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The eBay Community of Traders**

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ABSTRACT

eBay provides an online auction venue for remote and anonymous individuals to realize gains from trade. As a venue it never sees the items sold, verifies the item listings, handles settlements, or represents either the buyer or seller. Despite the associated incentive problems over five million auctions are active on an average day. Trading is based on trust among members of its community, and trust is supported by a multilateral reputation mechanism based on user feedback. eBay supplements the reputation mechanism with rules and policies that mitigate incentive problems and support trust among users and trust between users and the company. Reputations and the rules and policies provide a private ordering of eBay's Internet community. This paper examines that private ordering in the context of market strategy and in the shadow of the public order.

Private Ordering on the Internet: The eBay Community of Traders¹

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Since its founding in 1995 eBay has been one of the true successes of the Internet. eBay hosted person-to-person online auctions for the members of its community. That community was composed of anonymous and remote individuals who were unlikely to have repeat dealings. Trade was impersonal with, for example, a seller knowing only the eBay user name of bidders until the winner of the auction provided a shipping address. Buyers did not have an opportunity to inspect the goods on which they bid, and the winning bidder paid for the item prior to shipment. Moreover, since enforcement was costly, trades were neither supported by contracts nor in most cases by public enforcement of implicit contracts. Unlike an offline auction house eBay never saw the items offered for sale nor certified their authenticity or quality or the accuracy of the descriptions provided by the sellers. Furthermore, eBay did not act as an agent of the seller or the buyer, certify the credit worthiness of buyers, or play a role in settling the transaction.² Despite the inherent incentive problems due to asymmetric information, moral hazard, and unenforceability of contracts and despite eBay's very limited role, trade flourished with over five million auctions active on an average day.

On its Web site eBay explained, "The key to eBay's success is trust. Trust between the buyers and sellers who make up the eBay community. And trust between the user and eBay, the company." Trust among the members of the eBay community was supported by a multilateral online reputation mechanism based on feedback provided voluntarily by the transacting parties. The reputation mechanism not only provided information to traders but also established a target for punishment. The mechanism was supplemented by rules designed by eBay to govern who could be a member, what

¹ This paper has benefited from interviews with eBay personnel involved with its community and private ordering. Those interviews and independent research are reflected in the case "eBay: Private Ordering for an Online Community," P-37, Graduate School of Business, Stanford University, written by David Hoyt under the author's supervision. The author would like to thank David Hoyt, John McMillan, and Garth Saloner for their helpful comments. This research has been supported by NSF Grant No. SES-0111729.

² eBay thus differed from other venues such as the New York Stock Exchange, where in its early years members (brokers) acted as agents of investors, provided information about creditworthiness, used their information about prices, and helped enforce contracts through a "miniature legal system." (Banner 1998)

members could trade, and how they were to conduct themselves on its Web site. The mechanism was also supported by programs designed to reduce the cost of trust. The multilateral online reputation mechanism, the rules, and the programs supported the private ordering of eBay's community.

This private ordering existed in the shadow of the public order. Public order in the form of policing for activities such as fraud or the breach of implicit contracts was costly to access for a community of dispersed individuals whose only interaction was through a Web site. The public order also led eBay to position itself to avoid regulations and liabilities such as those associated with the sale of items that infringe copyrights. The public order also impacted the scope of its activities as well as the relations between the company and its members and the company.

eBay was established as a Web site to support trading of Pez dispensers, and when people began to offer other items for sale, the founder charged a fee in an attempt to stop them. Inundated by checks from the undissuaded, he decided to expand the site to allow more items to be traded. Trade grew spontaneously at eBay as it did at other Web sites.³ This growth was driven by the considerable gains to trade available to buyers and sellers, and those gains may well have been sufficient to sustain online auction markets. eBay's success, however, also depended on the cost of trust borne by market participants and that cost depended on its private ordering.

In the early days of eBay, order occurred spontaneously among the members of the community. Members established informal standards, provided feedback on other members' performance, and policed the site. Some traders formed neighborhood watch groups to police their trading areas; i.e., the items in which they traded. One group of six members that called itself "The Posse" actively monitored activity on the eBay site. Traders who violated implicit standards could quickly have their reputations damaged by The Posse. Spontaneous order was facilitated by the relatively small number of traders and listings (in the thousands) and by the communication they exchanged through email and on bulletin boards.

Early in its existence eBay established its Feedback Forum where members could provide feedback on other members, enabling them to establish an online reputation. The spontaneous private ordering that developed was supported by the basic honesty of

people and by a set of norms that continued to guide eBay and which the company hoped would guide its members as well:

eBay is a community where we encourage **open and honest communication** between all of our members. We believe in the following five basic values.

We believe people are basically good.

We believe everyone has something to contribute.

We believe that an honest, open environment can bring out the best in people.

We recognize and respect everyone as a unique individual.

We encourage you to treat others the way that you want to be treated.⁴

As online person-to-person trading caught on, the eBay community grew rapidly both in the number of items offered for sale and the size of the community. By mid-2001 eBay's community included 34 million members who traded in thousands of product categories with annual transactions of nearly \$9 billion. As it grew, its members became more anonymous and distant. The challenge for eBay was to continue to enable members to have trust in their trading partners. Opportunism, however, posed a threat to trust among members of the community. Even in the absence of fraud, disputes arose among members. Disputes pertained, for example, to the accuracy of the item description provided by the seller, the timeliness of shipping, packaging and damage, payments, and a host of other issues. Moreover, the items themselves could cause problems as in the case of pirated software or recalled products. These problems resulted in an elaboration of the rules developed by eBay to support trust and the online reputation mechanism.

This paper examines the private ordering of eBay's community of traders as a component of its business strategy.⁵ The next section describes briefly the nature of eBay's auctions and its positioning in its legal environment, and the following section introduces the private ordering. eBay's situation is then related to historical accounts of reputation mechanisms that developed in response to incentive problems arising in trade among remote and anonymous parties. The characteristics of eBay's business strategy are then considered followed by the role of the multilateral online reputation mechanism in mitigating incentive problems and reducing the cost of trust. The feedback and reputation accounting system developed by eBay is then considered, and eBay's support

³ See Kollock (1999) for a discussion of the spontaneous development of trade on sites not sponsored by a company.

⁴ Emphasis in the original.

⁵ In the typology of Armstrong and Hagel (1996) eBay has a "community of transaction" focusing on trades and has organized "communities of interest" that focus on particular categories of items.

of that system to reduce the cost of trust is analyzed. The relation to public order is then developed, and conclusions are offered in the final section.

EBAY AND ITS AUCTIONS

eBay provided a venue for online person-to-person trading that matched buyers and sellers allowing them to realize gains from trade. Its market format was an auction in which sellers described the items offered, including photographs, and posted fixed ending dates, an initial minimum bid, and a bid increment.⁶ Sellers had the option of setting a secret reserve price that was revealed only by a bid exceeding the reserve. Sellers also provided information on shipping and handling charges, payment methods, and shipping and payments schedules. Bidders could choose their initial bid and authorize eBay to automatically increase their bid to a specified limit in response to a bid by another member.⁷ If the reserve price were met, the winning bidder was obligated to complete the transaction. The buyer and seller exchanged email messages to arrange for payment and shipping. The seller paid eBay a small fee between \$0.30 and \$3.30 for each listing and for each completed sale paid a commission that depended on the transaction price. The commission was 5% for the first \$25 of the sale price, 2.5% for the amount between \$25 and \$1,000, and 1.25% for the amount above \$1,000.⁸ For the first half of 2001 eBay's revenue was \$335 million, and its net income was \$45.7 million.

eBay's rules were contained in the user agreement all members were required to accept. In addition to providing legal protection to the company and making clear that it provided only a venue for trading, the agreement identified the scope of activity on its site and who could conduct it.⁹ For example, minors were not allowed to use its site. The agreement described how buying and selling operated and the services eBay provided to assist buyers and sellers. The agreement warned, "Please use caution, common sense, and practice safe trading when using our site."

