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## The Impact of E-Commerce Strategies on Firm Value : Lessons from Amazon.com and its Early Competitors

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# The Impact of E-Commerce Strategies on Firm Value: Lessons from Amazon.com and its Early Competitors

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# The Impact of E-Commerce Strategies on Firm Value: Lessons from Amazon.com and its Early Competitors

## Abstract

Which strategies generate value in e-commerce environments? In a step towards answering this question, this paper estimates the impacts of several competitive strategies on the values of the well-known Internet retailer Amazon.com and three of its early competitors, BarnesandNoble.com, CDNOW, and N2K, from their IPO dates until exit or the end of 2001. The strategies analyzed include alliance formation, offline expansion, pricing, product line expansion, and service improvement. The results provide insight into the usefulness of various ways of competing online and could be applied in other settings where firms enter new environments about which they have little information.

**JEL Codes:** **G31:** Capital Budgeting, Investment Policy; **D81:** Criteria for Decision-Making Under Risk and Uncertainty; **L21:** Business Objectives of the Firm; **L81:** Retail and Wholesale Trade; **M21:** Business Economics

**Keywords:** Competitive Advantage, Competitive Strategy, Event Studies, Internet, Valuation

## **1. Introduction**

Managers are often uncertain about the impacts of their competitive strategies on the value of their firms, but this problem is exacerbated when firms enter new environments in which managers have little information about demand and other market conditions.

One such environment is the e-commerce environment. The rapid growth in the number of firms that perform some of their tasks online and compete in the e-commerce environment makes it increasingly important to understand which strategies work in this new environment and which do not.

To provide insight into the impact of e-commerce strategies on firm value, this paper applies event study methodology to analyze strategies announced by the leading Internet retailer Amazon.com and three of its early competitors, BarnesandNoble.com, CDNOW, and N2K, from their IPO dates until exit or the end of 2001. The paper focuses on six types of strategies that are of particular interest in the e-commerce environment: 1) promotional alliance formation and advertising; 2) offline customer service center and distribution center expansion; 3) pricing; 4) product line expansion; 5) service improvement; 6) foreign expansion.

The results demonstrate that the strategies chosen and their impacts on value can be explained using a simple framework: In the e-tailing environment, firms initially believed that pursuing sales was the main way to maximize firm value – this was their general strategy. The general strategy led the firms to implement a variety of initiatives aimed at increasing “web traffic,” the number of visitors to the firm’s web site. Initially, these efforts as a whole increased firm value, and these early positive impacts reinforced the firms’ initial beliefs. However, two factors apparent in the data worked against the

firms. First, the effectiveness of the general strategy diminished over time. Second, economic theory implies that some ways of increasing sales are less effective than others. Firms were slow to recognize both of these factors.

The empirical results can be summarized as follows. First, promotional activities have diminishing marginal returns. Early announcements have higher effects on value than later announcements, which in many cases have negative effects. Second, offline customer service center and distribution center expansion have diminishing marginal returns. Third, price reductions reduce value. Fourth, although product line expansion and service improvement programs generally increase value, this effect is due to a relatively small number of successful initiatives. Fifth, foreign expansion reduces value. Sixth, competitor investments in the firm's main lines of business reduce the firm's value.

The results are consistent with recent work that explores the relevance of web traffic for valuing Internet retailers. Hand (2000) and Trueman, Wong, and Zhang (2001) show that web traffic is an important indicator of the market value of Internet retailers. Jorion and Talmor (2000) show that the relative importance of web traffic falls over time as the firm matures. This is consistent with the result presented here that the impact of promotional alliances aimed at generating web traffic diminishes over time. Finally, Rajgopal, Kotha, and Venkatachalam (2000) show that the relevance of web traffic disappears once the determinants of traffic – including strategies – are taken into account. This highlights the importance of investigating the impacts of strategy on firm value in the e-commerce environment.

This paper contributes to a growing literature on competition and strategy in the Internet environment. In work closest to that presented here, Brynjolfsson and Smith

(2000) compare Internet and conventional retailers in the books and music markets and reject the notion that the Internet is a frictionless market in which price competition is the main form of competition. The results presented here provide further evidence that there is an important role for non-price strategies in the e-tailing environment, even when the goods sold are not differentiated (books, CDs).<sup>1</sup>

As far as I am aware, no other studies use event study methodology to comprehensively assess firm strategy in a new environment such as the e-commerce environment. Previous authors have studied several types of strategies using event study methodology. These include advertising (Chauvin and Hirschey, 1993), alliances (Chan et al. 1997), capital expenditures (McConnell and Muscarella, 1985), joint ventures (McConnell and Nantell, 1985), mergers and acquisitions (Jennings and Mazzeo, 1991), new product introductions (Chaney et al. 1991), and R&D (Chauvin and Hirschey, 1993; Sundaram et al. 1996).<sup>2</sup> These studies employ a cross sectional approach and estimate the average effects of announcements on the sample firms' stock returns. In contrast, this paper follows four competing firms over time. Examining several categories of strategies facilitates comparing different strategies and considering how the effectiveness of some strategies changed over time.

### ***Amazon.com and its Early Competitors***

Amazon.com was founded as an online bookstore in July, 1995 and went public in May, 1997 (Nasdaq: AMZN). In June, 1998 Amazon.com launched its music store. Since then Amazon.com has become the most prominent Internet retailer. Over time Amazon.com has added several products including electronics, health and beauty products, housewares, kitchenwares, music, tools, toys, videos, and several services such as

auctions, 1-Click ordering, and zShops.<sup>3</sup> Amazon.com has expanded nationally and internationally and now operates several customer service and distribution centers in the United States and international web sites that serve customers around the world.

Amazon.com's early online competitors consisted of other Internet retailers of books and music. BarnesandNoble.com has been Amazon.com's main competitor in online book retailing. CDNOW and N2K were the two top Internet music retailers before being displaced by Amazon.com. Subsequently, CDNOW and N2K merged.

Brynjolfsson and Smith (2000) provide a comprehensive list of the top online book and music retailers prior to May 1999. The firms on their list account for 99.8% of web "hits" for book retailers and 96.5% of hits for music retailers. Their data shows that the four firms considered in this paper are the only ones that were independent online entities that were publicly traded during the period studied here – essential for measuring the impact of strategies on value. The other firms on their list were mostly minor competitors relative to the four firms considered here.

There are several other reasons for focusing on the firms considered here. The firms are excellent examples of firms entering new environments in which the impacts of competitive strategies on value were difficult to assess in advance. In addition, the firms have announced their major strategies publicly on their web pages and the business press has followed their activities and fortunes very closely. Thus, it is possible to construct a comprehensive list of key strategic decisions in each of the categories described above.

The firms are also interesting in their own right. Amazon.com has had a fascinating experience in the stock market. Figure 1 shows Amazon.com's adjusted daily closing price compared to the S&P 500 Index, where both are normalized to begin at one.

Amazon.com went public in May, 1997, and at its peak in December, 1999 it was valued at 61.70 times its closing price on its first day of trading, but by the end of 2001 Amazon.com's value had declined to 6.26 times its initial level. By contrast, the S&P 500 Index at its highest point was 1.84 and finished at 1.38.

Amazon.com has always dwarfed its online competitors in terms of market value, and its competitors have not performed as well. Table 1 shows how Amazon.com's market value compares to the other firms' market values on their IPO dates. Figures 2-4 show that none of Amazon.com's early competitors achieved its stock market success. BarnesandNoble.com was valued at 1.12 times its initial closing price at its peak, which occurred soon after its IPO. CDNOW and N2K were valued at 1.61 and 1.81 times their initial closing prices at their peaks, which occurred in April 1998. Figures 2-4 show that all three firms' values fell over time.

The lessons learned may be applied to other Internet ventures. Stock prices of e-commerce firms are volatile and often seem to fluctuate for no reason, so measuring the impacts of strategies on value is particularly useful in this setting. Estimating how strategies affect the market's assessment of value will help us understand the forces shaping competition between e-commerce firms.

## **2. Theory**

The testable hypotheses emerge from a simple framework with the following assumptions about behavior and success in new environments: Firms form beliefs about what their general strategy should be before entering the new environment or soon after. Typically survivors experience early success using their general strategy – firms that do not achieve early success exit. Early success reinforces the firms' beliefs, making them



somewhat resistant to change. However, two factors work against the firms. First, the effectiveness of the general strategy eventually diminishes as the firm and the environment evolve. Judging when the general strategy is no longer useful is difficult, and a firm may need to experience several negative effects before it revises its general strategy. Second, the different ways of implementing the general strategy may differ in their effectiveness, and it may be difficult for the firm to determine which ways are effective. However, here economic theory can provide a guide, and this section uses economic theory to assess the likely effectiveness of different e-commerce strategies.

In the e-tailing environment, the “general strategy” was increasing sales. Early on, firms believed that increasing sales was vital, and many of their strategies were designed to increase the number of visitors to their web sites.<sup>4</sup> The first two hypotheses follow from the notion that the effectiveness of this general strategy eventually diminished. The remaining hypotheses apply insights from economic theory to the e-commerce environment. Many of the hypotheses could be applied to other new environments with only small modifications.

### ***Promotional Alliances and Advertising***

Promotional activities, including promotional alliances and advertising, were important devices employed early on by the firms in their attempt to attract visitors. A promotional alliance is basically an advertising and promotion contract combined with a long-run relationship. Internet allies provide links to the firm’s website and promote the firm’s products. For example, consider Amazon.com’s early alliance with Yahoo!, the popular search engine firm. Yahoo! provided direct links to related Amazon.com book titles from every Yahoo! search result. Searchers were invited to buy books related to what they

were searching for on the web. Potential allies include Internet service providers, search engine firms, and other popular sites. These sites are often referred to as *portals*, which are sites that people visit first when they log on to the Internet.

The main benefit of promotional activities is that more consumers become aware of the firm's products and services. The cost of such activities includes transaction costs and fees that are determined in large part by the opportunity costs of the ally or advertising outlet. This type of investment naturally involves diminishing marginal returns because the marginal costs of continued promotion are largely independent of the firm's actions (they are determined by the partner's opportunity costs). Therefore, if the marginal benefits of promotion fall, marginal returns tend to fall. Marginal benefits may fall for at least two reasons. First, once consumers are aware of the company's products and services, the impact of additional promotional activities may be minimal. Second, even if higher consumer awareness generates increased sales it may not generate increased profits, but it may take firms time to realize this. Both of these effects were relevant in the e-commerce environment. This suggests the following testable hypothesis:

**Hypothesis 1:** Investment in promotional alliances and advertising have diminishing marginal returns: investments early in the firm's life have a more positive impact on the firm's value than those later on.

### ***Offline Customer Service Center and Distribution Center Expansion***

Offline customer service center and distribution center expansion involves leasing or purchasing bricks-and-mortar facilities to warehouse products and handle shipping and

service. The benefit of offline customer service center and distribution center expansion is that more customers can be served and shipping times can be reduced. The cost of offline expansion is determined by the opportunity costs of the facilities being purchased or leased and the resources employed in the service effort. This type of investment naturally involves diminishing marginal returns because the firm's marginal benefits from continued expansion tend to fall over time while the marginal costs of continued expansion are largely independent of the firm's actions (they are determined by opportunity costs). Marginal benefits tend to fall over time because early expansion efforts lead to large increases in the number of customers that can be served and dramatic reductions in shipping times, but later expansion efforts have less substantial effects. This effect may be offset somewhat by growth in the number of consumers in the market and the number of purchases each makes, but these variables eventually level off. When they do so is not known in advance, but when they do, marginal benefits fall. This suggests a testable hypothesis:

**Hypothesis 2:** Investment in offline customer service center and distribution center expansion has diminishing marginal returns: investments early in the firm's life have a more positive impact on the firm's value than those later on.

