

Understanding the Online Selling Environment: A Segmentation Approach to Profiling eBay Sellers

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Abstract

This study examines relevant aspects of the more than 1.2 million small businesses that conduct their retail operations on eBay's US site. A random sample of 384 eBay sellers was extracted, with several variables measured, including number of feedbacks, age of operation, whether the enterprise is U.S.-based or foreign. Factor analysis and cluster analysis was conducted on the data. Sellers were categorized into four clusters: SUPERPOWERS, VETERANS, ROOKIES and GLOBALS. SUPERPOWERS are high volume US-based sellers. They make up the top 4.5 percent of all sellers and account for 46.8 percent of all eBay feedback volume. The study has numerous implications regarding the maturing of the Internet auction phenomenon, the future of e-tail, marketing to eBay sellers and the evolution of eBay itself.

Introduction

The widespread availability of online auctions as a selling platform, and eBay in particular, has revolutionized the retailing industry worldwide. As of late 2008, the Internet had penetrated nearly three-quarters of households in the United States, 60 percent of households in Australia, and half the households in Europe. Internet market penetration worldwide stood at 21 percent, representing a 300 percent increase over eight years (Internet World Population and Usage Statistics, 2008). The 1.5 billion users of the Internet, by virtue of the medium's interactive capabilities, are a ready market for virtually all goods and services from real estate to perishable foods.

Accessing this ready market is the primary goal of the approximately 750 thousand US small businesses (1.2 million worldwide) that sell via eBay as a primary or secondary source of income (Bid Floor, 2008). These small retail operations are in many respects a modern day iteration of the mom-and-pop stores of mid-20th century America. Starting on a shoestring, an entrepreneur with a vision can establish a presence on eBay, set up a storefront or post items for sale, and thus pursue the capitalist dream; and it can be done from virtually anywhere in the world.

To date there has been a great deal of research into the area of online auctions and eBay. Researchers have focused on the nature of the auction system and its application to the online environment (see, for example, Bland et al., 2007). Research in this stream often

focuses on game theory in order to predict the effects of features such as Buy It Now pricing or setting reserves (Anderson et al., 2007). Another key stream of research has focused on the potential moral hazards that exist between online buyers and sellers and the role of reputational feedback in mitigating such hazards (Cheema, 2008). The applicable paradigms in this latter stream are the well-worn agency and transaction cost theories, which have for the most part turned out to be very relevant to this new environment (Standifird & Weinstein, 2007).

Another area of concern is the recent change in management at eBay and the new management's changes that seem to favor large sellers at the expense of smaller sellers. The changes include: (1) increasing final value fees and decreasing insertion fees, which have the effect of favoring larger retailers offering more goods at fixed prices over auction sellers; (2) offering rebates to sellers based on volume and positivity of feedbacks; and (3) relegating lower feedback and volume sellers to the bottom tier in search results. The change in strategic direction by eBay has led to a great deal of disenfranchisement and even boycotting by smaller, long-established sellers (Mangalindan, 2008). While the boycotts have had limited success in affecting eBay's sales (Rowland, 2008), the question remains as to what information may have led eBay to move in this direction. Just how much economic clout do the larger sellers have in influencing eBay policy?

The issue of customer size and the degree to which it affects, or should affect, one's business strategy has long been a ripe subject in marketing and management. In general, researchers have supported the proposition that establishing richer relationships with bigger customers is a wiser approach than delivering a consistent product to all customers (see, for example, Simon, 1997). In fact, this is one foundation upon which the entire logic of market segmentation is founded. Many previous studies have verified that it is a sound approach to focus more heavily on higher and more frequent users of one's product (Thurman 1999; Perfetto & Woodside, 2009).

