BID TOGETHER, BUY TOGETHER: ON THE EFFICACY OF GROUP-BUYING BUSINESS MODELS IN INTERNET-BASED SELLING

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ABSTRACT. In recent years, the advent of electronic commerce has led to the creation of many new and interesting business models for Internet-based selling. In this paper, we will explore a variant of the typical *dynamic pricing mechanism*, in which buyers and sellers actively engage in the price discovery process, that emphasizes the power of group buying. Dynamic pricing approaches are used by many well known Internet-based firms, including firms that offer online auctions such as eBay and Amazon.com. A *group-buying discount* is a dynamic pricing mechanism that mimics the general approach of traditional "discount shopping clubs." Group buying pricing mechanisms permit buyers to aggregate their purchasing power and obtain lower prices than they otherwise would be able to get individually. However, with the recent closing of Mercata.com, a leading group-buying Web site, and the change in strategic direction of another market leader, Mobshop.com, the future of group-buying discount business models in Internet-based selling is no longer clear. In this essay, we will: (1) introduce the innovations associated with group-buying business models in Internet-based selling; (2) characterize the operational aspects of dynamic pricing mechanisms for group-buying through a discussion of a series of mini-cases with different firms that are widely recognized as the innovators in this area; (3) assess the quality of their business models relative to other new business models for Internet-based selling; and (4) draw conclusions about their sustainability in light of competitive forces in the marketplace.

KEYWORDS: Consumer behavior, dynamic pricing mechanisms, e-commerce, economic theory, electronic marketplaces, group-buying, Internet-based selling, World Wide Web.

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Group-Buying on the Intemet in a Nutshell

"It's the 'we-commerce' revolution."

-- Tom Van Horn, founder and CEO of Mercata, and veteran leader of two prior software ventures with Paul Allen, the Microsoft co-founder (quoted from Kane, 1999)

"It's truly like a limit order for stock. Let's say 22 people have committed to buy a product that needs 50 people to reach the lowest price tier. Thirteen additional people may have said they'll only purchase when it reaches the lowest tier. So only 15 more buyers are needed to get everyone the lowest price."

-- Jim Rose, co-founder and CEO of Accompany/ Mobshop (quoted from O'Brien, 2000)

"The difficulty that Mercata faced was that it wasn't able to capture great discounts and, in fact, the search bots like Ask Jeeves turned up better prices than Mercata. So for all the effort to be part of the pool, the reality was you didn't get as good [] prices as other sites."

-- Andrew Bartles, senior e-commerce analyst, Giga Information Group (quoted from Sandoval and Kawamoto, 2001)

"[For] an analyst, Mercata was an incredibly neat idea. But for a consumer it is not so exciting, and the reason is that the deals were not worth waiting for."

-- Carrie Johnson, online retail analyst, Forrester Research (quoted from Cook, 2001)

INTRODUCTION

As a channel that is characterized by convenience, wide product selection, and easy comparison shopping, the Web has enjoyed tremendous growth in consumer spending in recent years. Despite the ongoing market shakeout and yet-to-come profits on the retailer side, Forrester Research, a Cambridge, Massachusetts-based marketing research firm, predicts that U.S. consumer online spending will be on the rise to $74 billion in 2001, a 64% increase from the $45 billion of 2000 (Scheraga, 2001). Paralleling the proliferation of online consumer spending is the emergence of many innovative business models, including *dynamic pricing mechanisms*. According San Francisco-based Vernon Keenan, a consultant and publisher of an industry newsletter called *The Keenan Vision* (available at www.keenanvision.com), in 2004 some $561 billion worth of transactions will be conducted online via dynamic pricing mechanisms, accounting for approximately 40% of all online transactions (Andrews, 1999).

Such market mechanisms are what Spulber (1996, 1999) and O'Hara (1997) refer to as *market microstructure*, a term that is often associated with the operational mechanics of the financial markets.[1] Andrews (2000) identifies three difference kinds of mechanisms including *group-buying models, price-reduction models* and *traditional auction models.* We add to Andrews' list the *non-traditional auction models*, including such recent phenomena as reverse auctions and other "name-your-own-price" mechanisms.

Table 1. Four Types of Dynamic Pricing Models for Internet Marketplaces

MODEL TYPES	KEY CONCEPT
Traditional auctions	Apply long-standing concepts associated with real world auctions. These include: the single-item open-outcry ascending-price English auction; the single-item open-outcry descending-price Dutch auctions; the single-item first-price sealed-bid auction; the single-item second-price sealed-bid Vickrey auction[2]; the multiple-item, open-outcry call market; and the open- and closed-bid, double auctions, in which both buyers and sellers simultaneously update their bids and offers.
Non-traditional auctions	Apply variations on the auction approaches mentioned above. Examples include: reverse auctions, in which buyers either state an interest in purchasing a sale item or a bundle of items and sellers indicate their offers; 3-D auctions, in which price-quantity is supplemented by utility reflecting willingness-to-trade; among others.
Price-reduction models	Enables buyers to obtain lower prices, but only based on a pre-announced time schedule for price drops from a higher starting price. Operates without consideration given to the number of participants in the marketplace. Similar to Dutch auction.
Group-buying models	Enable buyers to obtain lower prices, as more people indicate a willingness to buy from the Internet-based seller's Web site. There are two varieties, involving group-buying with a fixed time period to completion of an auction, and group-buying with a fixed price that is achieved only when enough buyers participate

[1] More recently, Weber (1998) has referred to market microstructure in the context of Internet-based electronic marketplaces as *market technostructure*, implying the range of new possibilities that the Internet opens up for innovation market mechanism designs.
[2] For a description and comparison of the first four types of traditional auctions, see McAfee and McMillan (1987).

The online auctions by eBay (www.ebay.com) and Amazon.com (www.amazon.com) and the "name-your-own-price" mechanism by Priceline.com (www.priceline.com), are among the most well-recognized of the dynamic price mechanism brand names. In addition, other less well known players have appeared, which have used variations on a "seek-out-a-seller" mechanism. These include, for example, the Colorado-based TravelBids (www.travelbids.com) and the Canadian Mortgage Centre (www.mortgagecentre.com). Still others, such as First Auction (www.firstauction.com), have found ways to cut the time-to-transaction for time-conscious bidders, by developing instant auctions and flash auctions call markets of very short 30-minute duration for consumer goods. At these Web sites, buyers are no longer passive recipients of the sellers' asking prices. Instead, they can actively engage in *price discovery* along with the sellers.

Mimicking the general approach of traditional "discount shopping clubs," *group-buying discounts* represent a dynamic pricing mechanism that allows consumers to aggregate their purchasing power and to obtain lower prices than they otherwise would be able to get individually. Introduced in 1999, group-buying business models have been employed by quite a few companies to date, not all of which have been very successful. They include Mercata.com, Accompany.com (now Mobshop.com, www.mobshop.com), actBIG.com (now Etrana.com, www.etrana.com), CoShopper.com (www.coshopper.com), C-Tribe.com, DemandLine.com (www.demandline.com), Let's Buy It (www.letsbuyit.com), OnlineChoice.com, PointSpeed.com, SHOP2gether (www.shop2gether.com), VolumeBuy.com (www.volumebuy.com), and Zwirl.com (www.zwirl.com).[3] All of the firms are based in the United States, except CoShopper and Let's Buy It, which were founded in Norway and Sweden respectively and have operated in multiple European countries. Among the group-buying Web sites, Mercata and Mobshop have been widely recognized as the international market leaders (Gambale, 2000c; Olsen, 2000; Van Horn, 2000; Wimpsett, 2000).

O'Brien (2000) characterizes Internet-based group-buying as one of a number of means of "cooperative commerce." Viewed this way, consumers benefit from additional buyers who join a buying group, and, thus, will have an incentive to recruit additional buyers. As a result, one can predict that group-buying business models may lower customer acquisition costs for retailers. They can also simultaneously help manufacturers to offload excess inventories. In addition, they can also deliver lower price benefits to consumers (Rugullies, 2000). However, with the recent

[3] The going has been tough among group-buying firms since the third quarter of 2000, as we observe from their announcements of closure, reorganization and revisions to their strategy. For example, C-Tribe and Mercata failed, Mobshop and SHOP2gether reoriented themselves from a B2C to a B2B emphasis, Let's Buy It is reorganizing after bankruptcy, and several of the others (including Mobshop) have reoriented themselves towards the licensing and sale of demand aggregation and group-buying software solutions, in lieu of operating an electronic marketplace. OnlineChoice.com also recently shut its doors.

closing of Mercata and the change in strategic direction at Mobshop the future of group-buying discount business models in Internet-based selling is no longer clear (Clark, 2001; Cook, 2001; Sandoval and Kawamoto, 2001). We will discuss these at greater length later in this chapter.

The challenges faced by group-buying Web sites come from consumers, competitors, and suppliers. As group-buying is still a new concept to many consumers, retailers have to develop a *critical mass* presence in the marketplace in order to realize a savings and be able to pass them on to consumers. In a discussion on the recent closure of Mercata, Cook (2001) points out that the group-buying business model is too difficult for the general consumer to understand. The author also argues that the mechanics of group-buying on the Internet also prevent impulse buying, due to the lengthy periods consumers have to wait until the end of the auction cycles that characterize group-buying market mechanisms. More importantly, he argues that the transaction volume on group-buying sites is much smaller than those of the traditional discount stores, which makes it difficult for group-buying sites to compete with retail giants such as Wal-Mart and Target. This smaller volume also makes it unlikely for group-buying sites to secure better wholesale prices with their suppliers because of the latter's risk of losing bigger clients (Tanaka, 1999). As a result, with the low prices and nearly instant gratification offered by discount offline and online retailers, consumers may not wait to see how the final prices turn out on the group-buying sites.[4]

As a promising business model that has many obstacles to overcome, in retrospect, how should we understand the efficacy of group-buying discounts on the Internet? With this overall concern in mind, we address the following four questions in this paper:

- What are the innovations associated with group-buying business models in Internet-based selling?
- How can we characterize the operational aspects of dynamic pricing mechanisms for group-buying? To what extent do different firms illustrate the various approaches?
- What is the overall quality of these firms' business models relative to other new business models for Internet-based selling?
- What conclusions can we draw about their competitive sustainability in light of competitive forces that exist in the marketplace?

[4] For a perceptive and prescient discussion of the likely shakeout in the group-buying marketplace, the interested reader should see the occasional columns by the staff writers at Gomez Advisors, including Margaret Juergens (2000), Mark Gambale (2000a, 2000b and 2000c), and Martin DeBono (2000).