⁶ See Bajari and Hortacsu (2000) for a theoretical and empirical study of eBay auctions.

⁷ The auction thus has the feature of a Vickery auction where the winner paid the valuation of the second-highest bidder.

⁸ The fee on real estate and vehicles was fixed because of government regulations. eBay also collected a small fee for posting a secret reserve price. It also received revenue from advertising and partnering.

⁹ The user agreement stated that eBay did not participate in any transaction. "As a result, we have no control over the quality, safety, or legality of the items advertised, the truth or accuracy of the listings, the

POSITIONING RELATIVE TO THE PUBLIC ORDER

eBay differed from traditional auction houses in a number of ways. First, it neither inspected nor saw the items for sale. Second, it did not serve as an agent of any trader. Third, it did not authenticate items or put its reputation or warranty behind any item. Fourth, it was not involved in the transaction between the buyer and seller. Instead, eBay functioned much like the classified ad pages in a newspaper. These distinctions were important because eBay sought to position itself outside the reach of state auction laws and regulations.

A crucial issue for eBay was whether it could be held liable for the listings provided by sellers or for postings on its bulletin boards. The Communications Decency Act (CDA) of 1996 shielded an Internet service provider from liability for what was said or written on an Internet site, whereas an Internet content provider could be liable for postings. eBay has positioned itself as an Internet service provider thus receiving protection under the CDA. That positioning, however, meant that eBay had to be careful not to provide content, such as commenting on the authenticity of items listed for sale. Instead, eBay provided links to sites where users could obtain opinions, authentication, and grading of items ranging from coins to beanie babies to comics.

Even though eBay had avoided the reach of state auction laws, it was subject to a host of other state laws. Under a California law allowing individuals to sue companies that violated state law, eBay was sued by individuals claiming that pirated software and fake sports memorabilia were sold on its site. In both these cases the judges ruled that eBay was protected by the CDA from liability for what sellers offered on its site.¹⁰

eBay also positioned itself relative to violations of the law by the buyers and sellers on its site. A small number of sellers engaged in fraud, others sold items that violated copyrights, and others sold banned items. eBay monitored its site for possible fraud, and the members of its trading community also monitored for fraud. For example, eBay used shill hunter software to identify shill bidding rings.

Although eBay monitored for possible fraud, it did not monitor for copyright violations, since doing so might make it liable for any infringing items it failed to find. A

ability of sellers to sell items or the ability of buyers to buy items. We cannot ensure that a buyer or seller will actually complete a transaction.”

¹⁰ The text of one opinion, which was not officially published, can be found at: http://www.2001law.com/article_429.htm. The other case, *Gentry v. eBay, Inc.*, can be found at: <http://legal.web.aol.com/decisions/dldecen/gentry.html>

federal Court of Appeals decision in *Fonovisa, Inc. v. Cherry Auctions, Inc.* held that an official swap meet owner was liable for copyright violations because pirated recordings were sold on its venue.¹¹ The Court ruled that the owner had the ability to monitor its site for illegal items and failed to do so. eBay had some ability to monitor its site for possible copyright violations, but with nearly one million new listings a day, complete monitoring was virtually impossible. Moreover, the CDA excluded intellectual property, so that shield was problematic.

The Digital Millennium Copyright Act (DCMA) of 1998 clarified the monitoring issue by stating that Web sites were liable if they monitored for intellectual property infringements and failed to find some infringing items. A site, however, had a safe harbor if it did not monitor, provided it removed violating items when notified by a copyright holder. eBay had already implemented such a program, now referred to as VeRO (verified rights owner), and it decided to rely on that program rather than attempt to monitor listings and be exposed to liability for infringing items it missed. Monitoring was thus performed by the copyright holders, who asked eBay to remove infringing items from its site. eBay assisted the copyright holders by creating a system in which VeRO participants could query on key words and automatically receive by email notification of any listing with those key words.

This did not satisfy the Business Software Alliance (BSA) which developed a model code requiring Internet sites to pre-screen listings for copyright violations. Even though Amazon.com agreed to the code, eBay refused to do so because of the potential liability under the DCMA. As a result of the logic of the two California court rulings, eBay began restricted monitoring by examining only what was within the “Four Corners” of a seller’s listing, dropping listings so identified as infringing a copyright. eBay had concluded that the CDA provided protection from liability if it relied only on the content of the listing provided by the seller. The Four Corners policy also strengthened eBay’s bargaining position relative to the BSA as the two parties attempted to find a mutually agreeable policy.

Intellectual property law, however, provided little protection for eBay’s database. In a 1991 decision *Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S., 340, the U.S. Supreme Court held that “facts,” even if collected through “sweat and effort,”

¹¹ For the text of the ruling, see: http://www.law.cornell.edu/copyright/cases/76_F3d_259.htm

remained in the public domain. Earlier court decisions had held that databases were protected by copyright under the “sweat of the brow” doctrine. This doctrine prevailed despite 1976 amendments to the Copyright Act that required a degree of creativity or originality for compilations of data to receive copyright protection. In *Feist* the court affirmed the originality and creativity requirement and stated that “all facts—scientific, historical, biographical and news of the day ... are part of the public domain available to every person.”¹² This ruling gave auction aggregators a possible legal basis for extracting “facts” from eBay and other online auction sites.¹³

Bidders’ Edge, an auction aggregator, used a robot to copy all of eBay’s auction listings and make them available to users of its Web sites. Bidders’ Edge argued that the listings were compilations of facts and hence under *Feist* were not protected by copyright. The public order often provided a number of avenues for pursuing an issue. eBay might have been able to meet the creativity test, but in doing so it might risk being viewed as an Internet content provider and subject to liabilities. eBay was able to protect its database from robotic searches by Bidders’ Edge when a federal court concluded that the aggregator had violated trespass law by law ignoring warnings not to use robots or spiders.

By either good fortune or considerable foresight eBay had also positioned itself well in another part of the public order. A competitor BidBay entered the online auction market with a logo and cover page that closely resembled eBay’s. In addition to the similarity of its name, BidBay’s cover page used the same color scheme, location of the company name, and location of the menu bar, search window, and category list as did eBay. In intellectual property law, the most defensible trademarks are those that are “arbitrary and fanciful.” An eBay attorney explained, “eBay is a completely coined name. It means nothing.”¹⁴ eBay filed a trademark infringement lawsuit against BidBay in federal court.

¹² For example, the telephone white pages cannot be copyrighted because they are simply an alphabetical list of names and numbers, whereas the Yellow Pages can be copyrighted because the information is arranged by category, which has a degree of originality.

¹³ See the case *eBay and Data Protection*, P-33, Graduate School of Business, Stanford University, 2000.

¹⁴ *San Jose Mercury News*, July 31, 2001.

PRIVATE ORDERING

eBay's principal objective was to achieve order for its community so that buyers and sellers could trust each other and realize the gains from trade. Since participation in the community was voluntary, the size and composition of the community itself was a function of the efficacy of the private ordering. That is, the community was endogenous to the private ordering it sustained. The product of its private ordering was trust. Trust among remote and anonymous traders who interacted infrequently and then only through impersonal trading could be sustained through reputations carried by the traders.

The establishment, maintenance, and updating of an online reputation required information and communication. Those with the best information were the traders themselves, since they knew whether the quality of the merchandise was as represented, payment had been timely, and the good was delivered as promised. Within the broader eBay community of users were a number of communities of traders in particular items, primarily collectibles such as Pez dispensers. These communities had repeated transactions with the same traders which allowed bilateral reputations to be established. Most members, however, would transact with many different parties rather than have repeat dealings with the same person, so bilateral reputation formation was insufficient to establish trust. Resnick and Zeckhauser (2001), for example, studied 138,158 buyer-seller pairs and found few repeat pairs. Moreover, the "vast majority" of the repeat pairs involved transactions conducted in close proximity presumably to save shipping costs.

