

Jim Britton. Selling a Car in an Electronic Auction: A Case Study of eBay Motors. A Master's paper for the M.S. in I.S. degree, May, 2003. 33 Pages. Advisor: Paul Solomon

In less than seven years of existence, eBay has grown from mainly selling low-priced goods to more valuable items such as cars. This case study examines the process of selling a high-priced automobile by using the electronic auction realm of eBay Motors. The process of listing the auction and communication patterns between sellers and buyers is examined. Additionally, analysis of hit traffic to the listing is studied based on different factors such as the day, time of day, and the location of the listing within various views presented by eBay to the potential bidders. The issue of feedback ratings is also discussed in helping to determine trust through an electronic medium.

Headings:

Internet Auctions -- eBay

Electronic Commerce – Case Study

Auctions – Electronic Marketplace

Online Auctions – Hit Traffic Analysis

SELLING A CAR IN AN ELECTRONIC AUCTION: A CASE STUDY OF EBAY
MOTORS

by
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A Master's paper submitted to the faculty
of the School of Information and Library Science
of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements
for the degree of Master of Science in
Information Science.

Chapel Hill, North Carolina

May, 2003

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Introduction

eBay is an electronic auction community that allows individuals to sell and buy a wide range of new and used goods. The website is often one of the top five websites searched in the United States. According to a Nielsen NetRatings report, of the estimated 134 million active at home and at work internet users in the US¹ during January 2003, over 44 million unique individuals (16 million at work and 28 million at home) visited eBay during the month of January 2003² making eBay the 5th most visited domain during this time frame. Each visitor also spent an average of approximately 1 hour and 45 minutes on the site. Traffic continues to build and the electronic auction house continues to bring in more users and sell a wider variety of goods.

The purpose of this study is to monitor an eBay auction for a very high priced item, specifically an automobile. My brother owned a 1999 Mercedes Benz S500 that he wanted to sell to buy a smaller car. He purchased a new Acura and the dealer offered him \$33,000 for the trade-in value of his Mercedes. He believed he could get much more for the car since it was a very unique car. In fact, there were only 600 total made of this version of the car. Because of this rarity, it was perfect for eBay, which focused on collectibles and rare items. However, would it be possible to sell a car through an electronic marketplace without buyers actually seeing the car? This case study involves looking at the hit traffic on the auction page, the communication methods between the seller and buyer, and unique findings during the overall experience.

History of eBay

eBay has existed for less than 8 years and the history of the electronic marketplace is very unique. Adam Cohen's recently published book "The Perfect Store"³ provides a well-documented perspective on the various challenges the company has experienced over the years. Pierre Omidyar originally launched the company as AuctionWeb in September of 1995. The name eBay was created from Omidyar's own consulting company named Echo Bay Technology Group. While the website address was ebay.com, the site also included three other websites. One was for a small biotech company Omidyar's fiancée was working for, another was an alumni site for a San Francisco school, and the final site was information about Ebola. In order to get to what is now eBay or AuctionWeb at the time, users would have to go to www.ebay.com/aw. In August of 1996 when the site traffic steadily increased, the other unrelated sites were eliminated to build a more professional atmosphere and ebay.com became the primary website. However, AuctionWeb remained the official name of the online auction until August 1, 1997 when the name was officially changed to eBay.

On initial launch, eBay only included 7 categories, but has expanded tremendously over the years to over 18,000 categories⁴. Also, eBay charged no fees for listing items until 5 months after the service began. Omidyar created the online auction for all individuals to create a market place in which the "perfect" price was reached because the supply of the product would meet the demand. He believed that the Internet was becoming more and more commercial and to that end much less personal and colder. Therefore, eBay was not only a marketplace, but a community as well, which now includes over 30 million buyers and sellers.


Before eBay, newspaper classifieds were the major solution for individuals to sell items. With the advance of the Internet, the options have increased for the better. Newspapers realized this potential threat and were extremely concerned since classified ads brought in over 40 percent of most newspaper's revenue. Newspapers were threatened since the Internet allowed more space to describe their product as well as the ability to include pictures. Also, the Internet was able to reach a much wider audience and the medium provided the ability of sellers and buyers to contact each other easier through electronic communications such as e-mail.


Trust in Electronic Marketplaces


The issue of trust in the electronic environment on eBay was one of the early struggles for the company. Omidyar instituted ethical guidelines for the website in the beginning with his main belief that "people are generally good". He told users to "treat other people on the site the way they themselves wanted to be treated" and his idealistic beliefs did work in his electronic marketplace. Omidyar did realize that he needed to create some additional mechanisms to help build trust among the members so he created the feedback forum in February of 1996 to eliminate dishonest members by praising people for good transactions and complaining for bad ones. By November of that year, colored icons were placed next to users of increasing high feedback ratings to help make them easily distinguished from others. Below is the current Stars Chart, which allows other eBay members to quickly notice honest and trustworthy sellers.


The Star Chart


Stars are awarded for achieving a particular Feedback Profile.


A "Yellow Star" () represents a Feedback Profile of 10 to 49.


A "Blue Star" () represents a Feedback Profile of 50 to 99.


A "Turquoise Star" () represents a Feedback Profile of 100 to 499.


A "Purple Star" () represents a Feedback Profile of 500 to 999.


A "Red Star" () represents a Feedback Profile of 1,000 to 4,999.

A "Green Star" () represents a Feedback Profile of 5,000 to 9,999.

A "Yellow Shooting Star" () represents a Feedback Profile of 10,000 to 24,999.

A "Turquoise Shooting Star" () represents a Feedback Profile of 25,000 to 49,999.

A "Purple Shooting Star" () represents a Feedback Profile of 50,000 to 99,999.

A "Red Shooting Star" () represents a Feedback Profile of 100,000 or higher.

Difficulties of Selling High-Priced Items through an Electronic Medium

Although most people would have originally thought eBay was only used for small transactions, the website did have a \$40,000 car and a \$325,000 warehouse for sale on the site within the first month. However, these items were not sold. Many people at the time, including eBay, were skeptical that high-priced items would ever sell on the Internet, especially among strangers. eBay has ventured into other expensive items such as high-end art and antiques with little success. In 1999, eBay purchased the traditional auction house Butterfield & Butterfield but it was sold in 2002 when the sales results were poor. eBay also partnered with the well-known Sotheby's auction company in January 2002, but ceased the partnership in February 2003. The major lesson learned was that consumers wanted to see the merchandise in person for these high-priced goods⁵.

Creation of eBay Motors

However, eBay has amazingly experienced great success with online automobile auctions. Cars are the second most expensive purchase after houses for most individuals and buyers typically “insist on kicking the tires in person”. In 1999, many eBay sellers were creating auctions for cars under the Miscellaneous section of the website. eBay realized that this was a potential business opportunity so in May of 1999 they bought Kruse International, the largest off-line car-auction company to help gain expertise to bring to eBay’s new ventures into automotive auctions. In August of that same year, an *automotive* category was finally created. The section was flooded with new auctions for not only collectible cars but everyday vehicles such as Hondas as well. The high demand for the category and the high level of sophistication required for evaluating automobiles for purchase led eBay to create their first separate site within eBay – eBay Motors. eBay Motors launched on April 24th in 2000. Many people in the e-commerce industry believed that consumers would be afraid to purchase a car online. However, people did purchase numerous cars and although eBay expected most purchases to be local, more than 75% of all cars sold were sent out of state. The site was very successful and initial estimates showed that eBay Motors was on track to sell \$1 billion in cars a year making it the largest car seller on the Internet.