THE BASICS OF GROUP-BUYING MODELS IN E-COMMERCE

We next discuss group-buying models in Internet-based selling in greater detail. We first describe the market mechanisms, and then consider the core value proposition that they offer to their participants.

The Market Mechanisms

Pricing to match buyers and sellers is an important function of a market (Spulber, 1996). In the bricks-and-mortar world, *posted pricing mechanisms* have been the dominant pricing strategies, where retailers display the prices they ask for the merchandise and consumers decide whether they would accept the prices or not. Under *dynamic pricing mechanisms*, however, buyers are no longer left with this take-it-or-leave-it decision. They can actively negotiate with the sellers to reach a satisfactory price. For example, buyers in online auctions, such as we have seen at eBay, place their bids and the final transaction price is the highest price offered at the end of the auction. At Priceline, for example, consumers can name their own price for airline tickets and hotel rooms. Based on the demand from consumers and their assessment of their own supply of perishable assets, sellers then can decide whether they would like to accept the prices. What makes dynamic pricing different from posted pricing strategies is that, with the wide network connection and lower operation costs enabled by technology, consumers become more active in the price discovery process, resulting in greater a likelihood for transactions to occur and for higher market efficiency and effectiveness.

As a special instance of dynamic pricing mechanisms, group-buying discounts allow buyers to aggregately determine transaction prices and take advantage of the savings that a seller can offer in the presence of many buyers of the same product. This is how it usually works on group-buying Web sites. A product is put on sale on the company's Web site with a specified starting and ending time for what they typically call an *auction cycle*. As more buyers join the group to purchase this product, the price drops from the starting price according to a predetermined *price change trajectory*. Some Web sites reveal this price change trajectory, and some do not. The auction cycle can also end before the specified ending time if a maximum number of units have been sold. At the end, everyone who participated in the cycle will be charged the same final low price, even if some of them indicated a willingness to buy earlier at a higher price.

The Value Proposition for Group-Buying on the Internet

The primary value proposition of group-buying business models to consumers is the lower prices they can provide, due to the buyers' collective bargaining power. By accumulating a large number of orders in a short period of time, group-buying Web sites claim they can negotiate low prices with manufacturers and suppliers, and then pass these savings on to their customers. On these Web sites, the starting prices are typically higher than the prices charged by discount posted-price merchants, reflecting their lack of purchasing power with suppliers in the face of small order quantities. However, prices drop as more people buy. When enough people join an auction cycle, it is possible that the final price will be lower than the lowest price charged elsewhere. In fact, just as the name "group-buying" tells us, if purchasing does not reach a critical mass, the pre-conditions for the success of this kind of business model will not be in place.

BUYER BEHAVIOR AND MARKET COMPETITION IN GROUP-BUYING

We now turn to a discussion of how buyer behavior works in group-buying marketplaces, and the extent of the competition that is observed among firms that apply the various kinds of business models that characterizes this kind of buyer services on the Internet.

Buyer Behavior Under the Group-Buying Market Microstructure

Group-buying business models are representative of innovation in the context of Internet-based selling. But they also give rise to the following five interesting aspects of consumer behavior: anticipation of falling prices, a group-buying mentality, the potential presence of a price threshold effect, a reservation price effect, and word-of-mouth-induced behavior.

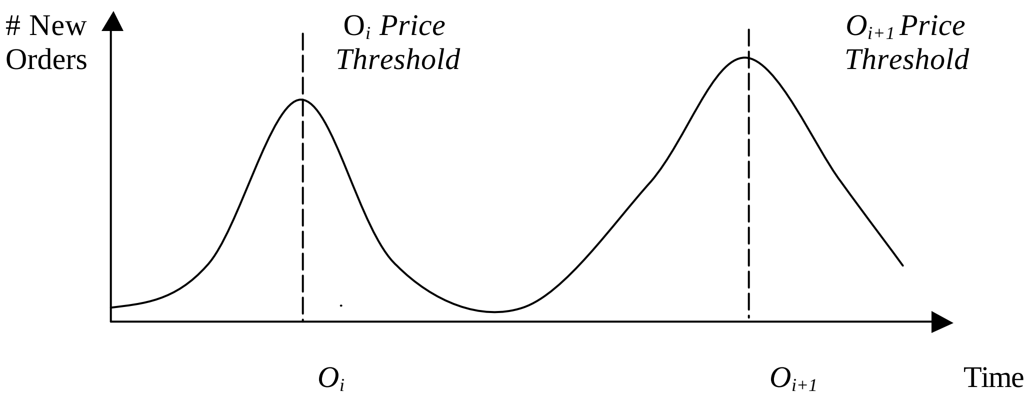
The Anticipation of a Price Drop. The starting prices on group-buying sites are usually higher than the prices of online discount stores, such as Buy.com (www.buy.com). However, we need to ask why people still place orders at these higher prices. Is this behavior irrational? Or is it the result of asymmetric information, indicating that the consumer is at some kind of informational disadvantage, despite the power of the new technologies for search support that have become available on the Internet? Or what else? We believe that potential buyers anticipate that prices for a given product offered during a Mercata or Mobshop auction cycle will drop in the near future. And it is this *anticipation of a price drop* that motivates them to make their purchase so as to facilitate the process in which prices drop from discount price tier to discount price tier.

The Group-Buying Mentality. The second aspect of consumer behavior is the *group-buying mentality*. Research on network externalities indicates that the utility a technology adopter obtains tends to increase as the number of network adopters increases (Katz and Shapiro, 1985, 1986 and 1994; Shapiro and Varian, 1999). This higher utility, in turn, shifts the demand curve for a technology-based product, resulting in the adopter's (or buyer's) higher willingness-to-pay (Economides, 1996). This phenomenon is called a *demand-side network externality*.

Due to the size of a group of buyers and the price-demand relationship inherent in this market microstructure, buyers will indirectly benefit from other people's participation in the market, another indication of the presence of a beneficial externality. Previous research has used *current installed base* or *expected installed base* to quantify the impact of network externalities on a potential adopter's decision to adopt (Dybvig and Spatt, 1983; Kauffman, McAndrews and Wang, 1999). As a result, in the presence of group-buying market microstructure, *ceteris paribus*, potential buyers will be more likely to place their orders as the size of the buying group increases.

The Price Threshold Effect. A third aspect of consumer behavior is what we call the *price threshold effect*, an expectation on the part of potential buyers that we observed in our empirical research on Mobshop's market microstructure and performance (Kauffman and Wang, 2001). At Mobshop, the current price was displayed along with a price drop scheme that was determined by current order quantity. We expect more orders to be placed right before and after each price drop, as shown in Figure 1. (See Figure 1.)

Figure 1. Price Threshold Effect



Note: O_i and O_{i+1} are the *starting* and *ending total order quantities* for discount price-tier *i*. We expect more new orders right before and after price changes at O_i and O_{i+1} and fewer new orders to arrive in better, as shown in the figure. (Figure adapted from Kauffman and Wang, 2001.)

We explain this phenomenon as follows. When the number of orders needed to reach the next price tier is smaller than some threshold number of bids, a potential shopper will form the expectation that price will decrease in the near future. At this time, if this consumer's reserve price is no less than the next lower price and she is not risk-averse, she would simply place this order to facilitate the price drop process. On the other hand, if this consumer is risk averse, she may wish to wait, unless the price actually changes to place her order. Using a time-series of data collected from auction cycles on an Olympus digital camera at Mobshop during the second quarter of 2000, we found on a significant *before-price-drop effect*, but no significant after-price-drop effect (Kauffman and Wang, 2001).

The "Save-a-Spot" feature at Mobshop allowed shoppers to place conditional bids at lower price tiers if they were dissatisfied with the current price. This created a win-win situation for both the firm and its customers. By placing conditional bids, consumers would only be added to the group when the price actually dropped to their specified reserve prices. Thus, they did not incur the risk of buying at prices higher than they were willing to pay. However, with conditional bids at the next lower price tier, the number of orders needed to reach the next price drop decreased. This way, if there were a sufficient number of conditional bids arriving, this would also have the effect of driving the price down -- even if no new orders were placed at the current price level. This tended to create a basis for higher market efficiency and effectiveness. And so we see that, under the group-buying market microstructure, consumers have the opportunity to collaborate with each other to get lower prices, instead of simply bidding against each other in auctions. Hence, consumers have the incentive to recruit other shoppers.

Competition in the Group-Buying Market

To realize the low price value proposition to their customers, group-buying firms face challenges from four different quadrants: suppliers, competitors, consumers and the marketplace for e-commerce investment opportunities. In order to provide shoppers with low prices, group-buying sites first need to negotiate low prices with manufacturers and distributors, or retailers. As Gottlieb (2000) points out, because of the low transaction volume on these sites compared to bricks-and-mortar retail chains, it is unlikely that they can get lower wholesale prices than other low-price-all-the-time sellers off the Internet. He argues that group-buying sites such as Mercata and Mobshop were able to offer lower prices because of their lower overhead costs by operating only on the Web and by piggybacking on the manufacturers' strategy to use these sites to price discriminate. However, the lower overhead for online merchants is not an exclusive advantage to group-buying sites. Web sites such as Amazon.com and Buy.com also have lower operational costs compared to bricks-and-mortar stores, and they represent significant competition, albeit with different selling strategies on the Internet in mind. Moreover, buying at these Web sites involves no extensive waiting time, providing consumers an additional advantage in terms of immediate purchase (DeBono, 2000; Gambale, 2000b).

With these considerations in mind, then how should group-buying sites compete with offline and online retailers? Mobshop's answer to this question was to play the role of a *pure intermediary* and ask their suppliers to fulfill customers' orders. It made money by taking a certain percentage cut of each sale. However, even with their innovative and attractive business models for Internet-based selling, group-buying sites still face the problem of obtaining market attention. In the competition with other online merchants for market participation, group-buying sites need not only a critical mass of consumer patronage and interest, but also a significant amount of transaction volume so as to be able to profitably deliver on their low price guarantee. If they cannot reach a critical mass of users and sales volume, then it will be difficult for the group-buying business model to bring the customers of the firms that adopt it the savings they expect.

A FRAMEWORK FOR COMPARING GROUP-BUYING WEB SITES

In this section, we examine a number of companies that have implemented group-buying business models on the Internet. They are actBIG.com, CoShopper, C-Tribe, DemandLine, Let'sBuyIt.com, Mercata, Mobshop, OnlineChoice.com, PointSpeed.com, SHOP2gether.com, VolumeBuy.com, and Zwirl.com. Rugullies (2000) compared Mercata, Mobshop, actBIG, and Zwirl using two different criteria: *the auction cycle initiator*, and the *demand aggregation mechanism*. We add an additional dimension for *customers targeted* and compare the group-guying Web sites in Table 2. (See Table 2.)