Although bilateral reputation formation could not be relied on to engender widespread trust, multilateral reputation mechanism, where a seller's reputation was based on the experiences of all those who traded with her, could generate trust. A multilateral reputation mechanism also provided for uncoordinated, multilateral punishment of a seller who violated the trust of other traders.¹⁵ Punishment was administered by not bidding on items offered by a seller with a bad reputation or bidding less for those items or in the case of sellers by refusing to sell to a buyer with a bad reputation.¹⁶ This multilateral reputation mechanism generated incentives similar to those in a long-term relationship between a buyer and a seller.

¹⁵ See Kandori (1992) for a theory of multilateral or community enforcement of norms.

¹⁶ As indicated below, eBay could also administer punishment by suspending or banning a user or by providing information to public law enforcement authorities.

McMillan and Woodruff (2000) argued that for a private ordering to solve the incentive problems resulting from informational asymmetries and the unenforceability of agreements both organization and coordination of punishments were required. They wrote (p. 2458):

In communities where people can hide behind their anonymity, private order, if it is to operate at all, must be organized. Private-order organizations in notably diverse settings, from medieval Europe to present-day Mexico, work in similar ways. An organization such as a market intermediary or a trade association disseminates information about contractual breaches and coordinates the community's response to breaches. The usual sanction is to boycott the offender.

In contrast, the private order established among the members of eBay's community was not formally organized by its members nor was the punishment coordinated.¹⁷ Instead, the Internet enabled the collection and transmission of transaction and reputation information that allowed spontaneous private order to function with little organization or coordination. eBay did not participate in the reputation and information systems other than to establish rules such as whether feedback could be retracted. Punishment was voluntary and uncoordinated and occurred because individuals feared that they would have a bad experience with a member with a bad reputation, as others had had in the past. The effectiveness of this system was reflected by the importance members place on their online reputations and on the feedback they received.

A private ordering can be supplemented through design to increase its efficacy. Over time eBay developed a set of rules for its community to reduce the cost of trust and provided a set of services to reduce the costs of trading. In some cases, the rules were a response to incidents that identified weaknesses in the private ordering. For example, to avoid email harvesting and the spamming of members, eBay restricted the availability of email addresses to the participants in an auction. Similarly, as the community grew and became more anonymous, eBay required members who were not otherwise identifiable to provide credit card information to establish their identity.

¹⁷ As discussed below eBay could suspend members as punishment.

TRUST AMONG REMOTE AND ANONYMOUS TRADERS: THEORY AND HISTORICAL ACCOUNTS

eBay's challenge was to generate trust among traders who were remote and anonymous and would never meet face-to-face. Moreover, they might well only trade once with any particular person. In addition, no institution provided enforcement of agreements or implicit contracts. As McMillan and Woodruff indicate, the problem of developing trade in such situations has analogies in history. In many of these cases institutions were also not present, and in other cases institutions arose in response to particular information and reliance problems. eBay's case was similar in many respects. For example, trade developed almost spontaneously on its site just as trade emerged among merchants a millennium earlier. eBay's challenge was to support order for its community of traders as it grew and became more diverse, remote, and anonymous.

A private ordering could be established through face-to-face and repeated interactions that allowed norms to develop and be sustained. Ellickson (1991) studied the norms of ranchers and homeowners in Shasta County, California and found that they settled disputes based on norms largely without reliance on the law and often in a manner contrary to the law. The ranchers and homeowners were able to rely on norms and punishments, primarily through gossip, because they had repeated interactions and were proximate. That is, repetition and proximity allowed norms to be respected. eBay's community, however, was remote and anonymous.

The development of remote trade in the Mediterranean and through fairs in medieval Europe occurred in conjunction with the establishment of offices and organizations for the maintenance of reputations among self-interested traders. The law merchant studied by Milgrom, North, and Weingast (1990) was an office that allowed reputations of traders to be developed and communicated to those with whom they might trade. Merchants would travel long distances to fairs to display their goods and reach agreements on trades to be executed in the future. Such trades relied on the honesty of the merchants, yet there was no government to enforce agreements. The office of the law merchant arose to help resolve the honesty problem and establish trust among the merchants. The law merchant was a merchant with expertise in the good in dispute who received information about traders, rendered judgments in the event of a dispute, kept a record of each merchant's reputation, and provided that information to other merchants.

This system worked because merchants anticipated future trades even though those trades might be with other merchants; i.e., the incentives were multilateral.

The law merchant and the reputation mechanism mitigated a number of incentive problems arising from the timing of trades, moral hazard associated with the quality of the goods delivered, and asymmetric information about the character and intentions of traders. eBay's multilateral reputation mechanism had many of the same features with the Internet serving the informational and reputation accounting functions as well as facilitating dispute resolution, as discussed below.

Present day trade associations serve many of the same roles as the law merchant. Woodruff (1998) studied the Mexican footwear industry, which was served by two trade associations that supported a multilateral reputation mechanism. The associations collected and aggregated data on whether retailers paid their bills, returned merchandise claiming it was defective, or cancelled orders. A manufacturer could obtain a report on a retailer before shipping products, so retailers had an incentive to invest in their reputations. The associations also helped resolve disputes and collect delinquent payments. Because retailers feared being cut off from supplies, most of the disputes between a manufacturer and a retailer were settled quickly and without use of the courts. This mechanism was facilitated by the geographic proximity of the manufacturers, their control of three-quarters of the production in Mexico, and a set of captive retailers.¹⁸

Greif (1989)(1993) analyzed the ethnically-linked Maghribi traders who operated in the Mediterranean in the eleventh century. The traders found it efficient to hire each other as agents to conduct transactions in distant ports. For example, traders shipped goods to their agents in other ports who were responsible for sales and remittance. The Maghribi traders functioned as a coalition and developed an information network in support of a multilateral reputation mechanism that induced members to honor the terms of implicit contracts rather than take advantage of their distant principals. Enforcement took the form of subjecting violators to multilateral punishment through the refusal by coalition members to hire the violator as an agent in the future. The implicit contracts were also supported by reliance on the Merchants' Law, which provided mutual understandings about how agents were to deal with circumstances not explicitly covered

¹⁸ When import restrictions were loosened in 1988, imports captured nearly one-third of the Mexican market. Imports gave retailers alternative sources of supplies, and their incentives to maintain reputations with Mexican manufacturers diminished.

by the principal's instructions.¹⁹ The result was a horizontal private ordering among approximate equals.

Long-distance trade also flourished in the Mediterranean in the twelfth century because merchants in the Italian city-states developed means of establishing trust. Merchant guilds enabled collective action, including the provision of sanctions, among self-interested merchants. In contrast to the Maghribi traders, the merchants of Genoa developed quite a different means of facilitating trade. To deal with the agency problems inherent in long-distance trade, they invested in overseas possessions, "such as posts, houses, customs agreements, legal rights, and so on," (Greif 1994) that facilitated trade with Africa and Europe.²⁰ The Genoese invested in overseas possessions after overcoming a collective action problem among the merchants by consolidating power in a single family that extended its reach through marriage. The merchants then were able to finance the investments and establish a military capability to protect the investments and defend against rivals from Pisa and Venice. In the case of Genoa, long-distance trade was facilitated by a vertical private ordering corresponding to autocratic order through a dominant family.

As in the case of the Maghribi traders the reputation mechanism operative in eBay's community originally developed horizontally. As the community grew, the mechanism was supported and supplemented by eBay. In contrast to the Genoa merchants eBay did not act autocratically in supporting the reputation mechanism but instead encouraged the participation of community members. eBay supplemented the mechanism with services intended to reduce trading costs and address imperfections. eBay thus resembled more the community of Maghribi traders than the merchants of Genoa. eBay's role was much like the Merchants' Law, which supplemented the reputation mechanism by dealing with the incompleteness of the reputation mechanism.

