

Balances of Power on eBay: Peers or Unequals?

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Abstract

The difference between buyer and seller maturity on eBay creates “balance of power” conditions for feedback information that substantially skew feedback in favor of the sellers. Participants with fewer transactions may tend not to use negative evaluations for fear of retaliation. Hence feedback information on eBay may be inflated over time and may not adequately represent negative experiences. We propose an empirical approach to test our hypothesis and describe a solution to the problem: 1) automatically calculate feedback using information such as date and time of close, payment and shipping; and 2) report total number of transactions together with feedback. These automatic calculations would increase transparency, improve self regulation and limit inflated feedback as well as retaliation.

Keywords: economics of peer to peer networks, eBay, balance of power, collusion, reputation systems.

1 Introduction

Online reputation systems substitute for trust between individuals who interact via online transactions without knowing one another. The mechanisms through which reputations are created and used will affect the evolution of peer to peer systems. In this paper, we examine eBay’s reputation mechanisms to investigate how “balances of power” emerge inside those systems, and “unequals” appear amongst “peers.” We discuss how imbalances lead to biased feedbacks and undermine the trust of a system’s participants.

eBay is the best known and most successful online auction service. Its reputation system is remarkable, both for the amount of feedback provided by its users and for the overwhelming percentage of positive feedback (?)(?) (?). More than half of completed transactions result in feedback provided by the seller or the buyer (or both). The percentage of negative feedback is less than one per cent for both buyers and sellers. (?). For comparison, SatMetrix’s survey on online customers satisfaction was answered only by 11 per cent of potential respondents (?). A 2001 report by Nielsen/NetRatings and Harris Interactive (?) found that the average online customer satisfaction rate was 7.7 (out of 10).¹ How is it that customers of eBay can be so satisfied when “hijacking and

¹Even more strikingly, 28 per cent of all attempted online purchases failed in the sample considered by the Boston Consulting Group in 2000. (?) Also, 41 per cent of individuals who participated to online auctions reported having problems (such as late delivery or goods never arriving) in a survey commissioned by the National Consumer League (?).

fraud plague [its] users[?]" (see (?)) BizRate.com's post-fulfillment satisfaction surveys of eBay's and half.com (an auction website controlled by eBay) auctioneers fall well short of eBay's own customers reputations.²

Resnick and Zeckhauser (see (?)) advance hypotheses to explain eBay's peculiar feedback rates and positive customer reputations. eBay users may feel a sense of belonging to a community that they are willing to spend effort to maintain. In particular, "courtesy feedback" (the exchange of reciprocal kindnesses) and fear of retaliation may lead to "collusive" behavior between buyers and sellers, with predominantly positive feedback. In addition, eBay customers have disincentives to provide negative feedback. (?) also highlight that communications between buyer and seller to correct an unsatisfactory transaction may never appear in the published feedback. In short, incentives to provide feedback apply "much less forcefully" when the experience has been negative (see (?)). This means that if dissatisfied customers are less likely to give feedback, then eBay reputations are biased. (?) note that this bias may not work against the system itself, since making dissatisfaction more visible could reduce faith on the marketplace.

In this paper, we focus on whether the differences in maturity of eBay buyers and sellers determines a "balance of power" condition for feedback information, skewing feedback in favor of sellers and larger players, and determining self-reinforcing biased dynamics.

2 Balances of Power and Reputation Inflation

An analysis of the literature on eBay's reputation system suggests the following factors as motivation for participants' feedback: fairness, reciprocity (or "courtesy," and intention to induce reciprocity), retaliation, and fear of retaliation.

If all participants act only out of fairness, feedback would be frequent *and* truthful. Less than two per cent of eBay transactions are associated with negative or neutral feedback for the buyer or the seller (see (?)). However, millions contemporary transactions take place daily on eBay. These facts combined make it difficult to believe that feedback is always fair.

Media reports on eBay uncover several issues plaguing the system. The system's internal mechanisms do not seem to provide strong enough incentives to penalize the small amount of negative feedback. Compare (?)'s reasoning to (?)'s findings.

If all participants act only out of courtesy, both feedback rates and positive feedback would be high. However, we will show that this is not the case. If participants acted according to personal self interest rather than for social benefit, feedback rates and the ratio of positive feedback would still be high, but more variable. This is what we find in the data, and what we discuss in this paper.