Electronic Auction Fraud Issues

Although eBay Motors has been helping individuals to sell cars over the Internet for 3 years, it is amazing that people would be willing to make such a large purchase in the electronic world of online auctions. In a study of online auctions in 1998, the median price of all auctions was well under \$100 and practically no items sold above \$1000⁶. In

the 5 years since, items well over \$100,000 are sometimes sold. Since the purchase price can be high, the issue of fraud in the electronic marketplace would seem to be an issue for consumers. A 1998 study determined that there was actually very little fraud in online auctions⁶. However, the Internet Fraud Complaint Center (IFCC) received 34,604 cases of online auction fraud in 2002. These cases accounted for over 46% of all Internet fraud causes in the US. This trend of Internet auction fraud has continued for the past three years⁷. EBay, however, reports a relatively steady amount of minimal auction frauds. In a 1999 report, eBay reported only 27 auctions per million generated a fraud⁸. Two and a half years later, eBay reported a number about 10% higher than in the past but still very minimal at only 30 fraud cases per million auctions⁹.

EBay Auction Duration Research

Studies in the past have varied in whether or not the duration of the auction matters. EBay offers auction durations of 3,5,7, or 10 days. In a 1998 study of 460 Harley-Davidson Barbie dolls, the length of the auction did not affect the price. The researchers predicted prior to the study that a Saturday or Sunday end would result in a higher amount of bids and a higher price. However, the number of bids received and the price were not significantly affected by the day when the auction ended¹⁰. As I would have expected, the research determined that when auctions ended between 3 AM and 7 AM Eastern time, the price was approximately 3% less than during other periods of time. However, Robert Kauffman of the University of Minnesota found that the ending date did have an effect on the price. During a three-year study of thousands of coin auctions, the price was 2% higher for auctions ending on a weekend because people had more time to consider their buys and would indeed decide to pay more¹¹. With this knowledge, I

determined that I would begin the auction on a Saturday afternoon and end it on a Saturday as well. Therefore, I decided the best time to list would be from 3 PM Eastern time on a Saturday to 3 PM on the following Saturday.

Placement of the Auction Ad Within eBay Motors

The first step in the process was to create the ad that would be submitted and view by potential bidders on eBay Motors. After researching some auction management software solutions, I determined that Andale Autos (<http://autos.andale.com>) was the best solution to help create the advertisement for the car. The ad was created with the inclusion of 19 individual photographs of the car. One interesting characteristic of car auctions ads on eBay is the fact that many more pictures are included. For small priced items, only one or two pictures are included, but car auction ads include on average 30 or more pictures. Links to the vehicle history record from Carfax.com and a price estimate from NADA.com were added to give potential bidders a quick access to information on the value of the well-maintained car. The final webpage listed is in Appendix A.

After determining that there were no true benefits to extending the time for online auctions or any best time to list, I determined to place the ad to run for 7 days even though eBay will allow car auctions to run for 10 days for no additional price, unlike the regular auctions which charge an additional fee. On Saturday, March 29th, 2003, the auction began at 3:06 PM Eastern time and ran until Saturday, April 5th, 2003. The total cost to list the car was \$61.95. The fees broke down into four different charges. The largest portion was the \$40.00 insertion fee. When eBay Motors originally started charging listing fees, the insertion fee was \$25.00 and if the car sold there was another \$25 final value fee. However, now there is just a straight listing fee potentially

suggesting that the change was made since many car auctions do not successfully complete with a final sale. The next major listing fee was the \$14.95 Category Featured listing fee. This fee would make sure the ad was placed at the top of the search list and place it in the search list twice as well. Research in 2001 found that featured ads of normal goods were 8% more likely to sell on eBay⁹ so this cost was reasonable for the potential benefit. The third fee was a \$5.00 highlight fee, which emphasized the listing with a colored band surrounding the entire ad. The final \$2.00 charge was the reserve auction fee since we wanted to make sure there was a minimum price we were willing to accept for the car. The reserve was originally set at \$45,000 based on the NADA trade-in estimate.

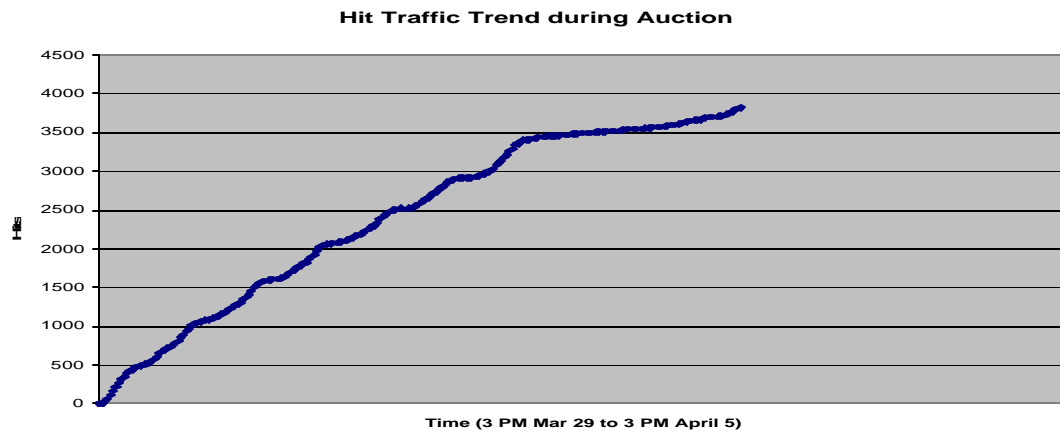
The car was listed in eBay Motors under the All Categories, Luxury Cars, Mercedes-Benz, S-Class section. Additionally, the car was listed under the All Categories, Cars, Mercedes-Benz, S-Class section. The main difference between the Luxury Car browsing section and the Cars section was that only 22 car brands were listed for Luxury Car section, while the Cars section listed 68 brands. Other cars such as Sports Cars and SUVs are also listed in additional categories to help potential bidders browse through cars they might be interested in buying.

Data Collection Process

During the entire auction, numerous data points were taken to study the auction as a whole. One of the main pieces of data was how many times the ad was being view by potential bidders. Each unique visitor to the auction ad represented a single hit. The hit data was captured every 15 minutes throughout the week. With this hit traffic data, I wanted to study how many people viewed the auction during different times of the day.

The next pieces of data collected were the location of the auction in the four different category views eBay Motors displays to allow potential bidders to browse for cars they might be interested in purchasing. The default view presented to each person who clicks on a category is the Current view which displays all cars in the category that are up for auction. The next two views available are the New Today section, which lists all car auctions that have been placed in the last 24 hours and the Ending Today view, which lists all the car auctions that are ending within the next 24 hours. The final view is the Going, Going, Gone view, which contains all auctions that will be ending approximately within the next 4 hours. The different views are updated at various times during the day ranging from 30 minutes to more than an hour.

Located below is a graph of the hit traffic received during the weeklong auction.

