follows:

> This is item 1 for the Changing the Game exercise. For everyone except those who have been assigned to this auction in that class, the item is simply a piece of paper with this description written on it. For the members of the class assigned to this auction, the item will be redeemed as described in class.

Figure 1 shows a screen-shot of one of the auction sites set up for an experiment.

[*Insert Figure 1 here*]

[6] Another way in which an informed bidder can be the high bidder is if he manages to bid 62, the highest value of an uninformed bidder, before any uninformed bidder. Hence, by mimicking the highest value uninformed bidder, the informed bidder may remain the high bidder and thus hide his information.
[7] We have never had anyone other than a class participant bid in any of these auctions.

When the auction is posted on the site there are a number of options the instructer has to decide upon, all are fairly self-evident. The most important of these is the ending time. In our experiments we choose the auction to end between 10 and 11 pm the night before the class, in which the experiment is to be discussed. Before the class, the instructor monitors the auctions and makes transparencies from screen-shots of the bid histories to promote class discussion. A few examples are discussed in the following section.

In preparation for the auction, participants are given three pieces of paper. The first contains a general set of instructions for the auction. The second conveys the information specific to the participant, including coupon valuations, whether they are informed about the amount of cash in the envelope, their auction name, and its URL. The third piece of paper contains instructions on using Yahoo!. These documents are included in the appendix. We leave the exact number of participants in the auction slightly vague to accommodate variations in class sizes. We also explicitly ask bidders to make notes as they enter bids so that they can discuss their bidding strategy in class.

III Lessons to be drawn from the experiment

The primary pedagogical aim of the experiment is to illustrate how market outcomes can be affected by the distribution of information among the participants. This occurs in this instance because the bidders may reveal their information when they bid. The auction we create is related theoretically to the ascending auction considered in Milgrom and Weber

(1982), where it is shown how bidders with affiliated values update their valuation estimates during the course of the auction, after observing bidding by competitors.

Several insights about auction theory and market design generally can be conveyed using this experiment. A recurrent theme in the auction literature, particularly in the common value literature, is that bidding conveys information about what bidders know. This is drawn into stark relief in this design. As alluded to earlier, if the informed bidders "show their hand" by bidding high on an object, then the uninformed bidders will infer that the common value component has a value of $70 rather than $40 and bid accordingly. Since the uniformed bidders have higher values of *Z(i),* they will outbid the informed bidders, who are left with nothing.

A related general lesson is that markets can be surprisingly efficient at transmitting information. While students often think of markets as determining prices and allocations they tend not to think of markets as consolidating, summarizing, and transmitting information. This experiment has proved to be highly effective at illustrating this point.

The tendency for the informed bidders to make no profit after revealing their information can discourage their participation. This mirrors the important point in auction design that agents need to be presented with positive rents to give them an incentive to participate in a market. In this instance, the auctioneer, by providing the market participants with ways to obtain information about their competitors, has discouraged the informed bidders from

participating which could negatively affect the revenue of an auction, in which there were costs to the bidder for entering the auction (e.g. cost for preparing bids).

The experiment also illustrates how ending rules matter in the auction. The ending of auctions is a source of considerable debate, particularly in the FCC spectrum auctions where a set of complex activity rules is used. In the context of internet auctions, Roth and Ockenfels (forthcoming) present evidence that a fixed auction ending time (used e.g. by eBay auctions) changes the timing of bid submission as compared to the soft, automatic extension ending rule (used e.g. by Amazon auctions).[8] In the auction presented here the most reliable way for an informed bidder to make money is to enter a bid in the last seconds before the auction closes. In this case, uninformed bidders will be unable to respond to the new information due to time constraints. In class discussion this point is easily brought out. Also, if the instructor wishes to draw this out, the Yahoo! auctions allow both a fixed ending time and a soft close, allowing the design presented here to be easily modified.[9]

The previous point is a useful platform from which to develop a discussion of mechanism design for procurements (sales). While students are generally familiar, at least at some level, with the idea that auctions can drive prices very low (high), they tend not to understand when an auction may not be preferred to some other mechanism, such as a

[8]Amazon auctions finish at the appointed ending time or after 10 minutes have passed after the last bid, whichever is later. Thus a bid in the last seconds of scheduled time on Amazon does not deprive other bidders of the ability to respond; it instead causes the auction to be automatically extended for ten minutes. ebay and Amazon are auction sites found on the Internet, at http://www.ebay.com and http://www.amazon.com, respectively. Each site contains links to their auctions.