Clay (1997) studied trade in California during the Mexican era of 1830 to 1846. The nexus of trade was formed by merchants located near the ports. The merchants traded with local residents and with ships traveling the California coast and with ports in Hawaii, Mexico, and Europe. As with the Maghribi traders, the merchants had fixed locations but bought and sold goods in other ports by hiring merchants located in those

¹⁹ The incentives that supported adherence to the implicit contracts also served as an entry barrier which provided an incentive to maintain the coalition.

²⁰ See Lopez (1976).

ports as agents. Merchants thus hired each other as agents. Because the agents were self-interested, remotely located, and credit was extended for a year or more, opportunism was possible. Yet little occurred. This was not the result of law and its enforcement, since local judicial officers did not have enforcement authority. Instead, order and trust were provided privately.

The merchants developed a loose coalition within which they earned reputations for trustworthiness. Trust resulted because the merchants anticipated future trades and could be punished in proportion to the extent of their opportunism. Punishment consisted of the refusal to do business with the offending merchant for some period of time. The resulting trust was supported by an informal information network in which letters and news were brought by the ships. Thus, a merchant in Monterey could learn of prices, supply, and demand in Los Angeles and make inferences about how his agent there had performed. In the case of eBay, the Internet served as the information network.

Arrangements among the merchants were governed by implicit contracts, the terms of which were adjusted in the event of delivery of goods of less than the anticipated quality. In the case of damaged goods “merchants often arranged for an impartial survey by third parties. (p. 241)” Clay noted (p. 243), “merchants attempted to preclude disputes and privately resolve those that arose,” generally in an “amicable” manner. eBay’s private ordering included both opportunities for third-party opinions and a dispute resolution mechanism to encourage resolution within the community.

Despite the similarities, eBay’s circumstances differed significantly from these historical accounts. First, except for specialized neighborhoods there was little likelihood of reciprocity, as in the case of merchants hiring each other as agents. Second, repeated interactions among traders on eBay were a small fraction of the opportunities for trade. Both of these factors hindered the development of bilateral reputations. Moreover, many of the buyers and some of the sellers were infrequent rather than repeat players. The incentives provided by future interactions were typically one-sided in the eBay community, resting with the sellers. However, as in the case of the merchants in Mexican California, reputations were established multilaterally. Furthermore, information was available at virtually no cost, allowing reputations to be assessed by infrequent as well as frequent traders. Although traders on eBay were remote and would never meet, reputation substituted for face-to-face and repeated interactions.

In contrast to the incentive problems associated with the shipment of goods to agents in advance of sales and remittance, buyers on eBay typically paid before they received the good. The seller thus had an opportunity to take advantage of the buyer by providing an exaggerated description of the item, delaying shipping, or not packaging the item carefully for shipping. The burden of the reputation mechanism thus rested primarily with sellers to reassure buyers.²¹

In contrast to the private ordering that arose among distant traders in medieval Europe and in California, the private ordering of eBay's community was supported by a company. eBay's role in the private ordering was more active than any player in a system of norms or in a coalition or association. eBay provided the infrastructure for, and owned, the venue and supported the private ordering. eBay explicitly designed its private ordering with the objective of benefiting the members of the community as well as the enterprise. With respect to the development of order within its community, eBay's interests were closely aligned with those of the members.²² The common interest was to have a safe, well-lighted, and efficient venue where members could have trust in each other and in eBay itself.

STRATEGY AND THE DRIVERS OF SUCCESS

The economics of eBay's business can be characterized in terms of the gains from trade available to its community and the costs of supporting that community. The primary source of value was the matching of buyers and sellers to realize gains from trade. The gains were large for people selling no longer used items, collectors, and people operating businesses on its site. Since eBay's revenue was a function of listings and trades, its objective was to enable its community to develop trust and do so in a manner that was good for the enterprise. In the short-run its costs were largely fixed, and in the longer-run its costs were associated with support staff and servers to handle the volume of listings and trades, marketing expenses, product development, and administration. Putting aside the pricing issue, maximizing its profits was nearly the same as maximizing the number of items offered on its site.²³ Trust was essential to its strategy. eBay

²¹ Buyers also had incentives to establish a reputation to assure sellers that they would not renege on a winning bid. This is considered in more detail below.

²² The interests of eBay and its community were opposed on some matters, as in the case of pricing.

²³ eBay also considered the costs of certain sales in deciding the scope of its venue. It chose not to allow the sale of wine because of the complexity of the tax and regulation systems across the states. Similarly,

explicitly sought to develop trust among the members of its community and trust between its community and the company.

The gains from trade depended on buyers' valuations of the items listed, sellers' opportunity costs, trading costs, and what has been referred to as the "cost of trust." The cost of trust is the loss of value to the community due to concerns about the trustworthiness of trading partners. eBay's role was to provide an efficient venue for trading and to reduce trading costs and the cost of trust. Trading costs included the cost of listing items and executing the transactions. For example, eBay helped reduce trading costs by developing a tool to automate listings for sellers.²⁴ eBay also reduced trading costs by creating local markets in which information and delivery costs could be reduced. By mid-2001 eBay had local sites for 60 cities in the United States.

To increase the value of its site, eBay provided a set of services. It allowed sellers to link each of their auctions to a page listing their other eBay auctions. eBay took this a step further by allowing sellers to set up personalized virtual storefronts. It did not, however, allow sellers to link to other Web sites, such as their auctions on other sites. eBay sought to prevent sellers from taking transaction offsite, as considered in more detail below.

Also, eBay provided services to "Power Sellers," members who had minimum monthly sales of \$2,000 and 98% positive feedback. Power Sellers, for example, were allowed to purchase banner ads on eBay's site. They were also provided with a variety of benefits, including dedicated email, a dedicated account manager, and a hotline.

Buyers also incurred transaction costs. One such cost was associated with searching for items. An efficient search engine was one means of reducing the costs to buyers, but another was the selection of categories and subcategories of items that allowed a buyer to browse efficiently down an aisle of interest. eBay also allowed members to establish a "My eBay" folder which listed transactions, bids and their status, and tracked auctions selected by the buyer. Trading costs for both buyers and sellers were also reduced by providing a payment system, Billpoint, as an alternative to the independently-provided service PayPal. eBay was also responsive to buyers' and sellers' concerns. For example, it had a policy of answering members' email promptly.

eBay did not allow listings for tobacco and firearms. eBay's Butterfields offline auction house did hold firearms auctions.

²⁴ An uproar from sellers occurred in 2001 when eBay began to charge a fee for the use of the listing tool.

Economies of scale and scope were present on both the demand and supply sides. On the supply side the marginal cost of expanding the venue to accommodate additional traders was likely below average cost. Similarly, broadening the scope of product offerings to include automobiles, real estate, and other items lowered the average cost of hosting auctions.

The principal economies of scale and scope, however, were not on the supply side but on the demand side. The demand-side economies of scope resulted from the greater benefits to buyers and sellers when a broader array of items were listed. The demand-side economies of scale resulted from network externalities characteristic of many Internet services. Each additional member of the eBay community provided a positive externality to the other members. In practice, each member had an interest in only a very small subset of the items sold on eBay, so the external benefits were far smaller, but certainly important.

In addition, as its trading grew, users became locked in to eBay. A seller might have an interest in switching to Yahoo Auctions, which was free, but unless buyers also switched the seller would face a thin market. Buyers would not switch because the other sellers remained on eBay, and the sellers remained there because the buyers were there. Members who traded in a particular class of items could also collectively switch to another online auction site, but they would incur high costs since coordinating their switching would be extremely difficult.²⁵ Since other companies including AuctionWatch.com provided services, including account management, to sellers, one recurring threat to eBay's lock-in was that large sellers might be attracted away by a site such as AuctionWatch.com.

eBay also had the opportunity to offer complementary goods, which in its case represented alternative formats for sales as well as an expansion in the scope of item categories. For example, it acquired half.com, where items were sold at fixed prices. Network externalities and the provision of complementary goods both contributed to the demand-side economies of scale.