### ***Pricing Strategy***

A firm attempting to increase sales may lower prices to attract customers. However, in the absence of cost advantages, price reductions are easily imitated, leading to price wars that lower everyone's profits and provide no one with a relative advantage. Price

reductions may appear to be easily reversed, but this is often not the case partly because competitors react by lowering their own prices. Further, price reductions are usually publicized in order to maximize their effect, so they cannot be reversed without inducing a loss of reputation amongst consumers. Therefore, the firm cannot return to the initial state of the world simply by raising prices.

Price competition has long been thought to be a potential problem for online retailers. Bricks-and-mortar retailers differ by location, and game theoretic models of horizontal product differentiation show how location differences allow firms to charge higher prices even when the goods sold are identical in all other ways. In the absence of location differences, simple models predict that producers of identical goods engaged in price competition obtain zero profits unless one has a cost advantage (see Tirole, 1988 for a formal presentation). Partly for this reason, manufacturers often have an incentive to provide local monopolies to their retailers (Carleton and Perloff, 1994). The Internet removes this source of product differentiation. This is critical in cases like Amazon.com's where the products sold are not differentiated from those of other retailers (books, compact disks, and so on). Like other firms, e-commerce firms can obtain above-normal profits only if they obtain lower costs than their competitors or differentiate by providing better services and complementary product lines that are not easy to imitate.

These arguments yield a testable hypothesis:

**Hypothesis 3:** Price reductions reduce value.

### ***Product Line Expansion and Service Improvement***

One of the basic problems firms face when entering new environments is that they do not know how consumers value the various products and services the firms can introduce. As a result, mistakes are likely, and we should observe many initiatives that lower value. Further, many initiatives will have little or no impact on value. These facts taken together suggest the following testable hypothesis:

**Hypothesis 4:** If product line expansion and service improvement programs succeed as a whole, success can be traced to a relatively small number of successful initiatives. Many initiatives reduce firm value.

Theory does not provide a clear guide into what will work and what will not, but some of the relevant factors are the following: Should the firm focus on improving its existing products and services or expand into unrelated activities? Should the firm partner with other firms in its efforts or go alone? Should the firm explore foreign markets or concentrate on domestic ones? In order to address these questions, in the empirical results presented below I consider product line expansion and service improvement programs that involve acquisitions and alliances separately from those that do not. Further, I treat announcements of all types that involve foreign expansion separately.

### ***Competitor Strategies***

Most strategies designed to attract additional customers draw some customers away from competitors. More generally, most strategies designed to increase a firm's value decrease its competitors' values: at least some of the value gained is at the competitors' expense.

This adverse effect on a firm's competitors is most likely to be observed when the strategy affects the competitors' main lines of business and is not likely to be observed at all if the strategy involves completely unrelated lines of business. The relative size of the firms also matters. To see why, consider a firm that is one-tenth the size of its competitor. If the firm implements a strategy that leads to a 10% increase in its value, then even if the gain is entirely at the expense of its competitor, its competitor suffers only a 1% loss in its value. This discussion suggests the following testable hypothesis:

**Hypothesis 5:** A firm's investments in its competitor's main lines of business have a negative impact on the competitor's value. This effect on the competitor's returns is larger if the competitor is smaller.

### **3. Empirical Methodology**

To obtain announcements of strategies I use company press releases. The firms that still exist provide many of their press releases on their web sites. I supplemented these lists with company press releases from *Business Wire* and *PR Newswire* in the *Lexis-Nexis* database. The goal was to assemble a comprehensive list of important announcements of strategies.<sup>5</sup> A vast amount of literature suggests that financial announcements also affect firm value (MacKinlay, 1997). Therefore, as control variables, I include all announcements of quarterly financial results, debt and equity issues, and CDNOW's announcements surrounding its search for a buyer. The estimated effects of financial announcements are reported at the end of the series of tables (Tables 13a-d).

To test Hypothesis 5 I identified competitor announcements in the firm's main

lines of business. I include promotional alliances with affiliates and associates, major portals and important bricks-and-mortar firms; pricing announcements that affect books and music products; product line expansion and service improvement activities in the books and music markets, including those that involved important bricks-and-mortar firms (Barnes & Noble, Borders); and major merger and acquisition announcements.

In some cases, multiple announcements occur on the same day or on adjacent days. In these cases I count only one event, put the event date on what appears to be the most important event's date, and describe the events together in the table associated with the major event, with the minor event mentioned in brackets. I assume that financial announcements are more important than strategy announcements and that a firm's own announcements are more important than its competitors' announcements, but for other categories I consider announcements case-by-case. Counted this way, there are 157 events for Amazon.com, 62 for BarnesandNoble.com, 68 for CDNOW, and 41 for N2K. Tables 4a-13d summarize the information that pertains to each event.

For each firm, I use adjusted daily closing prices to construct daily returns series for as long as the firm is publicly traded prior to December 31, 2001. I use the S&P 500 Index to construct market returns. The series are from Yahoo! Finance when available and CRSP otherwise. Table 1 reports the firms' IPO dates, the last date their returns are observed, the number of observations on returns, and the unconditional standard deviations of the firms' returns.

Table 1 shows that the unconditional standard deviations of the firms' returns are quite high. The lowest is BarnesandNoble.com's, which is 5.8%. This implies that daily returns of plus or minus 5% are well within the range of ordinary fluctuations and returns

must be plus or minus at least 11.6% in order to be in the tails of the distribution. Partly because of this, most of the estimated effects reported below are statistically insignificant even when the point estimates suggest that the effects on value are quite large.

Preliminary data analysis established that the market begins responding to announcements two days in advance, and the announcement typically appears in the Wall Street Journal the day after it is released. Therefore, to estimate the announcement effects I use an event window that includes the two days prior to the announcement day and one day after: [-2,1]. Some of the event windows overlap because some announcements are made less than three days apart. To estimate the cumulative abnormal returns (CAR) of each event given this problem I use two methods. In the first, the estimation equation is

$$R_{it} = \alpha + \beta R_{mt} + \sum_{j=1}^J \gamma_j d_j + \varepsilon_t, \quad (1)$$

where  $R_{it}$  is the firm's stock return on day  $t$ ,  $R_{mt}$  is the market return on day  $t$ ,  $J$  is the total number of events for firm  $i$ ,  $d_j$  is a dummy variable that takes the value one during event  $j$ 's event window,  $\varepsilon_t$  is the error term on date  $t$ , and  $\alpha$ ,  $\beta$ , and the  $\gamma_j$ 's are the estimated coefficients. In this method, the t test of the significance of event  $j$  uses the t statistic of  $\gamma_j$ . To compute the CAR of event  $j$ , I multiply  $\gamma_j$  by the length of the event window. This parsimonious specification avoids double counting abnormal returns when event windows partially overlap and facilitates joint hypothesis tests. Regression results from this method are reported in Table 2.<sup>6</sup>

The second method computes CAR the standard way (as described by MacKinlay, 1997). I delete periods covered by the event windows from the sample, estimate the market model by regressing  $R_{it}$  on  $R_{mt}$ , and compute the CAR of an event by summing



the forecast errors during its event window. Results from this method are also reported in Table 2. The coefficients of the market model are similar in the two methods, and the results below confirm that when the event window of an event does not overlap with another, both methods lead to essentially the same results. However, when the event window of an event does overlap with another, the results are sometimes quite different. The second method double counts the abnormal returns whenever two event windows overlap, but in some cases the results appear to be more reasonable.

Many of the effects are imprecisely estimated. Despite this, a relatively clear picture of the impact of strategies on value emerges when we look at categories as a whole. For example, Table 6a, which describes Amazon.com's pricing strategies, shows that every CAR except one is negative. Thus, even though each individual effect is imprecisely estimated and may be doubted, the weight of the evidence suggests that Amazon.com's pricing strategy has reduced its value.

#### **4. Empirical Results**

Table 3 summarizes the empirical results, and Tables 4a-13d describe the results in more detail. The tables group events into categories: 1) promotional alliance formation and advertising; 2) offline customer service center and distribution center expansion; 3) pricing; 4) product line expansion and service improvement through alliances or acquisitions; 5) product line expansion and service improvement without alliances or acquisitions; 6) foreign expansion; 7) competitor announcements; and 8) financial announcements. Each table lists events in the category and includes related follow-up events. When I report joint hypotheses tests and summary statistics I use the coefficients from method 1. Both methods yield similar conclusions.

### ***Promotional Alliances and Advertising***

Tables 3 and 4a-d provide some support for Hypothesis 1: promotional activities have diminishing marginal returns. The summary CARs reported in Table 3 suggest that only Amazon.com's promotional activities were successful as a whole – for the others the negative effects outweigh the positive ones. The detailed results in Tables 4a-d confirm that the announcements with positive effects occurred early on and the announcements with negative effects occurred later on. BarnesandNoble.com appears to be an exception, but these results can easily be explained: BarnesandNoble.com went public late in its life cycle relative to the other firms and because of this I cannot measure the effects of its early promotional activities (for a list of these announcements and how they affected Amazon.com see Table 12a discussed further below).

The results show that early alliances with major portals such as AOL, Netscape, and Yahoo! generated a lot of value. Amazon.com also increased its value by offering to pay high referral fees to the Top 500 PC Meter sites, the 500 most-visited sites on the web as measured by Media Metrix (9/8/97). More than 400,000 book titles were eligible for a 22.5% referral fee, and Amazon.com's other titles were eligible for a 7.5% referral fee. These fees were 50% higher than the fees paid to other sites.

After these early promotional alliances, the high benefits from additional promotional alliances disappeared. Note that by the end of 1998 Amazon.com essentially stopped this type of alliance formation. In contrast, BarnesandNoble.com and CDNOW continued to invest heavily in promotional activities. A comparison of the number of announcements in Tables 4c and 4d with the numbers in the remaining tables for CDNOW and N2K shows that promotional activities were the main devices these

companies used to attempt to increase sales.<sup>7</sup> The results suggest that promotional activities are most useful early in the firm's life cycle, and that alliances with major portals generate the most value.

It is worth noting that these results have implications for research on the effects of promotional activities on firm value. Chauvin and Hirschey (1993) find that advertising intensity (measured as advertising as a percentage of sales) has a positive effect on firm value in advertising-intensive industries. Chan et al. (1997) and Das et al. (1998) find that technological alliances are more valuable than marketing alliances. My results suggest that life cycle factors should be considered in such analyses because the value of promotional activities depends on how mature the firm is.

#### ***Offline Customer Service Center and Distribution Center Expansion***

Tables 3 and 5a provide some support for Hypothesis 2: offline customer service center and distribution center expansion has diminishing marginal returns. Only Amazon.com engaged in extensive expansion of this type. BarnesandNoble.com made one announcement in this category and the other firms outsourced distribution.

Although the results are statistically insignificant, the point estimates suggest that Amazon.com's early expansion had a positive effect on its value. In contrast, Amazon.com's expansion after its first two centers had a negative impact on value. Overall, the net impact of Amazon.com's expansion program is very close to zero.

The main benefit of offline expansion is that it improves delivery times. The results suggest that the improvements in delivery times from distribution center expansion were worth the cost early on, but that more recently this has not been the case. This is a reasonable conclusion. The Delaware center (11/18/97) provided better access to

East Coast customers and publishers. The Nevada center (1/7/99) reduced shipping times to key markets in the western United States by a full day. The expansion that followed led to smaller improvements and, although the terms of leases are not disclosed, the cost may have been higher because the more recent centers are larger.

### ***Pricing Strategy***

Table 3 and Tables 6a-c provide some support for Hypothesis 3: price reductions reduce value. Although BarnesandNoble.com's and N2K's announcements of pricing strategies were confined to price reductions and free shipping, Amazon.com's announcements of pricing strategies included more creative devices. As Table 6a shows, Amazon.com's first three announcements were price discounts, and the point estimates suggest that these discounts reduced Amazon.com's value. It is possible that Amazon.com learned from these early effects, because Amazon.com's pricing strategy after these events was more creative, although it still did not increase value.

