THE IMPACT OF A SELLER'S EBAY REPUTATION ON PRICE

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Abstract

eBay provides a large amount of data – enough data to investigate how markets address the problem of asymmetric information. This study analyzes 183 auctions of Apple iPod Touches on eBay.com to find the impact of a seller's rating on price. I found that a seller's percent of negative rating significantly impacts the price they ultimately receive.

Keywords: eBay, Auction, E-commerce, Seller reputation, Asymmetric information

I. Introduction

Some markets have the problem of asymmetric information, where one party in the market possesses more information than the other. For example, a seller in the market for used cars typically has more information about the cars for sale than a potential buyer. Some sellers may be honest, but others could be dishonest. The dishonest sellers sometimes drive out the honest sellers leaving only bad cars for sale. Since buyers have imperfect information, both honest and dishonest sellers may charge the same price for used cars causing the honest seller to leave the market. Such goods in these failing markets are often called "lemon" goods (Akerlof 1970).

A new market can potentially counteract the market failure of "lemon" goods. Companies such as Carfax.com and Consumer Reports try to alleviate the asymmetric problem by providing information to the consumer for a fee. What happens if a third party information broker cannot consistently signal the product quality? A potential remedy to this asymmetric information problem is to use past reputation of the seller to help provide a clue as to the current motivation of the seller. Auction websites such as eBay.com provide a modern example of this problem. eBay attempts to alleviate the asymmetric problem by providing a mechanism that allows buyers and sellers to rate each other after transactions.

In order to test the effectiveness of eBay's rating system, I measured the impact a seller's eBay rating has on the price that they receive from an on-line auction at eBay.com. Using data from eBay auctions of the Apple iPod Touch, I found that a seller's rating has a significant effect on the price that sellers receive. Therefore, I conclude that eBay's rating system is effective in alleviating the problem of asymmetric information in the market.

eBay and other on-line auction sites act as an auctioneer while the sellers assume most of the responsibility for the quality of their product. Sellers must describe the product and their policies such as shipping costs, acceptable methods of payment, and return policies. Sellers are also responsible for shipping the product. Unlike most commodity markets, eBay users cannot gather first-hand information about the product before they bid. Buyers rely solely on the seller to describe the item accurately and correctly. Therefore, the buyer assumes the risk of not receiving the item, receiving a damaged item, or receiving an inaccurately described product. The seller incurs the risk of not receiving payment. Sellers often alleviate this risk by shipping an item only after they receive payment.

Once a seller places an item on sale, any registered eBay user may bid on the item. eBay utilizes a modified ascending-bid, second-price English auction to determine which bid is ultimately successful. This auction type allows bidders to bid up the price of a product until time expires. In a second-price auction, the highest bidder only pays the amount of the second highest bidder, but in eBay's system, the winning bid must pay the amount of the second highest bid plus one additional bid increment. Bidders know if they are the

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high bidder but do not see the maximum bids of their opponents.[1]

After a transaction, both the buyer and the seller may leave positive, neutral, or negative feedback and any additional comments that they wish on the eBay website. eBay then compiles a rating for all to see by subtracting the total number of negative feedback from the total number of positive feedback. eBay also offers more complex rating information. Buyers can rate sellers on the following specific aspects of the auction: item as described, communication, shipping time, and shipping and handling charges. eBay also categorizes feedback by time periods into feedback from the last month, the last six months, and the last twelve months. Finally, buyers may also leave comments about a seller.

This rating system does have drawbacks that may render it

II. Literature Review

When current information on product quality is available at a low cost, expected quality measured by reputation is irrelevant, but information on current quality is often very costly or nonexistent. Further, if information about a product is imperfect and buyers cannot observe quality, individuals often rely on reputation to determine a product's quality. Sellers who invest in reputation receive a price premium above their competitors who do not have a good reputation (Shapiro 1983).

Consider the article by Landon and Smith (1998). They used data from Bordeaux wines to estimate the effect of current product quality and reputation on price. Landon and Smith (1998) utilized two separate models to determine price and quality. The quality model included two components – individual firm reputation of quality and collective reputation. Their model for equilibrium price included the current quality of the wine, the expected quality determined by reputation, group qualities, and taste factors. The authors used taste ratings from the *Wine Spectator*, the world's most circulated wine magazine, to represent current wine quality. The findings of the quality model represented the expected quality in the price equation. The authors also introduced variables that represented the government-determined wine regions of each wine and types of grapes used for each wine. Their findings supported the belief that both current product quality and product reputation play a statistically significant role in determining price, but reputation's impact on price was close to twenty times greater than current quality.