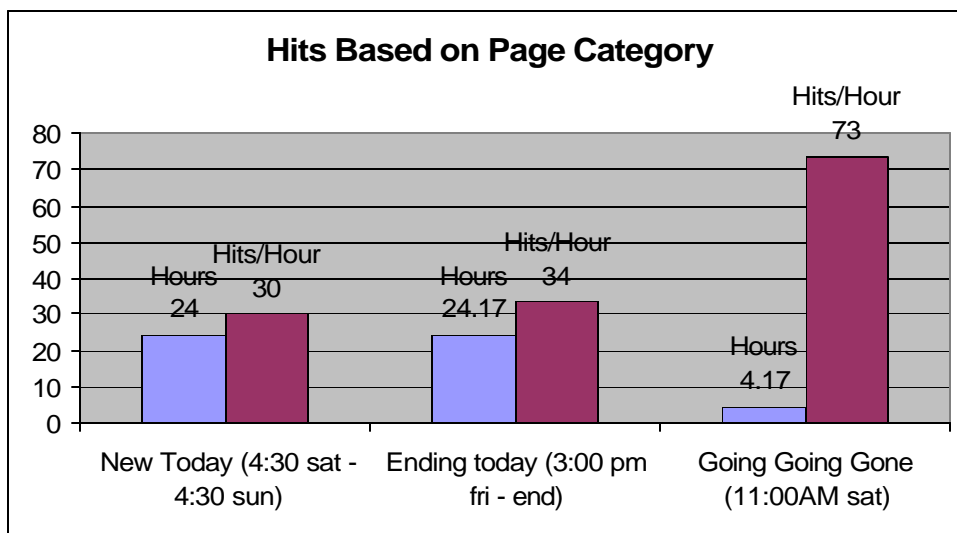


A more detailed report of the hits is included in Appendix B. The total amount of hits received for the auction was 3819.

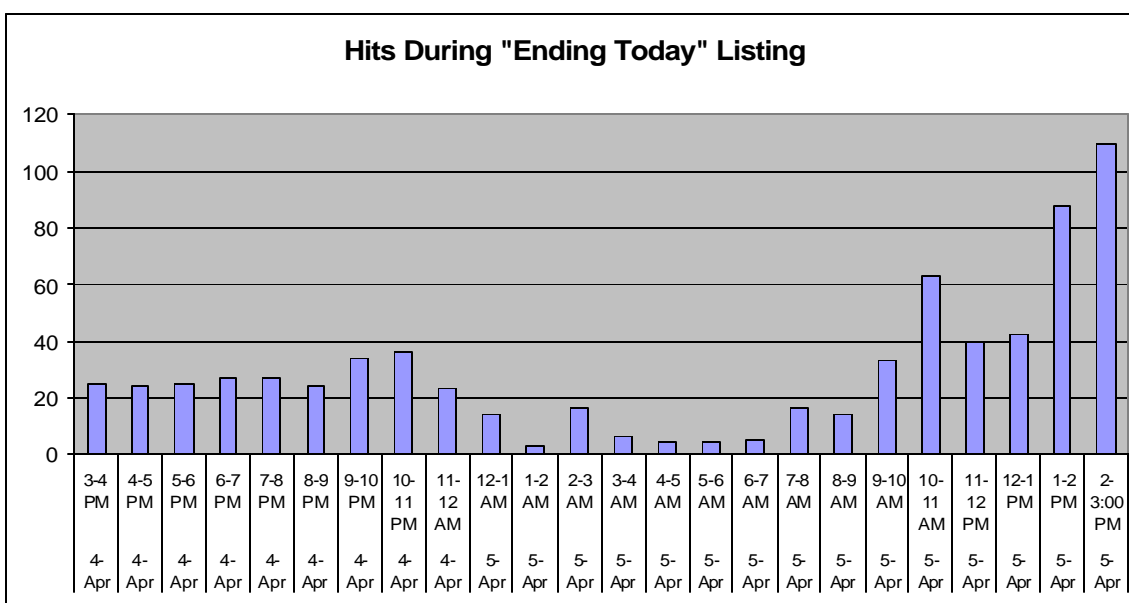
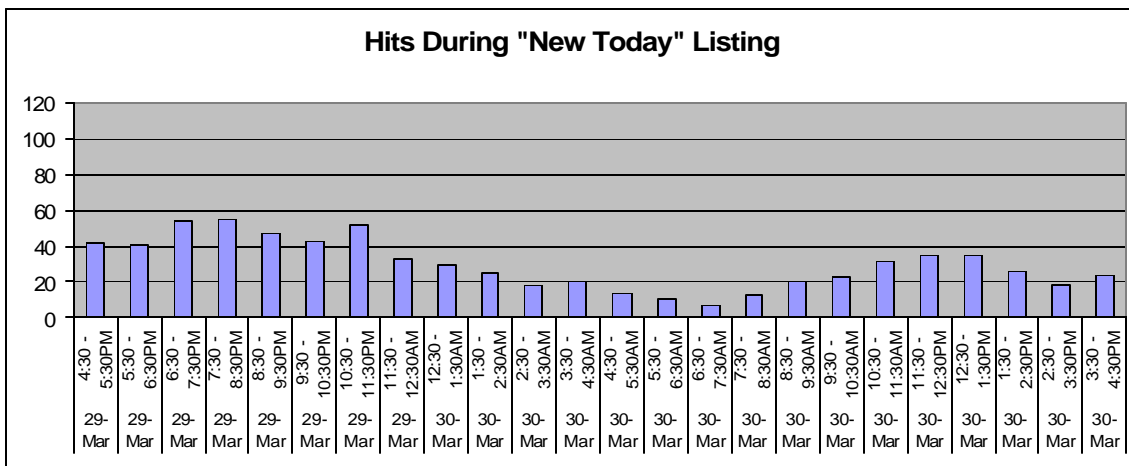
Traffic Based on Page View (New Today, Ending Today, Going, Going, Gone)

The next issue I wanted to look at was to see if there were any correlations between the hits and the specialized views within eBay specifically for the New Today,

Ending Today, and the Going, Going, Gone page views. Appendix C shows the placement of the ad listing within the different page views. My initial prediction was that the Going, Going, Gone view would get the most hits per hour since it was at the closing stages of the auction. Additionally, the Ending Today view would receive a substantially more hits than the New Today view. The chart below shows the average hits per hour based on time the ad was located on each page.



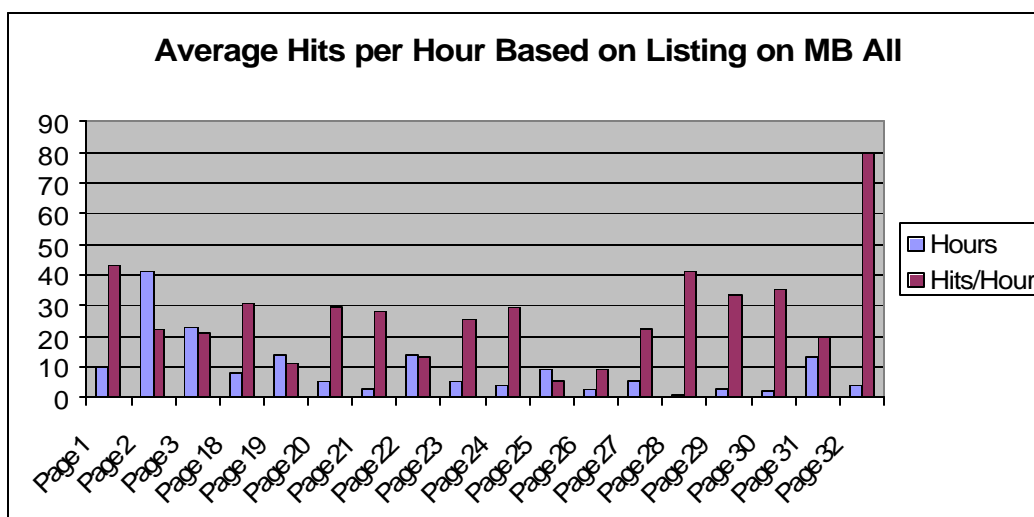
As expected, when located on the Going, Going, Gone page, the ad did receive the most hits per hour at 73 per hour. However, the Ending Today view and New Today were minimally different and comparable using this gross analysis. Therefore, the listings on each of these pages had no effect on the total number of hits. A more detailed view of page hits during each hour while on these pages is given below).