[9] We have run sessions with both treatments and find it can work well at drawing out this distinction, depending on how deeply the informed bidders think through their bidding strategies.

negotiation, or what type of auction to run. This experiment serves as an illustration that, depending on the information of the auctioneer, a negotiation may be preferred to an auction if some bidders have private information that they have a vested interest in not revealing. Similarly, the trade-offs between the secrecy in sealed-bid auctions and the price discovery implicit in open outcry auctions is easy to draw out. Here the success of the late bidding strategy, often referred to as *sniping*, essentially turns this auction into a sealed bid auction. In contrast, an Amazon style soft close maintains the ascending style of auction suggested by the auction's outward appearance.

IV Results from the Experiment

The results described here are intended to be a guide for prospective instructors about what sorts of behavior to expect from the auction design. The data were collected in two executive education classes conducted at Harvard Business School in the Fall of 2001 and the Spring of 2002. 24 auctions were conducted overall. The average profit of participants was $3.33. We paid out profits, while losses were imposed via a social obligation to buy classmates' drinks or dinner up to the amount lost in the auction. Obviously the size of the payoffs (and the cost of the demonstration) can be adjusted as desired by changing the coupon values and cash amounts.

Table 1 summarizes those results that are germane to the lessons likely to be drawn from the exercise.

Auction	Value of Y (in US$)	Value of the winner's Z(i) (in US$)	Winning Bid (in US$)	Payout (in US$)	1st Bid over $62 (if any)			Winner: I=Informed U=Uninformed	Did the winner snipe?
					By Uninformed	By Informed	>20 Minutes left		
Fall 2001									
1	40	18	75	-17	X		X	U	
2	40	16	81	-25	X			U	
3	40	22	11.52	50.48				U	
4	70	8	64	14		X		I	X
5	70	20	71	19		X	X	U	
6	70	20	72	18		X		U	X
7	70	20	77	13	X		X	U	X
8	70	22	66	26		X		U	
9	70	6	71	5		X		I	X
Spring 2002									
1	40	22	60	2				U	X
2	40	14	60	-6	X			U	
3	40	20	65	-5	X			U	X
4	70	18	92	-4		X	X	U	
5	70	4	66	8	X			I	X
6	40	20	79**	-19	X			U	X
7	40	22	65	-3	X		X	U	
8	70	18	91	-3		X	X	U	
9	70	6	74.5	1.5		X		I	X
10	70	6	64	12		X		I	X
11	70	20	90	0		X	X	U	
12	70	2	63.1	8.9		X		I	X
13	70	6	71	5		X		I	X
14	70	18	79	9		X	X	U	
15	70	18	87	1		X		U	X
Totals					8	14	8	7=I 17=U	13

Note: * In the table we define a snipe bid as any bid that occurred in the last minute of the auction. This definition is adopted as it is the smallest time interval that can be seen on the auction results page shown after the auction closes. This makes it hard to show bids occurring any closer to the end of the auction. However, it becomes apparent when watching the auctions in real time that snipe bids usually occur in the last ten seconds of the auction.

**In this auction a bidder made a mistake entering a snipe bid of $7900.00. Although he quickly explained his mistake in an email, the auction closed before the bid could be corrected. For the purpose of discussion, we use his intended bid of $79.00

Table 1: A Summary of Results from Two Classroom Sessions

In one third of the auctions the value of the common element, *Y*, was $40, while the rest had values of $70. Losses to the high bidder, indicated by a negative amount in the Payout column, tended to be concentrated on those auctions with *Y* equal to $40 (losses by the winning bidder are a good opportunity to discuss the "winner's curse," see Kagel, 1995). Where a bid over $62 was entered we report whether an uninformed or informed bidder first made such a bid and whether this bid occurred more than 20 minutes from the end of the auction. We also indicate whether an informed bidder won the auction and whether his/her strategy involved a last minute snipe. Finally we indicate whether bidding occurred within 5 minutes of the close of the auction.

It is often striking to the students that the when the informed bidders wins it is almost always by *sniping*, bidding at the last minute so as to reduce one's chance of being out bid. A successful snipe bid allows the informed bidder to hide, and hence profit from his/her private information. This is probably the point students most strongly appreciate after taking part in the exercise. It is also worth noting that the sniping strategy is not fool proof. The in-class discussion revealed that in two instances (Fall 2001 auctions 6 and 7) informed bidders tried to snipe but were unsuccessful, being out sniped by an uninformed bidder.