There are several reasons why both buyers and sellers as well as participants with differing numbers of transactions care about their reputations. First, sellers may expect buyers to consider their reputations when bidding. Buyers may wrongly expect sellers to refuse items to a buyer with a poor reputation. Social acceptance and need for recognition may pressure both buyers and sellers to achieve higher status. In addition, certain plateaus of feedback have additional benefits (on eBay, special notification stars and new functionalities). Hence, both buyers and sellers may have reasons to be courteous, induce reciprocity, fear retaliation, and desire positive feedback. However, sellers have a greater desire to establish a history of positive feedback. On eBay, sellers have the power

²<http://www.bizrate.com> reports satisfaction scores between 6.4/10 and 8.0/10 for half.com and between 7.0/10 and 8.2/10 for eBay.

to arbitrarily judge buyers on parameters which should not be arbitrary, such as timeliness and completeness of a buyer's payment.

Because of the way reputations are reported in eBay, negative feedback is less apparent and accessible for participants with a large amount of positive feedback, or "maturity."³ Negative feedback may be perceived as less threatening by "larger" participants. Mature participants are more experienced about providing feedback and their feedback may be expressed more freely and honestly. On the other hand, participants with less maturity may feel a greater pressure of social norms and conformity and are eager to build a history of feedback, for example inducing reciprocity.

(?) have found that, on average, sellers tend to be the more "mature" than buyers. We hypothesize that, on average, buyers on eBay have more to lose from providing negative feedback to sellers and are also more willing to provide positive feedback in order to build up reputation history. On the other hand, sellers have less constraints in providing negative feedback, although they still have interest in achieving "courtesy equilibria" to advance their reputation.

Buyers have more factors that determine their satisfaction with a seller (timely and complete shipment by the seller, quality of the shipment), than the factors considered by a seller (timely and complete payment by the buyer). Faced with a simple feedback structure that imposes only three levels of evaluation (positive, negative or neutral), some buyers may be afraid that their feedback is either be too harsh or not harsh enough. (?) provide evidence of a heuristic emerging where negative feedback is given for serious situations (i.e. no product shipped) and where neutral feedback is given for delays or poor quality. This may reflect a social norm that new users feel compelled to oblige. Once again, more mature users fear this balance of power less. On the other hand a mature seller may have fewer problems reporting a buyer who did not complete a payment, especially after attempting to resolve the issue.

In short, buyers, especially with a smaller amount of feedback, tend not to give negative feedback for fear of retaliation or psychological pressure from a customer with much more experience. These buyers tend to provide positive feedback as a courtesy. However, when unsatisfied with a transaction, they tend to give no feedback at all, even when the seller has first given positive feedback. Sellers provide more feedback and typically provide their feedback before the buyer, because they are more experienced, have less fear of retaliation and want to enlarge their feedback history.

It is simple to use the statistics reported in Table 7b in (?) for back-of-the-envelope calculations of an imaginary sequential game where a small buyer has to decide to provide a positive, negative, neutral feedback to a larger seller, or no feedback at all. Statistics suggest that providing positive feedback to the seller is the best move for a buyer. Of course, a buyer has additional motivations after an unsuccessful transaction, such as the desire to provide a fair judgment or to benefit the community as well as have the will to retaliate in anger. In these cases, the imaginary payoffs would change. The best strategy changes from providing positive feedback to providing no feedback at all. Punishing the other participant, but not so harshly to be punished back.

Resnick and Zeckhauser note that giving negative feedback has disincentives and that feedback that is not provided may hide negative feedback (?). Here, we highlight that the pressure to comply and defect is stronger for an individual with a less mature reputation (because she will fear more retaliation, as negative feedback will be more visible) and for an individual with fewer transactions than the one she has transacted with (because pressure is stronger). These dynamics may be self-reinforcing. Both biases are stronger for the seller versus the buyer and for mature participants

³eBay subtracts negative feedback from positive ones, thus weighting them equivalently.

versus beginners. Because the number of transactions of a certain participant cannot be seen by the others, it becomes more difficult to distinguish a truly good seller from a mediocre one on the basis of the ratios of positive versus negative/neutral feedback alone. If dissatisfied buyers use “no feedback” as their strategy, and transactions with no feedback do not appear on a seller’s reputation history, a vicious dynamic may bring many mediocre sellers to appear on the same level, in terms of positive feedback, with reliable sellers. The large amount of positive feedback for certain participants may not be due to their quality, but simply to their many transactions.⁴ Therefore, bad apples can be hard to detect.