Based on our survey of the group-buying websites that are listed above, we identified two primary kinds of customer targeting strategies: business-to-consumer (**B2C**) and business-to-business (**B2B**). The B2B category is actually somewhat broader than how we have defined it, as the table shows, since in addition to including small to medium-sized businesses, it also includes the education and government procurement (e.g., SHOP2gether and Mobshop). We also distinguish whether a buyer or a seller initiates the auction cycle. For *seller-driven sites* such as Mercata and VolumeBuy, suppliers maintained full discretion to decide upon the products that were offered for sale. At *buyer-driven sites* such as actBIG and Zwirl, however, consumers can propose the products they want but were not available. Suppliers then decided whether they wish to provide the merchandise. Still other sites were or are now hybrids, in some cases permitting sellers and in other case permitting buyers to initiate auction cycles and select what is to be bid upon (e.g., OnlineChoice, SHOP2gether and PointSpeed).

Table 2. A Comparison of Group-Buying Web Sites

GROUP-BUYING SITE NAME	CUSTOMERS TARGETED		AUCTION CYCLE INITIATION		AGGREGATION METHOD	
	B2C Emphasis	B2B Emphasis	Seller-Driven	Buyer-Driven	Destination Site	Distributed Service
actBIG.com	■ (past)	Small business, software		●		✱
CoShopper	■	Small to mid-size business, software	⌘	●	✚	
C-Tribe.com	■		⌘		✚	
Demand-Line.com		Small to mid-size business		●	✚	
LetsBuyIt.com	■		⌘	●	✚	
Mercata.com	■	Small to mid-size business, gov't	⌘		✚	
Mobshop	■ (past)	Small to mid-size business, gov't (present)	⌘	●		✱
Online Choice	■	Small to mid-size business	⌘		✚	
PointSpeed		Small to mid-size business	⌘	●		✱
SHOP2gether		Education, gov't	⌘	●	✚	
Volume Buy	■	Software	⌘		✚	
Zwirl	■ (past)	Software (present)		●		✱

Note: Mercata launched its Mercata Marketplace in November 2000, permitting sellers to initiate their own PowerBuys, by listing their own merchandise for resale. Although one may think otherwise, we still categorize this firm as being seller-driven, since the Mercata Marketplace existed only for a couple months, and never really had a chance to gain critical mass. In addition, Online Choice entered into an operating alliance with Mercata during September 2000, to share group-buying members across their distinct product bases (Guzzo, 2000).

Finally, we note that the demand aggregation approach can be determined by whether the Web site is a *destination site* or a site with a *distributed-service* model. Destination sites are able to attract business and users by themselves, without having to be embedded in other Web sites, to ensure that a sufficient number of users materializes. For sites such as Mobshop and actBIG that used a distributed-service model, they offer group-buying services on their partners' Web sites and their own. Using a distributed-service model, group-buying sites can increase their exposure to traffic on partner Web sites, obtaining higher transaction volume. The simpler of the two approaches is simply to list and transact in the context of a single Web site. We recognize these variations among the group-buying firms that we examined as well.

We now turn to a more in-depth discussion of several firms, to provide answers to some of the research questions that we laid out at the outset in this chapter.

Mercata.com

Mercata, a Bellevue, Washington-based group-buying company was 54.7% owned by Microsoft co-founder Paul Allen's Vulcan Ventures. It was started up in September 1998, and its Web site went live in May 1999. Along with Mobshop, Mercata was among the first Web sites to provide the innovative and new group-buying service to Internet users. At the height of its success, the company offered consumer electronics, computers, home appliances and household goods, jewelry and other merchandise using both fixed and dynamic prices.

Business Model. Using the slogan "the more people who buy, the lower the price," Mercata allowed its buyers to aggregate their purchase volumes and to obtain lower prices using a mechanism they trademarked as a "PowerBuy" auction cycle. For products listed in PowerBuy auction cycles, prices dropped in small decrements as more orders were placed. Figure 2 shows a PowerBuy auction cycle for a Nikon digital camera on Mercata. The only product information that we found on the page was the brand name, model and pixel resolution of the camera, along with a picture. In the PowerBuy Summary box, three prices were listed: the list price (usually the MSRP), the starting price and the current price. The difference between the list and the current prices gives a potential buyer an idea of what savings, below list price, are available. In addition to the price information, visitors to the page also could view the starting and ending time for the current auction cycle.

Figure 2. A PowerBuy Web Page at Mercata.com

Note: Mercata endows the buyer with relatively little information. Its Web page only provides information about the Starting Price for an auction cycle, and what the Savings level is for the current price tier that has been reached. The potential buyer obtains no information about the number of price tiers, and the lowest possible price that may be reached. The Starting Price for the auction, in this case, is clearly shown to be less than the List Price. Whether the real savings level is $95.03 is debatable, since many other Internet-based sellers probably offered the same product for less than list price during the same time frame. The reader should also note that the end of the auction occurs either at the posted date and time "or when the supply runs out."

If a buyer was not satisfied with the current price, she could also use the feature "make an offer" to specify her reserve price. This way, she only would be added to the buying group when the price actually dropped to her reservation price. The product offering page on Mercata was lean in terms of the information that it provided. Potential buyers were unable to get detailed product features, specifications and warranty information from the Web site, and were required to go elsewhere for this. The company also appeared to have designed the price change process as a "black box" for buyers. As a result, people visiting the site would not be able to tell how the price was going to change according to the number of units sold and how low the final price would be. Products not listed in a PowerBuy auction cycle could only be purchased at their posted prices.

Mercata's group-buying business model caused quite a stir in the business community, since it offered a new way of freeing up the long-standard reliance on posted prices for consumer purchases of commodity products. Pricing in Internet-based selling would never be the same after Mercata. The company's business model was featured in magazines such as *Forbes*

(Patsuris, 2000), *Newsweek* (Tanaka, 1999) and *BusinessWeek* (Browder, 1999), and the popular business press for the most part applauded the group-buying site as innovative and promising.[5] Mercata's pursued a multimillion dollar advertising campaign to turn its group-buying into a well-known brand identity. They also employed a slogan, "Down is Good," in an ad campaign that won the firm two "Telly Awards" (*Business Wire*, 2000b). This helped to educate consumers on the collective bargaining power of Internet users. By aggregating their purchase power, according to Mercata, consumers could obtain the volume discounts that were traditionally the privilege of bulk buyers.

Mercata experienced considerable growth in 1999 and early 2000. Randy Nargi, the company's VP of Marketing, reported that there were more than 10,000 participants in some of their largest buying groups (Mara, 2000). By eliminating suppliers and dealing with manufacturers directly, Mercata was also able to negotiate lower prices and pass these savings on to the consumers. The market perceived the company to be performing well during its first year of operation on the Internet, enabling Mercata to file for an initial public offering of stock totaling $100 million in March 2000 (Van Horn, 2000).

By the late third and early fourth quarters of 2000, however, there were rumors of increasing difficulties at Mercata. Chief among the difficulties reported was the "burn rate" of the firm's capital. During the year, the firm managed to go through about $89 million in capital, largely to support its advertising and operating infrastructure investment, and to pay its growing workforce (Sullivan, 2001).

Analysis. Although Mercata would subsequently fail, as we reported earlier in this chapter, and a lack of additional funding was cited by the firm's senior management as an important reason for the failure (Sandoval and Kawamoto, 2001), closer examination of the group-buying business model implemented by Mercata reveals problems that needed to be recognized sooner. *First*, group-buying, as Mercata learned, is a complex buying mechanism from a consumer perspective, and, as a result, it takes group-buying Web sites time, effort and financial resources to educate their customers and develop a large following. Since the formation of a large group – what economists often call an *installed base of users* or *critical mass in the network* – is essential to the success of this business model, customer acceptance and participation in the market become even more important.

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[5] To get a sense of what the counter-arguments were regarding the success of the group-buying Web sites, the interested reader should see Mullaney (1999) in *BusinessWeek*, and Patsuris (2000) in *Forbes.com*. For example, Patsuris comments: "[E]xperts predict that when group buying does catch on it won't be on a destination site. They expect the group shopping process to be adopted by portals and other sites that are already up and running, spreading the same way that auctions did."

Second, Mercata also faced a dilemma of choosing between emphasizing the development of a wide product selection versus the formation of large group sizes. Unlike posted price online merchants such as Buy.com (www.buy.com), where consumers can find just about any product they are hoping to purchase in the popular categories, Mercata tended only to offer limited product selection within each category. Right from the start, this constrained its capability to cater to the diverse preferences of consumers. On the other hand, broader selection of products also meant a smattering of orders across the various products in the same category. This would have the impact of diminishing the number of buyers attracted to any given sale item, resulting in smaller buying group sizes and less savings for consumers. Mercata's challenge, then, was to achieve an appropriate balance, not an easy task.

Third, it was difficult for a potential buyer to make her purchase decision based only on the limited product information that was available on Mercata's Web site. To get information such as product features and specifications, and to do a good job of comparison shopping, a consumer was forced to either visit the manufacturer's Web site or go to another online merchant. If the other online retailer offered the same or better products at reasonably competitive prices, Mercata bore the risk of losing sales.

Fourth, Mercata's marketing strategy also created a significant financial burden. The firm purchased full-page advertisements in the *Wall Street Journal* and *New York Times*, and issued $100 in shopping vouchers for purchases on Mercata to attract new customers. Both proved to be very costly for the firm.

Looking for ways to succeed, Mercata launched the Mercata Marketplace in November 2000. The intent was to allow sellers to initiate their own group-buying auction cycles by offering their own products to Mercata's installed base of users. The end came in January 2001, when Mercata posted the following message on its website, indicating that even in spite of its prior status as a high-flying DotCom company, it was unable to raise additional capital or reorganize itself in a way that gave investors sufficient confidence to take it forward. (See Figure 3.) The former market leader in group-buying on the Internet was suddenly a player no more.

Figure 3. Mercata's Shut Down Announcement, January 2001

Mercata™, the **Mercata Marketplace** and the **We-Commerce™ Network** are no longer in business.

Thank you, customers and partners, for your support.

Thank you, employees, for all your hard work.

Contact us at CustomerService@mercata.com with questions or concerns.

Mobshop.com

Mobshop is a San Francisco, California-based group-buying service provider. The firm was founded in October 1998 as Accompany.com, and launched its initial group-buying Web site in March 1999. In March 2000, the firm changed its name to Mobshop.com (Olsen, 2000).