Information surrounding the announcements of price reductions supports the theory discussed above in Section 2: price reductions lead to rapid competitor responses. Ghemawat (1999, Case 9) shows that Amazon.com's first price cut in Table 6a (6/10/97) was part of a price war with Barnes & Noble's online site that began before Amazon.com's initial public offering. Amazon.com's price discounts on *New York Times* bestsellers (5/17/99) were also part of a price war with Barnes & Noble and Borders, who both matched Amazon.com's discounts. Thus, Amazon.com obtained no relative advantage by lowering its prices.

The estimates suggest that Amazon.com's more recent pricing innovations were not more successful than its early price reductions. One example is the Honor System,

which allows web surfers to tip their favorite web sites. Amazon.com used this technology to implement a virtual tip jar that allows customers to tip their favorite musicians when they download MP3 tracks. As shown below, investors reacted more favorably to service and product line enhancements.

***Product Line Expansion and Service Improvement through Alliances and Acquisitions***

Tables 3 and 7a-8d summarize the effects of the firms' product line expansion and service improvement programs that involve alliances and acquisitions. Table 7a shows that Amazon.com's strategy of product line expansion through alliances or acquisitions consisted mainly of aggressive product line expansion far beyond books and music into areas where another e-commerce firm had already demonstrated competence. In contrast, Amazon.com's competitors' strategies of this type consisted mainly of expansion into closely related product lines. Table 7b shows that BarnesandNoble.com expanded into magazine subscriptions and e-books. Tables 7c and 7d show that CDNOW and N2K introduced custom CDs and digital downloads.

Amazon.com's strategy of service improvement through alliances or acquisitions is more difficult to summarize because it included several strategies: auctions, books, a credit card, delivery time improvements, free music downloads that allow consumers to sample music before purchasing, internationalization, and wireless access. Amazon.com's competitors' efforts were similarly multifaceted.

Overall, the results support Hypothesis 4: only a few types of events in Tables 7a-8d have substantial positive impacts on value. For example, Amazon.com's large investment in Drugstore.com and its subsequent introduction of a health and beauty store in partnership with Drugstore.com (the first three events in Table 7a) are associated with

a CAR of .35. Second, Amazon.com's acquisition of Exchange.com (4/26/99) is associated with a CAR of .27. The net impact of all other events in Table 7a is negative. The low or negative effects of the other products in Table 7a could be due to a variety of factors including lack of consumer appeal, lack of synergies with Amazon.com's other products and services, management's unfamiliarity with the products, or excessive acquisition costs. The results for the other firms are similar. Of all the announcements in Table 7b, only the last one, an alliance with Mightywords, had a significant positive impact on BarnesandNoble.com's value. Table 7c shows that CDNOW's introduction of music downloads had a high impact on its value, and Tables 7c and 7d show that CDNOW and N2K's merger had a positive impact on both companies.

Table 8a shows that Amazon.com's gains from service improvement can also be attributed to a small number of agreements. Amazon.com's early alliances with Muze for music (6/16/98) and OSM for back-office service (6/24/98) are each associated with a CAR of .23. Amazon.com's alliance with Bidpath for auctions (7/18/00) is associated with a CAR of .24. Amazon.com's alliance with Borders Group (4/11/01) is associated with a CAR of .42. Borders Group operates the second largest offline book retail chain in the United States, and its initial efforts to create an online bookstore failed. The alliance was extremely valuable because it combined Amazon.com's online capabilities and resources with Borders' offline strength.

The other events in Table 8a are difficult to evaluate because either the estimates are imprecise or the evidence is mixed. For example, several events pertain to Amazon.com's expansion of wireless access capabilities (10/4/99, 12/8/99, 2/28/00, 3/15/00), and while the net impact appears to be negative (CAR -.16), the alliance with

Sprint (12/8/99) had a significant positive impact (CAR .23).

The evidence on the other companies' service improvements is less supportive for the hypothesis. Table 3 shows that BarnesandNoble.com's and CDNOW's programs had positive impacts on value, but Tables 8b and 8c show that no events stand out as exceptional. The results for N2K do not address the hypothesis because its program yielded negative returns.

***Product Line Expansion and Service Improvement without Alliances or Acquisitions***

Tables 3 and 9a-10c summarize the effects of the firms' product line expansion and service improvement programs that did not involve alliances and acquisitions. The results for Amazon.com and BarnesandNoble.com suggest that strategies that do not involve acquisitions and alliances generate more value than those that do: even though the number of announcements of the former type is smaller, the effect on value is generally larger. The results for CDNOW do not exhibit this pattern, however, and N2K did not announce any efforts that did not involve partners.

The nature of the programs summarized in Tables 9a-10c is similar to those described in the previous subsection: Amazon.com expanded its existing product lines and introduced several new products, while its competitors restricted their product line expansion efforts to products close to books and music. As for service improvements, Amazon.com made shopping more convenient and informative (1-Click, recommendations center, links to similar products, subject lists, purchase circles), and its introduction of auctions and z-Shops allowed it to market its service capabilities without transferring its know-how. Amazon.com's competitors concentrated on improving services related to books and music.

The results support Hypothesis 4: Amazon.com's most successful product line expansions were the music store (6/10/98), the video store (11/17/98), and the electronics and toys and games stores (7/13/99). Its other expansion efforts either increased value marginally or decreased it. Table 10a shows that improving the ease of shopping through devices like the 1-Click payment feature and providing additional information to consumers through categorization, search capabilities, and recommendations on related books and music increased value. Note that in contrast to the price reductions described above, these strategies were not so easy for Amazon.com's competitors to imitate. For example, Amazon.com successfully obtained and defended a patent on its 1-Click payment technology. When Amazon.com expanded its product line it tended to adapt its existing services like 1-Click shopping and recommendations to the new products. Therefore, service improvements created economies of scope. Amazon.com's Auctions and zShops exploited these capabilities further by allowing others to make use of Amazon.com's technologies.

The results for BarnesandNoble.com suggest that its highest value generating efforts surrounded its introduction and expansion of its e-bookstore (8/8/00 on Table 9b) and electronic publishing (1/4/01 on Table 10b). The results for CDNOW do not address the hypothesis because its program yielded low or negative returns.

### ***Foreign Expansion***

Tables 3 and 11a-c show that foreign expansion efforts reduced value. This appears to be an example of how the firms' uncertainty combined with their enthusiasm for increasing sales led them to expand too far. There are several possible explanations for why foreign expansion reduced value; some of the key ones are high entry costs, low demand, and



management's lack of knowledge about the markets.

### ***Competitor Announcements***

Tables 3 and 12a-d provide support for Hypothesis 5: competitor announcements in the firm's main lines of business reduce the firm's value, and the effect is much less pronounced for Amazon.com, which is much larger than its competitors. N2K suffered especially because of CDNOW's strategies until the two companies finally merged.

## **5. Conclusion**

This paper estimates the effects of several e-commerce strategies on firm value. Among the conclusions for e-commerce firms are the following: First, promotional alliances should focus on the most prominent portals and are most useful early in the company's life. Second, excessive investments in offline expansion should be avoided. Third, price competition should be avoided. Fourth, product line expansion and service improvements, with or without alliances or acquisitions, should be pursued, but positive value may come from a small number of these. Amazon.com's highest estimated abnormal return came from an alliance with Borders Group, an offline book retail giant that complements Amazon.com's online strengths in book retailing. This suggests that one of the most fruitful strategies for online firms is to form alliances with offline firms in the same industry. Foreign expansion reduced the value of the firms considered here.

Stock prices for Internet firms often seem to fluctuate wildly for no reason, but the results show that even in this setting the market still responds to information. A final recommendation is that because the market reaction provides information for managers, firms that enter new volatile environments should 1) go public; 2) announce their competitive strategies in order to get the market's reaction; and 3) spread out strategy

announcements in order to isolate the market's reaction to each one.<sup>8</sup> The previous literature concentrates primarily on the setting in which managers have private information relevant for valuing the firm and other market participants do not, but in new environments information is often widely held.<sup>9</sup> Managers may be able to use the market's reaction to announcements to assist in formulating future strategies.

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Figure 1. Adjusted Daily Closing Prices for Amazon.com and the S&P 500 Index

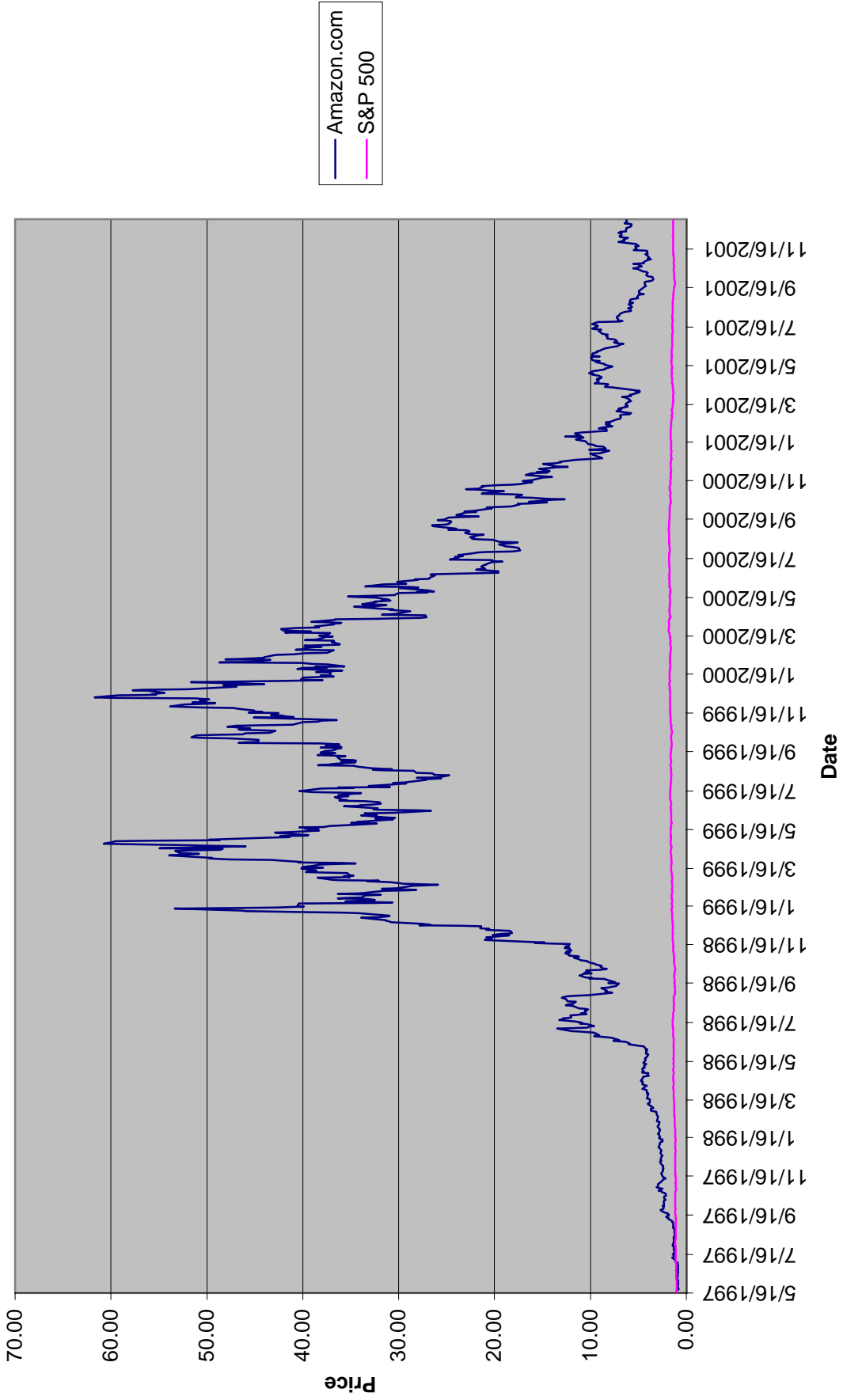


Figure 2. Adjusted Daily Closing Prices for BarnesandNoble.com and the S&P 500 Index