3 Some findings

In summary, eBay reputations are affected by “balance of power” conditions where more mature participants are favored over beginners, and both directly and indirectly, buyers are favored over sellers. What we expect is that sellers will provide feedback more often and before the buyer, because they are more experienced, fear retaliation less and want to enlarge their feedback history. Buyers, especially when of a smaller size, will tend not to give negative feedback for fear of retaliation, and will tend to provide positive feedback as a courtesy equilibrium. However, when unsatisfied with a transaction, they will tend to give no feedback at all, even when the seller has given first a positive feedback. The consequences of this phenomenon are that eBay reputations are both inflated towards positive (with too many positive) and biased against negative (with too many suspect “no feedback”).

If there is an imbalance of power on eBay, we can take that as evidence that ratings are inflated. The next step would be to see if the ratings are also skewed. We will seek to understand how this affects users.

Based on the above considerations, we would expect the following outcomes:

1. We would expect to find a positive correlation between maturity (as discussed above) and positive feedback (or feedback ratio). We would expect the causal relation to be not only from feedback to maturity (honest feedback being a proxy for quality), but also the reverse, in the sense that participant with large numbers of positive feedback will exert more psychological pressure on buyers.
2. We would expect sellers to provide more feedback, and more often before the buyer.
3. We would expect buyers who are dissatisfied with a transaction not to provide feedback rather than providing negative feedback, and we would expect this to trend to be the stronger the less mature the buyer. Hence, we would expect that a significant share of “no feedback” is actually “negative feedback,” and this share to rise with the maturity of the buyer (or decrease with the reduction of the maturity differential between buyer and seller).
4. We would expect the ratio of positive over total feedback (positive or negative) to be correlated with the difference in size between buyer and seller, that is, more positive feedback the more mature the seller and the larger the maturity differential between seller and buyer.

⁴Only if the system were operating optimally the feedback would be based on quality. In other words, rather than having quality determine the history of positive feedback, the history of positive feedback mimics and self-reinforce the *appearance* of quality.

Our current and preliminary results, based on an ongoing survey of eBay transactions, indeed suggest that the ratio of buyers providing a positive feedback to sellers declines with the “maturity” of the buyer. Conversely, the ratio of sellers providing positive feedback to buyers grows with the maturity of the sellers, although it goes down again with very large sellers (above 1000 unique positive feedback).

While these preliminary findings must be taken with caution, given the limited sample size we are considering (transactions over three days in consumer electronics), they suggest the existence of dynamics similar to the ones we have described in the sections above: small buyers feel more compelled to provide positive feedbacks to sellers, but more mature buyers will more frequently adopt the “no feedback” strategy.

In addition, (?) show that negative feedback given to the seller becomes less frequent with the growing maturity of the sellers (even more so than for mature buyers). Since sellers are in general more mature than buyers, the data reported by (?) is also compatible with a balance of power hypothesis.⁵

Again (?) report valuable information about the order of reported feedback. It is possible that a war of attrition starts between buyer and sellers with equal (or unequal) maturity after unsatisfactory experiences. This could explain why feedback is not given. As in poker, those who go first are in a weaker position. On eBay, the buyer is generally less experienced than the seller, and he is also more likely to offer his feedback first.

We will verify whether buyers who are also sellers (although not necessarily predominantly so) tend to give on average better responses. We also want to consider if there is a correlation between a participants’ negative feedback and the number of transaction that she participated to without receiving feedback.

We also note a interesting discrepancy in table 7b in (?). When the buyer moves first and provides a positive feedback, the seller is very likely to reciprocate. However, when the seller moves first and provides positive feedback, the buyer is much more likely to offer no feedback at all. This suggests two conclusions: the buyer is moving first to induce a courtesy equilibrium (or because certain buyers have too many transactions not to adopt such a simple strategy). However, a large number of buyers do not answer this call. This number is significant, as the general trend is for positive feedback to be reciprocated. Since this particular relation between positive feedback and no feedback for the buyer only takes place under these conditions, we argue that it provides evidence compatible with the hypothesis that “no feedback” is a proxy for negative feedback.

As our gathering and analysis of data continues, we plan to extend our analysis to consider the impact of “maturity differentials” between buyers and sellers on the feedback they provide as well as the timing of their offers.

4 Consequences and Solutions

Because positive feedback are often drawn by courtesy or fear of retaliation, and because the lack of feedback hides potential negative experiences, reputations do not offer accurate information of quality. Since eBay does not list the number of total transactions, it is not possible to know which

⁵(?) also show that sellers give negative feedback more often (although still very rarely). We would like to test if this is due to a size differential between buyer and seller. Note that sellers provide more positive feedback as well as negative feedback, further evidence of balance of power.

participants benefit the most from these skewed feedback. eBay reputations may be both inflated towards positive and biased against negative feedback, but in an unequal way: as discussed above, a vicious-circle type of dynamics favors mediocre sellers making them appear on the same level (in terms of positive feedback) with truly good sellers.