In most markets, reputation is difficult to quantify, complicating research. Researchers must be able to quantify reputation in order to use regression models that demonstrate the impact of a seller's reputation on price. The emergence of e-commerce, specifically on-line auction websites, provides researchers a means to quantify reputation with an abundance and variety of observations. According to the *Economist (2004),* eBay, the leading e-commerce site, totaled twenty-four billion dollars in trade in 2003. As discussed earlier, most e-commerce websites use a feedback mechanism to quantify reputation. Researchers have used these feedback mechanisms to answer two main questions. Does reputation impact the likelihood of a sale? Does reputation affect the ending price of an item?

Eaton (2008) tried to answer the question of whether reputation affects the likelihood of a sale. The author hypothesized that product characteristics, information variables, and seller reputation impacted the probability of a sale. Using 208 auctions of Paul Reed Smith Custom model electric guitars sold on eBay during the fall of 2002, Eaton found that each additional negative feedback left by buyers decreased the likelihood of a sale by 1%. Further, Eaton found that recent negative feedback impacts the probability of a sale more than older negative feedback.

Alm and Melnik (2002) estimated the effect of a seller's reputation on the ending price of eBay auctions. The authors gathered 450 observations of the 1999 $5 United States gold coin from eBay.com during the period from May 19 to June 7 of 2000. The data represented ninety-one distinctive sellers. The authors believed that the price of the 1999 $5 United States gold coin on eBay depended upon the value of its gold content, the features and policies of the auction, and, most importantly the seller's reputation represented by their eBay rating. Alm and Melnik used two different variables to represent the seller's reputation. They used the seller's overall rating, calculated by eBay as total positive feedback minus total negative feedback, along with a variable that is represented by the total number of negative feedback left by buyers.

Alm and Melnik estimated the parameters using the Tobit maximum likelihood estimation with

variable but known cutoffs (Alm and Melnik 2002). 114 of the 450 auctions received no bids at all because the seller selected a starting price above the willingness of bidders to pay. The Tobit method corrects the different cutoffs providing unbiased, consistent estimates. Alm and Melnik found that both of their reputation variables had a statistically significant impact on the price of the coins, but the impact was smaller than they expected.

Other studies have found similar results. McDonald and Slawson (2002) found that reputation and price had a positive relationship in a sample of 460 auctions of limited-edition Harley-Davidson Barbie dolls on eBay.com. The paper also found that the length of the auction does not affect price. Houser and Wooders (2000) used a standard two-step generalized least squares procedure to examine ninety-five auctions of Intel Pentium III 500 processors on eBay during the fall of 1999. Their paper found a statistically significant, positive relationship between positive feedback and ending price and a significant, negative relationship between negative feedback and ending price. Another eBay study that utilized used car auctions found that seller feedback impacts the price positively (Andrews and Benzing 2006).

While the studies mentioned above found that a seller's overall feedback (positive minus negative) significantly affected the ending price, this finding is not shared by all researchers. Lucking-Reiley, Bryan, Prasad, and Reeves (2007) used 461 eBay auctions of U.S. Indian Head pennies minted between 1859 and 1909 to determine the relationship between price and reputation. The paper first tried to estimate the effect of reputation on price using eBay's overall rating score, but the authors found it insignificant. Lucking-Reiley et al. then separated the rating into total positive feedback and total negative feedback. Their findings found a statistically significant effect of negative feedback on price, but positive feedback was statistically insignificant.