Working in the opposite direction from these demand-side increasing returns was the potential for deterioration in trust among increasingly remote and anonymous traders as the size of the community grew. The demand-side increasing returns generated

²⁵ See Saloner, Shepard, and Podolny (2001, p. 313).

positive feedback that outweighed the increasing cost of trust, and the U.S. online auction market tipped in favor of eBay. In addition to the demand-side economies eBay was the first mover in the U.S. market, and Yahoo Auctions, Amazon.com, and other online auction sites have been unable to wrest market share from eBay, even though some did not charge fees for listings or transactions.²⁶

The cost of trust was reduced by the feedback and reputation system, by allowing buyers to ask sellers questions about an item offered for sale, providing protection for buyers, policing the site for illegal items and activity, and responding to members' concerns. These costs also included providing capacity for and maintaining the online reputation system, providing safety and reducing fraud, avoiding and resolving disputes among members, and maintaining trust in eBay.

REDUCING THE COST OF TRUST

Buyers faced a variety of risks in trading on eBay's Web site. The seller could engage in outright fraud or could renege on a sale if the winning bid were less than the opportunity cost of putting the item up for sale again. A seller could provide exaggerated claims about the item, delay shipping the good until it was convenient to do so, or inadequately package the good risking damage during shipment. The buyer also posed certain risks for the seller. The buyer could renege on a transaction by refusing to pay for an item she won. At a minimum this imposed a time cost on the seller from having to re-list the item.²⁷ Similarly, the buyer could renege on a credit card payment. Because sellers shipped the items only after having received payment, however, the risks were primarily borne by the buyer.²⁸ Sellers thus had stronger incentives to assure buyers.

Reputation allowed both buyers and sellers to reassure their trading partners that they would complete the transaction as promised and not make promises they could not keep. Reputations were assets of the traders, and most members carefully guarded them.

²⁶ In contrast, Yahoo Auctions was the first-mover in Japan, and the market tipped in its favor. eBay has struggled in its attempt to overturn the tipping.

²⁷ If a transaction had a degree of urgency, the buyer and seller could use a payment service such as PayPal or Billpoint.

²⁸ Kollock (1999, p. 110) describes a norm of traders on a barter site for trading playing cards. The person with the fewer "references" (lower reputation) sent his card first, and the other trader sent her card only after receiving and inspecting the other card. Traders with similar reputations sent their cards simultaneously.

These assets were non-tradable and could not be transferred to other market sites.²⁹

Reputation had two kinds of effects. First, a bidder might be willing to bid more for an item offered by a seller with a strong reputation than for an identically-described item offered by a seller with a weak reputation. Second, more bidders might be willing to bid on the item offered by a seller with a stronger reputation. McDonald and Slawson (2000) estimated these two effects using eBay auction data. They found that a stronger reputation, as measured by the feedback accounting system discussed in the following section resulted in a higher winning bid.³⁰ They also found a greater number of bids for items offered by sellers with stronger reputations. Lucking-Reiley, Bryan, Prasad, and Reeves (2000) studied auctions of Indian-head pennies and found that the seller's positive feedback rating resulted in a statistically significant positive effect on the sales price, whereas negative feedback had the opposite but much larger effect. Similarly, Melnik and Alm (2000) studied auctions of gold coins and found a small but statistically significant positive effect of reputation on the sale price. Houser and Wooders (2000) found similar results for the auction of Pentium III processors. Resnick and Zeckhauser found that a stronger reputation of a seller increased the probability of a sale, but the effect on the price received was indeterminate. Although the empirical evidence is not overwhelming, it suggests that there is a return to the investment in a reputation, providing sellers with incentives to engender trust.

Members who anticipated trading repeatedly had strong incentives to form and maintain reputations. Many of the sellers on eBay were repeat traders who used eBay to conduct business or to supplement their incomes. Buyers transacted less frequently than sellers, so there was an asymmetry in the incentives for reputation maintenance. For example, in their sample of trades McDonald and Slawson found that the average eBay feedback rating of sellers was 53.6, whereas the average reputation of buyers was 23.2. Resnick and Zeckhauser found that the median feedback score of sellers in their sample was 33 and buyers was 8.

Traders had some means of directly addressing the trust issue. Sellers could make private assurances to buyers. For example, one seller stated on each listing:

²⁹ As discussed below user names and the associated reputations occasionally were sold, and eBay took steps to reduce the possible fraud.

³⁰ As Resnick, Zeckhauser, Friedman, and Kuwabara (2000) argue, this is consistent with a lemons model (Akerlof 1970).

“GUARANTEE: Our merchandise is unconditionally guaranteed as to originality and description. If you are dissatisfied for any reason the item may be returned for a full refund (less shipping) as long as it is returned in the same condition and within a three day inspection period.” More tangibly, sellers could offer their item as a hostage by accepting payment by credit card. A buyer then would know that if the item was not as described by the seller she could challenge the payment with the credit card company. The buyer would also know that the seller incurred the cost associated with payment by credit card, which could signal the seller’s intent on reassuring buyers. A buyer had little means of assuring the seller, however, that he would not renege. Such bonding was a poor substitute for reputation, however.

For high-value items eBay established eBay Premier, where auction houses and dealers would put their offline reputations behind the items they offered. Items such as fine art, wine, rare collectibles, and antiques were offered on eBay Premier. Sellers participating in eBay Premier provided a “Premier Guarantee” in which they stood behind the authenticity of their items.

FEEDBACK AND ACCOUNTING

An online reputation system required a feedback and accounting mechanism as well as communication of reputations to present and future trading partners. The Internet was ideal for these purposes.³¹ Feedback could be posted by traders and made available to potential buyers on the seller’s auction listings. The marginal costs of establishing and communicating reputations in this manner were nearly zero on the Internet. Moreover, feedback was durable, since storage costs were moderate.³²

The multilateral reputation mechanism was based on making feedback public, and members were encouraged but not obliged to do so. eBay stated, “You will probably want to make your Feedback Profile public because that generates trust and increases the likelihood that other eBay members will do business with you. After all, you’d probably want to see another member’s Feedback Profile before you bought from them, right?” Virtually all members made their feedback profile available.

³¹ See Avery, Resnick, and Zeckhauser (1999) for a theory of online evaluations similar to a reputation system.

³² Because of storage costs, however, eBay stored auction results only for the past month.

A member's feedback profile included the written comments of trading partners and a feedback rating. The written feedback provided important information but was time consuming to access. eBay thus reduced the information costs by aggregating the feedback. Feedback could be negative, neutral, or positive, and written comments could also be given. Positive feedback received +1 points, neutral feedback 0 points, and negative feedback -1 points. The aggregate score was reported as the "seller's rating" on an auction listing and the "buyer's rating" when a bid was made.³³ A score that reached certain levels earned a star of one of nine different colors.

The multilateral reputation mechanism had imperfections that increased the cost of trust, and eBay attempted to mitigate those imperfections. Feedback and reputation could become stale, or a member with a good reputation could begin to exploit his reputation, earning negative feedback. Similarly, eBay's aggregation rule masked information, since a member with a rating of 100 could have had 100 positive feedbacks whereas another had 200 positives and 100 negatives. Since the impact of feedback were asymmetric, i.e., negative feedback was much more influential than positive feedback, members were interested in the disaggregated information. To deal with these problems, eBay summarized in a convenient table the number of positives, neutrals, and negatives for the past week, month, and six months.