Business Model. When it initially positioned itself as a B2C group-buying Web site, Mobshop offered computers, PDAs, consumer electronics, software, movies and computer games using an approach for group-buying that was called "buying cycles." A buying cycle essentially operated as a call market, with a fixed time period for buyers to make bids, and some flexibility as to how many units of a specific sale item would be sold. The bulk of the sale items were the typical commodity products that one might associate with the core of Internet-based selling activities over the past several years (with the exception of books).

Similar to Mercata, prices at Mobshop drop as more people buy. However, the difference, as we pointed out earlier, lies in the buyer's information endowment. Mobshop offered more information on their buying cycle pages for the products they sold, assisting buyers to make more informed purchase decisions. Figure 4 shows an auction cycle page for a Kodak digital camera. (See Figure 4.)

Figure 4. A Group-Buying Auction Cycle at Mobshop

Note: Mobshop's Web page endows the buyer with more information. It shows MSRP, the Starting Price, the price levels for the different discount price tiers, the number of buyer bids that must be received at a price level to drop down a price tier, the number of Buyers in Cycle, the Current Price in the auction and the Savings So Far. Notice that a Mobshop auction cycle also may close before the listed time if the maximum number of buyers has been reached. Finally, we also see the typical "four-step-to-maximum-discount" approach that Mobshop used.

Along with the product name and model number, a brief description about the product features was also available. The most interesting aspect of the Mobshop version of group-buying was its *price drop trajectory histogram*. With four price-tiers below MSRP, the histogram told buyers how the price was going to change according to the number of units sold. In the case of the Kodak DC290 digital camera depicted above, the initial listing was $899. The bidding started at $689.95, and not the MSRP, however. The price remained the same until the number of orders reached 26, in turn, driving the price down by another $10 to $679.95. Thereafter, the price would be $679.95 for 26 to 200 orders, $659.95 for 201 to 500 orders, and $649.95 for 501 to 1001 orders.

Combining this price change histogram and the number of orders pla ced, potential buyers were be able to gauge the progress of the auction cycle. Even though Mobshop specified the starting and ending time for their product offerings, it still was possible that an auction cycle might actually end earlier if the maximum number of orders were reached. In addition to this kind of basic product and auction cycle information, Mobshop also offered features such as "Save-a-Spot," "Buyer Flash" and "Click-and-Tell". (See Figure 5.)

Figure 5. Mobshop Marketplace's "Save-a-Spot" and "Click-and-Tell" Features

Note: When a potential buyer clicked on the "Click-and-Tell" feature button in the figure, it provided access to a screen with blanks for the email addresses of people known to the potential buyer who could be contacted by Mobshop via email to notify them of the opportunity to buy a given product during the current auction cycle. The "Save-a-Spot" feature provided the potential buyer with a mechanism to represent a reserve price for the sale item.

If a consumer is not satisfied with the current price, she could save a spot at any of the lower price tiers. This conditional bid guaranteed that the consumer would not be added to the buyer group unless the price reached her reserve price. The "Buyer Flash" service provided consumers with email reminder when the price reached a specified level, or when a certain amount of time was left in the cycle. Because of the opportunity to leverage the "word-of-mouth" effect with its group-buying business model, Mobshop also provided a "Click-and-Tell" facility, so that visitors could easily send email to their friends.

Because of its innovative group-buying business model, Mobshop was named as a finalist for the MIT Sloan School of Management's E-Business Award in March 2000 (*Business Wire*, 2000a). In the same month, the firm also was nominated for having the best e-commerce Web site at the Webby Awards (WebbyAwards.com, 2000). Then, in July 2000, Mobshop was ranked fourth among the top 50 private e-commerce companies by a WIT SoundView corporate study (*PR Newswire,* 2000c). In addition to the attention that Mobshop received from the business community, consumers also showed a tremendous interest in Mobshop's group-buying service. For example, in a three-month period from January to April 2000, the number of registered users at Mobshop increased from 37,000 to 132,000. When the company started accepting orders, there were just about 20 to 25 orders for a product. But by March 2000, they were accumulating 1000 orders for Palm V PDAs in just one-and-a-half days. The average buying-group size for their top selling products also increased from less than 100 to several hundred, a clear sign of growing critical mass.

Analysis. Mobshop's early success can be attributed to its careful design of its business model. *First,* by illustrating the relationship between order quantity and price using the price trajectory, Mobshop gave potential buyer more information about how their orders would facilitate the price drop, creating the impetus for additional orders.

Second, due to the demand externalities in the group-buying setting, a large group size shown on the product cycle page indicates high market interest and possibly more savings by the end of the auction cycle. This tends to motivate potential buyers to place their orders. Additional orders that are placed would further attract new shoppers, resulting in a positive feedback loop (Shapiro and Varian, 1999).

Third, the "Save-a-Spot" feature allowed buyers to place conditional bids without incurring any risk, which increased the perceived effectiveness of the market. After a buyer saved an additional spot at the next lower price tier, the number of orders needed for the next price drop decreased by one even though the group size did not change. This way, if enough spots were saved, it could drive the price down even if no additional orders were placed.

Fourth, the "Click-and-Tell" feature on the Mobshop Web site leveraged the word-of-mouth effect and let potential buyers recruit new customers for the company. Mark Melville, Mobshop's Senior Director of Corporate Development, indicated that, unlike some of its competitors, Mobshop did not spend large sums of money on advertising. The "Click-and-Tell" feature worked well for the company in terms of acquiring new customers.

Fifth, Mobshop saved money by not physically maintaining a warehouse and fulfilling the orders. The company took a 3 to 10% cut of each sale and did not need to maintain a warehouse. Instead, Mobshop pre-negotiated prices at volume discounts with its suppliers and passed the orders on to its suppliers for fulfillment. This way, the firm carved much of its supply chain out of its own business process.

But, beginning in the summer of 2000, and paralleling the expectations of industry analysts and e-commerce journalists, Mobshop started to lose steam. Participation in its auction cycles was down. For example, group sizes for popular products dropped from several hundred back to less than 100. And the firm's product variety available to buyers also decreased.

We believe the following three factors were a force. *First*, even though the strategy of not having a warehouse saved money for Mobshop, it also posed constraints on what the company had to offer its customers. Melville referred to this as a "chicken and egg" problem: "[S]uppliers aren't willing to give aggressive pricing until you can show there is the demand there. Buyers won't come until they see there's a good pricing scheme, a value proposition for them."[6] When Mobshop was growing rapidly, the positive feedback loop between volume and price gave the company greater leverage for success. But once new demand was no longer there, a negative feedback loop began to occur. This eventually left the Mobshop's Web site with just a handful of orders and much less evidence for potential buyers that any critical mass remained. Moreover, requesting retailers and distributors for order fulfillment prevented Mobshop from having full control in product deliveries. As a result, they were more prone to delayed and damaged shipments. Things became even worse when it came to returns and exchanges of products purchased, since Mobshop also outsourced their 1-800 customer support. The consumer complaints about Mobshop at Gomez.com evidenced the frustrations consumers had in their dealings with Mobshop (Gomez Advisors, 2001). In a market that had fierce competition and high customer acquisition cost, Mobshop apparently was at a disadvantage when it came to transforming first-time buyers into repeated customers.

Just how did Mobshop go from being in "high gear" to running "out of gas"? This is primarily explained by a second factor: competition coming from other online merchants. As Melville pointed out when we interviewed him, price competition on the Internet has became fierce and many companies have used setting low prices as a customer acquisition strategy. As a result, Mobshop was no longer able to attract shoppers using prices that permitted it to earn an acceptable margin.

Third, an outdated product selection at Mobshop also appeared to play a role in the diminished interest from the market. According to our observations of new order arrivals at Mobshop's Web site, the most popular items were products that were in the prime of their growth in the market, including PDAs, MP3 players, digital cameras, DVD players, and newly-released DVD movies and video games. After a new product in these categories was put on Mobshop's Web site, we saw a surge in the buying-group size. However, manufacturers continually

[6] From a telephone interview by the authors with Mark Melville, February 1, 2001.

introduced new models of the same basic product, so that a once-popular item might garner less and less interest over time. Based on what we observed, it is clear that a requirement for growing consumer interest in group-buying is to be selling the right products.

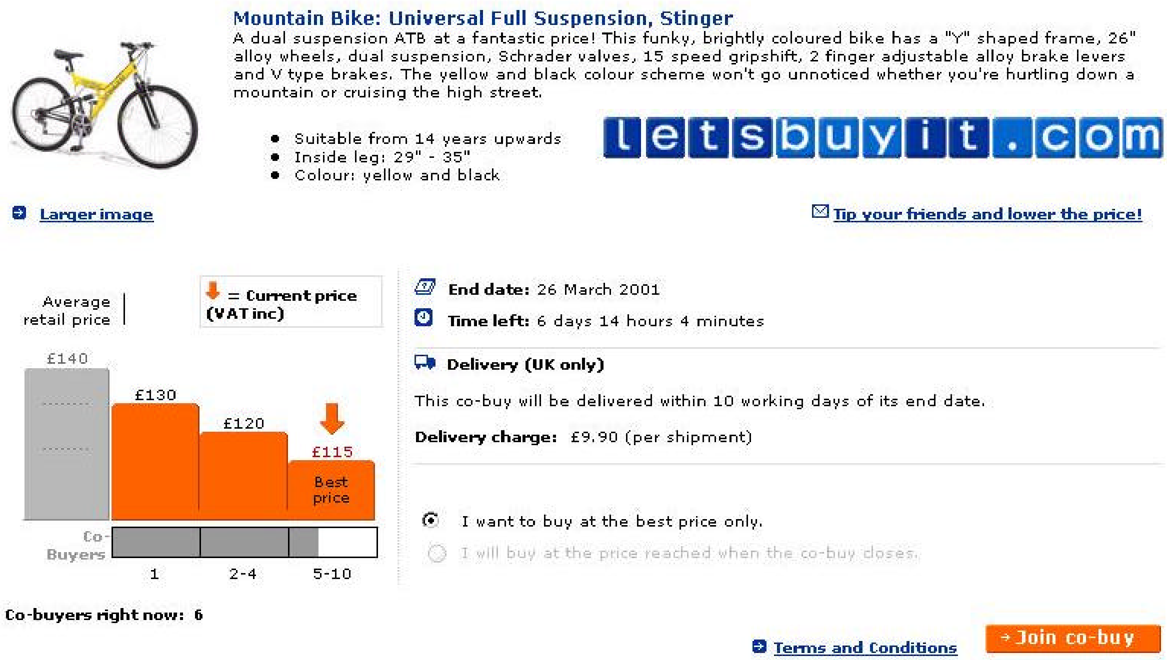
Ultimately, it became increasingly hard for Mobshop's senior management to grow the business on the B2C side, due to all the other competitors in the marketplace and the growing recognition among consumers of the frustrations associated with transacting in group-buying electronic markets. Along the way, Mobshop did try out a few innovations on the B2C side, as it developed its new strategies for software licensing and the B2B side of group-buying. For example, in Spring 2000 Mobshop sold ten new Toyota Camrys for two California automobile dealerships using the group-buying approach (Eldridge, 2000). But this was not enough. Finally, faced with higher costs and declining chances for success, in January 2001 the company ceased its B2C operations, and fully repositioned itself as a group-buying software licensing firm (Clark, 2001; Cook, 2001; Sandoval and Kawamoto, 2001).