III. Methodology

Data

From eBay.com, I collected 183 observations representing seventy-nine unique sellers for the Apple iPod Touch on April 12, 2008. eBay serves as a terrific data source because it gives easy access to all auctions that have ended in the past two weeks by performing a simple search and selecting an option to see only complete listings. Furthermore, you can search auctions older than two weeks if you have the item number. On April 13, 2008, I searched "Touch" under the category Consumer Electronics and the subcategory Apple iPod, mp3 Players. I then clicked the option to show the completed listings. From each auction of iPod Touches on April 12, 2008, I manually collected the data on the description of each item, the seller's policies, and the seller's reputation. I only considered auctions that ended in a completed sale, ignoring all auctions that did not meet the starting bid or the reserve price and all transactions that ended by eBay's Buy-It-Now Feature.[2] I also took several steps to ensure homogeneous characteristics of the observations. I left out auctions of iPod touches that excluded ear phones and a USB 2.0 cable or included additional accessories in addition to the ear phones and cable as well as iPod Touches that had been "jail broken."[3]

It was important that I collected the data on the next day. eBay keeps the seller's feedback in real-time. If I waited too long after the auctions ended, the data I collected would not reflect the feedback that the bidders saw when they bid on the item. Further, an exogenous change in trends, such as the announcement of a new mp3 player, that might influence the supply or demand for iPod Touches is unlikely to occur in the course of one day.

I chose the Apple iPod Touch for several reasons. The Touch is a popular new item that sees many transactions on eBay, ensuring that I will find an adequate amount of quality observations. It is important to be able to control for the different characteristics of each iPod Touch being auctioned. The ideal item to observe would be homogeneous for each auction. Although the iPod Touches on eBay are not homogeneous, I should be able to control for the differing factors of iPod Touches. iPod Touches have three different hard drive capacities: 8 gigabyte (1,750 songs), 16 gigabyte (3,500 songs), and 32 gigabyte (7,000 songs). A larger hard drive typically means a higher price. Further, the condition of iPod Touches on eBay varies. I introduced a variable to try to control for the differences in condition of each iPod Touch. iPod Touches have a relatively high value, making the effects of each variable easier to see. Buyers

also pay more attention to a seller's feedback when the price is high because they have more to lose from a fraudulent seller. Finally, the retail prices of iPod Touches are stable. If the item's retail price was volatile, I would have a difficult time controlling for the changes in price.

The average price paid for an iPod Touch on eBay on April 12, 2008 was $270.06 while the highest price was $500 and the lowest was $202. No buyer should be willing to pay more than $500 because Apple sells their thirty-two gigabyte iPod Touch for $499. Approximately 36% of the iPod Touches were sealed in the original box while the remaining 64% were used. Almost half of the iPod Touches stored eight gigabytes of memory; approximately 42% stored sixteen gigabytes, and the last 8% boasted a 32 gigabyte hard drive. The average cost of shipping in the sample was $8.94, and approximately 23% of the auctions included insurance in the shipping charges. The length of a warranty ranged from 0 to 90 days with a mean of around 24 days. Almost half of the auctions accepted payments other than PayPal, and the average number of bids per auctions was close to 24. The percent of negative feedback varied from 0% to 12%, and the mean was 0.89%. Table 1 provides summary statistics of the data collected:

The Model

Theoretically, eBay's rating system should help buyers determine the integrity of each seller. Buyers may be more willing to bid on products sold by highly rated sellers. Consequently, sellers with higher overall ratings and fewer negative ratings may receive higher prices for identical products from sellers with lower overall ratings and more negative ratings (Alm and Melnik 2002). This may not be the case. Lucking-Reiley et al. (2007) found that a seller's rating merely increases the incentive to provide good service. In either case, the rating system should play a valuable role in increasing the integrity of eBay and improve the satisfaction of its buyers and sellers. The rating system helps correct the market failure of imperfect information, but sellers must still compete to keep their customers.

In order to find the impact of a seller's rating, I estimated the following model for Apple iPod Touches using Ordinary Least Squares:

$$\begin{aligned} WINPRICE &= \beta_1 + \beta_2 NEW + \beta_3 SIXTEENGB \\ &+ \beta_4 THIRTYTWOGB + \beta_5 SHIPPING \\ &+ \beta_6 INSURANCE + \beta_7 WARRANTY \\ &+ \beta_8 OTHERPAYMENT + \beta_9 NUMOFBIDS \\ &+ \beta_{10} \%NEGATIVE + \varepsilon' \end{aligned} \tag{1}$$

The dependent variable WINPRICE represents the price that the winner of a bid pays to the seller. The highest bidder must pay the amount of the second highest bid plus one bid increment. The zero-one dummy variables NEW, SIXTEENGB, and THIRTYTWOGB describe the iPod Touch of each