Hits almost doubled on the Ending Today view during the time frame from 5 PM to midnight. The large average hit rate of approximately 90 hits per hour during the final hours of the auction caused the overall average to be higher than the New Today page. Therefore, this view seems to be of particular importance during the final hours of an auction.

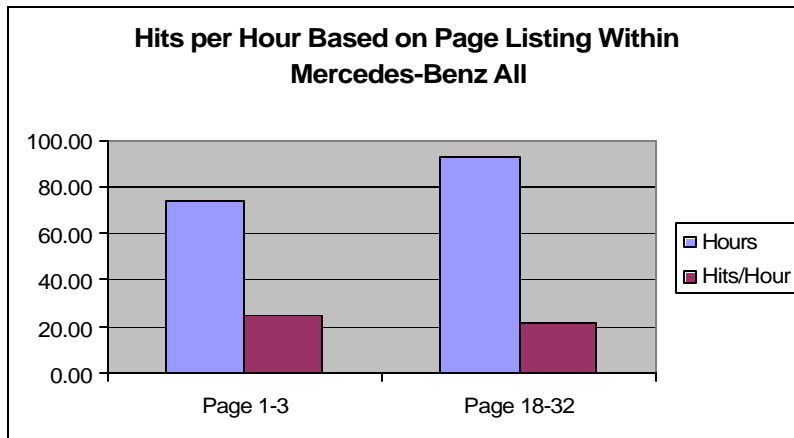
Traffic Based on Category Views

The next ad placement area examined during the duration of the auction was the placement of the ad based on the Mercedes-Benz section, which listed all cars up for auction and the subcategory view of S-Class, which only listed the S-Class Mercedes Benz cars. Each view displays 50 auction ads on each page. If the auction is featured, the ad is listed twice in the listings since all featured ads are listed and then the combination of featured and non-featured ads. This study only incorporates the first location of the ad in the listings. At the beginning of the auction, 1250 other Mercedes-Benz cars were being sold, including 162 S-Class models. Appendix D shows the number of cars listed and the location of the car within these subsections. On average, during the entire week, 1227 Mercedes-Benz cars were up for auction and 175 S-Class models. The chart below displays the total number of hours the auction ad was located on the specific page number within all Mercedes-Benz listings.

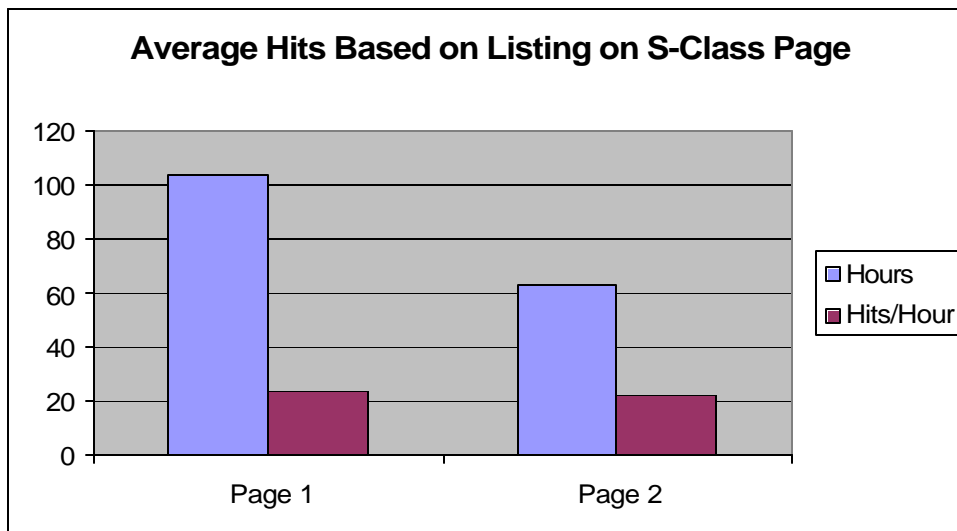


The ad was located on Page 2 for approximately 25% of auction. The most hits per hour, excluding the final hours, were received during the initial 10-hour period the ad was listed on Page 1. A drastic change in the location of the ad did occur 75 hours into the auction on Tuesday April 1st at 7 PM. The ad dropped from Page 3 all the way down

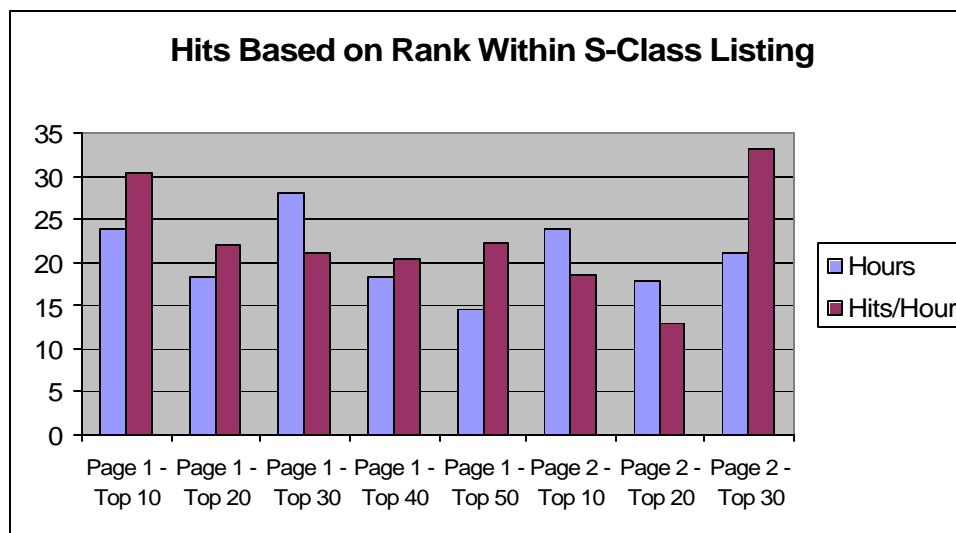
to Page 18. From this point on it could be assumed that people would not browse this far list to see the ad. Surprisingly, the average page views were comparable to when the ad was placed higher in the listing. From this data, it appears that the listing within the main category pages have no true effect on the amount of traffic received to the auction ad. Also, the chart below shows that the difference between the average amounts of hits received is minimal based on the location.