LetsBuyIt.com

One of the two European firms among those we examined in the group-buying sector on the Internet is LetsBuyIt.com, which was founded in Sweden in January 1999. Its Web site went live in Sweden in April that year, and by August became available in Denmark, Finland and Norway in Northern Europe. In October, the LetsBuyIt.com network expanded to Germany and the United Kingdom, and then in the first half of 2000 to Austria, Netherlands, Spain, Belgium, Italy and Switzerland. As of the end of late 2000, 14 national Web sites had been established (although only four of them are now active due to a restructuring of the firm to achieve profitability), and there are almost 1.2 million registered users. LetsBuyIt.com acts as a vendor of 150 internationally-known brands, including Pentax, Pioneer, Nikon, Logitech, Aiwa, and LG, among others. The firm's product diversity is greater than what we saw with Mobshop and Mercata, including some 50,000 products and services, and the emphasis is on the sale of high quality and medium to high-priced goods with known brands.

Business Model. LetsBuyIt.com calls its group-buying model the "co-buying" approach, and it is very similar to what we have seen with the other firm's whose dynamic pricing models we have already reviewed. Figure 6, which shows a co-buying auction cycle for a Universal Full Suspension Stinger Mountain Bike, illustrates the basics of how it works. (See Figure 6.)

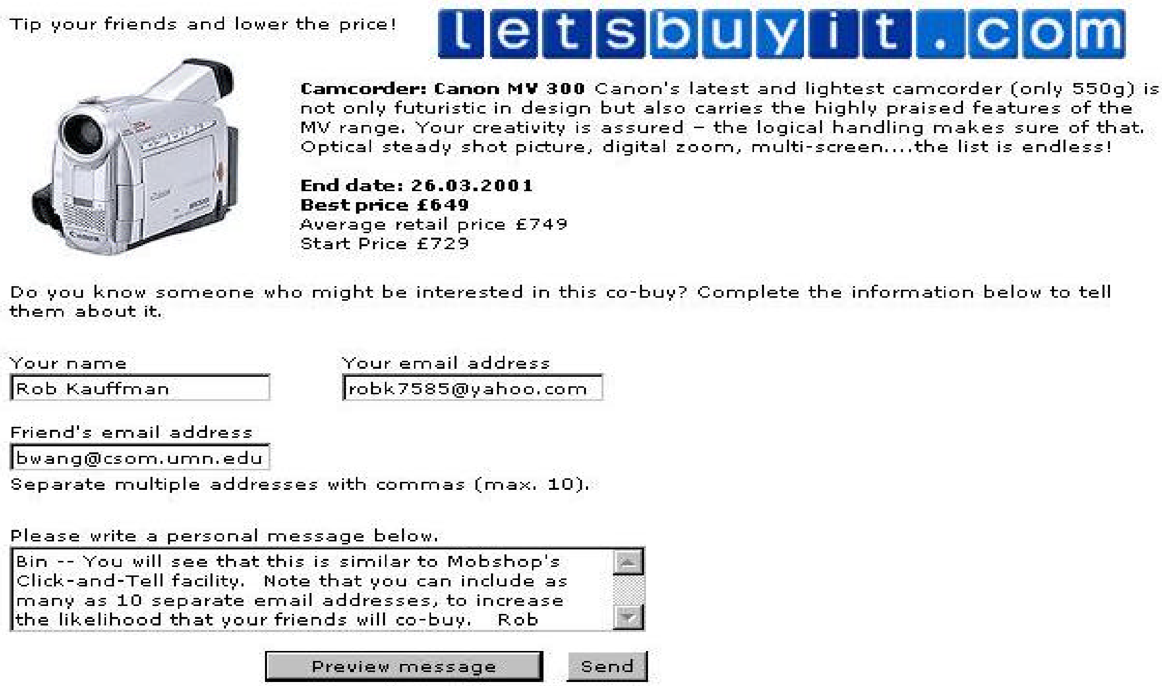
Figure 6. The Co-Buying Mechanism at LetsBuyIt.com



The co-buy auction cycle Web page shows a range of useful information. For this mountain bike, the lowest price tier is £115, which requires no fewer than 5 buyers. The posted comparison is to an average retail price of £140, and there are three steps to the deepest discount. The cycle has almost one week left to run, and delivery is indicated to occur within 10 days of when the transaction is finalized. Of special interest to us is the presence of two choices for the terms that the buyer sets for her purchase. The marked choice is "I want to buy at the best price only," in other words, the lowest price reached in the final price tier. Checking this box makes the bid act as a limit order or conditional bid, since it will only be filled if five or more people join the co-buy group. The second choice, "I will buy at the price reached when the co-buy closes," indicates that the buyer will choose to transact no matter how low the price goes, and that the price at which her bid occurred is an acceptable one.

The LetsBuyIt.com co-buy facility also includes a "Click-and-Tell" feature that is similar to the one used by Mobshop. Not the words in the figure above: "Tip your friends and lower the price." It turns out that this enables the potential buyer to provide information about ten friends who may be interested in the co-buy opportunity, creating some positive likelihood that the co-buy price will decline to the next price tier. Figure 7 shows the "Tip-Your-Friends" tool in LetsBuyIt.com that is obtained in the context of an auction cycle for a Canon MV3000 Camcorder. (See Figure 7.)

Figure 7. The "Tip-Your-Friends" Feature for Co-Buying at LetsBuyIt.com

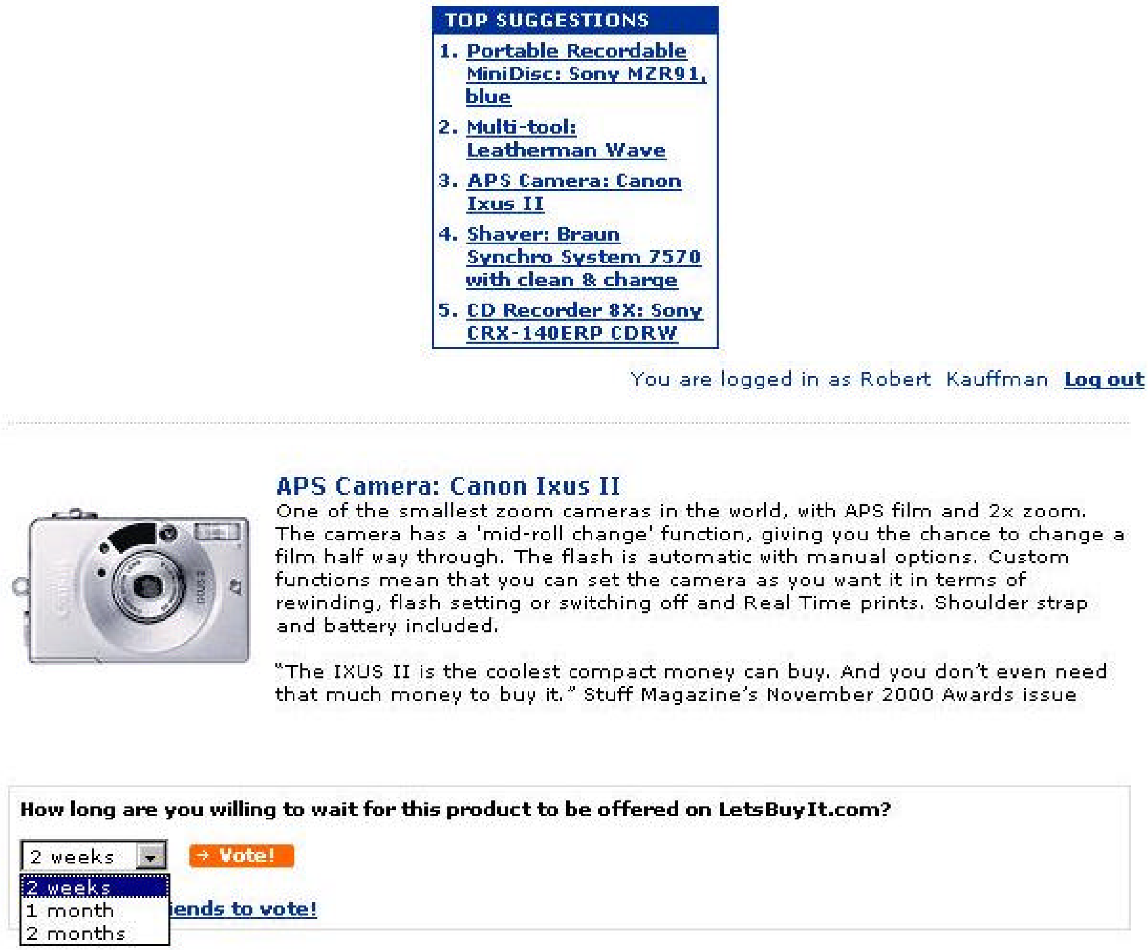


Another interesting aspect of the capabilities that LetsBuyIt.com offers is its "Suggest-a-Product" feature. (See Figure 8.) This feature emphasizes the approach that the firm has taken to balancing buyer and seller initiation for the transaction of sale items.

Figure 8. LetsBuyIt.com's "Suggest-a-Product" Feature

"Suggest-a-Product" enables a potential buyer of an unlisted product to initially search to determine whether the product that he in mind to suggest has been suggested by other shoppers via the "Search Suggestions" box. If the shopper finds the product already listed as a suggestion, similar to what is shown in the "Top Suggestions" box below that accompanies the product suggestion screen, the next step is to click on the item (in this case, we demonstrate with the Canon Ixus II APS Camera), and cast a vote. (See Figure 9.)