TABLE 1.
Summary Statistics of 183 Apple iPod Touches

	Mean	Standard Deviation	Maximum	Minimum
Dependent Variable				
WINPRICE	270.0583	61.77242	500	202
Independent Variables				
NEW*	0.360656	0.481508	1	0
SIXTEENGB*	0.415301	0.494126	1	0
THIRTYTWOGB*	0.087432	0.283242	1	0
SHIPPING	8.936885	5.869944	39.98	0
INSURANCE*	0.229508	0.42167	1	0
WARRANTY	24.38798	26.36946	90	0
OTHERPAYMENT*	0.497268	0.501364	1	0
NUMOFBIDS	23.78142	12.2908	77	1
%NEGATIVE	0.891207	1.751063	12	0

* Zero-one Dummy Variable

auction. A new iPod Touch described as still sealed in the original box receives a one for the variable NEW and zero if the iPod Touch was previously used. A sixteen gigabyte iPod Touch takes on a value of one for the dummy variable SIXTEENGB and a zero for the dummy variable THIRTYTWOGB while a thirty-two gigabyte iPod Touch receives a one for the dummy variable THIRTYTWOGB and a zero for the dummy variable SIXTEENGB. If the iPod Touch has a storage capacity of eight gigabytes, it receives a zero for both SIXTEENGB and THIRTYTWOGB. I expect that new iPod Touches, on average, receive a higher price than used iPod Touches, and the price should increase with increases in the storage capacity.

The variables SHIPPING, INSURANCE, WARRANTY, and OTHERPAYMENT describe the characteristics of each auction that the seller decides. Alm and Melnik (2002) believed that bidders take into account the entire cost of a transaction when deciding on their high bid. Therefore, bidders should incorporate the shipping costs into their bid decisions. The variable SHIPPING is the total amount a seller charges for the shipping and handling of a product. Some shipping costs differ by destination. In these cases, I simply used the same zip code as the seller to determine the shipping price. Because bidders integrate their entire transaction costs, I expect SHIPPING to have a negative impact on price. The zero-one dummy variable INSURANCE is one if a seller includes the cost of shipping insurance in their cost of shipping and zero otherwise. INSURANCE should have a positive effect on price because people are willing to pay more when they know that they are protected from their item being lost or damaged during shipping. WARRANTY represents the number of days each seller allows a buyer to return the item for a refund or exchange.[4] The typical numbers of days for refunds are zero, three, seven, fourteen, thirty, sixty, and ninety. I expect WARRANTY to have a positive impact on price because buyers have longer protection against a faulty item and fraudulent sellers.

Sellers also choose the methods of acceptable payments. Most sellers accept PayPal, an business that provides a method of on-line payments.[5] Some sellers accept other forms of payments such as personal checks, money orders, and cashier's checks. I added the zero-one dummy variable OTHERPAYMENT to control for sellers who accept other payments in addition to PayPal. An item receives a one if its seller accepts other forms of payments besides PayPal, and zero otherwise. OTHERPAYMENT should positively impact price because some buyers may prefer payments other than PayPal. Some buyers do not have a PayPal account while others may believe that PayPal is insecure.

The variable NUMOFBIDS captures the number of bids an auction has when time expires. The number of bids an auction receives serves as a means to measure the number of people interested in buying the product. This variable also captures several options eBay gives its sellers. Sellers can pay extra to have their auctions appear at the top of searches. This option creates more visibility to a seller's auction. As the number of people interested in an auction increases, the willingness to pay of some individuals probably increases as well, giving NUMOFBIDS a positive effect on price.

As I mentioned earlier, papers studying eBay used different measurements for reputation. Alm and Melnik (2002) used both the natural log of a seller's total negative feedback plus one and the natural log of a seller's overall feedback measured by positive feedback minus negative feedback. Andrews and Benzing (2006) also utilized a seller's overall feedback as well as the percentage of feedback that was positive. Houser and Wooders (2006) utilized the following four variables to measure seller reputation: the number of positive feedback, the number of neutral feedback, the number of negative feedback, and a dummy variable indicating if the seller recently changed his user ID or is new to eBay in the last thirty days.

eBay reports a seller's overall feedback and their percent positive feedback on each auctioned item's web page. Based on Lucking-Reiley et al. (2007) findings that negative feedback matters significantly more than positive feedback, I decided to use the percentage of negative feedback (% NEGATIVE) as the model's measurement for a seller's reputation. A user can quickly calculate this value by subtracting the percent of positive feedback of the seller that eBay reports on every item auction page from 100. The percent of negative feedback and price should have a negative relationship.