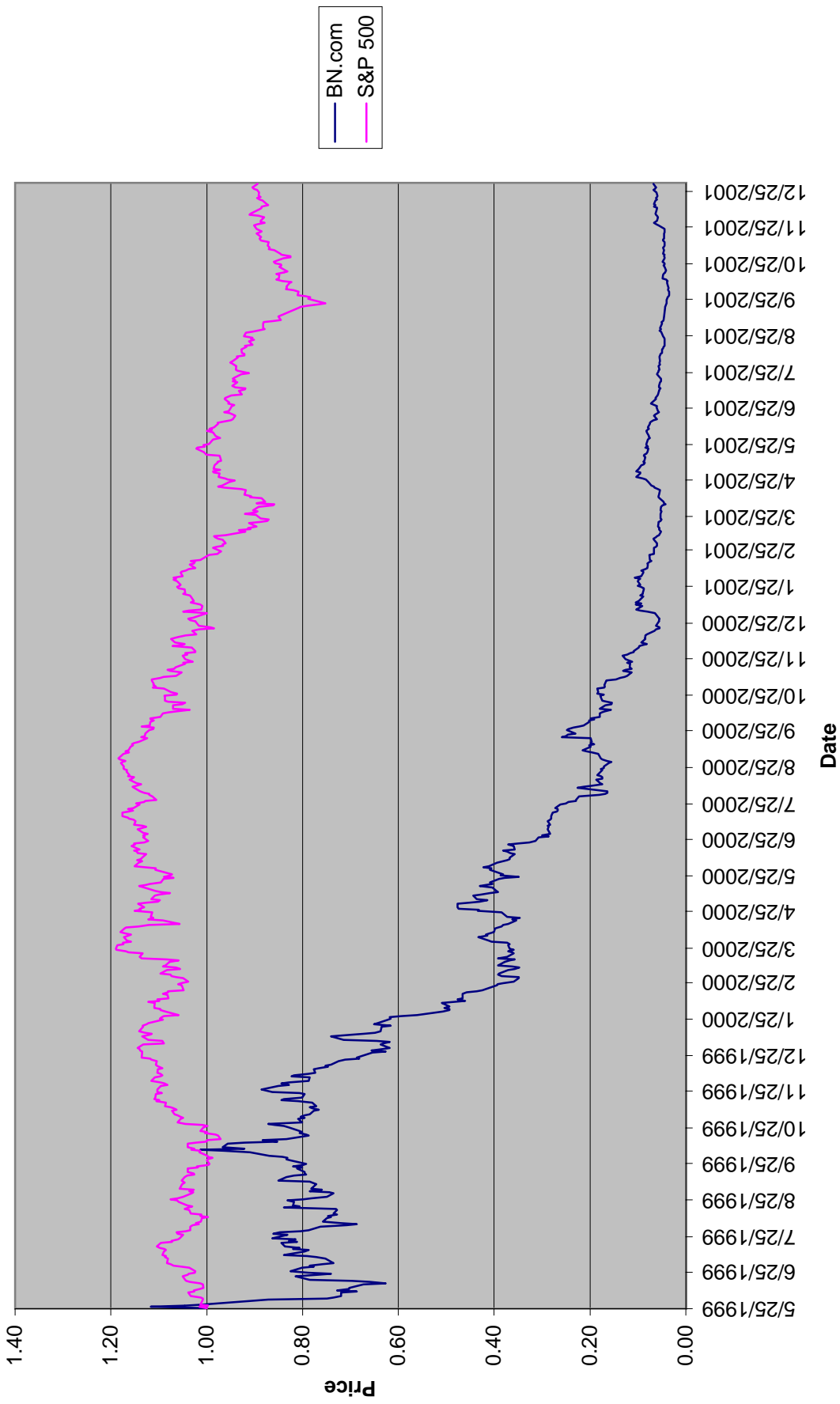


Figure 3. Adjusted Daily Closing Prices for CDNOW and the S&P 500 Index

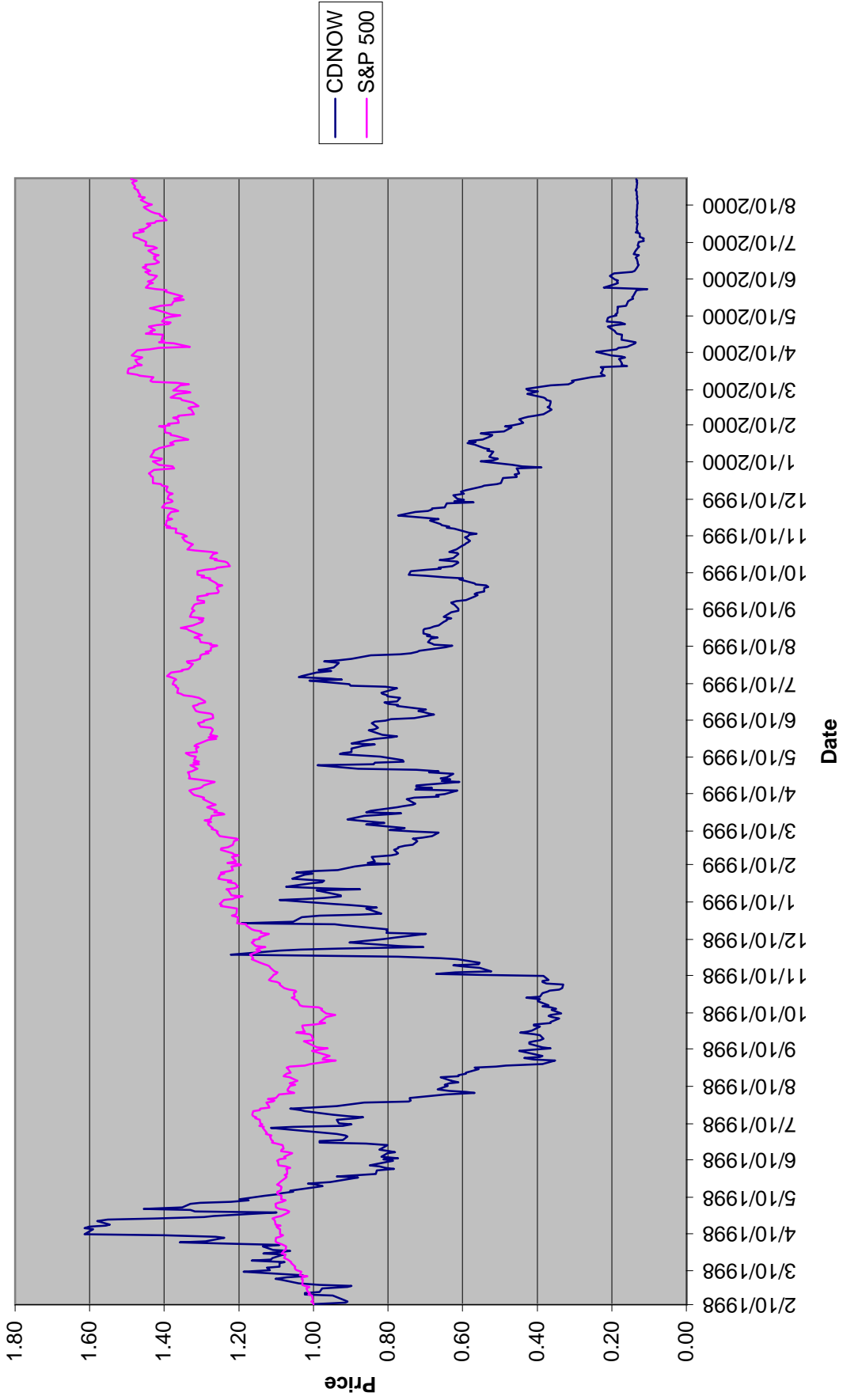


Figure 4. Adjusted Daily Closing Prices for N2K and the S&P 500 Index

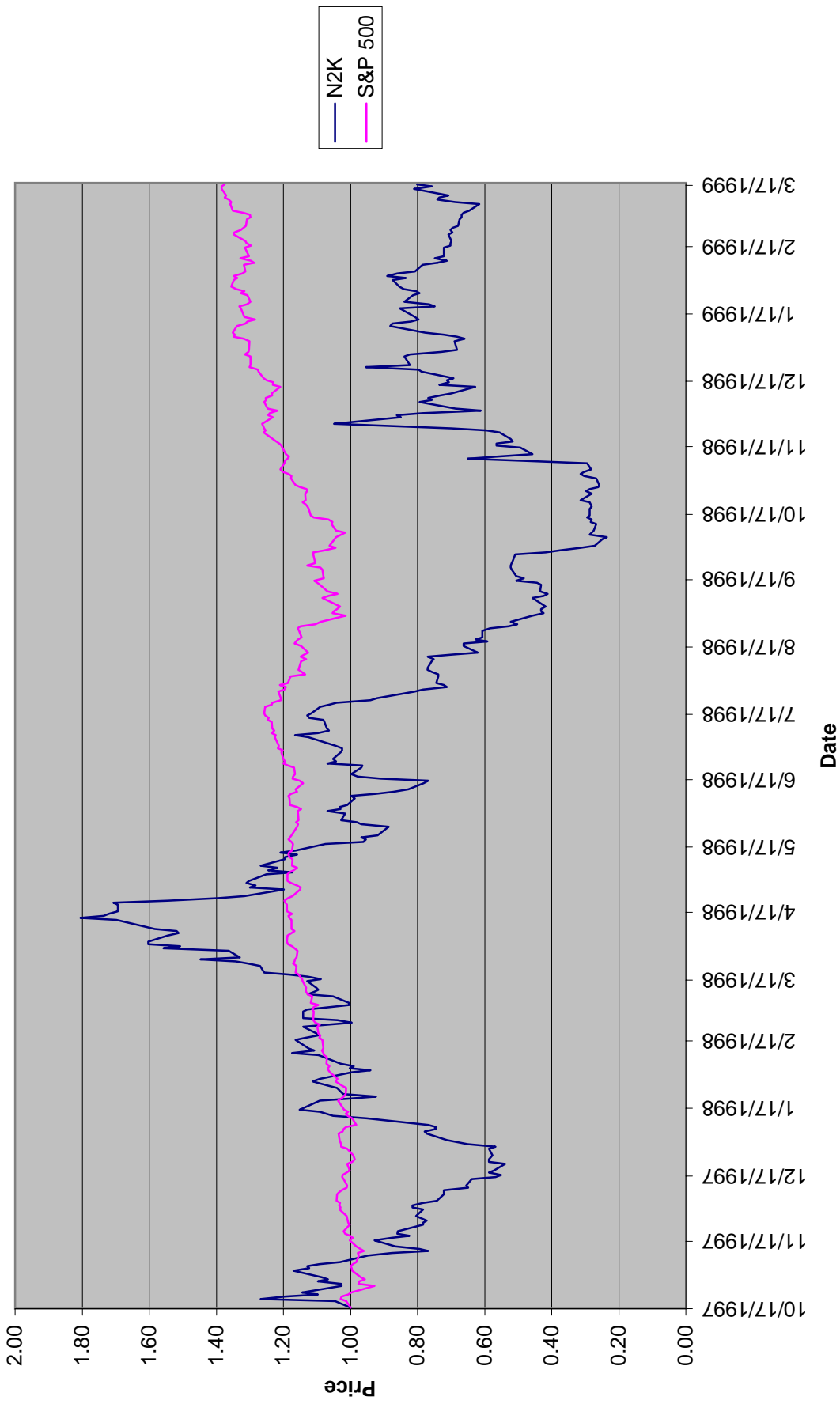




Table 1. Summary Statistics

Firm	IPO Date	Value on IPO Date (\$ billions)	Amazon.com's Value on IPO date (\$ billions)	Last Observation	Number of Observations	Standard Deviation of Returns
Amazon.com	5/16/97	0.56	0.56	12/31/01	1162	.065
BarnesandNoble.com	5/25/99	0.57	17.66	12/31/01	653	.058
CDNOW	2/10/98	0.33	1.52	8/31/00	646	.083
N2K	10/17/97	0.27	1.04	3/17/99	354	.081
S&P 500	-	-	-	12/31/01	1162	.013