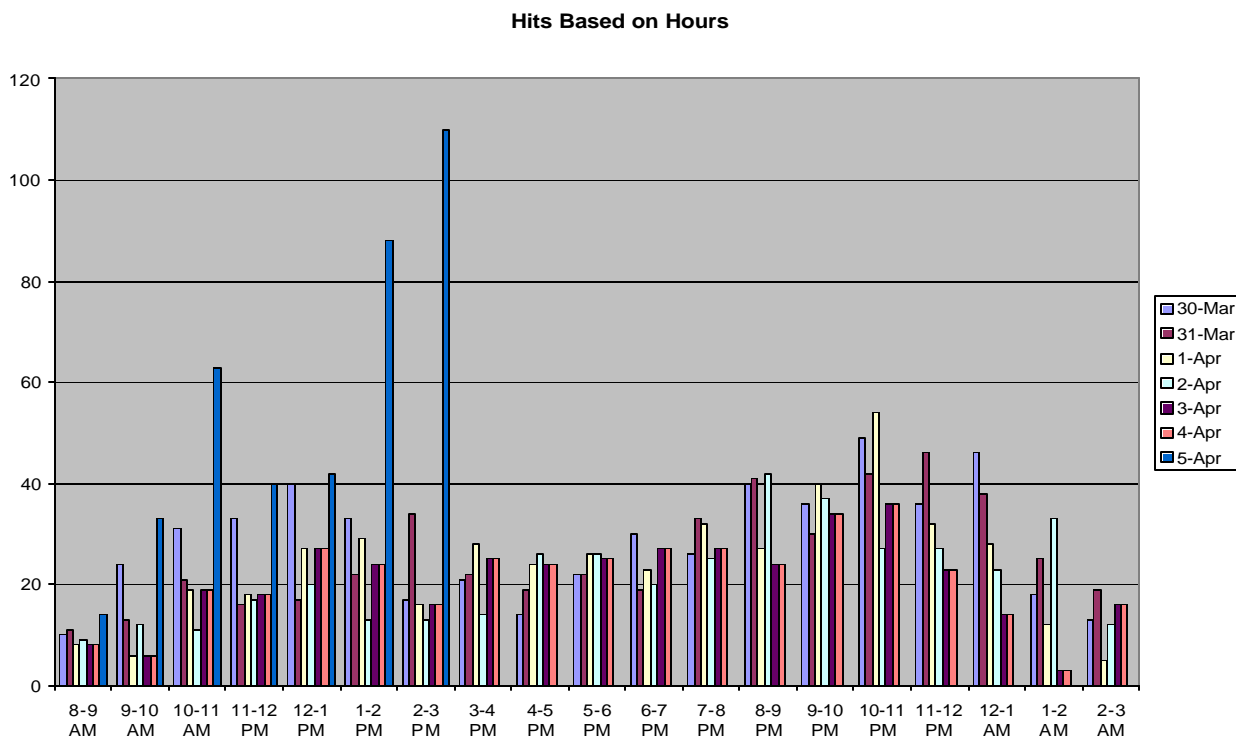
Within the S-Class category listing, the auction ad never went beyond the 2nd page. The chart below does show that the location of the ad had minimal impact on the traffic received.



Measurements were also taken based on the location of the ad within the top 10, 20, 30, 40 and 50 on each page. The results show that Page 2 location did cause the average hits to go down and therefore, this category view is used more often than the overall view which lists all Mercedes-Benz vehicles.



The next issue examined was if there was a substantially different amount of hits during the same time periods from Sunday to Saturday during the auction. The chart below displays the hits received during these periods.



As expected, the final few hours of the auction did bring the most traffic to the ad. Some things do stand out when looking at the data. Besides the final day, Monday mornings between 9 AM and 2 PM appear to be high traffic times compared to other days during the same time frame. Also, another trend is that as the week progressed, the hits generally decreased during the later hours of the night from 11 PM to 1 AM. This could partially be a factor of less people online later in night as the week progressed. Also, the overall data does suggest that the peak times for car auctions are from 8 to 11 PM compared to traffic during the normal business hours. Also, the common lunch period of 12 to 1 PM on the East coast did cause the peak traffic to the car ad during the day.

Bid Timing

The next area studied was when people would place bids for the car. In September of 1998, results from a study of 500 auctions of coins ranging from \$3 to

\$3700 determined that more than 50% of final bids were submitted after 90% of the auction duration has passed and about 32% of the bids are submitted after 97% of the auction has passed. Also, the median winning bid arrived after 98.3% of the auction time had elapsed and 25% of the winning bids arrived after 99.8% of the auction time elapsed¹². I wanted to look at this issue to see if it held true for a higher value priced item as well. Appendix E shows the bid timing for the total duration of the auction. Of the 22 bids received, almost 41% of them were received during the first day and 77% were placed within the first four days. No bids were received on the 5th and 6th day since the highest bid was at \$33,000, which was value the car dealer was originally. Therefore, potential bidders would assume that any additional bids they place could be the final bid and create a binding agreement to purchase the car. The final 23% of the bids were placed on the final day. The results of this auction are very different from the study of coins mentioned above. The main difference is that bidding on a high-priced item is not something people in general would be willing to do.

Communication Pattern

During the weeklong auction, I also wanted to look at the communication pattern of potential bidders with the seller. After looking at many general low-priced auctions versus high-priced car auctions, I noticed one significant difference. The regular auctions only allowed the ability to e-mail the seller, while almost all car auction ads contained the seller's phone number in addition to the e-mail address. I determined that the main reason for this was because of the high priced nature of the product and to help increase trust; having a contact phone number was an absolute must. As mentioned earlier, the car

auction ad for this study did include both a phone and e-mail address for bidders to contact my brother with any concerns or questions they might have about the car.

Before the auction began, I predicted that we would receive a high number of phone calls from potential bidders for such a high purchase item. However, of the 14 people who did place a bid, surprisingly, none of them even called or emailed while the auction was running. During the entire process, only two people called and only five people sent emails during the auction. Appendix F shows the time and type of communication received during the auction and final communications after the end. The questions ranged from shipping costs and to tell us that it was a nice car; the most popular question asked was how much the reserve price was. In order to increase potential bids, we did not tell them exactly what the reserve price was and only told them that we wanted to see how the auction went and if the car was not sold then we would contact them to see if they were interested in possibly buying the car. After the auction ended, one call was received and 3 emails from 2 different individuals. This one phone call was from the future buyer of the car. She was from Minnesota and had placed a previous bid of \$33,200 for the car on the final day of the auction. She was told that we had offered a second chance offer of \$40,500 to the highest bidder and we would call her if we heard it was not accepted or after the 3 day period. She mentioned that she would be willing to spend up to \$38,000 for the car, which was the final price paid for the car.

Analysis of the communication records led to an interesting finding. On Sunday, April 6th, someone who had previously emailed us sent us another message. Once again he wanted to know what we would be willing to sell the car for. This time we did tell him that there was a second chance offer out and someone else was willing to pay \$38,000. He did not respond. On Tuesday, April 8th, another email was received from

someone who said they were tracking the car through eBay. He noticed the car was not sold and he wanted to know how much we wanted for it. We responded with the same message as above and he responded back that the price was too high and he was amazed we were selling it for such a high amount since the market was soft. Once we received the email back, we noticed that it was from the same person who had emailed us during and after the auction, but he was using a different email address. I was surprised that someone would try to see if our price would change, but since it was all through electronic communication, this was very easy to achieve. Using a more traditional method of communicating through the phone would have made this deceitful act much more difficult for this person to carry out. The less personal communication method of e-mail allowed him to try and trick us without making him feel devious about it.