Many of the studies highlighted above contained two or more measurements of a seller's reputation, but I believe that this could cause problems such as correlation between the two feedback variables.

Further, Lucking-Reiley et al. (2007) hypothesized that a users on eBay believe people are inherently good until they prove otherwise. Sellers start with a clean slate in buyer's minds and are only penalized when they fail to meet a buyer's expectations. This would mean to eBay's feedback mechanism does not allow users to build reputation, but sellers begin with a good reputation until their behavior changes it. Therefore, the feedback mechanism serves as an incentive for sellers to remain honest and provide the best possible e-commerce experience.

Like Lucking-Reiley et al (2007), my model and data are not without drawbacks. First, I did not include any explanatory variables that described the attractiveness of an item's web page. Some sellers are better at web-design and can make their pages more pleasing to the eye and easier to navigate. The variable NUMOFBIDS may help capture this because more appealing auction pages with better pictures may receive more interest. This would be impossible to quantify and would require that I use my own judgment. I also did not verify the condition of the iPod Touch that the sellers claimed. This should not cause any problems because the feedback mechanism should give sellers an incentive to be honest.

Alm and Melnik (2002) pointed out several problems with the use of seller ratings. First, buyers have little incentive to leave feedback especially if their transaction went smoothly. Further, bad sellers could potentially change their on-line identities. eBay recently tried to fix this problem by making it more difficult for sellers to change their identities. eBay now requires them to provide credit card information. Sellers also have incentive to attempt to manipulate their ratings by bidding on their own items or selling low valued goods to build up their rating and then selling a high valued item fraudulently. Finally, honest mistakes sometimes happen. eBay users may respond to comments and feedback, but it then becomes a "he said, she said" situation. Users often cannot determine who is telling the truth.

IV. Results

The regression results appear in Table 2. Overall, the model was very effective. Five of the nine variables were significant at the 99% confidence level while two of the remaining four variables were significant at the 90% confidence level. The regression had an adjusted R^2 of 0.918704 meaning that the independent variables explain just over 91% of the variability of the winning price around its mean. Using analysis of variance, the model, with a 99% confidence level, rejects the null hypothesis that the explanatory variables have no effect on the winning price and accepts the alternative that the explanatory variables collectively affect winning price significantly.

TABLE 2.
Regression Results

Dependent Variable: WINPRICE
Method: Least Squares

Variable	Coefficient	t-Statistic
Constant**	211.9263	43.33426
NEW**	34.95416	8.741912
SIXTEENGB**	64.17136	22.51417
THIRTYTWOGB**	188.8704	34.75645
SHIPPING**	−0.820124	−2.838904
INSURANCE*	9.006843	2.455112
WARRANTY	0.081953	1.097022
OTHERPAYMENT*	8.036771	2.159303
NUMOFBIDS	0.148179	1.274826
%NEGATIVE**	−2.126228	−2.684447

R^2	0.922724	Durbin-Watson	2.174947
Adjusted R^2	0.918704	Log likelihood	−779.4832
S. E. of reg.	17.61287	F-statistic	229.5247
S. S. R.	53666.9	Prob(F-stat)	0

* Significant at the .05 Type I error level
** Significant at the .01 Type I error level

The three variables that described each iPod Touch were all significant at the 99% confidence level and, as expected, had a positive relationship with price. Holding everything else constant, an auction of an iPod Touch that is new and still sealed in the original box (NEW) received, on average, $34.95 more than a used iPod Touch auctioned on eBay. On average, a sixteen gigabyte iPod Touch (SIXTEENGB) had a $64.14 price premium over an eight gigabyte iPod Touch while a thirty-two gigabyte iPod Touch (THIRTYTWOGB) earned a $188.87 more than an a eight gigabyte iPod Touch, *ceteris paribus*.

The next four variables describe elements of the auction that sellers set. The cost of shipping (SHIPPING) negatively affected price with a confidence level of 99%; its coefficient was -0.820214 meaning that for every dollar the shipping charges

increased the winning price fell by approximately $0.82. With a 95% confidence level, an auction that included insurance in the shipping costs (INSURANCE) increased the dependent variable by slightly over $9.00. Although the length of a warranty (WARRANTY) is statistically insignificant, it does have the positive relationship with price that I expected. The variable OTHERPAYMENT that described auctions that accepted other payments in addition to PayPal was positively related to the winning price with a 95% confidence level. The winning price increased by roughly $8.00 if the seller accepted other payments in addition to PayPal.