Table 2. Regression Results

	Method 1	Method 2
Amazon.com		
Constant term (standard error)	-.00095 (.0023)	-.00080 (.0022)
Beta (standard error)	1.99 (.14)	1.93 (.18)
R-squared	.32	.16
Adjusted R-squared	.21	.16
Number of Observations	1162	602
BarnesandNoble.com		
Constant term (standard error)	-.0020 (.0026)	-.0018 (.0024)
Beta (standard error)	1.23 (.17)	1.18 (.19)
R-squared	.23	.085
Adjusted R-squared	.15	.083
Number of Observations	653	426
CDNOW		
Constant term (standard error)	-.00040 (.0041)	.00044 (.0036)
Beta (standard error)	1.65 (.27)	1.39 (.28)
R-squared	.15	.060
Adjusted R-squared	.052	.057
Number of Observations	646	395
N2K		
Constant term (standard error)	.0084 (.0054)	.0084 (.0060)
Beta (standard error)	1.30 (.33)	1.16 (.42)
R-squared	.20	.036
Adjusted R-squared	.089	.031
Number of Observations	354	200

Table 3. Summary of Effects of Strategies Using Method 1

Table Entry is:

Cumulative Abnormal Returns  
(Number of Events, Wald Test Statistic for Significance of Cumulative Abnormal Returns (1 degree of freedom))

Cumulative Abnormal Returns is  $\sum_{j \in J} CAR_j$ , where  $j$  is an event and  $J$  is the set of events being considered

Strategy	Amazon.com	BarnesandNoble.com	CDNOW	N2K
All Promotional Alliances and Advertising	1.03** (12, 5.98)	-.29 (7, 1.01)	-.030 (16, .0020)	-.36 (14, .052)
Early Promotional Alliances	.74*** (2, 19.37)	N/A	.45 (4, 1.87)	.26* (2, 2.92)
Late Promotional Alliances	.29 (10, .57)	-.29 (7, 1.01)	-.48 (12, .62)	-.62 (12, 1.07)
All Offline Customer Service Center and Distribution Center Expansion	.050 (9, .019)	.13 (1, 1.55)	N/A	N/A
Early Customer Service Center and Distribution Center Expansion	.30 (3, 2.21)	N/A	N/A	N/A
Late Customer Service Center and Distribution Center Expansion	-.25 (6, .73)	N/A	N/A	N/A
Pricing Strategies	-.32 (7, 1.05)	-.016 (2, .012)	N/A	-.27 (2, 1.41)
Product Line Expansion through Alliances and Acquisitions	.35 (22, .35)	-.17 (8, .35)	.32 (9, .35)	.051 (2, .051)
Product Line Expansion without Alliances and Acquisitions	.84* (15, 2.85)	.47* (5, 3.39)	-.098 (2, .18)	N/A
Service Improvement through Alliances and Acquisitions	1.25** (23, 4.37)	.38 (13, .80)	.17 (5, .18)	-.26 (2, 1.34)
Service Improvement without Alliances and Acquisitions	1.09*** (12, 6.93)	.44 (8, 1.88)	.022 (5, .0030)	N/A
Foreign Expansion	-.16 (12, .14)	N/A	-.12 (3, .13)	-.43 (4, 1.64)
Competitor Strategies	-.030 (19, .0031)	-.82*** (6, 9.09)	-.22 (9, .17)	-1.29*** (9, 6.54)

\* significant at the 10% level

\*\* significant at the 5% level

\*\*\* significant at the 1% level

Table 4a. Amazon.com Promotional Alliances and Advertising

Date	Ally: Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
7/7/97	Yahoo!: Amazon.com will be the premier bookseller on Yahoo!, with direct links from Yahoo searches to related books at Amazon.com. (Also, Amazon.com will make a multi-million dollar advertising buy on Excite and will become Excite's exclusive bookseller. On 7/8, in a three-year agreement, Amazon.com will be the exclusive bookseller on AOL.com and AOL's search engine. AOL will receive \$19 million over three years with additional payments if Amazon.com's revenues exceed thresholds.)	.38*** a (3.18)	.39*** (3.69)
9/8/97	Premium associates: Amazon.com offers the Top 500 PC Meter sites referral fees for recommending books that are in excess of the fees paid to the regular associates (9/9 BarnesandNoble.com launches its affiliates program)	.36*** a (3.06)	.34*** (3.24)
10/9/97	Altavista: Amazon.com will be the exclusive bookseller on the Alta Vista search service	-.028 a (-.24)	-.038 (-.36)
10/20/97	Netscape: Amazon.com will be the exclusive bookseller on Netscape Marketplace	.063 a (.53)	.13 (1.19)
12/3/97	Geocities: Amazon.com will be the exclusive bookseller in the Geocities communities	.055 (.48)	.056 (.53)
1/21/99	Amazon.com and Geocities renew their agreement	-.14 a (-1.17)	-.066 (-.62)
4/7/98	iVillage.com: Amazon.com will be the exclusive bookseller throughout the iVillage.com community, the number one online destination for women.	-.031 (-.27)	-.033 (-.31)
11/24/98	Microsoft: Amazon.com will be the premiere music merchant on Microsoft's MSN	.29** (2.57)	.30*** (2.79)
10/3/00	Amazon.com renews deal with Microsoft to extend music and video offerings throughout MSN (Also an alliance with Ofoto, an online photography service)	-.065 (-.57)	-.067 (-.63)
12/4/98	NetFlix.com, an online DVD rental firm: NetFlix.com will promote DVD purchases at Amazon.com and Amazon.com will promote rentals at NetFlix.com (12/7 BarnesandNoble.com becomes the premier book seller on Microsoft's MSN)	-.11 a (-.86)	-.11 (-1.02)
12/16/98	Earthlink: In a multi-year agreement, Amazon.com will be the exclusive book retailer on Earthlink's Personal Start Page and the Earthlink home page.	.22* (1.89)	.22** (2.04)
8/3/00	Associates: Associates will receive bonus payments based on the number of new customers they refer to the site through December 2000	.036 (.32)	.037 (.35)

In this and all the tables that follow:

An "a" beside the coefficient in the first column indicates that the event window overlaps with the window of another event

- \* significant at the 10% level
- \*\* significant at the 5% level
- \*\*\* significant at the 1% level

Table 4b. BarnesandNoble.com Promotional Alliances and Advertising

Date	Ally: Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
6/1/99	NBC and CNET's Snap.com: Each Snap.com search result page will feature a BarnesandNoble.com "buy books" link.	-.36*** (-3.34)	-.36*** (-3.59)
7/12/99	Launches MybnLink, which allows customers to become merchants (7/13 Announces an exclusive e-commerce agreement with ucook.com, an online cookbook. 7/9 CDNOW begins offering digital downloads of music. 7/13 CDNOW announces merger with Sony's and Time Warner's Columbia House)	.026 a (.24)	.034 (.34)
8/2/99	Reading Rainbow, the PBS television series: In a two-year partnership, Barnes & Noble and BarnesandNoble.com will establish a Reading Rainbow presence.	-.13 (-1.18)	-.13 (-1.29)
11/11/99	Launches its largest ever national advertising campaign	-.016 (-.15)	-.016 (-.16)
2/15/00	Seven e-commerce companies: BarnesandNoble.com and the companies will provide links to each other's sites and participate in joint marketing	.0071 (-.066)	-.0091 (-.091)
2/28/00	Concur Technologies, a provider of business-to-business (B2B) eCommerce solutions: BarnesandNoble.com will participate in a global B2B trading network	-.11 (-1.07)	-.11 (-1.15)
9/19/00	Yahoo!: BarnesandNoble.com will be the premier bookseller on Yahoo! Searches on Yahoo! will yield links to related books at BarnesandNoble.com.	.30*** (2.82)	.30*** (3.00)

Table 4c. CDNOW Promotional Alliances and Advertising

Date	Ally: Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
2/18/98	LoveAol: CDNOW will be the exclusive music retailer on LoveAol (2/17 CDNOW becomes the official music sales partner of CBS.com, CBS News' web site)	.12 (.71)	.11 (.81)
3/6/98	CDNOW announces a new promotion with significant increased marketing expenditures	.087 (.53)	.084 (.60)
4/1/98	Lycos: In a three-year agreement, CDNOW becomes the exclusive music retailer on the Lycos and Tripod web sites. CDNOW will pay Lycos \$16.5 million in cash and \$2 million in stock over the three years.	.18 (1.11)	.18 (1.31)
4/7/98	Yahoo!: CDNOW becomes the premier music retailer for Yahoo! Mail and music chat rooms (4/8 In a \$5.5 million agreement CDNOW becomes the exclusive music retailer for Lycos Bertelsmann in Europe)	.068 (.41)	.060 (.43)
4/22/98	Rolling Stone Network: CDNOW will integrate Rolling Stone Network content into the CDNOW store in a three year alliance	-.19 a (-1.02)	-.17 (-1.19)
4/28/98	Expands its Cosmic Credit marketing program, which permits web site owners to become music retailers through CDNOW. Increases referral fees and bonuses	.0047 a (.025)	.085 (.60)
5/19/98	MTV Networks: CDNOW and MTV Networks announce a three-year integrated marketing and content alliance that includes event sponsorships, online and on-air advertising, online music retailing, online content and co-promotions. The alliance will provide over \$22.5 million in cash and stock to MTV Networks over the three years. (5/18 CDNOW is named the exclusive music retailer for the Imagine Radio Internet radio network. Also, CDNOW and MusicMatch announce a joint marketing agreement to integrate MusicMatch's web site and MusicMatch jukebox software with Cdnw)	-.060 (-.37)	-.063 (-.44)
7/6/98	CDNOW launches its multi-million dollar advertising campaign on MTV. An ad campaign on VH1 will debut in late July	.13 (.77)	.13 (.90)
10/1/98	Customer Rewards program: Shoppers now earn points for every dollar they spend on CDNOW products. The points can be used to buy products on CDNOW	.0066 (.040)	-.0084 (-.059)
12/2/98	Launches a new automated business network program that extends its Cosmic Credit affiliate program to corporate web sites	-.44*** (-2.70)	-.45*** (-3.22)
2/22/99	CBS: CDNOW will unveil a new ad campaign during the CBS telecast of the 1999 Grammy awards	-.074 a (-.44)	-.080 (-.57)
3/23/99	First USA: CDNOW and First USA announce multi-year, multi-million dollar marketing and advertising agreement	-.077 (-.47)	-.090 (-.64)
7/27/99	Interscope Geffen A&M records and Miller Genuine Draft's MGD Music Productions: Announces a six-month promotion enabling consumers to create customized CDs by locating codes inside Miller beers.	.0031 (.019)	.00065 (.0046)
1/21/00	Pizza Hut: CDNOW and Pizza Hut team up to use custom music CD's as an incentive to buy the Big New Yorker Pizza. Every order of the Big New Yorker Pizza will include a personal access code to create a custom CD via CDNOW.	.16 (.97)	.15 (1.04)
5/24/00	Expands its Media Sales organization to support the ongoing development of CDNOW media content (5/23 announces an alliance with 7 Up to promote custom CDs)	-.014 a (-.074)	-.077 (-.54)
6/12/00	Time Inc.: CDNOW and Time Inc. announce a one-year marketing alliance. Time Inc. becomes the premier publishing company promoted at CDNOW and CDNOW will enjoy online and offline advertising and marketing exposure in Time Inc properties.	.074 (.45)	.070 (.50)

