IDEA GROUP PUBLISHING
701 E. Chocolate Avenue, Suite 200, Hershey PA 17033-1240, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.idea-group.com
ITB12657

This paper appears in the book, *Emerging Trends and Challenges in Information Technology Management, Volume 1 and Volume 2* edited by Mehdi Khosrow-Pour © 2006, Idea Group Inc.

The Retaliatory Feedback Problem: Evidence from eBay and a Proposed Solution

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ABSTRACT

Research has shown that reputation systems play an important part in online auctions. A higher reputation (or feedback) is correlated with higher prices paid for auctioned items. In order to guard their online reputation, many auction users refuse to provide negative feedback to others out of fear of retaliation.

This paper outlines the retaliatory feedback problem. Data gathered from eBay is used to show that users are worried about the possibility of retaliation. Finally, a simple solution, involving the escrow of feedback scores is detailed.

INTRODUCTION

The past few years have seen the explosive growth of online auction transactions. In 2004 eBay listed 1.4 billion items for auction, representing a 68.7% increase over the previous year. Those listing were responsible for $34 billion in transactions (a 69.5%) increase over 2003 [1]. While eBay is the major player in this area, it is not the only one. Many other companies, such as Amazon, Yahoo, and Overstock offer consumer-to-consumer (C2C) online auctions.

In online auctions buyers do not have the ability to directly inspect the products they are purchasing, not are they likely to know the seller. They face what Akerlof [2] calls a "Lemons" market. That is they have a high amount of uncertainty about the quality of the information and/or goods. Auction theory addresses the issue of uncertainty through a concept of "commitment." Commitment typically refers to how the seller promises to sell his goods or services, whereby once a seller sets out rules for how its goods or services will be sold, the seller cannot renege. It has been noted that sometimes the only means for assessing commitment is through a seller's reputation [3]. Formally stated, reputation is the "overall quality or character as seen or judged by people in general" [4]. In online auctions, reputation is increasingly used as a proxy for gauging the quality of products or services for sale.

Given the uncertain nature of online auctions, online reputation systems have been developed to serve as a benchmark for seller reliability and promoting trust between buyers and sellers. These systems allow the participants in a transaction to rate each other. Individuals' ratings are aggregated and are available for everyone to see.

As an individual's reputation rating is typically the only information a buyer has as to the trustworthiness of a seller in an online auction setting, people go to considerable lengths to ensure their rating is high. Previous studies have shown that increased reputation can lead to the ability to charge higher prices [5,6,7]. This has led to the problem of retaliatory feedback.

Retaliatory feedback is the idea that leaving a negative rating for a transaction partner will cause that partner to leave you a negative rating. It should be noted that merely the thought that somebody might retaliate will cause this problem to occur. The implication of this phenomenon is that everyone will always leave positive feedback and the reputation system will become meaningless.

The primary purpose of this paper is to examine the scope of the retaliatory feedback problem and detail a simple solution through the idea of feedback escrow. The following section provides background on reputation systems in general, retaliatory feedback, and retaliatory feedback from a game theoretical perspective. The data gathering approach is then outlined and the data analysis presented. This is followed by a discussion of the proposed solution. Finally, a general discussion, limitations, and future research directions are detailed.

BACKGROUND

Reputation Systems

Online auctions are typically characterized by one-time transactions where participants possess neither a shared history nor the promise of future transactions. Therefore reputation systems have been developed to allow participants in a transaction to rate each other. The theoretical basis for reputation systems is game theory [8]. The traditional Prisoner's Dilemma indicates that in a consumer-to-consumer (C2C) online auction, in which no reputation mechanism is present, the participants always have an incentive to cheat each other [9]. Essentially, reputation systems are designed to extend the relationship between buyer and seller beyond the one-time transaction by providing information about previous dealings.

In the eBay reputation system (which eBay calls feedback), any completed transaction may be rated by the winning bidder of an item and the seller of that item. The feedback scores are +1, representing a positive experience; 0, representing "neutral" feedback; and -1, meaning the purchasing experience was negative for some reason. These ratings are then used to calculate an overall reputation score (feedback score) as well as a percent positive feedback rating.

A number of researchers [5,6,7] have shown a correlation between higher reputation (feedback) scores on eBay and higher prices. Therefore, individuals have a strong incentive to achieve and maintain a high reputation score. Some people will go to great lengths to ensure a high score. For example, individuals with a negative reputation can easily open a new account (although eBay has taken measures to curtail this behavior). In addition, some sellers enter into agreements to purchase each other's goods and provide positive feedback [10]. However, mechanisms can be put in place to prevent this. On eBay, for example, a seller's reputation score only uses feedback from unique buyers. Therefore, multiple feedback from the same buyer is not counted.

Retaliatory Feedback

According to Bunnell [11, p.55] the eBay system, "was founded on the belief that most people are trustworthy and committed to honorable dealings with each other. … We are encouraging our community to think that basically 99 percent of the people out there are doing the right thing …" In fact, Resnick and Zeckhauser [6] found that 99.1% of feedback left on eBay was positive, only 0.6% negative, and 0.3% neutral. While the empirical evidence seems to support the basic tenant that most

people will behave correctly, we must consider the possibility that the underlying data is skewed due the problem of retaliation.

However, a number of researchers [8, 12] have suggested that the high level of positive feedback observed on eBay is the result of retaliatory feedback. Retaliatory feedback occurs when one party in a transaction believes that the other party will leave them a negative feedback if they do the same. In order to better understand this phenomenon we turn to game theory and anecdotal data gathered from eBay's feedback discussion forum.