One key area of research germane to the present study is in the area of competition between online sellers and the degree to which online retailers can engage in non-price competition. In general, fierce competition in the retail environment -- in both the bricks-and-mortar environment and the online environment -- has severely limited retailers' ability to engage in non-price competition. Traditional bricks-and-mortar retail approaches -- such as seeking location superiority, branding and atmospherics -- are falling short in terms of their ability to achieve sustainable competitive advantage (Binninger, 2008). Online retailers have various tools available to engage in non-price competition, including use of the "Buy It Now" function, seller reserves, setting up a virtual store and featuring merchandise. Nonetheless, the body of evidence suggests that the ability of these tools to help the online retailer garner a premium price is, at best, marginal (Anderson et al., 2007; He & Chen, 2006). As we head into the second decade of the 21st century, it appears that, for retailing, the marketing concept may be on the wane, and that a new era may be dawning. In this emerging era, retailers may be viewed by consumers as interchangeable; the primary driver of consumer decision-making becoming price.

The purpose of this study is to examine the nature of the millions of entrepreneurs who choose to do battle in this maturing arena. More specifically, this study examines whether the universe of eBay sellers can be segmented into relevant groups that enrich our understanding of their nature in terms of size and type. Such a categorization could be of benefit to: (1) eBay sellers looking to see where they fit in the general scheme of things, (2) analysts seeking to understand eBay and the online auction phenomena, (3) businesses wishing to compete with eBay or service eBay sellers with products of their own, (4) eBay customers seeking a richer understanding of who and what they are dealing with. There is quite a bit of evidence that the emergence of these millions of sellers has dramatically improved retail market efficiency by increasing the amount of information available to consumers (Bailey, Faraj & Yao, 2007). Thus, they are a primary driver to the phenomenon described in the previous paragraphs. While there has been some descriptive statistical reporting on the numbers of sellers, the categories in which they tend to sell, the number who have storefronts and other information, to date there is no scholarly paper that attempts to utilize advanced statistical methods to categorize eBay sellers utilizing archival data. Such an effort may enrich our understanding as to how these businesspersons should be grouped based on relevant dimensions.

The small businesspersons who sell products on eBay are undoubtedly a target market for many other enterprises interested in developing that market in a business-to-business context. Such enterprises range from Internet photo hosting services, to management software developers, to shipping services and an array of other concerns that target small business. A large volume of research has been devoted to the importance of segmenting business-to-business markets (see, for example, Simkin, 2008; Powers & Sterling, 2008). Thus, a segmentation approach (i.e., one which attempts to divide the market into relatively homogenous groups based on relevant dimensions) may be useful for both practitioners who target this market and academics who study it.

The Study

Utilizing a random number generator, 384 eBay listings selected utilizing the “Browse Category” function, first by column, then by category, then by order of appearance within the category. The sample size corresponds to a 95 percent margin of error for a large population made up of variables with a normal distribution (Cramer 1996). Ultimately, sales were represented from numerous and highly disparate eBay sales categories ranging from real estate to automobiles to low-priced collectibles. For each listing, values for eight seller-related variables were noted. These variables are: (1) name of the seller (SELLER); (2) number of unique feedbacks the seller has acquired (FDBCKS); (3) seller’s feedback rating (RATING); (4) whether the seller operates an eBay store (STORE); (5) whether the seller is an eBay Power Seller (POWSEL); (6) whether the seller has a “Me” Page (MEPAGE); (7) number of years the seller has been registered on eBay (YRS); and (8) whether the seller is located in the United States (US). A ninth variable was calculated as the ratio of FDBCKS divided by YRS. This variable is labeled VOLUME.

A presentation of relevant descriptive statistics for the data can be found in Table 1, Descriptive Statistics eBay Sellers. As indicated by the significant differences between the means and medians for the variables FDBCKS and VOLUME, these two variables are not normally distributed. In addition, three of the variables (STORE, POWSEL and MEPAGE) are categorical. This will compromise the confidence level somewhat, and is therefore a limitation of the study. Nonetheless, the statistical techniques used to analyze these data are robust (Hair 1992), and so the sample size is deemed sufficient for the purposes of the study.

A commonly used paradigm in marketing and sales contexts is the Pareto principle (“vital few and trivial many”) which has evolved into a rule of thumb known as the “80/20 Rule,” in which it is posited that 80 percent of the outcomes will be attributed to 20 percent of the population. The Pareto principle is extremely relevant to the subject of market segmentation because if it is true, it suggests that a company can much more efficiently marshal its marketing resources by focusing on the 20 percent of potential customers who buy 80 percent of the product rather than spending equally across the whole spectrum of possible customers. In the present case, if the Pareto Principle applies, it suggests that eBay has a sound basis for pursuing its current course.