Potential Problems with Absolutely No Feedback for Seller

Another issue studied during the auction was whether the feedback rating would make a difference. The account created to sell the car was a brand new account less than one month old. Because of this, a symbol of a pair of sunglasses was placed next to the username for the first 30 days of the account. The symbol indicates that the user is potentially “shady” because they have no proven track record. Many buyers look at this and consider it a red flag and will not do business with them. Prior research has determined that seller’s feedback does indeed impact the final price of goods sold on eBay. Based on a study of 450 gold coins, which were offered for sale in May 2000, results showed that users with no feedback sold items for only 4.9% less than users with an average rating of 450. While this was minimal for a \$35 coin, this was more significant on a car that is valued at approximately \$40,000 (\$1960 difference)¹³. The

ironic twist is that in eBay Motors, the majority of personal sellers are new to eBay and they have only joined to sell their car. Therefore, they will have no or minimal feedback. This was indeed true since on average, the feedback ratings of both buyers and sellers were very low. In this study, the car was purchased from a buyer with no feedback from a seller without any feedback. This result may demonstrate that feedback ratings are (amazingly) of little value for such a high-priced item and people do have the belief that others are inherently trustworthy. The car was finally sold over the phone although the binding agreement was finalized on eBay Motors by using the Second Chance Offer. Once the final offer was accepted, a verbal agreement was arranged so that if my brother hand delivered the car, the buyer would pay \$900 for shipping charges. If the car was not accepted, the seller would back out of the deal and pay him \$1500 for his time and effort. My brother drove over 20 hours to deliver the car to the auction winner in Minnesota. The car was accepted and payment was received in the form of a cashier's check.

Final Conclusions

After analyzing which auctions bidders for my auction bid on in the past, I determined that the majority of them were indeed car dealerships, and not individual consumers. After looking at the sample of successful car auctions for cars listed on March 29th, 2003, the majority of them were indeed sold from car dealers who had a high feedback rating. Although eBay Motors tries to make the individual consumer feel like they can purchase a car online by including escrow services, financing, and limited warranties, the complexities of a high value purchase are still limited to the professionals even though the tools are available on the Internet. Although not the case in my case

study, the issue of trust is still a major barrier that will be hard to overcome in the electronic medium.

APPENDIX B: HIT TRAFFIC BY HOURS

29-Mar	3:10p	0
	4:00p	0
	5:00p	30
	6:00p	62
	7:00p	108
	8:00p	162
	9:00p	213
	10:00p	264
	11:00p	309
30-Mar	12:00a	354
	1:00a	390
	2:00a	419
	3:00a	441
	4:00a	462
	5:00a	479
	6:00a	488
	7:00a	500
	8:00a	509
	9:00a	519
	10:00a	543
	11:00a	574
	12:00p	607
	1:00p	647
	2:00p	680
	3:00p	697
	4:00p	718
	5:00p	732
	6:00p	754
	7:00p	784
	8:00p	810
	9:00p	850
	10:00p	886
	11:00p	935
31-Mar	12:00a	971
	1:00a	1017
	2:00a	1035
	3:00a	1048
	4:00a	1060
	5:00a	1072
	6:00a	1077
	7:00a	1084
	8:00a	1093
	9:00a	1104
	10:00a	1117
	11:00a	1138
	12:00p	1154
	1:00p	1171
	2:00p	1193
	3:00p	1227
	4:00p	1249
	5:00p	1268
	6:00p	1290
	7:00p	1309
	8:00p	1342
	9:00p	1383
	10:00p	1413
	11:00p	1455
1-Apr	12:00a	1501
	1:00a	1539
	2:00a	1564
	3:00a	1583
	4:00a	1590
	5:00a	1597
	6:00a	1599
	7:00a	1604
	8:00a	1606
	9:00a	1614
	10:00a	1620
	11:00a	1639
	12:00p	1657
	1:00p	1684
	2:00p	1713
	3:00p	1729
	4:00p	1757
	5:00p	1781
	6:00p	1807
	7:00p	1830
	8:00p	1862
	9:00p	1889
	10:00p	1929
	11:00p	1983
2-Apr	12:00a	2015
	1:00a	2043

	2:00a	2055
	3:00a	2060
	4:00a	2064
	5:00a	2075
	6:00a	2078
	7:00a	2084
	8:00a	2092
	9:00a	2101
	10:00a	2113
	11:00a	2124
	12:00p	2141
	1:00p	2161
	2:00p	2174
	3:00p	2187
	4:00p	2201
	5:00p	2227
	6:00p	2253
	7:00p	2273
	8:00p	2298
	9:00p	2340
	10:00p	2377
	11:00p	2404
3-Apr	12:00a	2431
	1:00a	2454
	2:00a	2487
	3:00a	2499
	4:00a	2502
	5:00a	2511
	6:00a	2523
	7:00a	2516
	8:00a	2518
	9:00a	2526
	10:00a	2532
	11:00a	2551
	12:00p	2569
	1:00p	2596
	2:00p	2620
	3:00p	2636
	4:00p	2661
	5:00p	2685
	6:00p	2710
	7:00p	2737
	8:00p	2764
	9:00p	2788
	10:00p	2822
	11:00p	2858
4-Apr	12:00a	2881
	1:00a	2885
	2:00a	2898
	3:00a	2914
	4:00a	2916
	5:00a	2916
	6:00a	2916
	7:00a	2921
	8:00a	2921
	9:00a	2926
	10:00a	2933
	11:00a	2943
	12:00p	2951
	1:00p	2969
	2:00p	2998
	3:00p	3006
	4:00p	3032
	5:00p	3091
	6:00p	3115
	7:00p	3148
	8:00p	3192
	9:00p	3223
	10:00p	3263
	11:00p	3295
5-Apr	12:00a	3342
	1:00a	3359
	2:00a	3385
	3:00a	3401
	4:00a	3407
	5:00a	3411
	6:00a	3415
	7:00a	3420
	8:00a	3436
	9:00a	3450
	9:05a	3450
	9:10a	3450
	9:15a	3451
	9:20a	3454
	9:25a	3454
	9:30a	3456

9:35a	3457
9:40a	3463
9:45a	3464
9:50a	3467
9:55a	3472
10:00a	3483
10:05a	3485
10:10a	3488
10:15a	3489
10:20a	3490
10:25a	3490
10:30a	3492
10:35a	3496
10:40a	3498
10:45a	3510
10:50a	3510
10:55a	3513
11:00a	3513
11:05a	3515
11:10a	3515
11:15a	3518
11:20a	3522
11:25a	3524
11:30a	3528
11:35a	3539
11:40a	3543
11:45a	3545
11:50a	3545
11:55a	3547
12:00p	3553
12:05p	3553
12:10p	3553
12:15p	3559
12:20p	3559
12:25p	3567
12:30p	3571
12:35p	3573
12:40p	3575
12:45p	3579
12:50p	3579
12:55p	3591
1:00p	3595
1:05p	3597
1:10p	3599
1:15p	3610
1:20p	3620
1:25p	3626
1:30p	3642
1:35p	3646
1:40p	3650
1:45p	3658
1:50p	3664
1:55p	3669
2:00p	3683
2:05p	3690
2:10p	3696
2:15p	3704
2:20p	3706
2:25p	3708
2:30p	3712
2:35p	3714
2:40p	3723
2:45p	3740
2:50p	3759
2:55p	3771
3:00p	3793
3:05p	3802
3:10p	3819