The number of bids (NUMOFBIDS) was statistically insignificant, but it did have the expected positive relationship with the winning price. I expected the number of bids to significantly increase price. eBay's policies probably impact the significance of this variable. Sellers decide the starting bid price. Most sellers set the starting bid low to attract more attention, but some sellers set the starting bid high because they want to make sure that their benefits are greater than their costs. The auctions with a low starting bid typically receive many bids while the auctions with a high starting bid receive very few bids even though both end at roughly the same amount. This most likely diminishes the direct impact of the number of bids on the final selling price.

The most variable of interest measures a seller's reputation. The percentage of negative feedback of a seller (%NEGATIVE) was inversely related to the winning price and statistically significant with a 99% confidence interval. Holding everything else constant, the price a seller received decreases by almost $2.13 for a one unit increase in the seller's percentage of negative feedback.

The retail prices on Apple.com of an eight gigabyte, sixteen gigabyte, and thirty-two gigabyte Apple iPod Touch are $299, $399, and $499 respectively. My model can make some predictions about the cost of iPod Touches on eBay. A new, thirty-two gigabyte iPod Touch costs $432.05 on eBay when calculated by using the mean values of the explanatory variables. When shipping insurance and other payments are included, the cost jumps to $449.09. Using the seller's most advantageous combination of variables, a new thirty-two gigabyte iPod Touch with free shipping and insurance, a 90-day warranty, acceptance of payments in addition to PayPal, 77 bids, and no negative feedback sells for $471.58 on eBay.

V. Conclusion

This paper found that a seller's rating, particularly negative rating, impacts the price they receive on e-commerce auction. Since bidders cannot physically examine items up for auction, they must rely on sellers to provide relevant, accurate information. Sellers may misrepresent an item or fail to deliver an item once payment is received, and buyers have no way of knowing which sellers are dishonest. To combat this asymmetric information problem, on-line auction sites such as eBay.com developed feedback mechanisms that allow buyers and sellers to rate each other.

I found that negative feedback tends to decrease the price that a seller receives. This is consistent with Lucking-Reiley et al. (2007) who also found that negative feedback decreases the price a seller receives for an item. One possible explanation is that eBay users believe people are inherently good (Lucking-Reiley et al. 2007). Sellers can only be hurt by their own actions. This theory does not take away from the value of the feedback mechanism. As long as seller's future benefits outweigh their potential short-run benefits of cheating, the feedback mechanism provides sellers with an incentive to describe their items accurately, provide good service, and to fulfill their obligations.

The rules and laws of e-commerce are changing quickly. According to a recent New York Times article, eBay recently altered the way it displays search results. eBay originally displayed the results in order of when auctions ended, but now sellers with better feedback, lower shipping charges, and lower prices show up first (Stone 2008). Although eBay's feedback system is not perfect, this study demonstrates the value of buyer feedback in terms of the impact a poor reputation has on selling price. If eBay wanted to take full advantage of its feedback system, it could introduce an incentive for buyers to record their feedback for every transaction. Perhaps buyer discounts would increase the frequency with which customers make use of the feedback fields. This would improve the measurement of sellers' reputations and ultimately, improve the quality of both consumers' and sellers' eBay experiences.

Notes

1. Bidders sometimes practice a bidding method called "sniping" where they enter their bid at the last second to try to win the item without driving up its price.
2. eBay has a Buy-It-Now feature that allows sellers to set a price that they are willing to accept right then. Bidders may simply offer the Buy-It-Now price, and the auction ends. Further, some auctions do not end for one of two reasons. Sellers set the starting bid, and they sometimes over value their item and set the starting price too high. Sellers also have an option to set a visible or hidden Reserve Price. If an auction does not reach the set Reserve Price, the seller is not bound to complete the transaction.
3. Jail broken is a term referring to a hacked iPod that allows users to upload additional applications that Apple has not sanctioned. An iPod loses it warranty when it is "jail broken."
4. Most are refunds because the seller often possesses only one item.
5. All the sellers in the sample accepted PayPal.

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