Figure 9. The LetsBuyIt "Top Suggestions" Box and "Suggestion Vote" Web Page



Note: The screen that permits the user to cast a vote for having LetsBuyIt.com offer the product also provides a response box that enables the company to sample how long a potential buyer is willing to wait (e.g., 2 weeks, 1 month or 2 months) for the product to be sourced and offered as a co-buy. This provides a useful source of information to enable the firm to be responsive to its customers. The implication is that LetsBuyIt.com would source the most demanded products with the shortest willingness-to-wait on the part of the potential buyers.

Based on what we saw with respect to Mobshop and Mercata, this group-buying Web site appears to offer both enhanced functionality and better balance and responsiveness to buyer interests, as opposed to a primary emphasis on the sellers' interests only. Next, we analyze how well this firm did in the marketplace, with the experiences and analysis we conducted of other American firms in mind.

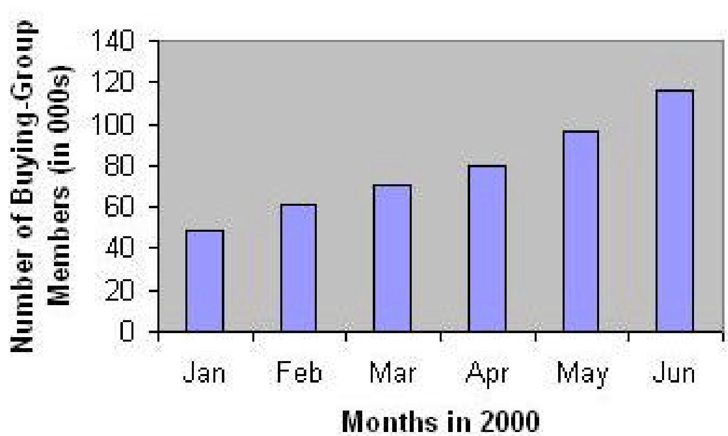
Analysis. In comparison to the American firms we have discussed, LetsBuyIt.com was in a relatively enviable position. It ranked among the top ten Internet-based sellers in Europe during 2000, and grew a very large installed base of co-buying participants through the first half of the year. (See Table 3 and Figure 10.)

Table 3. The Top Ten Internet-Based Sellers in Europe, August 2000

RANK	FIRM NAME	UNIQUE VISITORS
1	Amazon.de	1,253,000
2	Amazon.com	1,213,000
3	Amazon.co.uk	1,086,000
4	Jungle.com	495,000
5	Bol.de	475,000
6	FNAC.com	419,000
7	LetsBuyIt.com	404,000
8	Handy.de	380,000
9	ShopSmart.com	347,000
10	Quell.de	326,000
---	All WWW Sites	23,497,000
---	All retail sites	10,400,000
Source: Stelin (2000), who quotes a Media Metrix survey		

Source: www.letsbuyit.com, March 2001.

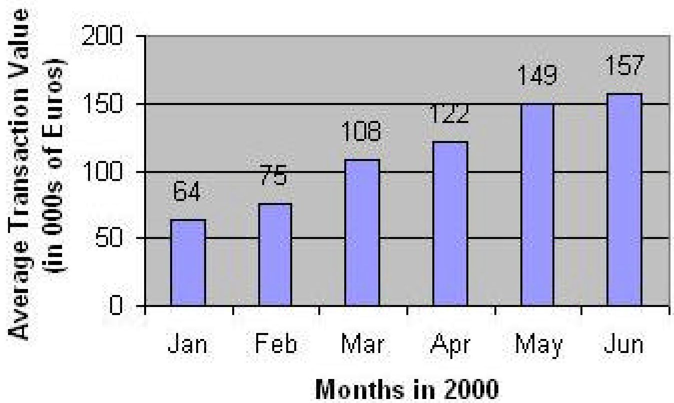
Figure 10. Number of LetsBuyIt.com Co-Buy Purchasing Members (000s)



Source: www.letsbuyit.com, March 2001.

In addition, LetsBuyIt.com was able to increase the value of the average co-buy purchase on its website from EUR 64.00 to EUR 167.00 from January to June in 2000. (See Figure 11.)

Figure 11. Average Transaction Value at LetsBuyIt.com (1st half of 2000, in Euros)



But, similar to some of the other firms that we discussed, the company also ran into trouble in the third quarter as the novelty of its service began to wear off, and consumers became more knowledgeable about how to efficiently shop on the Internet. The costs LetsBuyIt.com was incurring to migrate its operations to 14 European countries grew rapidly. The growth in installed base of users required the costly localization of software for a number of languages (e.g., English, German, Spanish, French, Swedish, Norwegian, Danish, etc.) But the firm had some difficulties doing an initial public offering of stock at an attractive price. When it finally did issue stock, it turned out that the EUR 62.3 million in capital that it netted in the marketplace was insufficient to see it through to the end of the year (LetsBuyIt.com, 2000a). In December 2000, LetsBuyIt.com notified its investors and customers that it was halting operations, pending bankruptcy reorganization (LetsBuyIt.com, 2000b). The company's restructuring plan enabled it to bring in an additional EUR 53 million, however, the new board required that the firm's operations be scaled back significantly (LetsBuyIt.com, 2001).

Other Group-Buying Websites

In addition to those that we discussed above, there are a number of other group-buying Web sites that are worthy of discussion. They include actBIG.com, DemandLine.com, OnlineChoice.com, PointSpeed.com, SHOP2gether.com, VolumeBuy.com and Zwirl.com, which once provided or are still providing group-buying services on the B2B and B2C sides. As we show below, the product and services offered by these group-buying websites differed considerably, and not all of them have fared very well in the marketplace.

actBIG.com (Etrana Inc.) New York City-based actBIG.com was founded in 1999 to provide group-buying and reverse auction services in many product categories, including airfare, hospitality services and vacation packages. Compared with Mobshop and Mercata, actBIG.com was more buyer-driven and allowed buyer-initiated group-buying cycles. If shoppers were not able to find the products they wanted, they could submit a proposal to the suppliers with the prices they were willing to pay. The merchants would then decide to either offer the products or make a counter-offer. Even though actBIG had a wide variety of product categories, there were few sales in many of the categories (Wimpsett, 2000). Unable to sustain its B2C business model, actBIG changed its name to Entrana.com (www.entrana.com) and is now providing franchise systems services and group-buying technologies to businesses.

CoShopper.com. Norway-based CoShopper.com (www.coshopper.com) is LetBuyIt's competitor in the European group-buying B2C market. Founded in 1999, CoShopper now maintains a presence in six European countries (United Kingdom, Norway, Spain, Germany, Sweden and Portugal), two South America countries (Brazil and Chile), three Asian countries (Singapore, Japan and Malaysia), as well as Australia. By participating in "CoShop cycles" which usually last for one to two weeks, buyers at the site can obtain collective savings in product categories such as consumer electronics, computer hardware, home and garden, and sports and leisure.

Maintaining a similar information structure to LetsBuyIt, CoShopper displays the price drop trajectory and the total number of orders placed. Shoppers can also place conditional bids at lower prices if they are not satisfied with the current offering. A feature called "Tip-Friends" allows consumers to send emails to friends informing them about CoShop cycles going on at the site. Employing a zero inventory policy, CoShopper outsources its order fulfillment through two European logistics firms, iForce and Parcel Force, and charges shoppers a fixed delivery fee.

Expanding into the B2B market, CoShopper now offers group-buying services in France, Sweden and Norway in the business procurement sector. However, it has been unable to maintain its B2C operations in Singapore, Malaysia and Chile, so CoShopper now only provides e-commerce solutions in these three countries.

C-Tribe.com. Founded in 1998, San Francisco, California-based C-Tribe.com focused solely on the group-buying of offline retail gift certificates. It is unique among all the group-buying firms that we examine. C-Tribe illustrates the case that group-buying sites may not always be in competition with offline retailers (*Apparel Industry Magazine*, 2000). Based on the same concept, "the more people who buy, the lower the price," C-Tribe promoted bricks-and-mortar retail stores, such as Barnes and Noble, Blockbuster, KB Toys, Foot Locker and Darden Restaurants, by offering their gift certificates at volume discounts. It drove shoppers back to the physical shopping experience (*Business Wire*, 2000d; *PR Newswire*, 2000a). Following a redesign of their Web site in June 2000, C-Tribe provided their customers with access to its services through multiple channels via the Internet, telephone, and hand-held wireless devices (*Business Wire*, 2000d). In addition, the company's newsletter, the "C-Scribes," gave shoppers up-to-date information on product offerings at the site. Similar to a loyalty program, customers could also earn cash-back rewards by purchasing gift certificates of C-Tribe's partner retail stores. Unable to maintain a critical mass of shoppers, C-Tribe appears to have folded in late 2000.

DemandLine.com. Targeted at small businesses, San Bruno, California-based DemandLine.com (www.demandline.com) provides group-buying opportunities and reverse auction services on telecommunications, Internet, software support, credit card processing, and human resources services (DeCeglie, 2000). By aggregating the buying power of small businesses, DemandLine helps companies to obtain the low prices that are available to large companies (King, 1999). However, the mechanism that the firm uses does not report prices in real-time. Instead, the mechanism is more like a reverse auction in that a potential buyer submits a request for a price and DemandLine acts as an intermediary in the presentation of attractive prices on applicable services. The potential buyer then can decide to arrange for the purchase of the service online, or pursue further discussions with the vendor directly.

OnlineChoice.com. Founded in Pittsburgh, Pennsylvania as ElectricityChoice.com, OnlineChoice was the nation's first Internet-based buying pool for electricity (United States Department of Energy, 1999). As the Web site expanded its services, it focused primarily on demand aggregation for services, such as local and long distance phone service, and pure commodity essentials, such as natural gas, electricity and gasoline (Belsie, 2000). Participants could join "buying pools," and in lieu of observing the operation of an electronic market, OnlineChoice.com periodically approached suppliers to negotiate deals on behalf of buyers to obtain discounts. Although a consumer joined a pool, she was not required to purchase the services or products that were offered at a negotiated price. If a deal went through, OnlineChoice.com earned a referral fee by acting as the matchmaker. The range of services offered for group-buying and the installed base of consumer and corporate participants is shown in Table 4. (See Table 4.)

OnlineChoice.com's positioning from the beginning was in an area that the major brand name competitors, Mobshop and Mercata, did not target. However, there have been other companies, especially those that utilized a reverse auction model, which appeared to have been competing in the categories that OnlineChoice.com selected for its emphasis. However, OnlineChoice was unable to build towards profitability in its business, and closed its doors in late April 2001.