APPENDIX D: AD PLACEMENT IN MERCEDES-BENZ ALL AND S-CLASS CATEGORY

TIME	DAY	# IN MR ALL	AD PLACEMENT #	# IN S-CLASS	AD PLACEMENT #
3:00PM	29-Mar	1210	0	163	0
4:00PM	29-Mar	1215	0	163	0
5:00PM	29-Mar	1242	9	168	2
6:00PM	29-Mar	1245	14	170	3
7:00PM	29-Mar	1253	17	170	3
8:00PM	29-Mar	1252	22	171	3
9:00PM	29-Mar	1263	31	169	3
10:00PM	29-Mar	1259	44	169	3
11:00PM	29-Mar	1261	45	169	4
12:00AM	30-Mar	1266	46	168	4
1:00AM	30-Mar	1267	47	168	4
2:00AM	30-Mar	1267	48	168	4
3:00AM	30-Mar	1267	51	168	5
4:00AM	30-Mar	1267	51	168	5
5:00AM	30-Mar	1267	51	168	6
6:00AM	30-Mar	1267	51	168	6
7:00AM	30-Mar	1267	51	168	6
8:00AM	30-Mar	1267	51	168	6
9:00AM	30-Mar	1267	51	170	6
10:00AM	30-Mar	1267	51	172	7
11:00AM	30-Mar	1270	51	171	7
12:00PM	30-Mar	1271	54	174	7
1:00PM	30-Mar	1280	55	175	7
2:00PM	30-Mar	1275	57	174	8
3:00PM	30-Mar	1275	60	173	8
4:00PM	30-Mar	1284	62	173	9
5:00PM	30-Mar	1263	63	173	11
6:00PM	30-Mar	1262	62	176	11
7:00PM	30-Mar	1264	64	176	11
8:00PM	30-Mar	1275	66	177	11
9:00PM	30-Mar	1283	69	177	15
10:00PM	30-Mar	1297	67	177	16
11:00PM	30-Mar	1299	67	177	16
12:00AM	31-Mar	1315	67	177	16
1:00AM	31-Mar	1321	68	179	16
2:00AM	31-Mar	1321	70	180	16
3:00AM	31-Mar	1321	71	180	16
4:00AM	31-Mar	1321	71	180	16
5:00AM	31-Mar	1321	71	180	16
6:00AM	31-Mar	1321	71	180	16
7:00AM	31-Mar	1321	71	180	16
8:00AM	31-Mar	1321	71	180	16
9:00AM	31-Mar	1326	76	180	16
10:00AM	31-Mar	1318	83	180	18
11:00AM	31-Mar	1320	79	181	20
12:00PM	31-Mar	1327	78	182	20
1:00PM	31-Mar	1228	83	186	22
2:00PM	31-Mar	1223	85	186	22
3:00PM	31-Mar	1217	86	187	21
4:00PM	31-Mar	1217	87	187	24
5:00PM	31-Mar	1286	91	187	24
6:00PM	31-Mar	1295	96	183	26
7:00PM	31-Mar	1293	99	182	26
8:00PM	31-Mar	1119	101	177	26
9:00PM	31-Mar	1182	101	171	24
10:00PM	31-Mar	1165	103	173	25
11:00PM	31-Mar	1173	107	173	22
12:00AM	1-Apr	1178	118	174	26
1:00AM	1-Apr	1109	121	174	26
2:00AM	1-Apr	1194	123	174	26
3:00AM	1-Apr	1190	123	173	26
4:00AM	1-Apr	1190	123	173	26
5:00AM	1-Apr	1193	123	173	26
6:00AM	1-Apr	1194	123	173	26
7:00AM	1-Apr	1194	123	173	26
8:00AM	1-Apr	1194	123	173	26
9:00AM	1-Apr	1194	124	173	26
10:00AM	1-Apr	1190	125	173	25
11:00AM	1-Apr	1189	127	173	26
12:00PM	1-Apr	1174	129	173	29
1:00PM	1-Apr	1173	130	173	28
2:00PM	1-Apr	1171	133	173	29
3:00PM	1-Apr	1168	135	173	30
4:00PM	1-Apr	1161	135	174	30
5:00PM	1-Apr	1162	142	173	30
6:00PM	1-Apr	1165	147	173	30
7:00PM	1-Apr	1172	905	176	32
8:00PM	1-Apr	1170	925	177	32
9:00PM	1-Apr	1172	929	178	34
10:00PM	1-Apr	1172	900	177	37
11:00PM	1-Apr	1180	921	180	37
12:00AM	2-Apr	1190	942	183	39
1:00AM	2-Apr	1193	948	183	38
2:00AM	2-Apr	1196	952	183	37
3:00AM	2-Apr	1196	952	183	38
4:00AM	2-Apr	1196	952	183	38
5:00AM	2-Apr	1196	952	183	38
6:00AM	2-Apr	1196	952	183	38
7:00AM	2-Apr	1196	952	183	38
8:00AM	2-Apr	1197	952	183	38
9:00AM	2-Apr	1198	960	183	41
10:00AM	2-Apr	1199	972	184	42
11:00AM	2-Apr	1201	978	183	42
12:00PM	2-Apr	1202	984	181	42
1:00PM	2-Apr	1198	986	182	42
2:00PM	2-Apr	1182	987	178	42
3:00PM	2-Apr	1199	997	178	42
4:00PM	2-Apr	1186	997	174	42
5:00PM	2-Apr	1182	1007	174	44
6:00PM	2-Apr	1182	1009	173	44
7:00PM	2-Apr	1176	1027	172	46
8:00PM	2-Apr	1174	1033	172	46
9:00PM	2-Apr	1174	1043	172	46
10:00PM	2-Apr	1170	1057	170	47
11:00PM	2-Apr	1180	1088	170	49
12:00AM	3-Apr	1163	1090	171	50
1:00AM	3-Apr	1186	1100	171	50
2:00AM	3-Apr	1193	1100	173	50
3:00AM	3-Apr	1194	1101	173	50
4:00AM	3-Apr	1194	1103	173	50
5:00AM	3-Apr	1194	1103	173	50
6:00AM	3-Apr	1194	1103	173	50
7:00AM	3-Apr	1194	1103	173	50
8:00AM	3-Apr	1194	1107	173	51
9:00AM	3-Apr	1195	1117	173	52
10:00AM	3-Apr	1193	1119	173	52
11:00AM	3-Apr	1195	1120	174	54
12:00PM	3-Apr	1185	1122	174	54
1:00PM	3-Apr	1187	1125	176	55
2:00PM	3-Apr	1189	1137	177	55
3:00PM	3-Apr	1190	1152	178	56
4:00PM	3-Apr	1175	1156	174	56
5:00PM	3-Apr	1173	1175	174	57
6:00PM	3-Apr	1180	1182	174	57
7:00PM	3-Apr	1179	1199	173	57
8:00PM	3-Apr	1184	1201	175	58
9:00PM	3-Apr	1185	1216	174	58
10:00PM	3-Apr	1186	1224	173	59
11:00PM	3-Apr	1177	1247	171	59
12:00AM	4-Apr	1192	1277	172	60
1:00AM	4-Apr	1198	1283	172	60
2:00AM	4-Apr	1196	1281	173	61
3:00AM	4-Apr	1201	1286	172	61
4:00AM	4-Apr	1201	1286	172	61
5:00AM	4-Apr	1201	1286	172	61
6:00AM	4-Apr	1201	1286	172	61
7:00AM	4-Apr	1201	1286	171	61
8:00AM	4-Apr	1205	1284	170	61
9:00AM	4-Apr	1220	1313	170	63
10:00AM	4-Apr	1228	1329	173	64
11:00AM	4-Apr	1213	1350	176	66
12:00PM	4-Apr	1228	1353	175	66
1:00PM	4-Apr	1226	1352	174	66
2:00PM	4-Apr	1223	1352	175	66
3:00PM	4-Apr	1228	1352	175	65
4:00PM	4-Apr	1217	1391	174	65
5:00PM	4-Apr	1215	1407	177	68
6:00PM	4-Apr	1248	1411	181	70
7:00AM	4-Apr	1230	1429	173	70
8:00PM	4-Apr	1217	1446	173	70
9:00PM	4-Apr	1246	1467	171	70
10:00PM	4-Apr	1255	1484	174	71
11:00PM	4-Apr	1261	1501	176	73
12:00AM	5-Apr	1271	1517	176	73
1:00AM	5-Apr	1279	1537	177	72
2:00AM	5-Apr	1278	1543	178	72
3:00AM	5-Apr	1280	1543	178	72
4:00AM	5-Apr	1280	1543	178	72
5:00AM	5-Apr	1280	1543	178	72
6:00AM	5-Apr	1280	1543	178	72
7:00AM	5-Apr	1280	1543	178	72
8:00AM	5-Apr	1280	1547	178	72
9:00AM	5-Apr	1283	1549	179	72
10:00AM	5-Apr	1285	1547	179	73
11:00AM	5-Apr	1278	1547	179	73
12:00PM	5-Apr	1284	1552	178	72
1:00PM	5-Apr	1283	1562	177	72
2:00PM	5-Apr	1292	1570	177	73
3:00PM	5-Apr	1295	1588	178	72