An imperfection in the feedback mechanism was due to free-riding. After completing a transaction a buyer had little incentive to provide feedback to a seller with whom she was unlikely to trade again. The extent of the free-rider problem was not known, but considerable feedback was clearly provided. Using data from the first half of 1999 Resnick and Zeckhauser found that 52.1% of the buyers and 60.6% of the sellers provided feedback.³⁴ One possible explanation for the provision was the sense of community, however anonymous and remote it might be, and in the "personal relationship" that temporarily existed when a buyer and seller were making arrangements for payment and shipping. The exchange of email messages between the buyer and seller could establish a temporary bond that motivated traders to provide feedback.

³³ See Kollock (1999, pp. 115-6) for a discussion of feedback and aggregation rules on other online auction sites.

³⁴ Longitudinal studies of feedback are needed to determine how the amount of feedback varies with the size of the community.

The explanation, however, was more likely to be found in a norm of reciprocity.³⁵ A seller had a stronger interest in a good reputation than did a buyer, so the seller had an incentive to induce the buyer to provide feedback. This could be accomplished through courteous email messages and timely shipping, but it could also be sparked by providing positive feedback to the buyer. This encouraged the buyer to reciprocate, thus mitigating the free-rider problem. One seller stated in a note included with an item shipped to his buyers, “Feedback is very important to both buyers and sellers. I always give feedback when I receive payment. It is amazing how many people send me e-mail thanking me for the item I sent them, but neglected to give positive feedback. Please follow through with this transaction, and take a minute to do this. I have done it for you! Thanks!” The stronger the community and the more positive the buyer’s experience on eBay the more likely feedback would be provided.

Although reciprocity could induce positive feedback, it could hinder negative feedback. Negative feedback was seldom given. Resnick and Zeckhauser found that 0.6% of the feedback provided by buyers was negative with a somewhat smaller percent for sellers.³⁶ In Bajari and Hortascu’s data the average feedback rating was 203 and the average number of negative feedbacks was 0.43. This could simply reflect the fact that the vast majority of people are honest, but it could reflect moral hazard. A dissatisfied trader considering giving negative feedback might fear that the other trader would retaliate with negative feedback. Resnick and Zeckhauser, for example, found that “Sellers are far more likely to provide negative feedback after a buyer[’s] negative or neutral (19.4%) than they are overall (1.2%).”³⁷ Consequently, negative feedback was likely to be undersupplied. Nevertheless, the prospect of negative feedback was an inducement to traders to fulfill expectations. One seller posted on each listing, “Payment is due within 10 days or you risk losing the item and neg. feedback.”

Since negative feedback damaged a reputation, feedback extortion was possible. A member could threaten to provide negative feedback on another member unless some concession were offered. Or, a member could provide negative feedback and offer to retract it if a concession were granted. The extent of the feedback extortion hazard was

³⁵ Resnick and Zeckhauser refer to this as a “high-courtesy-equilibrium.”

³⁶ Buyers provided more negative or neutral feedback for less experienced sellers than for more experienced sellers.

³⁷ They, however, speculated that much of the negative feedback may be due to botched transactions such as items lost in the mail.

not known, but eBay took two measures to address it. First, feedback could not be retracted unless, for example, it had been sent to the wrong address, constituted harassment, or had no connection with eBay.³⁸ Second, the recipient of negative feedback was allowed to reply with an explanation of her side of the matter. Resnick and Zeckhauser found that 29% of those receiving negative feedback provided a response.

Clay reported similar opportunities for “false accusations” and noted that such accusations appeared to have been rare in Mexican California. She concluded (p. 210), “The reciprocal nature of the information network probably mitigated to some extent merchants’ incentives to knowingly transmit incorrect information. Further, merchants undoubtedly gathered information from a variety of sources, so the potential benefits from transmitting such information were comparatively small.” In the case of eBay the potential for false information was mitigated by both the opportunity to respond and by the possibility of retaliation by the member falsely accused.

One issue in the management of a feedback mechanism was who should be permitted to provide feedback. Initially, any eBay member was allowed to provide feedback, so a seller could, for example, provide comments on the goods offered by another seller. Or, a non-bidder could provide feedback on the responsiveness of a seller to answering questions. To avoid possible abuses of the feedback system, eBay restricted feedback to those who participated in a transaction. The reputations established thus were based on actual trades. The feedback system was also restricted to the eBay site, and feedback could not be exported to or imported from other sites. The former was prohibited to increase the cost of developing a reputation on another auction site. The latter was prohibited according to eBay because the company did not have the capability of importing written feedback and “a composite number, without the corresponding feedback does not reflect your true online reputation within our community.”

SUPPORTING TRUST THROUGH DESIGN

The feedback system and the online reputation mechanism generated a substantial degree of trust among the community. That mechanism, however, had imperfections resulting from asymmetric information, moral hazard, and free-riding. eBay was able to mitigate some of the remaining incentive problems through rules, policies, and services

³⁸ Feedback could also be retracted as a result of a court order.

and thus reduce the cost of trust. Beyond mitigating incentive problems, eBay's rules, policies, and services contributed to building trust between its community and the company.

Participation and Community

eBay's primary asset was its community, but eBay was also an important asset to its community. Many members believed that it was their community as much as it was eBay's. To provide benefits for members, eBay made improvements on its site and updated practices, and in doing so learned some important lessons. For example, it changed the way feedback scores were displayed on an auction page. Similarly, in 1997 the number of listings had increased to the point at which new item categories had to be developed. eBay decided on new categories, revised its front door page, and implemented the changes. In both cases eBay was flooded with weeks of angry emails and telephone calls complaining about the changes. It was forced to rescind some of the changes and revise others.

eBay realized that many members viewed the community as theirs. This called for a collaborative approach to its community. The company formed a diverse group of twelve community members, some of whom were nominated by the community, and brought them to its offices for an exchange of information and ideas. eBay discussed changes it was considering making and asked for feedback, but much of the time was spent simply listening to the ideas and views of the group. The interchange was very successful, and the process was institutionalized as "Voices." eBay established new Voices groups on a quarterly basis to discuss planned changes and hear the views of members. Voices groups were largely composed of sellers, although some buyers were included. Voices members continued their discussions with the company through email and telephone conversations. Some matters such as price changes were not discussed with Voices, however. Voices not only enabled eBay to serve its members better, but it also helped identify new market opportunities for the company. Participation by the community also helped develop trust between the community and eBay. Although Voices members constituted a tiny fraction of the eBay community, their communication particularly among sellers helped build that trust.

Trust and Community Sentiments

The cost of trust was reduced by the comfort of members with the community. This included not only a member's satisfaction with listings, bidding, and trades but also with what the community encompassed. Many members were uncomfortable with items sold on its site. Items associated with hate groups, Nazi items, and "murderabilia"—items associated with murderers—were offensive to many members.³⁹ Yet, some World War II items, for example, were of interest to museums, scholars, and history buffs. Items associated with the assassination of President Lincoln, for example, were of historical significance. eBay faced the problem of drawing a line between items that were objectionable and those that might be of historical significance, recognizing that any such line would be unsatisfactory to some members. eBay formulated a policy to "judiciously disallow" Nazi, Ku Klux Klan and other hate group materials, as well as items associated with notorious individuals who had committed murderous acts during the past 100 years.⁴⁰

This policy was put to the test when in the wake of the terrorist attack on New York and the Pentagon. Sellers listed New York newspapers and World Trade Center items for sale. eBay responded by removing items exploiting the tragedy and suspended nine members. eBay also banned until October any items associated with the World Trade Center or the Pentagon.

Privacy

An important component of trust between the community and eBay was privacy protection. eBay did not share members' personal information with third parties and allowed members to determine how eBay contacted them. eBay did use session cookies to collect information and provided aggregate profiles to advertisers. The company provided a chart that indicated how a member's information could be used by five types of organizations: advertisers, internal service providers, external service providers, eBay community representatives, and legal requests.⁴¹

³⁹ The victims rights group Justice for All called on eBay to band murderabilia, and the Simon Wiesenthal Center complained of the sale of Nazi items.