Table 4d. N2K Promotional Alliances and Advertising

Date	Ally: Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
10/20/97	Netscape: N2K will offer a co-branded music retail service to members of Netscape Netcenter through Netscape Marketplace	.20* (1.84)	.21 (1.23)
11/17/97	RCA/BMG, Trans World Entertainment, and AT&T's A2B Music initiative: N2K and its partners will mount a music marketing campaign with a digital discount coupon that can be redeemed at Music Boulevard	.061 (.39)	.066 (.39)
12/4/97	SonicNet: Music Boulevard becomes the exclusive music retailer for all SonicNet sites	-.097 (-.62)	-.095 (-.56)
1/29/98	National Academy of Recording Arts and Sciences: Music Boulevard will be the official online music retailer for the 40th Annual Grammy Awards	-.045 a (-.28)	-.014 (-.080)
2/23/98	WebTV Plus: Music Boulevard will broadcast a special ad during the Grammy Awards Ceremony that will allow WebTV Plus customers to link directly from the Grammy broadcast to the Music Boulevard web site	-.082 a (-.51)	-.089 (-.53)
3/16/98	iVillage.com, the Women's Network: N2K will create a co-branded version of Music Boulevard which will be fully integrated into the iVillage network	-.065 (-.41)	-.063 (-.37)
4/20/98	Microsoft: Music Boulevard will be a featured retailer on The Microsoft Plaza, a popular online shopping destination.	.0044 a (.027)	-.058 (-.34)
4/28/98	Ticketmaster Group: In a two-year music retailing and marketing agreement, Music Boulevard will be the exclusive music partner for Ticketmaster Online. Music Boulevard will be featured on the Ticketmaster site, including a presence on the Ticketmaster home page. The agreement is valued at \$12 million (CDNOW expands its Cosmic Credit marketing program, which permits web site owners to become music retailers through CDNOW)	-.015 a (-.090)	-.081 (-.48)
5/5/98	BellSouth.net: Music Boulevard will be the premier provider of online music content and retailing services for the BellSouth.net Internet service gateway	-.072 (-.46)	-.073 (-.43)
6/29/98	Buena Vista Internet Group: Music Boulevard will be the online music retailer for Disney.com and ABC.com. In addition, ABC Radio Networks and N2K's Music Boulevard Network will develop a network of web sites for ABC Radio Networks and the ABC Radio stations that will integrate Music Boulevard's online music information and online retailing capacity	-.078 (-.50)	-.077 (-.46)
7/7/98	Infoseek: A long-term agreement makes Music Boulevard the exclusive online music retailer worldwide for Infoseek's domestic and international online services. The alliance includes advertising and transaction-related revenue.	.020 (.12)	.022 (.13)
8/18/98	Affiliates: Music Boulevard alters the commission structure of its Affiliates Program	-.21 (-1.37)	-.21 (-1.25)
8/24/98	MJI Broadcasting: N2K becomes the exclusive online music retailer for all of MJI Broadcasting's syndicated content services for radio stations. Music Boulevard will create a co-branded version of its online music superstore for each of MJI's services for radio station Web sites (almost 200 stations). Along with these branded links to Music Boulevard, the agreement also includes offline promotional partnerships	-.036 (-.23)	-.036 (-.21)
12/9/98	USATODAY.com: Music Boulevard named exclusive online music retailer for USATODAY.com	.057 (.37)	.056 (.33)

Table 5a. Amazon.com Offline Customer Service Center and Distribution Center Expansion

Date	Event	Method 1 CAR (t stat)	Method 2 CAR (t stat)
9/3/97	Leases a 200,000-square-foot state-of-the-art second distribution center in New Castle, Delaware and will expand its Seattle distribution center by 70%. These plans will increase the company's stocking and shipping capacities by nearly six times (Also, Amazon.com becomes the exclusive bookseller on the Prodigy Shopping Network)	-.071 a (-.60)	.021 (.20)
11/18/97	Opens the Delaware center	.13 a (1.06)	.10 (.99)
1/7/99	Opens a new highly mechanized 322,560 square foot distribution center in Fernley, Nevada that will reduce shipping times to key markets in the western United States by a day. The center is leased.	.25** (2.17)	.25** (2.36)
4/13/99	Will open a 460,000 square foot distribution center in Coffeyville, Kansas. The center is leased. (On 4/12 Amazon.com agrees to purchase LiveBid.com, the sole provider of live-event auctions online)	-.034 (-.30)	-.036 (-.33)
5/25/99	Will open two distribution centers in Kentucky: 570,000 and 600,000 square feet, respectively. Both centers are leased.	-.015 (-.13)	-.018 (-.17)
6/8/99	Will open a 800,000 square foot highly mechanized Georgia distribution center. The center is leased. (Also launches free downloads of entire songs to promote CD sales)	.061 (.53)	.061 (.58)
10/15/99	Will open a second U.S.-based customer service center in Tacoma, Washington	-.039 (-.34)	-.043 (-.40)
11/11/99	Will expand its Grand Forks customer service center acquired from Tool Crib of the North	-.15 a (-1.04)	-.059 (-.55)
1/13/00	Will open a customer service center in Huntington, West Virginia. The center will be owned and operated by a subsidiary of Amazon.com.	-.078 (-.68)	-.078 (-.74)

Table 5b. BarnesandNoble.com Offline Customer Service Center and Distribution Center Expansion

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
8/19/99	Will open a 380,000-square-foot distribution center in Memphis in Spring 2000. The center will stock over a million titles.	.13 (1.25)	.13 (1.33)



Table 6a. Amazon.com Pricing Strategies

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
6/10/97	Announces lower prices on books. For more than 400,000 titles, every hardcover is at least 30% off and every paperback is at least 20% off.	-.052 (-.45)	-.051 (-.48)
11/21/97	Announces lower prices on audiobooks, calendars, and some books. More than 30,000 audiobooks are discounted 30%, more than 1,000 calendars are discounted 20%, and some books have discounts of up to 89%.	-.087 a (-.73)	-.056 (-.52)
5/17/99	Announces 50% discounts on all <i>New York Times</i> bestsellers. Barnes & Noble and Borders match Amazon.com's discounts. (On 5/18 Amazon.com acquires 35 percent of HomeGrocer.com, a web-based grocer, for \$42.5 million)	-.023 (-.20)	-.025 (-.24)
5/8/00	Announces Bid for Featured Placement, which allows sellers to bid for placements on the Amazon Auction page	.049 (.43)	.048 (.45)
11/9/00	Announces free shipping on orders over \$100 through 11/22/00 for the Christmas holidays	-.087 a (-.74)	-.094 (-.89)
2/6/01	Announces the Honor system, which allows online visitors to tip their favorite sites	-.016 (-.14)	-.018 (-.17)
2/28/01	Announces a new free music downloads area with MP3 and Liquid Audio files – includes a virtual tip jar	-.10 (-.90)	-.10 (-.98)

Table 6b. BarnesandNoble.com Pricing Strategies

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
6/9/99	Cuts the price of NuvoMedia's Rocket eBook from \$499 to \$399.	.012 (.11)	.0097 (.097)
7/2/01	Introduces free shipping on orders of two or more items and reduced shipping rates on orders of one item.	-.028 (-.26)	-.028 (-.28)

Table 6c. N2K Pricing Strategies

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
12/18/97	Announces a series of discounts and online specials, including \$1 shipping on all U.S. orders, regardless of the number of items, or a \$4 charge for overnight delivery if orders are placed by December 22	-.11 (-.72)	-.11 (-.68)
6/15/98	Starts a summer sale offering the lowest prices of the year on every CD, cassette, LP, t-shirt or video in the store. Further, for a limited time, shipping is free to all customers who buy three items or more when shipped within the U.S.	-.16 a (-.97)	-.19 (-1.11)

Table 7a. Amazon.com Product Line Expansion through Alliances or Acquisitions

Date	Ally, description of the firm (if necessary): Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
2/24/99	Drugstore.com: Amazon.com owns 46% of Drugstore.com	.21* (1.83)	.21** (1.98)
1/24/00	Drugstore.com: Amazon.com will invest \$30 million, own 28% of the company, and add Drugstore.com's products in return for \$105 million over three years (On 1/21 Amazon.com acquires 5% of Greenlight.com, an online car-buying service, and will receive \$82.5 million over five years and warrants to increase its stake as much as 30% and add its products)	.11 (.97)	.11 (1.03)
4/17/00	Amazon.com launches a health and beauty store with Drugstore.com (On 4/18 Amazon.com announces it has invested \$30 million in WineShopper.com in 1999)	.032 (.28)	.031 (.29)
8/23/00	Greenlight.com: Amazon.com introduces the new car-buying service	-.0056 (-.048)	-.0055 (-.051)
4/26/99	Exchange.com: Amazon.com acquires Exchange.com, adding more than twelve million rare books and music items, and has agreements to acquire Accept.com and Alexa Internet, two Internet software companies. Amazon.com will pay \$645 million in stock for all three	.27** a (2.04)	.11 (1.04)
6/14/99	Pets.com: Amazon.com increases its stake in Pets.com to 54%	-.18 a (-1.33)	-.12 (-1.16)
11/2/99	HomeGrocer.com, an online grocer, secures \$100 million from Amazon.com and several other investors	-.11 a (-.91)	-.090 (-.84)
11/5/99	Five leading collectibles companies: Amazon.com adds their products	.079 a (.54)	.14 (1.33)
12/1/99	Ashford.com, the leading Internet retailer of luxury products: Amazon.com will invest \$10 million to own 16.6% of Asford.com, and add Ashford.com's products (On 11/30 Amazon.com announces the acquisition of Back to Basic Toys, an online retailer of rare toys)	-.027 (-.24)	-.028 (-.26)
1/31/00	Audible.com, a spoken audio content firm: Amazon.com will acquire 5% of Audible.com and will add its products. In return Amazon.com will receive \$30 million over three years	-.084 a (-.62)	.040 (.38)
5/31/00	Audible.com: Amazon.com expands spoken audio content and has more than 4,700 audiobooks (also deepens its alliance with HP. 5/30 Amazon.com adds Lightning Source's 9,000 titles)	.015 (.13)	.017 (.16)
11/14/00	Audible.com: Amazon.com launches its ebooks store	-.014 a (-.12)	-.037 (-.35)
3/28/00	eZiba.com, a leading online retailer of handcrafted products: Amazon.com has invested \$17.5 million in eZiba.com, owns 20% of the company, has warrants to acquire more, and will add eZiba's products	.048 a (.36)	.011 (.10)
5/19/00	Living.com: Amazon.com launches its home living store	-.046 a (-.39)	-.033 (-.31)
8/10/00	Toysrus.com, a toy retailer: to create a co-branded toy and video games store. Amazon.com will receive periodic fixed payments, per unit payments and a single-digit percentage of revenue	.018 (.16)	.017 (.16)
5/23/01	Babiesrus.com, an affiliate of Toys "R" Us: Amazon.com and Babiesrus.com will launch a co-branded Baby store at Amazon.com	.12 a (1.03)	.14 (1.31)
7/30/01	Toys "R" Us and Amazon.com launch Imaginarium.com, a co-branded toy store (7/31 Amazon.com launches a Wusthof store within its Kitchen and Housewares store)	.14 a (1.16)	.054 (.51)
11/28/00	AT&T Wireless, Sprint PCS, and Voicestream Wireless: wireless phones	.061 (.53)	.061 (.58)
9/11/01	Target: Amazon.com will open a Target store and operate Target's online properties. Under the five-year strategic alliance, Amazon.com will receive per unit fees and annual fixed fees.	.038 (.33)	.033 (.31)
9/26/01	Expedia, an online travel store: Amazon.com launches a travel store (9/27 Amazon.com launches millions of tabs, which enables consumers to personalize their Amazon.com experience)	-.28** (-2.47)	-.28*** (-2.65)
11/9/01	Catalogcity.com: Amazon.com makes an all-stock investment valued at \$5 million in Altura International, which owns CatalogCity.com. The sites will feature each other's products.	.0084 (.073)	.0078 (.073)
12/18/01	Egghead.com, an online retailer of electronics, videos, and games: Amazon.com re-launches Egghead.com	-.066 (-.57)	-.065 (-.61)

Table 7b. BarnesandNoble.com Product Line Expansion through Alliances or Acquisitions