The 80/20 rule has been used in numerous business related situations, including sales, consumer complaints, quality control and manufacturing deficits (Craft & Leake 2002). This principle applies to the present data in that the top 20 percent (77 in total) of the sellers account for 84.5 percent of the total feedbacks recorded, and the top 20 percent of the sellers in yearly volume account for 85.3 percent of the total volume.

Table 1: Descriptive Statistics eBay Sellers

VARIABLE	MEAN	MEDIAN	FREQUENCY
FDBCKS	9876	1349	
RATING	99.1	99.9	
STORE			.482
POWSEL			.503
MEPAGE			.313
YRS	5.3	5.5	
VOLUME	2325	347	

Because a number of the variables measured were correlated, a factor analysis was conducted to identify how many dimensions were measured, and to uncover the nature of those dimensions. The final three-dimension matrix is shown in Table 2, Factor Analysis Three-Dimension Matrix. The three underlying dimensions in the data are identified as SIZE, AGE and DOMESTICITY. SIZE is largely a function of a firm having a high number of feedbacks and/or a large amount of feedbacks per year. AGE is largely a function of the YRS variable, which was the numeric representation of the number of years the firm had been registered with eBay. DOMESTICITY is a categorical variable based on whether the seller was based in the US or elsewhere.

Table 2: Factor Analysis Three-Dimension Matrix

VARIABLE	SIZE	AGE	DOMESTICITY
FDBCKS	.829	.291	.339
RATING	.118	.239	-.206
STORE	.500	.248	-.337
POWSEL	.574	.145	-.457
MEPAGE	.442	.499	-.219
YRS	.203	.750	.294
US	.046	.414	.714
VOLUME	.793	-.487	.225

Two-step cluster analyses were conducted using two approaches: (1) finding clusters based on the three factor dimensions; and (2) finding clusters based on the variables VOLUME, YRS and US. Both approaches yielded four clusters with nearly identical memberships between approaches. Therefore, the second method was chosen in the interest of simplicity. The final cluster profiles are shown in Table 3, Cluster Analysis Final Groupings.

The four clusters are identified as VETERANS, SUPERPOWERS, ROOKIES and GLOBALS. VETERANS are U.S.-based eBay sellers with small, medium and large volumes who have been selling for an extended period of time (average 7.7 years). SUPERPOWERS are U.S.-based eBay sellers who sell in extraordinarily large volumes (23K feedbacks per year on average). SUPERPOWERS, who make up just 4.5 percent of all eBay sellers, account for 46.8 percent of total volume. ROOKIES are U.S.-based eBay sellers with small, medium and large volumes who have been selling for a relatively short time (average 1.7 years). GLOBALS are eBay sellers of all sizes and durations who are located outside of the U.S. but sell on eBay's U.S.-based site.

Table 3: Cluster Analysis Final Groupings

	VETERANS	SUPERPOWERS	ROOKIES	GLOBALS
NUMBER	206	18	95	65
PERCENT OF TOTAL (NUMBER)	54.0	4.5	24.7	16.9
VOLUME (MEAN)	1,001	23,239	1,091	2,536
PERCENT OF TOTAL (VOLUME)	23.1	46.8	11.6	18.5
YRS (MEAN)	7.7	3.4	1.7	3.6
PERCENT DOMESTIC	100	100	100	0

Discussion

The most significant revelation of this study is the degree to which larger sellers affect eBay's revenues, which underscores the company's shift in strategic direction from its traditional posture as an online auction site that secondarily offered fixed price merchandise, to a fixed price priced site that secondarily offers auction merchandise. With roughly 20 percent of the sellers accounting for about 85 percent of the firm's volume (nearly half the volume being accounted for by the top 5 percent), it is not surprising that the firm has embraced a business model that is more oriented toward maintaining price consistency and security than the turbulent and risk-oriented marketplace that typified its earlier existence.