⁴⁰ eBay understood that removing such items from its site would not prevent their sale. Listings on ePier increased by 5,000 in one month when eBay banned war memorabilia with Nazi markings. When eBay banned the sale of firearms, listings on AuctionArms increased from 300 to 6,000 in two days. (AuctionWatch.com, June 22, 2001)

⁴¹ See the case "eBay: Private Ordering for an Online Community." See also Duh, Jamal, and Sunder (2001) for an analysis of privacy, integrity, and security at eBay.

Authentication

Even with reputation incentives, asymmetric information remained about the items offered for sale. eBay could provide information and authentication to support trading, but it chose not to do so for two reasons. First, it typically had little expertise in the types of items offered for sale, and developing such expertise would be costly. More importantly, however, if eBay were to provide information or authentication, as did an offline auction house, it could fall under the jurisdiction of state auction laws. Moreover, such activities could make it an Internet content provider rather than an Internet service provider. That would expose it to a host of potential legal liabilities that it preferred not to assume, as discussed above.

Insurance, Escrow, and Third-Party Opinions

Reputation could be effective in building trust between buyers and sellers, but trust could be supported through institutional arrangements. For example, buyers faced risks when trading with new sellers, sellers with a marginal reputation, or in some cases with a trader with a good reputation. To reduce the risk, eBay offered without charge insurance against fraud for all items up to a value of \$200 with a \$25 deductible.⁴²

For transactions with a transaction value above \$500 eBay provided access to an online escrow service Tradenable Inc. The escrow system allowed a buyer to make the payment to Tradenable. The seller then shipped the item to the buyer, and if the buyer approved, Tradenable paid the seller.

Sellers were better informed about the item offered at auction than were buyers. To address this informational asymmetry, sellers provided descriptions of their items, including photographs. Nevertheless, a potential moral hazard problem remained, since sellers had incentives to shade information, recognizing that the buyer would discover the shading only after having paid for and received the item. Reputation played an important role in mitigating this problem, since sellers who delivered items that differed significantly from their descriptions risked having their reputations sullied by negative feedback. Nevertheless, differences of opinion between buyers and sellers in such situations could easily result, and some might develop into disputes.

To deal with the incentive problems, buyers could use escrow and consult with independent third-party experts such as coin dealers and antiques appraisers. eBay could

⁴² The insurance system was administered by Lloyd's of London.

also put its reputation behind items, but it chose not to do so as considered above. Instead, eBay linked members to Internet sites where they could obtain professional opinions on certain items. The sites provided information ranging from a quick opinion to authentication and grading services involving physical inspection of the item. The services covered a variety of items ranging from Beanie Babies to coins to sports memorabilia. This approach allowed eBay to capture a portion of the rents that would occur if it could put its reputation behind the items.

Disputes and Their Resolution

Most disputes were resolved through the exchange of information to clear up misunderstandings between traders. Some disputes remained, however. eBay was approached by SquareTrade Inc., which offered to provide online dispute resolution and mediation services. SquareTrade's Direct Negotiation online mechanism facilitated settlement, and the company also offered the intervention of a mediator to resolve the remaining disputes. eBay decided to provide the online mechanism to the community without charge, whereas the mediated dispute resolution service was provided for a fee of \$15 with eBay paying the rest of the cost. eBay was not involved in the resolution of any disputes, but if members were unable to resolve the dispute, they could access eBay's fraud protection programs, such as insurance.

Sellers could certify that they would rely on the dispute resolution mechanism to resolve problems. This strengthened their reputations and generated trust by providing recourse to buyers. Sellers that pledged to use the online mechanism could display a SquareTrade icon on their offerings.

Offsite Transactions

One risk to eBay as an enterprise was that members might take their transactions offsite. For example, a seller might contact the winning bidder and offer offsite another of the item at the same price. Or, a seller might contact losing bidders and offer offsite another of the item at a fixed price. In effect, the seller would be offering the first item on eBay's site as a means of advertising. Similarly, some sellers provided a link to their own Web sites on which other items were offered for sale. Offsite transactions were a risk because sellers were allowed to design their own auction listings.

eBay drew a line in the sand against offsite trades and hyperlinks to non-eBay sites where items were listed for sale. The user agreement prohibited offering items

offline, and hyperlinks were also prohibited. To accommodate sellers who wished to link to their other auctions on eBay's site, eBay provided each seller with a "visit seller's other auctions" link to a page listing all other offerings by the seller on the eBay site. With five million auctions in progress at any moment it was difficult for eBay to monitor the listings to determine if links to non-eBay sites were provided. eBay thus enlisted the community to help it police the site for such links.

eBay's rationale for these practices was twofold. First, it lost revenue when transactions were made offsite. Second, although links to a seller's home page, for example, might be of interest to buyers, eBay was concerned that offsite transactions did not carry the protections, such as insurance, escrow, and dispute resolution, available on its own site. Members who had a bad experience offsite then might blame eBay. For example, a seller sold a Rolex watch, and then contacted the second-highest bidder offering to sell another Rolex. The bidder paid several thousand dollars only to discover that the second Rolex was a fake.

eBay also faced the problem of email harvesting. Some companies sent robots onto its site to collect email addresses that they would then spam with offers. Other companies collected either by hand or by robot the email addresses of all the bidders on products it had manufactured. They then directly contacted those addresses offering to sell new items. eBay's user agreement prohibited such harvesting. For legitimate use eBay partnered with other companies or organizations to allow eBay listings for a particular type of item to be accessed through a link that appeared on those companies' sites.

Katkar and Lucking-Reiley (2001) identified another form of email harvesting. A seller specified a high secret reserve price with the intention of not selling the item. When the auction ended, the seller had the email addresses of all the bidders and could contact them offering to sell them the item offsite. The researchers sent a survey form to randomly selected high bidders of unsuccessful auctions with secret reserves. Twenty-seven percent of the respondents (a 28% response rate) reported that they had been contacted by the seller offering to sell the item to them at a specified price, often their bid price but in some cases the prices were higher than the bid price and in other cases lower.

PRIVATE PUNISHMENT

The reputation mechanism provided assurance to traders, but occasionally a trader would abuse the system. This resulted in negative feedback and left the issue of what to do about members with bad reputations. Similarly, some members violated the user agreement. eBay had a specialized department that searched for such items.

In response to such problems, eBay imposed punishments on members. If a member's feedback rating reached -4, the member was automatically suspended. eBay also suspended members for repeated failure to ship goods sold or for buyers who did not pay for goods for which they were the high bidders. Membership could also be suspended or terminated because of an inability to "verify or authenticate any information you provide" such as a credit card number for a seller. Members could also be suspended or terminated if their actions caused "legal liability for you, our users or us."

Explicit punishment was uncommon, since the reputation mechanism functioned effectively in most cases. An online reputation, however, was masked, since an eBay user name was chosen by the member. Consequently, a member could change his user name to avoid a weak reputation. eBay addressed this problem by placing a "shades" (sunglasses) icon by the user name of anyone who had changed names or joined eBay during the previous 30 days.

The more serious problem was a member intent on committing fraud or other violations of the user agreement. A suspended or banned user could return with a different user name, email address, and credit card. For example, a metals trader accused of fraud by scores of members had purchased the account of a member with a strong reputation. eBay had some ability to monitor sellers, since it required credit card information so it could bill them for listing and transactions fees. Nevertheless, anonymity gave fraud perpetrators a degree of cover. To address this problem, eBay allowed members to have their identity verified by a third party Equifax Secure, which gave members an ID Verify icon for use in their feedback profile.⁴³

INTERACTIONS WITH THE PUBLIC ORDER

Any private ordering exists in the shadow of the public order. eBay incorporated references to public law in its user agreement and took a number of steps to ensure that

⁴³ The information given to Equifax Secure was strongly encrypted to protect privacy.

listings were consistent with public law, including searching selectively for items that had been banned or recalled by the government, violated intellectual property law, or were offered fraudulently. In this sense, eBay's private ordering interacted with the public order.