Table 4. Participants in the Services Group-Buying Pools at OnlineChoice.com

CATEGORY OF SERVICE	NUMBER OF CONSUMER BUYERS	NUMBER OF CORPORATE BUYERS
Electricity	90,006	242
Gasoline	106,165	177
Health Insurance	9,759	304
Home Security	12,827	----
Internet	12,216	----
Local Phone	22,327	----
Long Distance	105,269	198
Natural Gas	39,654	179
Term Life Insurance	2,563	----
Wireless	45,996	250

Source: OnlineChoice.com. The data for buying group participation are as of March 20, 2001. This company branded its consumer-side services as OnlineChoice, and its business side services as BusinessChoice. Overall, it reported that it had over 460,000 unique customers.

PointSpeed.com. PointSpeed.com (www.pointspeed.com) is a San Mateo, California-based group-buying purchasing center for small businesses. Functioning as a backend service provider, PointSpeed differs from the other group-buying Web sites we examined in that its service is only available through its partners. They include such firms as Bizography.com (www.bizography.com) and Wells Fargo (biz.wellsfargo.com). Through its partners' Web sites, PointSpeed also provides small businesses access to more than 30 retailers and manufacturers such as AT&T, Barnes and Noble, NECX, and Prudential (*Business Wire*, 2000c). Similar to Mobshop, PointSpeed's profits come from fees charged to suppliers based on transaction volume. However, a lack of market interest has caused PointSpeed to discontinue its service in March 2001.

SHOP2gether.com. Founded in early 1999, San Jose, California-based SHOP2gether (www.shop2gether.com) was among the first to provide group-buying services to small businesses by catering to their needs for office furniture, office equipment, travel, employee benefits and corporate gifts. Similar to actBIG, SHOP2gether also functioned as an intermediary to facilitate the product request flow from buyers to sellers. However, different from Mobshop's take-a-sales-cut-from-the-supplier approach, SHOP2gether assessed a fixed fee from buyers whenever a transaction was made.

To seize opportunities in the education procurement market, SHOP2gether introduced the first education-focused group-buying platform in April 2000, partnering with more than 400 vendors who have a total sale of $74 billion in the estimated $618 billion education market (*PR*

Newswire, 2000b). Now with a focus on educational institutions and local government, SHOP2gether supports collective purchasing in product categories such as furniture, education technology, office equipment and supplies, and transportation.

VolumeBuy.com. Encino, California-based Volumebuy.com (www.volumebuy.com) is a software company that licenses its group-buying technologies to small to medium sized businesses. In addition, the company provides group-buying services to consumers on its Web site using three types of buying pools. When they participate in a "Time Power Pool," consumers are guaranteed a low price based upon the amount of time that they are willing to wait to make a purchase. The company's "Flex Power Pool" works like Mercata and Mobshop's group-buying business models, in which prices decrease as more people join the pool. Finally, the "Group Power Pool" does not close until a pre-specified buying group size has been reached. Then, everyone in the pool will receive the same low group price. The product selection at VolumeBuy includes computers and office products, consumer electronics, communication products and services, and vocation packages. Although VolumeBuy's various types of buying pools offer consumers the flexibility in choosing the group they want to participate in, Figure 15 illustrates the additional effort on the consumer side that is required to understand the differences between the pool types. (See Figure 12.)

Zwirl.com. Zwirl.com (www.zwirl.com) is a New York-based e-commerce startup that was founded in July 1999. The company provided group-buying services in product categories such as computing equipment and software, office supplies, baby and household goods, and sporting goods. At Zwirl, shoppers also could initiate auction cycles if the products they want were not in cycles. Moreover, Zwirl also provided a "wish list" service to shoppers similar to LetsBuyIt.com, that would let the company know what products consumers wanted at what prices. Zwirl.com was designed as a destination site but it later partnered with other Web sites to provide group-buying e-commerce solutions. In 2000, Zwirl ceased its own B2C operation and is now focusing on group-buying technology provision.

ANALYZING GROUP-BUYING BUSINESS MODELS

We now turn to a comparison and analysis of these business models, building upon our discussion of the individual group-buying sites, and taking advantage of other assessments.

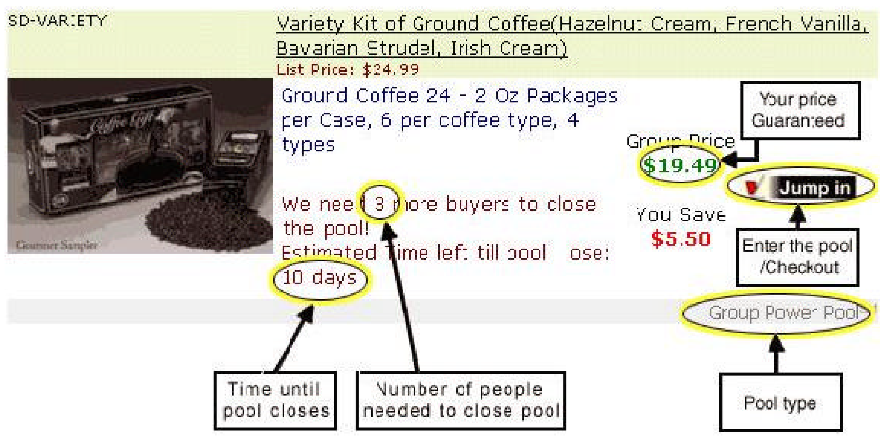
Some Dimensions for Comparing Group-Buying Business Models

Two industry studies offer useful input on how to compare group-buying firm effectiveness.

Figure 12. VolumeBuy.com's Three Types of Pools

- **Time Power Pool:** Length of time to the close of the pool determines the price.

- **Group Power Pool**: Low prices are achieved if group size meets a pre-specified level.



- **Flex Power Pool:** Prices fall over a fixed time, but do not reach a pre-specified level.

Source: www.volumebuy.com, March 20, 2001.

Industry Studies. In 2000, Gomez Advisors (www.gomez.com), a well-known e-business consultancy, compared three group-buying Web sites, Mercata, Mobshop, and VolumeBuy, together with descending-price Web site, OutletZoo.com (www.outletzoo.com). (See Figure 13).

Figure 13. Gomez Advisors' (2000) Comparison of Four Group-Buying Web Sites

Buying Services

Top Internet Buying Service Sites for **Fall 2000** ranked by Group Buyer.

Firm	Score
1. Mercata (review)	7.57
2. Mobshop, Inc. (review)	6.29
3. Volume Buy (review)	4.40
4. Outlet Zoo (review)	3.37

Highest score = 10
Lowest score = 0 (A firm with a 10 for Overall Cost provides services at the lowest cost)

Read about the **Scorecard Methodology**.

Which is the best site by:
> Overall Score
> Ease Of Use
> Customer Confidence
> On-Site Resources
> Relationship Services

Which is the best site for the:
> Auction Buyer
> **Group Buyer**
> Haggler

Note: Outlet Zoo, apparently included incorrectly in this assessment, is a descending-price auction site, where product prices drop as time progresses until all the units have been sold. Mobshop ceased its B2C operations on January 13, 2001. Mercata ceased its entire operations on January 31, 2001.

Using criteria such as *ease of use*, *customer confidence*, *on-site resources*, *relationship services*, and *overall cost*, Gomez ranked Mercata the top site among the four firms, followed by Mobshop. Mercata had advantages over the other firms in customer confidence, on-site resources, relationship services, and overall cost. Mobshop featured high ease of use, but was deemed to be weaker in on-site resources and relationship services.

Rugullies (2000) compares four group-buying sites -- Mercata, Mobshop, actBIG, and Zwirl -- based on site features and usability, business model, corporate infrastructure, and Web site foundations. Because Mercata dealt with manufacturers directly, Rugullies (2000) argues it could achieve higher margins than the other three firms, resulting in the strongest business model. Consistent with Gomez, Mobshop received the highest score in site features and usability. Mercata also was rated higher than the other three firms in terms of corporate infrastructure and Web site foundations.

How Do Prices on Group-Buying Web Sites Compare with Other Firms' Prices?

Since e-commerce industry observers have considered group-buying Web sites to be an innovative use of the Internet, they also have drawn a lot of scrutiny related to their performance.

Many comparisons have been made between the final prices charged by group-buying Web sites and posted-pricing retailers. Is it the case that the group-buying Web sites truly are cheaper for consumer? Or is the opposite true?

Overall, the results that we have examined seem to be mixed. Consider the following anecdotal evidence on variable cost savings that has been documented by industry observers:

- **Palm Pilots.** Dodge (2000) compared the prices charged for a Palm V by group-buying site Mobshop and two posted-price sites, PalmGear.com (www.palmgear.com) and eCost.com (www.ecost.com). Mobshop's final price was $224.95. At PalmGear the same product was priced at $309.95. At the same time, eCost, a site ranked "number one" on overall cost for computer purchase among a set of the top 20 Web sites, based on a Gomez Advisors (www.gomez.com) ranking, was asking $255.99. In addition, Gambale (2000c) reported that eTown (www.etown.com) listed a Palm V $319.91 on two successive days in early April 2000, while Outpost.com (www.outpost.com) listed it for $274.95. Both days, the product was unavailable at both Mobshop and Mercata.
- **DVDs and DVD Players.** Jidoun (2000) also noticed the considerable savings offered by Mobshop. She noted, for example, that one cycle on *The Matrix* DVD accumulated 400 orders and resulted in a final price of $9.95. This was 60% off the list price and $5 less than the lowest price that two shopping bots could find on the Web. However, Jidoun also cautioned against buying expensive items on group-buying Web sites. For example, she found that Mobshop charged $650 or more for a Hewlett-Packard notebook computer, when it could be bought elsewhere on the Internet for about $600. Gambale (2000c) offers additional indications of the mixed results in this product area. Again, on successive days in April 2000, he found that eTown charged the fixed price of $291.35 for a Toshiba 3109 DVD Player, that Outpost.com and Mobshop did not list. However, the prices listed on Mercata each of those days were $289.40 and $293.29, respectively, indacting that Mercata had the low price edge. For a Toshiba SD1200 DVD Player the story was different though. eTown and Outpost.com listed this item at $245.60 and $249.99, respectively, while Mobshop did not list it. On the first of the two days, Mercata's price was $159.95, but on the second day (the beginning of an auction cycle, we guess) it was $249.99, just matching Outpost.com's price.
- **VCRs.** The final evidence that we have seen is again from Gambale (2000c), this time for VCRs. He reports mixed pricing between the fixed price and group-buying sellers. For example, a JVC HRVP770 VCR priced at $163.17 by eTown, and unavailable at Mercata and Outpost.com was priced at $175.95 at Mobshop both days in early April

2000, giving eTown the low price lead. Just the opposite was true with a Toshiba M685 VCR though. eTown listed this second VCR at $152.64 both days, while Mobshop and Outpost.com did not offer it. However, Mercata's prices were better by more than $25 both days, at $128.84 and $124.69.