APPENDIX E: BIDS PLACED

Bid #	Time	Date	Day of Week	Date	Bidder	High Bidder	Bid Placed	Current Bid	Max Bid of Bidder
1	5:39 PM	29-Mar	Saturday	29-Mar	mecherokee(0)	mecherokee(0)	\$1,000	\$1,000	\$5,000
2	6:40 PM	29-Mar	Saturday	29-Mar	mercscinc (3)	mecherokee(0)	\$1,025	\$1,050	\$1,025
3	6:40 PM	29-Mar	Saturday	29-Mar	mercscinc (3)	mecherokee(0)	\$1,200	\$1,225	\$1,225
4	7:18 PM	29-Mar	Saturday	29-Mar	volynalex (23)	volynalex (23)	\$5,100	\$5,100	\$10,000
5	8:02 PM	29-Mar	Saturday	29-Mar	blondienunc (4)	volynalex (23)	\$5,500	\$5,600	\$5,500
6	8:02 PM	29-Mar	Saturday	29-Mar	blondienunc (4)	volynalex (23)	\$5,700	\$5,800	\$5,700
7	9:29 PM	29-Mar	Saturday	29-Mar	rich57eagle (0)	rich57eagle (0)	\$10,500	\$10,500	\$10,500
8	9:31 PM	29-Mar	Saturday	29-Mar	rich57eagle (0)	rich57eagle (0)	\$10,900	\$10,900	\$10,900
9	10:46 PM	29-Mar	Saturday	29-Mar	kmunkres (0) (New User)	kmunkres (0) (New User)	\$11,000	\$11,000	\$20,000
10	6:08 AM	30-Mar	Sunday	30-Mar	norayr77 (0)	kmunkres (0) (New User)	\$15,000	\$15,100	\$15,000
11	1:47 PM	30-Mar	Sunday	30-Mar	i_kalimullov@yahoo.com (63)	i_kalimullov@yahoo.com (63)	\$20,100	\$20,100	\$30,000
12	8:26 PM	30-Mar	Sunday	30-Mar	christophorosgreen(0)	i_kalimullov@yahoo.com (63)	\$30,000	\$30,000	\$30,000
13	12:43 AM	31-Mar	Monday	31-Mar	ekg69 (63)	ekg69 (63)	\$30,100	\$30,100	\$33,000
14	8:57 AM	31-Mar	Monday	31-Mar	aajatoi (4)	ekg69 (63)	\$30,300	\$30,400	\$30,300
15	6:19 PM	31-Mar	Monday	31-Mar	blueskiesmn (0)	ekg69 (63)	\$31,000	\$31,100	\$31,000
16	10:33 PM	1-Apr	Tuesday	1-Apr	clkpwr (5)	ekg69 (63)	\$32,000	\$32,100	\$32,000
17	10:34 PM	1-Apr	Tuesday	1-Apr	clkpwr (5)	ekg69 (63)	\$33,000	\$33,000	\$33,000
18	8:41 AM	5-Apr	Saturday	5-Apr	ekg69 (63)	ekg69 (63)	\$33,100	\$33,100	\$35,000
19	11:32 AM	5-Apr	Saturday	5-Apr	blueskiesmn (0)	ekg69 (63)	\$33,200	\$33,300	\$33,200
20	2:38 PM	5-Apr	Saturday	5-Apr	wigginsrichard (7)	ekg69 (63)	\$34,000	\$34,100	\$34,000
21	2:39 PM	5-Apr	Saturday	5-Apr	wigginsrichard (7)	ekg69 (63)	\$35,000	\$35,000	\$35,000
22	2:40 PM	5-Apr	Saturday	5-Apr	wigginsrichard (7)	wigginsrichard (7)	\$35,100	\$35,100	\$35,100

APPENDIX F: COMMUNICATION DURING AND AFTER AUCTION

Time and Date	Type
Sunday, March 30th, 5:00 pm	Phone
Sun, March 30, 2003 7:02 pm	Email
Mon, March 31, 2003 4:15 pm	Email
Tue, April 1, 2003 12:19 am	Email
Tue, April 1, 2003 10:00 pm	Email
Wed, April 2, 2003 2:38 pm	Email
Friday 4/4/03 , 2 PM	Phone
Sat, April 5, 2003 6:07 am	Email
Sat, April 5, 2003 5:43 pm	Email
Sat, April 5, 2003 6:45 pm	Phone
Sun, April 6, 2003 6:30 pm	Email
Tue, April 8, 2003 12:31 pm	Email
Tue, April 8, 2003 4:06 pm	Email
Thursday, April 10th 4:00 pm	Phone
Saturday, April 11th 2:00 pm	Phone

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- ¹⁰ McDonald, Cynthia G and Slawson Jr., V Carlos. “Reputation in an Internet Auction Market.” *Economic Inquiry* 40 (2002): 633-650.
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