Banned, Recalled, and Regulated Items

Some eBay members used eBay to dispose of items from their attics, basements, or garages. A community member noticed a listing for "jarts," a lawn darts game banned by the Consumer Products Safety Commission (CPSC) because of the danger of injury. eBay faced the problem of how to protect its community from such dangers. It decided to work with the CPSC to identify products with potential problems including recalled and banned items. eBay established an "About Me" page on its site for the CPSC and provided a link to information on its Web site. More importantly, when a seller listed one of these products, a pop-up screen appeared providing a link to the CPSC Web site where an explanation of the problem could be found. A member who bid on such an item also encountered the pop-up window. Both sellers and buyers thanked eBay for alerting them to the problem. This produced considerable traffic at the CPSC site and resulted in the removal from circulation of a substantial number of dangerous items. eBay established similar programs with a number of other government agencies, including the Department of Fish and Wildlife, Food and Drug Administration, Environmental Protection Agency, and Postal Service to deal with items that may be against a law or regulation, such as import-export laws or the Endangered Species Act.

Intellectual Property

A problem for any Internet venue was to ensure that it was not associated with illegal activities. A particular problem for eBay was the sale of items such as pirated software and recordings that violated intellectual property law. As indicated above, the CDA provided a shield to telephone companies and Internet service providers for what users posted on their systems.⁴⁴ Copyright infringement, however, presented a complex challenge.

⁴⁴ The text of one opinion, which was not officially published, can be found at: http://www.2001law.com/article_429.htm. The other case, *Gentry v. eBay, Inc.*, can be found at: <http://legal.web.aol.com/decisions/dldecen/gentry.html>.

eBay's VeRO program allowed rights owners to identify violating items, which eBay then removed.⁴⁵ Rights owners demanded, however, that eBay pre-screen its listings. Such screening would be complicated, since, for example, eBay would have to determine which edition of a recording, U.S. or European, was being sold, since they might have different protections. eBay refused to pre-screen because it feared it might be held liable under the DCMA, but it instituted the Four Corners policy in response to pressure from the Business Software Alliance. eBay wanted to monitor its site for infringing items and lobbied in Washington for an amendment to the DCMA to provide a safe harbor from liability for responsible monitoring.

Fraud: Policing and Enforcing

A community based on trust was vulnerable to fraud. Data on fraud rates were not available, but fraud was believed to be relatively rare. In 1997 eBay's president stated that 99.99% of trades were successfully completed.⁴⁶ eBay later reported that the fraud rate was one in 40,000. Fraud generally began with the item description. On each listing page eBay stated, "These items are not verified by eBay; caveat emptor." Policing the venue and punishing violators were required, however. Members of the community could effectively participate in the battle against fraud and other illegal activities by forming "neighborhood watch" groups. For example, the traders of a collectible could monitor the activity of those trading in that item and post concerns on the bulletin boards provided by eBay. eBay provided specialized discussion boards for "Dolls & Bears" and "Coins and Paper Money" and chat rooms for Barbie dolls, beanie babies, furbies, trading cards, jewelry and many more categories.

eBay could also do its own monitoring, since the DCMA pertained to copyrights and not fraud. One form of fraud was shill bidding where a seller used aliases or enlisted others to drive up the price of an item.⁴⁷ If the price were driven too high and the item was not sold, it was often re-listed. eBay employed shill-hunter software to detect such practices, but it also relied on the community to detect shill-bidding rings. If shill bidding

⁴⁵ As another example, eBay did not monitor for the sale of frequent flyer miles even though such sales were against airline policy. To stop the sales, American Airlines began sending email to the sellers of its AAdvantage miles reminding them that sales violated the terms of the program.

⁴⁶ See Kollock, p. 117.

⁴⁷ Shill bidding was not illegal in some states.

was detected, eBay notified the appropriate law enforcement agencies.⁴⁸ For example, in 2001 federal indictments were issued for three men accused of shill bidding on 1,100 auctions. eBay and the FBI were alerted to the ring when a painting auctioned reached a price of \$135,000. In addition to eBay's monitoring individual users policed the site. On one bulletin board a user posted a message: "[user name] = Do you know how to spell *S-H-I-L-L*??"

In addition, members of the eBay community used their expertise. For example, a seller offered an "1879c Morgan Hill Silver Dollar." A knowledgeable community member noticed the item and reported to eBay that he believed that no such coin had ever been minted. The trader and eBay then cooperated with the Secret Service leading to the arrest of the seller.

Individuals who believed that they had been wronged were encouraged to communicate with the other party to the transaction to determine if there was a misunderstanding and to use SquareTrade if there remained a problem. If those steps failed and the user believed that she had been defrauded, she could file a fraud report with eBay after a waiting period of 30 days. This fraud protection program pertained to what eBay defined as fraud:

1. Paying for an item and never receiving it or
2. Receiving an item that is less than what is described—such as winning a solid gold necklace but receiving a copper one instead.

The insurance program provided compensation up to \$200 for victims, but fraud complaints remained a concern.

To deal with such complaints, eBay established an Investigations department. Upon a complaint by a community member the department investigated feedback, buying, selling, contact information/identity, and miscellaneous offenses. For example, seller offenses included shill bidding, not delivering the item according to terms and conditions stated on the listing, refusing a complete a successful transaction, intercepting a transaction intended for another seller, and avoiding eBay's fees as in the case of offsite transactions.

⁴⁸ Another fraudulent practice was bid shielding where a member submitted a very high bid to shield a lower bid from a conspiring bidder. The member would then withdraw his shielding bid just before the auction ended, allowing the shielded bid to win.

eBay could also help detect fraud by aggregating data from dispersed victims. If a member identified an act of fraud, eBay would contact other winning bidders who might have been victims of the same seller to determine if they had had problems. In addition, eBay was able from time to time to spot possible fraud because of complaints posted about a particular member. eBay put defrauded members in contact with the appropriate law enforcement office.⁴⁹

CONCLUSIONS

The private ordering of eBay's community of buyers and sellers had a number of antecedents in economic history. In contrast to those private orderings, however, eBay provided only a venue for trading and did not coordinate the actions of the members of its community. It also did not participate in transactions nor serve the other functions of offline auction houses. This left a host of potential incentive problems. The Internet, however, allowed gains from trade to be realized and trust to be developed. An online reputation mechanism supported trust among anonymous traders, most of whom would not have repeat bilateral interactions. The feedback mechanism was multilateral and coordinated only by the provision of information through feedback by the parties to a transaction. This mechanism was the heart of eBay's business strategy.

The feedback mechanism did not eliminate all incentive problems, however, so there was a role for eBay to strengthen the mechanism and reduce the cost of trust. This included the provision of services, such as insurance, escrow, and dispute resolution. It also relied on participation by the community to identify means of better serving their interests and building trust between the community and eBay.

An online market such as that hosted by eBay has drivers such as gains from trade from matching remote buyers and sellers. It also has network externalities and opportunities for complementary products, which produce demand-side increasing returns to scale and scope and generate positive feedback. In conjunction with collective lock-in, this can result in tipping, as in the case of eBay in the United States. When the conditions for tipping are present, only a small number of online trading communities would be expected to persist. This means that in the competition to become the winner, strategy is increasingly important, since there may be no second chance. Developing

⁴⁹ Snyder (2000) called for online auction sites to authenticate items offered for sale and for the government

trust and reducing its cost are the centerpieces of this strategy. eBay's experience provides important lessons in how trust can be generated in a large community through feedback and reputation based on the participation of community members and supported by rules, policies, and services provided by the company.

to impose "swift and severe" penalties against sites where fraudulent items are sold.

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