A more general lesson is that a large amount of bidding behavior occurs in the last five minutes of the auctions. A class discussion quickly clarifies the point that late bidding is useful for both concealing information and avoiding costly bidding wars. Thus in the data we see both informed and uninformed bidders using snipe bids. This behavior is most

stark in our data in Auction 15. In this auction the price was $4 right up until 3 minutes from the end of the auction. At this point bidders started to bid aggressively, trying quickly to gain advantage as information was revealed. Over the course of the next three minutes the price soared to $87. The winning bidder was uninformed and won with a snipe bid.

Conversely, when bidding action occurs early in this environment it is never to the informed bidders' advantage. When an informed bidder makes an early high bid, it is invariably interpreted by the uninformed bidders as a signal that the value of *Y* is $70 rather than $40. Thus an informed bidder who shows his hand early never wins. This reinforces both the advantages of concealing information by bidding late and the efficiency of the market institution in transmitting information.

Paradoxically, this flow of information can lead to the downfall of the uninformed bidders when an incorrect inference is made. Classroom discussion of bidding strategy will often draw out an uninformed bidder who felt that it made sense for him/her to bid a little over $62 in order to see whether the bid is improved upon by someone else (who is assumed to be informed). In other words, one of the uninformed bidders often wants to test whether they are facing a 'high' *Y*. Naturally, another uninformed bidder might confuse this speculative bid as an informed bid and drive the price up. This is often the pattern of play when bidders lose money in the *Y* = $40 treatment.

[*Insert Figure 2*]

While Table 1 is designed to be a useful reference for the instructor, Yahoo! provides much more exciting ways to present the results of the auction. Since the instructor can take screen-shots of the auction as it occurs, a Socratic style of teaching is easy to implement. Figure 2 is a screen-shot from a typical auction won by a snipe bid. The instructor can present pictures like Figure 2 from different times during the auction and ask the participants what they were doing. A discussion of this kind proves to engage students, while also making substantive points easy to demonstrate. For example, the screen shown in Figure 2 invites the questions of why the student chose to bid so late in the auction. The ensuing discussion should flow smoothly into a discussion of late bidding and the value of concealing information.

[Insert Figure 3]

Figure 3 shows the seller's screen on which the instructor can monitor the status of all the auctions. This sort of screen has proved useful for summarizing the final outcomes for the students.

V Concluding Remarks

The paper presents a simple way to teach aspects of auction strategy in class. Students access a specific auction on an Internet auction site, and bid for a voucher that is

worthless to anyone except for the participants of the class. The setup of the experiment is strikingly simple, and cost is low.

The auction we conduct is an ascending-price auction with asymmetric information among bidders about the value of the good. The participants learn several lessons through their participation. Most importantly, they demonstrate to themselves that bids convey information about the respective bidders' private signals. In our auction, this implies that it is difficult for informed bidders to make profits, since their bidding behavior is understood by their competitor as revealing the underlying value of the good. As a consequence, late bidding occurred very frequently, with informed bidders attempting to place bids just in time so uninformed bidders cannot outbid them.

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Appendix

Here we present the instructions given to participants in the experiment.

YAHOO AUCTION
GENERAL INSTRUCTIONS

Please read Yahoo Auction Registration Instructions. Make sure you completed: "Sign up now".

General Instructions for Yahoo.
In this exercise you will be bidding for an envelope that contains cash and a coupon. The amount of cash will either be $40 or $70, each equally likely. The coupon will have a different value to each bidder. The value to a bidder *i* of winning the envelope will be the amount of money in the envelope (*Y*) plus his/her individual value (*Z(i)*).
In each auction there will be four or five eligible bidders. Some of them will be *Informed* (about how much money (*Y*) is in the envelope) and the others will be *Uninformed*. In each auction there will be one or two informed bidders and three or four uninformed bidders.
Informed: Informed bidders know the value of *Y*. Furthermore, the coupon value, *Z(i)*, of informed bidders can be any of $ 2,4,6,8, where each of these numbers have equal probabilities. (So the item is worth no more than $ *Y*+8 to any informed bidder.)
Uninformed: Uninformed bidders do not know the value of *Y*. Furthermore *Z(i)* of uninformed bidders can be any of $ 14,16,18,20,22 where each of these numbers have equal probabilities. (So the value of the item is always higher for every uninformed bidder than for any informed bidder.)