Date	Ally, description of the firm (if necessary): Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
12/16/99	Enews.com: BarnesandNoble.com will acquire 32% of Enews.com, the largest online retailer of magazine subscriptions, for cash and stock. In a four-year agreement, BarnesandNoble.com will receive warrants that allow it to increase its stake in Enews.com to 40%.	-.040 a (-.32)	-.044 (-.44)
4/5/01	BarnesandNoble.com increases its investment in enews	-.14 a (-1.29)	-.074 (-.73)
12/20/99	Alibris: Alibris will supplement BarnesandNoble.com's listings of rare, secondhand, and out-of-print books	-.0063 a (-.049)	-.058 (-.58)
6/6/00	MightyWords, a provider of digital content: BarnesandNoble.com invests \$20 million for a 25% equity stake in MightyWords and will distribute its content.	-.13 (-1.24)	-.13 (-1.33)
8/28/00	Adobe: BarnesandNoble.com and Adobe plan to offer PDF-based ebooks online at BarnesandNoble.com's new ebookstore (8/29 Amazon.com extends its promotional alliance with AOL)	-.12 (-1.15)	-.12 (-1.24)
9/13/00	Fatbrain.com, an online bookseller specializing in professional and technical titles: BarnesandNoble.com will acquire Fatbrain.com in exchange for \$4.25 per share in a deal is valued at \$64 million. BarnesandNoble.com will own 50 percent of MightyWords, formerly a subsidiary of Fatbrain.com	-.054 (-.50)	-.056 (-.55)
11/16/00	Completes the acquisition of Fatbrain. Fatbrain.com shareholders receive \$1.0625 in cash and .8557 shares of BarnesandNoble.com Class A common stock for each share of Fatbrain.com stock they own. The deal is valued at \$61.7 million.	.046 (.43)	.046 (.46)
4/10/01	Mightywords: BarnesandNoble.com and Mightywords expand digital content to articles that can be purchased and downloaded (4/11 Amazon.com will provide the e-commerce platform to relaunch Borders.com as a co-branded web site)	.28** a (2.55)	.25** (2.46)

Table 7c. CDNOW Product Line Expansion through Alliances or Acquisitions

Date	Ally, description of the firm (if necessary): Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
10/7/98	N2K: CDNOW and N2K confirm that they are discussing a possible transaction between the two companies	.078 (.48)	.063 (.45)
3/17/99	CDNOW and N2K announce the completion of their merger.	.14 (.87)	.14 (1.01)
5/18/99	Grand opening of the new merged store	-.027 (-.17)	-.035 (-.25)
2/17/99	CDuctive, a custom CD firm: The debut of the CDuctive music catalog in CDNOW's Custom Shop	-.050 a (-.30)	-.075 (-.53)
7/9/99	CDNOW, Atlantic Records and Microsoft join forces to launch the music download of songs from four Atlantic Record artists using Microsoft Windows Media Audio format. This is the first time CDNOW has offered secure downloads by major artists from a top music label. CDNOW plans to eventually sell downloads (7/12 BarnesandNoble.com launches MybnLink to allow customers to become merchants)	.38 a (1.63)	.27* (1.89)
7/19/99	CDNOW will offer over 10,000 songs for downloading from CDuctive.com in a digital download store scheduled to launch in the fall and add songs over time	.029 (.18)	.021 (.15)
11/15/99	CDNOW and Liquid Audio Inc team to add 40,000 Liquid Audio downloads to CDNOW's web site	.0033 a (.017)	.053 (.38)
12/6/99	CDNOW launches over 13,000 music downloads for sale and expects to add more than 50,000 more by mid-December using the secure Liquid Audio format	-.18 (-1.11)	-.18 (-1.30)
8/7/00	Imix.com, a leading personalized internet music syndication and distribution company: CDNOW's Custom Shop adds more than 100 new collections with over 10,000 new songs from imix.com. Also, CDNOW and Skybox.net announce a shipping partnership agreement enabling Latin American customers to get faster and cheaper deliveries.	-.051 a (-.30)	-.049 (-.35)

Table 7d. N2K Product Line Expansion through Alliances or Acquisitions

Date	Ally, description of the firm (if necessary): Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
9/10/98	Music Connection: Music Boulevard customers can use Music Connection's musicmaker.com system to create custom CD compilations (9/9 Music Boulevard improves its classical music search. Also, Amazon.com adds classical CDs)	-.035 (-.23)	-.030 (-.18)
10/7/98	CDNOW: CDNOW and N2K confirm that they are discussing a possible transaction between the two companies	.086 (.55)	.080 (.47)

Table 8a. Amazon.com Service Improvements through Alliances or Acquisitions

Date	Ally, description of the firm (if necessary): Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
6/16/98	Muze, a source of digital information about music, books, and movies: Amazon.com will incorporate its content throughout its site (6/15 N2K starts a summer sale)	.23** (1.98)	.23** (2.14)
6/24/98	OSM, a systems management specialist: OSM will provide software and services to help manage Amazon.com's server farm	.23** (2.04)	.24** (2.21)
8/4/98	PlanetAll, which provides a web-based address book, calendar, and reminder service, and Junglee, which provides web-based virtual database technology: Amazon.com will acquire both companies in exchange for equity worth approximately \$280 million	.045 (.39)	.041 (.38)
2/16/99	Geoworks, a wireless communications firm: Amazon.com will invest \$5 million in Geoworks (7% of the company)	-.028 (-.24)	-.028 (-.27)
4/20/99	Sarah McLachlan, a major recording artist, Nettwerk/Arista Records, a music distribution company, and Liquid Audio, a streaming audio software firm: Amazon.com offers free digital downloads to promote McLachlan's upcoming release. Amazon.com intends to expand this service.	.080 (.69)	.080 (.75)
6/16/99	Sotheby's: Sotheby's and Amazon.com will launch a joint online auction site for collectibles and general art and antiques – authenticated and guaranteed products. Amazon.com will purchase shares and warrants in Sotheby's worth \$45 million.	.11 a (.82)	.022 (.20)
11/19/99	Launches Sothebys.amazon.com, an online auction site	.023 (.20)	.023 (.21)
10/10/00	Sothebys.com and Sothebys.amazon.com will combine into one online auction site which will bear the name Sothebys.com	-.076 (-.66)	-.080 (-.75)
9/23/99	Della & James, an online wedding gift registry, raises \$45 million from Amazon.com and several other retailers. The funds will be used to launch an all-occasion gift registry. The alliance includes promotions on Amazon.com's site.	.13 (1.14)	.13 (1.20)
10/4/99	Convergence Corporation, a software firm specializing in Internet access from different appliances: Amazon.com has acquired Convergence Corporation in exchange for shares worth \$20 million to help it provide shopping from wireless devices	-.26** a (-1.97)	-.075 (-.71)
12/8/99	Sprint: Amazon.com and Sprint will offer Internet shopping from Internet-ready Sprint PCS wireless phones	.23** (2.02)	.23** (2.17)
2/18/00	Basis Technology, a provider of internationalization technology: Amazon.com makes a minority investment in Basis Technology	-.071 (-.62)	-.074 (-.70)
2/28/00	Motorola: to promote mobile e-commerce. Amazon.com introduces a web address for mobile shopping	-.025 (-.22)	-.025 (-.24)
3/15/00	AirTouch Cellular: for wireless e-commerce	-.11 a (-.90)	-.094 (-.88)
3/20/00	Kozmo.com, an Internet-to-door delivery service: Amazon.com invests \$60 million in Kozmo.com, has warrants to acquire more, and will introduce 1-hour delivery	.050 a (.36)	-.00029 (-.0028)
5/16/00	NextCard: Amazon.com launches credit card with NextCard	.068 a (.57)	.057 (.54)
7/10/00	FedEx: Amazon.com and FedEx deliver 250,000 copies of the new Harry Potter book on the day of its launch	-.14 (-1.21)	-.14 (-1.30)
7/18/00	Bidpath, an auction infrastructure firm: to improve Amazon.com's auctions	.24* a (1.78)	.20* (1.86)
4/11/01	Borders Group, one of the largest Book Superstores: Amazon.com will provide the e-commerce platform to relaunch Borders.com as a co-branded web site	.50*** a (3.81)	.53*** (4.99)
8/2/01	Borders goes live	-.081 a (-.68)	-.045 (-.42)
5/18/01	Major movie studios: Amazon.com offers movie theater showtimes by ZIP code and candid customer and editorial reviews of films currently in movie theaters.	.072 a (.61)	.10 (.99)
8/14/01	iSky, a provider of outsourced customer management services, will enhance Amazon.com's customer service network in a multi-year agreement	-.021 (-.18)	-.022 (-.21)
8/20/01	Circuit City, an electronics retailer: Beginning in November, Circuit City stores will offer several thousand consumer electronics items for sale at Amazon.com, with purchases ready for immediate pickup at hundreds of Circuit City stores nationwide. Amazon.com will be paid a percentage of the revenue for Circuit City electronics merchandise purchased through Amazon.com's Electronics store.	.049 a (.37)	.021 (.19)

Table 8b. BarnesandNoble.com Service Improvements through Alliances or Acquisitions

Date	Ally, description of the firm (if necessary): Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
6/28/99	United States General Services Administration (GSA): BarnesandNoble.com's Business Solutions program is awarded a five-year contract with the GSA that allows federal employees to purchase BarnesandNoble.com books and other offerings from the GSA web site - the first contract the GSA has signed with an online merchant.	.042 (.39)	.041 (.41)
10/12/99	i2 Intelligent eBusiness Solutions: Alliance to link and optimize BarnesandNoble.com's inventory management and transportation systems	-.034 (-.32)	-.036 (-.36)
11/3/99	Cendant Corporation: BarnesandNoble.com purchases books.com web address and trademark from Cendant to make it easier for consumers to find its web site	.0017 (.016)	.00081 (.0081)
11/26/99	Flooz.com: BarnesandNoble.com will accept Flooz online gift currency.	.11 a (.89)	.088 (.88)
12/23/99	Beatnik: Beatnik will provide interactive remixes to engage music shoppers on BarnesandNoble.com's web site	-.12 a (-1.11)	-.13 (-1.25)
1/10/00	EXE Technologies: BarnesandNoble.com will deploy EXE Technologies' back office fulfillment software.	.053 a (.43)	.11 (1.09)
1/19/00	MBNA America Bank: Will develop and market a co-branded credit card. MBNA will have the exclusive right to market credit cards to BarnesandNoble.com's customers. BarnesandNoble.com will be featured on MBNA's web sites	.018 (.17)	.017 (.17)
5/30/00	notHarvard.com, an online university developer: BarnesandNoble.com acquires a minority stake in notHarvard.com. The companies will create a free online university (Amazon.com adds Lightning Source's 9,000 titles)	.15 (1.39)	.15 (1.48)
6/27/00	Palm: BarnesandNoble.com will be an in-box content provider on certain future versions of Internet-enabled Palm handheld computers. Also, Barnes & Noble University opens and BNTV, which broadcasts over the Internet, launches.	-.076 (-.71)	-.077 (-.77)
10/26/00	Barnes & Noble and BarnesandNoble.com announce plans to integrate Barnes & Noble's stores with BarnesandNoble.com's website:  1. Internet service counters will be installed in all Barnes & Noble superstores. The counters will enable customers to order products from BarnesandNoble.com and have them delivered to the location of their choice. 2. A membership loyalty program will offer discounts and benefits in Barnes & Noble stores and at BarnesandNoble.com for a small annual fee. 3. BarnesandNoble.com customers can return products to any Barnes & Noble store.	.11 a (.88)	.055 (.55)
12/12/00	AltaVista: Fatbrain.com has selected AltaVista Search Engine 3.0 to power the search function for its custom online and e-tail bookstore businesses	.038 (.36)	.038 (.38)
1/2/01	United States General Services Administration (GSA): The government names Fatbrain.com to its GSA schedule for buying books and other information resources	.046 a (.37)	.39*** (3.89)
9/19/01	DIRECTTV and Wink Communications: The launch of the BarnesandNoble.com channel, an e-commerce application available through television	.045 (.42)	.039 (.39)