Retaliatory Feedback and Game Theory

An online auction transaction closely resembles a Prisoner's Dilemma type game. In this game if both players cooperate (provide each other with positive feedback) they will both receive a payoff of +1. If both players defect (provide each other with negative feedback) they will both receive a payoff of -1. However, if one player defects (provides a negative feedback) and the other player does not (provides positive feedback) then the payoffs are -1 for the player receiving the negative feedback, and +1 for the user receiving the positive feedback. These payoffs are summarized in Table 1. Neutral scores are not considered due to their low incidence and for the sake of simplicity.

If we consider the traditional Prisoner's Dilemma from game theory we know that if one person defects (in this case meaning provides a negative feedback) the best option for the other transaction participant is to also defect. With this in mind many eBay participants have chosen to cooperate (never provide negative feedback) even when the circumstances dictate that they should not.

DATA GATHERING AND ANALYSIS

We would not expect to see many instances of actual retaliation, since the fear of retaliation drives users to provide positive feedback. Therefore, in order to find evidence to support the theory that users are concerned about retaliatory feedback, we monitored eBay's Feedback Discussion Forum during a one week period in September 2005.

During the period of observation there were 324 active threads. An active thread was defined a priori as either a new thread or a thread that contained a new reply. Each thread was reviewed to determine if the content was related to the retaliatory feedback problem. Of the 324 total threads, 51 or 15.7% concerned retaliatory feedback.

A example of a typical posting on this issues is "I have to say this. I think it totally defeats the purpose of the feedback system if you don't leave feedback until the "other" person leaves it. In about fifty percent of my recent purchases, the sellers have said, "When I see you have left positive feedback, I will leave mine." No!, No!, No!. I have held up my end of the bargain by paying you within 30 seconds via PayPal, if you are happy with that, then the rest of the deal is up to you. Honestly, you have nothing else to base your feedback on for me. This is not a trade; it is FEEDBACK on how the transaction went. What if I am unhappy with your end of the deal, now if I leave negative feedback I have to worry about receiving negative feedback, when I did nothing wrong. Something has got to change. Do other eBayers out there face this same problem?"

The 51 threads of interest were further examined in order to determine the exact nature of the users' concerns. Based on this analysis the retaliatory feedback problem can be broken into four main categories. Note, some threads fell into multiple categories resulting in the numbers below adding to more than 51.

First, 17 threads were primarily concerned with specific instances of retaliation. Many of the postings in this category discussed the problem of non-paying winner bidders threatening to leave negative feedback for sellers who leave them a negative for non-payment.

Second, a large number of threads (28) discussed the problem of who should leave feedback first after a completed transaction. Of course most buyers believe that the seller should leave feedback first, and most sellers believe buyers are responsible for first feedback. The fact that both parties are waiting for the other to leave feedback first follows from game theory. If one party already knows that the other party either defected or cooperated then the best move is predefined. The impact of this waiting game is that many people do not leave feedback at all. This is in line with previous research by Resnick and Zeckhauser [6] who found that only 52.1% of buyers leave feedback and 60.6% of sellers.

Third, 8 threads sought advice on whether and how to leave negative feedback. A number of posts recommend maintaining two eBay accounts – one only to sell and the other only to buy. This allows an individual who is unhappy with a purchase to leave negative feedback for a seller without fear that it will impact his or her own seller account. Since eBay allows 90 days to leave feedback, the other common advice is to wait until the last minute to post negative feedback. This would not allow enough time for the other party to the transaction to retaliate. However, a number of posts warn that this approach may backfire, as eBay does not always lock out feedback at exactly 90 days.

Fourth, some threads (5) discussed the problem of feedback extortion. This occurs when one party to a transaction demands something from the other party and uses the threat of negative feedback as part of the demand. For example, in a recent posting a buyer complained that the seller had only shipped part of the purchase. After waiting 11 weeks for the rest of the purchase the buyer posted negative feedback. At that point the seller told the buyer that he would not send the remainder of the purchase unless the negative feedback is withdrawn.

PROPOSED SOLUTION

There is a very simple solution to the retaliatory feedback problem – feedback escrow. In a system with feedback escrow, parties to a transaction would be allowed to leave feedback only for a specified period of time (a few weeks perhaps). In addition, all feedback would be kept secret until both parties have left their feedback or until the time has expired.

It should be noted that feedback escrow addresses three of the categories of retaliation discussed above. Specific instances of retaliation would not occur. In addition, we would expect an increase in amount of feedback and the speed with which it is left. Since feedback is kept secret until both parties have posted or until the time limit is reached, the concern about who should leave feedback first is eliminated.

The one area that feedback escrow cannot address is feedback extortion. If the system allows users to withdraw previously posted feedback then some users will likely find ways to abuse the process.

DISCUSSION, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

In online auctions, and especially on eBay, reputation systems play a crucial role in providing a level of trust between buyers and sellers. However, a reputation system where almost all of the feedback is positive and users come to believe that those positive scores are not deserved will quickly become useless. The retaliatory feedback problem threatens to undermine eBay's feedback system. Feedback escrow represents a simple solution that should restore confidence in the system.

This paper has begun to examine the retaliatory feedback problem and proposed a solution. The analysis performed was very limited. Future research should further detail the problem through various research methodologies. For example, a survey of eBay users would likely yield a greater understanding of the scope of the problem, as well as motivations for retaliation.

While the proposed solution is simple and seems to resolve most of the issues addressed herein, future research into the solution needs to be conducted. A controlled experiment should be performed in order to verify that feedback escrow will work as anticipated.

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