There are two ways in which you can bid in Yahoo!. In each case you are asked to enter a price in the field "Maximum Bid". You then have to choose between "Bid up to this amount on my behalf" and "Bid this exact amount". In the first case Yahoo will place a bid on your behalf, at the lowest possible increment. That means the new "current bid" equals the previous bid in the auction plus the bid increment. Essentially these are the rules of a second price auction, where the person with the highest maximum bid wins the auction at a "current bid" of one bid increment above the second highest maximum bid. (However, the current bid will never be higher than the price you entered in the field "Maximum Bid"). If you chose "Bid this exact amount" the "current bid" jumps to the exact amount you entered.

Your earnings are determined in the following way. If you do not win the auction, your earnings are zero. If you win the auction, your earnings are the value of the item to you minus the "current bid" in the auction. That is we will pay the winner of each auction *Y+Z(i)* and the winner will pay us the winning final price in the auction, i.e. the final "current bid". (Note that the difference between the two payments can be positive, in which case you earn money, or negative, in which case you lose money.)

The following document is the form containing the participants' private information. Bold entries are by way of example.

This letter contains your private information for the class exercise on Yahoo! auctions. This information is for you only, and you are not supposed to share it with your colleagues. This information contains the auction in which you are eligible to bid, whether you are informed or not

(in case you are informed you learn the amount of cash in the envelope) and information about your private value for the coupon in the envelope.

You are assigned to auction **1**, which means you are eligible to bid only in the auction for item ChTG**1**, which you find at: **http://page.auctions.shopping.yahoo.com/auction/.**

This auction ends today (Wednesday) at **22:23** Boston time (on Yahoo! you see pacific daylight time: **7:23pm**, i.e. **19:23** PDT).

This "Auction does not get automatically extended", which means it will close exactly at **10:23** p.m.

You are **informed** (*informed/uninformed*).
(*If Informed*): The value of *Y*, i.e. the value of cash in the envelope, in *your* auction is $ **70** .

Your personal value of the coupon in the envelope in *your* auction, i.e. *your Z(i)*, is $ **4**.

Please do not bid on any auction other than the one you are assigned to.

Please keep a record of your bidding behavior, to discuss it in class.

Finally we present the instructions for using Yahoo! auctions:

YAHOO AUCTION

REGISTRATION INSTRUCTIONS

Registering for Yahoo: Please use as a user ID the first letter of your first name and your last name. If you use a different Yahoo ID, please send an email with your full name and your Yahoo user ID in the subject line of your email to Auction@fas.harvard.edu.

1. Go to www.yahoo.com
2. Click on auctions, you are at http://auctions.yahoo.com/
3. Click (on the upper right) sign in.
4. If you do not have a yahoo ID yet, click: Sign up now! You come to a page where you are asked all kinds of questions.
5. Once you finished and have a Yahoo ID, go back to the auctions home page: http://auctions.yahoo.com/
6. You are now ready to go to the auction page you have been informed about in your instructions.
7. You may have to verify your credit card at various points in the bidding and signing up, but all transactions will be settled in cash in class.