The fact that 48.2 percent of all sellers pay to maintain an eBay store, where the merchandise is inventoried longer-term and sold at a fixed price, indicates that a large percentage of sellers are adapting to the new environment and operating more like traditional retailers. This necessitates that sellers maintain larger levels of working capital and endure lower turnover rates in exchange for improved margins. Given the number of competitors, the question arises whether the sellers are, in fact, enjoying higher margins, or whether they have adopted this new model having been unable to compete in the riskier auction environment, and now finding that the fixed price buyer is nearly as price-sensitive as the auction buyer.

If this trend continues, and an altered eBay emerges that is primarily an online fixed-price retailer, it may signal the end of the online environment as the dominant market for auction-based goods. The company's recent suspension of "eBay Live," which offered traditional auctioneers the opportunity to present their sales simultaneously on eBay, is

perhaps another harbinger of this trend. The question arises as to whether online auctions as a societal phenomenon will simply fade in prominence, or whether some other site will emerge as a dominant player in this arena. Energized by the apparent seller discontent in the marketplace, numerous alternative sites have sprung up in recent years, including ePier, Wigix, Silkfair, Etsy and Oodle. Thus far, there has been very little apparent erosion in eBay's market share, but there is some evidence that sellers are increasingly experimenting with these smaller e-commerce sites (Mangalinda, 2008).

A limitation of the study is that many eBay sellers may have multiple identities. This study, not having access to eBay proprietary data, did not investigate the degree to which this is the case. The study therefore assumes that each seller is a separate and discrete entity. Finding out how many sellers use multiple identities and determining what variables are correlated with such behavior is a potentially fruitful area for future research.

Slightly more than half the sellers in the study were identified as "Power Sellers." In order to become a Power Seller, a seller must have sales consistently over one thousand dollars per month, 98 percent feedback rating, and average better than 4.5 stars (out of a possible 5) on four service dimensions. Given that better than half the sellers qualify for this distinction, the question arises as to whether it confers any real competitive advantage, which may be an area for future research.

Another interesting finding is that only 31.3 percent of the sellers utilized eBay's "About Me" page. The About Me page is a free feature that allows sellers to create an image for themselves and perhaps draw some distinctions between themselves and other eBay sellers. Given that having an About Me page is free promotion, and given that less than a third of sellers use it, it suggests that a majority of eBay sellers may not think non-price competition makes much of a difference on eBay. Do a majority of sellers view what they sell as a commodity, with eBay little more than a clearing house? eBay offers numerous other marketing tools to sellers for differentiate their retail operations from competitors, including enhanced photo presentations, featured listings, customized templates and color headlines. Determining the degree to which these features are utilized and exploring why or why not sellers buy them may be another fruitful area of future research.

For business-to-business marketers who target eBay sellers, this study suggests that a great deal of time and expense can be saved by focusing on the relatively small number of big sellers. Given the degree to which sellers of all stripes seem to disregard non-price competition as a viable strategy on eBay, the competition for the sellers' dollar may very well be one in which price is the dominant concern, just as it is between the sellers and their customers. This study is by no means definitive in that regard.

The underlying theme in this data is that eBay can now be considered a mature brand, and that its business strategy is more likely to reflect it going forward. The eBay environment may be in a state of transition not unlike the Main Street bricks-and-mortar environment of the 1960's-1990. The mom and pop small operators may be supplanted by more efficient large operators better able to leverage economies of scale and

distribution efficiencies. Given the instantaneous nature of Internet communications, one would expect the transition to occur with considerably more rapidity than it did in the bricks-and-mortar environment.

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Biography



Victor J. Massad earned his doctorate at the University of North Texas. He is currently an associate professor of marketing at Kutztown University and owner of the online retailer auktiononline.com. He has published in numerous journals and conference proceedings including the *Journal of Internet Commerce*, *Journal of Marketing Management*, *American Marketing Association Proceedings* and *Academy of Marketing Science Proceedings*. He also works as a consultant for regional firms in the central Pennsylvania region. His clients include High Industries, S. Clyde Weaver and Daisy Data Display.