If this is true, then why does eBay's reputation system seem to be working so well (see also (??))? First, the system is easy to use and to understand. There could also be mitigating factors, including ones noted by (??) initiation fees, stoning behavior, and the sense of community, which hides the bad apples but inspires trust. eBay also benefits of a particular phenomenon: in a typical market sellers compete for buyers; however, eBay has become such a focal point for sellers that buyers often compete for unique items offered there.

eBay reputations are biased just enough to inspire a general sense of trust and community (??), but not so much as to become completely devoid of meaning (or determine a lemon market situation (??)). This could be due to the fact that, in reality, the supply of bad sellers is not infinite.

Someone else may pay the price for the biases. Users acting according to personal interest rather than social benefit may cause the exit of small participants dissatisfied with the system and unwilling to even bother reporting their negative experience. Rather than checking how many sellers exited the eBay market because of negative feedback, knowing how many buyers left after only one transaction could be more interesting.

Would a system with more accurate feedback work better? (??) have proposed a sophisticated solution based on micro payments. The mechanism they propose is able to satisfy the features identified in (??) as critical for a reputation system. However, the forces which create balances of power in reputation systems are likely to persist in more sophisticated environments: buyers may still be unwilling to provide negative feedback for fear of retaliation, if the retribution for truthful feedback was smaller than the perceived retaliation risks. Retaliation still exists under a payment system if participants feel a stronger incentive (or threat to) to retaliate than the payment incentives they receive. In other words, a payment system would have to end up considering additional, non monetary motivations. At the same time it would have to be simple enough to be understood by a vast set of participants. Otherwise, rather than rationality and game theory, participants would adopt heuristics influenced by peer pressure, indecision about one's own evaluation, conformity, different perception of quality, and uncertainty about the distribution of quality over several transactions.

We make therefore two simple, alternative proposals. The first is to require that the seller provides the first feedback (which would decrease seller's power on the buyer) or to automate buyer feedback altogether, where possible. An eBay buyer who pays quickly and efficiently should have her positive feedback awarded automatically. If she has paid the correct amount using an acceptable or agreed upon method within the time specified as well as providing accurate information (i.e. shipping address) then her part of the bargain is complete and the system notes that she completed her transaction satisfactorily. eBay and PayPal already collect the information needed to award feedback in this case.⁶ If buyer's feedback were be automated, buyers would be less afraid to give accurate feedback, and there would be fewer occasions for colluding equilibria. A post-questionnaire, such as those prepared by Andale.com, could cast light on the decision process of eBay users.

The second proposal is to give reputations scores together with total number of transactions, and to give distinct summaries for buyer and seller reputation. By combining an automated buyer feedback and the report of total number of transactions for each participant, one could reduce

⁶We realize that eBay does not have complete information on buyers in all cases such as checks and money orders, however a substantial number of transactions happen with electronic payment.

courtesy-retaliation fear bias without dramatically altering the “feel good” eBay atmosphere, since many participants could use the “no feedback” approach. While negative feedback may not rise (disrupting the atmosphere), the “no feedback” portion would now be more recognizable and could be used as additional information and to reduce the imbalances between participants.

In established marketplaces and economic arenas, laws are devised to protect weaker agents (such as minority shareholders or entrant competitors) from imbalances of power and collusion. As peer to peer systems become more sophisticated and economically significant, similar protections will have to be devised to protect “peers” from what we have shown being the emergence of “unequals.” Our two proposals for eBay reputation system go in that direction.

5 Conclusions

In this paper, we have discussed how the difference between buyer and seller maturity on eBay can create “balance of power” conditions for feedback information that affects feedback in favor of the sellers. We have discussed some preliminary evidence supporting our hypothesis.

The outcomes we discuss do not seem to be related to intentionally misleading behavior. More simply, the system creates incentives biased towards market power (balance of power) and skewed reputations. With more complex auction possibilities coming in the future, limits of this reputation system could become a burden. Currently proposed solutions based on payment mechanisms have limits too. We propose a simpler approach based on automated buyer feedback and reporting of transaction numbers. We plan to extend our empirical analysis to further scrutiny our hypotheses.

References