Figures

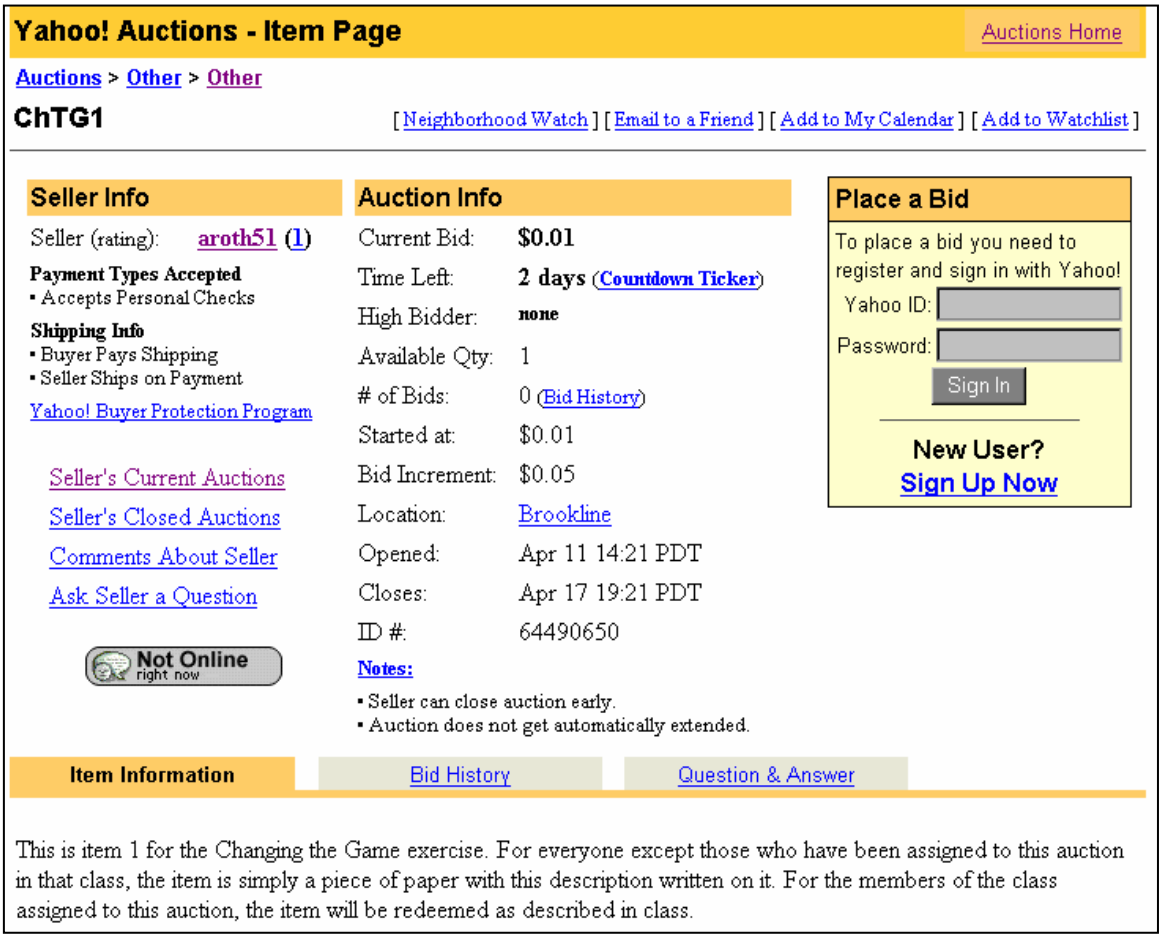

Figure 1: The Bidding Screen

Figure 2: The Bid History

Selling (16 items)

Prev | 1 - 16 of 16 | Next

ID	Title	Current Bid	Bids	High Bidder	Time Left	Actions
64491671	ChTG12	$56.10	10	--Edit--	19 min	Feature Manage
64492040	ChTG16	$0.01	-	-	30 min	Feature Manage
64490650	ChTG1	$0.01	3	--Edit--	50 min	Feature Manage
64490692	ChTG2	$35.00	4	--Edit--	52 min	Feature Manage
64490746	ChTG3	$60.00	11	--Edit--	54 min	Feature Manage
64490849	ChTG4	$41.00	2	--Edit--	56 min	Feature Manage
64490920	ChTG5	$47.00	4	--Edit--	58 min	Feature Manage
64490991	ChTG6	$0.01	-	-	1 hr	Feature Manage
64491057	ChTG7	$56.00	5	--Edit--	1 hr 2 min	Feature Manage
64491118	ChTG8	$61.10	18	--Edit--	1 hr 3 min	Feature Manage
64491370	ChTG9	$55.00	7	--Edit--	1 hr 11 min	Feature Manage
64491452	ChTG10	$19.50	13	--Edit--	1 hr 13 min	Feature Manage
64491587	ChTG11	$60.00	7	--Edit--	1 hr 17 min	Feature Manage
64491812	ChTG13	$37.00	11	--Edit--	1 hr 24 min	Feature Manage
64491887	ChTG14	$73.00	9	--Edit--	1 hr 25 min	Feature Manage
64491978	ChTG15	$4.25	5	--Edit--	1 hr 27 min	Feature Manage

Prev | 1 - 16 of 16 | Next

Figure 3: The Sellers Screen