Clearly, the evidence that we have pulled together suggests that the value proposition with respect to retail group-buying discounts still requires the buyer to beware.

Comparing Rivals: Mercata and Mobshop

Based on our mini-case analyses of the various group-buying Web sites, as well as the comparisons made by Gomez Advisors (2000) and Rugullies (2000), we identify the following five overall aspects that differentiate the two former market leaders, Mercata and Mobshop, in group-buying services: *pricing strategy, information endowment, site features, product emphasis,* and *pre-trade and post-trade logistics*.

- **Pricing Strategy.** The two firms used different pricing strategies. Mercata offered both fixed and dynamic pricing. For products involved in a Mercata Power Buy auction cycle, the prices changed frequently but in small decrements. In contrast, Mobshop generally took a four-tier approach to price changes, and their prices changed less frequently.
- **Information Endowment.** The information endowment for buyers that is available on the two sites clearly was different. Consumers were unaware of the price-quantity relationship at Mercata. They only observed the dropping prices resulting from increasing order volume, but not the driving force: the buying group. At Mobshop, consumers knew the internal mechanisms that drove price changes. Potential buyers were not able to locate detailed product features and specifications at Mercata. Mobshop provided brief product specifications. But compared to Web sites such as Amazon, the details of product descriptions about products at both sites were modest at best.
- **Site Features.** The many additional features such as "Buyer Flash" and "Click-and-Tell" provided by Mobshop gave it advantages over Mercata in ease of use.
- **Product Emphasis.** The two firms had different product emphases. Compared to Mobshop, Mercata had a wider product selection and focused on consumer electronics and household goods. In contrast, Mobshop offered high-tech commodities that were relatively new to the market.
- **Pre-Trade and Post-Trade Logistics.** The logistics before and after sales were made were also different. Mercata dealt with manufacturers directly for procurement, enabling it to achieve higher margins. Mobshop dealt with retailers and distributors, however, making its margins slimmer. Mobshop also eliminated inventory costs by acting as an

intermediary that did not physically fulfill its own orders. Mercata, on the other hand, bought from manufacturers and had to maintain a warehouse and fulfill the orders themselves.

Table 5 summarizes these key differences between Mercata and Mobshop. (See Table 5.)

Table 5. A Comparison of Mercata and Mobshop

COMPARISON DIMENSION	MERCATA	MOBSHOP
Pricing strategy	❑ Both fixed and dynamic pricing ❑ Frequent price change, small decrements	❑ Dynamic pricing only ❑ Four-tier pricing
Information available on Web site	❑ Internal pricing mechanism unavailable ❑ No product features and specifications	❑ Price drop trajectory and group size info available ❑ Brief product specifications
Site features, Ease of use	❑ No	❑ Buyer Flash ❑ Click-and-Tell
Product focus	❑ Wider product selection ❑ Consumer electronics and household goods	❑ Less products offering ❑ High-tech products that were relatively new to market
Logistics	❑ Dealt directly with manufacturers ❑ Provided fulfillment of orders	❑ Dealt with retailers and distributors ❑ Pure intermediary, did not engage in fulfillment of orders

Discussion

Although they are still in their infancy, group-buying business models on the Internet face the challenges of accumulating critical mass and establishing themselves in competition with posted-pricing discount Web sites. Now that we have examined the bases of the initial successes enjoyed by these firms and the subsequent shakeout of the group-buying sites in the marketplace, we offer the following questions and preliminary answers.

(1) In which market does the group-buying business model work best, B2C or B2B?
Compared to offline and online discount merchants, group-buying Web sites are at disadvantage in the B2C market because of the small transaction volume they can aggregate, which makes it difficult for them to realize their low price proposition to their customers. The recent closure of several B2C group-buying service providers suggests the nature of the obstacles that exist in the consumer market. On the other hand, because of the large number of small businesses and government agencies, as well as the high transaction amount, the B2B market provides companies with group-buying business models ample opportunities for making their mark in the marketplace.

(2) **How should firms that are focusing on the B2C market compete with other business models for limited customer resources?** The last two years of experience of the group-buying Web sites that we examined suggest the use of a distributed-service model instead of being a destination site. The high customer acquisition cost and limited traffic to group-buying sites make it difficult to for a destination site to obtain the critical mass it needs to become truly effective. By partnering with other sites that enjoy higher traffic, group-buying sites can provide their services on portal sites and aggregate orders across sites, increasing their chances of marketplace viability.

(2) **What do we learn about the composition of effective product offerings at group-buying Web sites?** As we illustrated in the case of Mercata, group-buying firms face the dilemma of selecting between developing a wide product selection and a large buying-group size. A variety of goods in each category can satisfy consumers' diverse preferences. However, too many products in each category make it difficult to achieve large buying group sizes because of the scattered orders across different products. As a result, group-buying Web sites need to maintain a balance between product variety and order volume for each product. In the selection of each product, it is also important to consider its potential of market interest.

From Mobshop, we observed that the top sellers were either high-tech big-ticket items, such as PDAs, digital cameras, DVD players, MP3 players, or small items, such as DVD movies and video games. A characteristic shared by all the big-ticket items is that they are still in the growth stage of their product life cycle, and demand for them in the marketplace is still increasing. At this stage, buyers tend to be early adopters with higher income and education levels. This tends to match the profile of online shoppers. Hence, these products are best positioned for group-buying.

In our observation of order arrivals at Mobshop (Kauffman and Wang, 2001), there was often a surge of orders after the introduction of a new model of a particular product in the product categories that we discussed. But, some time later, market interest tended to decline, signifying the importance of maintaining fresh and interesting product offerings. After it has been on sale for a while, even a previously hot seller may become relatively unattractive, with the result that it will fail to capture the interest of a sufficient number of buyers to create a basis for critical mass usage. The reasons are simply that repeated visitors who want the product will have purchased it and that the number of newly-acquired customers will not be large enough to result in a large buying-group size.

(4) To what extent are group-buying Web sites at a disadvantage when it comes to the use of shopbots for comparison shopping? The Web as a shopping channel has been characterized by low search cost. Shopbots on the Internet (e.g., www.dealtime.com or www.mysimon.com) make it even easier to do comparison shopping. Using these services, a savvy shopper can easily locate the best deal among a large number of online merchants. This puts group-buying sites at disadvantage for two reasons. *First*, many group-buying sites are still not well-recognized by shopping bots. Thus, it is impossible for the group-buying Web site to leverage these shopping bots in some way to acquire new customers. *Second*, even if they were listed by a shopbot, the dynamic nature of the prices also makes it less likely that the information that is captured represents the best prices the sites have to offer. For example, when a buyer conducts a search at the beginning of an auction cycle, she will only observe the high starting price, which is not likely to be the final one. The information clearly will be misleading.

Group-buying poses both opportunities and challenges for Web sites employing this business model. With the estimated $2.4 trillion worth of transactions projected to materialize by 2004 (Kafka, et al., 2000), the B2B market gives group-buying companies potential opportunities for success. To enhance their viability, group-buying firms focusing on the B2C market can take advantage of the high traffic on portal sites to increase shoppers' exposure to this relatively new buying concept. In addition, DealTime's effort to add group-buying merchants to its search capabilities illustrates that as the group-buying business model matures, the merchants will get recognition from shopping bots to overcome the disadvantage they have when it comes to comparison shopping (*Business Wire*, 1999).

CONCLUSION

In this chapter, we examined group-buying business models in Internet-based selling. Based on a series of mini-case studies and related analysis, we illustrated the innovative use of technologies by group-buying sites in providing their customers with volume discounts that were traditionally privileges of bulk buyers. However, even though group-buying on the Web represents an interesting business model, this alone is not sufficient to justify its viability. Group-buying still is a new concept to many shoppers, and so group-buying firms face the challenges of educating the consumers and achieving critical mass. Moreover, the competition coming from posted-price merchants, especially offline and online discount retailers, makes it difficult for group-buying sites to deliver low prices base on their limited transaction volumes. In consideration of the successes and the failures of group-buying business models in the past couple of years, we believe group-buying firms oriented toward the B2B market are better positioned for future growth. In addition, for sites that focus on the B2C market, a distributed-service model has advantages over a destination site. Furthermore, it is also crucial to maintain a balance between a wide product offering and large group sizes.

In this chapter, we also intended to make a contribution to senior management thinking about group-buying on the World Wide Web. *First*, our research highlights the unique features presented on many group-buying Web sites that facilitate the collective purchasing process. For companies that are interested in site redesign and improvement, they can add functionalities that will improve market efficiency and effectiveness such as the "Save-a-Spot" feature at Mobshop and the "Email Friends" function supported by many sites. *Second*, following an analysis of the competition coming from posted-price discount retailers and the small transaction volume on group-buying sites, we identified strategies taken by group-buying companies to obtain competitive cost savings. Examples include dealing directly with manufacturers and maintaining zero inventory. At the same time, we also noted the problems resulting from these strategies, such as delayed shipments and difficult product returns and exchanges. By illustrating the pros and the cons about group-buying companies, we provide a more holistic view of the problem space that relates to corporate strategy in the presence of this variety of Internet technology. *Third*, our framework for comparing group-buying business models and our analysis of the opportunities and challenges in the market can help interested parties to critically evaluate the most promising market approaches and business models.

For researchers in IS and e-commerce, our research offers other contributions. *First*, by cross-examining several group-buying Web sites, we identified the key aspects of consumer behavior under the group-buying market microstructure. This will provide the motivation for future research to more thoroughly understand and test the efficacy of these group-buying models in the presence of different kinds of consumer behavior. *Second*, group-buying business models are relatively new, and our research is the first to critically examine the efficacy of this type of business model. *Third*, with the ongoing market shakeout in e-commerce, our research illustrates how the academic world can go about helping the business community learn from their successes and their failures.

With the new opportunities that are becoming available in the B2B market, we believe that group-buying business models actually can help small businesses obtain volume discounts. Future research can examine the efficacy of group-buying business models in the B2B market. Moreover, buyer behavior in the B2C market, such as the anticipation of falling prices, the group-buying mentality, the price threshold effect, the reserve price effect, and word-of-mouth behavior might also be mapped to the B2B market and examined more closely. Finally, comparisons also can be made on the efficacy of group-buying business models for different product types in different stages of their life cycles.

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