Table 8c. CDNOW Service Improvements through Alliances or Acquisitions

Date	Ally, description of the firm (if necessary): Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
7/13/98	Verity: New search capabilities using Verity's software allow for spelling mistakes	-.050 (-.30)	-.050 (-.36)
7/22/98	Muze, a source of digital information about music: CDNOW has incorporated over 10,000 of its artist biographies	.047 a (.25)	.12 (.85)
9/15/98	Diskjockey.com: CDNOW will integrate Diskjockey.com's 85 channels of streaming audio to allow consumers to listen before buying (9/14 CDNOW introduces personalization features)	.060 a (.30)	.031 (.22)
11/23/98	Implements Platinum Technology's database management tools (11/24 Amazon.com will be the premiere music merchant on Microsoft's MSN)	.014 (.085)	.019 (.14)
6/26/00	ViaFone, a leading provider of interactive mobile applications: CDNOW announces that it will extend its e-commerce business to a wireless environment in time for the holiday shopping season. ViaFone will build and host its mobile presence.	.099 (.60)	.090 (.64)

Table 8d. N2K Service Improvements through Alliances or Acquisitions

Date	Ally, description of the firm (if necessary): Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
2/4/98	Fresh Picks, a distributor of music through the supermarket channel: N2K enters an exclusive five-year alliance with Fresh Picks to bring Music Boulevard to interactive touch-screen kiosks being installed in supermarkets nationwide	-.15 (-.98)	-.15 (-.88)
10/19/98	Post Communications: "My Music Boulevard," an individualized music service developed by Post Communications with N2K, goes live	-.11 (-.68)	-.098 (-.58)

Table 9a. Amazon.com Product Line Expansion without Alliances or Acquisitions

Date	Event	Method 1 CAR (t stat)	Method 2 CAR (t stat)
3/2/98	Introduces Amazon.com Kids with a catalogue of over 100,000 books for children, teens, and parents	.080 (.70)	.080 (.76)
6/10/98	Announces launch of Music Store with over 125,000 titles	.40*** (3.50)	.40*** (3.77)
9/9/98	Adds more than 42,000 classical and opera CDs to its music store (9/10 Music Boulevard customers can use Music Connection's musicmaker.com system to create custom CD compilations)	-.063 (-.55)	-.064 (-.60)
11/17/98	Opens a Video Store with more than 60,000 videos and a holiday gift store (11/16 CDNOW launches a custom shop for creating custom CDs)	.20* (1.75)	.20* (1.90)
7/13/99	Opens Electronics and Toys and Games Stores (On 7/14 Amazon.com announces that it owns 49% of Gear.com, a web-based sporting goods discount retailer. 7/13 CDNOW announces merger with Sony's and Time Warner's Columbia House. 7/12 BarnesandNoble.com launches MybnLink, which allows customers to become merchants)	.21 a (1.50)	.079 (.74)
8/31/99	Opens Christian store with thousands of Christian products	-.054 a (-.45)	-.025 (-.24)
11/9/99	Opens four new stores: 1) Home Improvement 2) Software 3) Video Games 4) Gift Ideas  (Also acquires Tool Crib of the North, a leading tools and equipment catalog company)	.18 a (1.08)	.14 (1.35)
2/9/00	Tools and equipment	-.089 a (-.54)	-.0094 (-.088)
4/5/00	Lawn and patio store	-.040 (-.35)	-.040 (-.38)
5/2/00	Kitchen store	.10 (.89)	.10 (.94)
9/8/00	Computer and video games	-.068 a (-.57)	-.048 (-.45)
2/12/01	Downloadable software store	-.042 (-.37)	-.044 (-.41)
6/25/01	Software Licensing Center	.073 (.64)	.072 (.68)
8/29/01	Computer Store	-.059 (-.51)	-.062 (-.59)
10/30/01	Magazine Subscriptions	.011 a (.085)	-.022 (-.21)



Table 9b. BarnesandNoble.com Product Line Expansion without Alliances or Acquisitions

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
7/7/99	Opens a Music Store with hundreds of thousands of albums in all varieties of music including classical and jazz	.033 a (.30)	.039 (.39)
10/26/99	Launches a Prints & Posters Gallery with thousands of products and an Electronic Greeting Service	.14 a (1.17)	.065 (.65)
7/19/00	Launches Video Store, featuring tens of thousands of videos on DVD and VHS (7/20 Bertelsmann will buy CDNOW)	-.029 (-.28)	-.031 (-.31)
8/8/00	Launches eBookStore, featuring thousands of titles from more than 30 publishers. BarnesandNoble.com is the only major e-commerce retailer to support three formats of eBooks: Microsoft Reader, Rocket eBook and Glassbook.	.32*** a (2.92)	.24** (2.37)
8/15/00	Textbook store	-.0049 (-.046)	-.0051 (-.051)

Table 9c. CDNOW Product Line Expansion without Alliances or Acquisitions

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
11/16/98	Launches a Custom Shop for creating custom CDs. Consumers can choose which songs they want on a CD.	-.11 (-.68)	-.11 (-.78)
4/5/00	CDNOW expands it custom shop with over a thousand songs	.013 (.077)	.0097 (.069)

Table 10a. Amazon.com Service Improvements without Alliances or Acquisitions

Date	Event	Method 1 CAR (t stat)	Method 2 CAR (t stat)
9/23/97	Introduces three new features: 1) Recommendations center 2) Subject-browsing areas 3) 1-Click ordering	.32*** (2.81)	.32*** (3.03)
3/9/99	Improves the music recommendations center by adding more categories. (On 3/10 Amazon.com and Dell Computer Corporation announce a promotional alliance)	.076 (.66)	.077 (.73)
2/9/99	Will list which feature placements on its site are paid for and which are not (Also will implement a new book-return policy that allows books to be returned even after they have been read and possibly damaged)	-.14 (-1.24)	-.14 (-1.35)
3/29/99	Amazon.com will open Amazon.com Auctions, a person-to-person auction service (Also, Amazon.com will acquire 50% of Pets.com)	.25** (2.22)	.26** (2.41)
8/18/99	Introduces CrossLinks and First Bidder Discount. CrossLinks allows sellers to highlight their auctions next to related product listings throughout Amazon.com's book, music and video stores. First Bidder Discount gives the seller the option of rewarding the first person who bids on his or her auction by taking 10 percent off the final bid price, provided the first bidder ultimately wins the auction.	.094 a (.71)	.10 (.97)
8/20/99	Introduces purchase circles, the location-specific bestseller lists	.019 a (.14)	.066 (.62)
8/26/99	Modifies purchase circles to let individuals and firms withhold purchasing habits	.12 a (1.03)	.11 (1.01)
9/30/99	Launches three innovations: 1) zShops enables anyone to offer merchandise for sale at Amazon.com 2) Amazon.com Payments allows individuals and firms to accept payments through the 1-Click payment feature 3) All Products Search allows shoppers to find anything for sale on the Internet	.37*** a (2.79)	.24** (2.25)
10/8/99	Launches Wish List, an advanced and extensive online gift registry	.075 (.65)	.076 (.71)
3/22/00	Amazon.com launches a new independent film section with descriptions, reviews and search capabilities	-.054 a (-.40)	-.027 (-.25)
8/22/01	Launches a new Corporate Accounts program, accepting online purchase orders from qualified businesses, libraries, schools, government institutions and other organizations. The program also features new account management tools.	-.054 a (-.41)	-.030 (-.28)
11/2/01	Launches a new Credit Account service	.011 a (.094)	.016 (.15)

Table 10b. BarnesandNoble.com Service Improvements without Alliances or Acquisitions

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
11/23/99	Launches a Holiday Gift Center and streamlined search and purchases capabilities.	-.0098 a (-.079)	.046 (.46)
12/1/99	Launches bn.com On the Go, which enables BarnesandNoble.com's customers to shop from wireless devices	-.079 a (-.71)	-.052 (-.52)
5/18/00	Expands the program by providing access to more devices	.060 a (.49)	.061 (.61)
2/1/00	Launches Internet Radio with more than 25,000 songs and hundreds of audio books	-.18* (-1.69)	-.18* (-1.81)
9/27/00	Expands B&N Radio to more than 140 stations	-.025 (-.24)	-.026 (-.26)
5/16/00	Offers same day delivery in Manhattan	.0067 a (.054)	.037 (.37)
1/4/01	Announces Barnes & Noble Digital, an electronic publishing imprint. Barnes & Noble Digital will provide authors with a one-stop, direct-to-market process, featuring editorial support and online sales monitoring, as well as exposure on the BarnesandNoble.com eBookStore and potentially all other eBook retailers	.69*** a (5.33)	.67*** (6.71)
5/30/01	Launches a jazz recommendation service that allows customers to listen to jazz samples and learn about jazz styles and artists	-.018 (-.17)	-.021 (-.21)

Table 10c. CDNOW Service Improvements without Alliances or Acquisitions

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
11/4/98	Introduces a Gift Center with several new categories that make shopping easier	.11 (.67)	.11 (.81)
1/5/99	Launches new editorial strategy with expanded music coverage, allowing consumers to easily navigate through interviews, profiles of emerging artists and recommendations	-.054 (-.33)	-.049 (-.34)
11/17/99	Announces the launch of Cosmic Music Network, an online community that will connect unsigned bands with fans	.088 a (.47)	.092 (.65)
5/22/00	CDNOW launches a Latin Music Department featuring reviews, news, interviews, recommendations in English and Spanish	-.11 a (-.58)	-.13 (-.95)
8/2/00	Launches CDNOW Radio with streaming music programming on 22 channels (8/3 Amazon.com Associates will receive bonus payments based on the number of new customers they refer to the site through December 2000)	-.012 a (-.073)	-.022 (-.16)

Table 11a. Amazon.com Foreign Expansion

Date	Event	Method 1 CAR (t stat)	Method 2 CAR (t stat)
9/2/98	Yahoo!: Amazon.com expands its relationship with Yahoo! and is now the premier bookseller throughout many of Yahoo!'s world sites.	-.092 (-.80)	-.095 (-.89)
10/15/98	Enters the European book market by launching new web sites in Germany and the United Kingdom: Amazon.de and Amazon.co.uk. Amazon.de has a customer service and distribution center in Regensburg, Germany, and Amazon.co.uk has a customer service and distribution center in Slough, England	-.067 a (-.56)	-.043 (-.40)
3/30/00	Opens a 103,000 square foot customer service center in The Hague, the Netherlands	-.072 a (-.55)	-.050 (-.47)
8/29/00	Launches Amazon.fr, a French-language site (Amazon.com also announces an extension of its promotional alliance with AOL)	.10 (.88)	.10 (.95)
10/31/00	Launches Amazon.co.jp, a Japanese-language site	-.10 a (-.86)	-.053 (-.50)
6/13/01	Amazon.co.jp launches music, video, and DVD stores	-.087 (-.76)	-.090 (-.85)
7/5/01	Amazon.co.uk begins selling Carphone Warehouse pre-pay mobile phones through its new co-branded phone store	.20 a (1.53)	.14 (1.28)
7/18/01	Launches new regionalized shipping rates and times for international customers	-.014 a (-.11)	-.023 (-.21)
7/25/01	The U.K.'s leading specialist bookseller Waterstone's online bookselling site will be relaunched in autumn 2001 powered by Amazon's e-commerce platform	-.28** a (-2.01)	-.26** (-2.47)
10/10/01	Amazon.co.jp opens Software and TV Game stores, featuring over 8,000 Software and TV Game titles. (Also, with the cooperation of several publishers, Amazon.com launches Look Inside the Book, which allows customers to flip through the inside pages of over 25,000 books. 10/11 Amazon.co.uk and Virgin Wines launch a new online Wine Store)	.046 (.40)	.047 (.45)
10/25/01	Amazon.co.uk launches an e-book store, featuring hundreds of business, fiction and children's titles based in Adobe Portable Document Format	-.13 a (-.94)	-.14 (-1.35)
11/26/01	Amazon.co.uk opens a full service travel store through a partnership with Expedia@.co.uk.	.33*** (2.89)	.33*** (3.12)

Table 11b. CDNOW Foreign Expansion

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
8/17/98	Launches CDNOW Europe, featuring access in nine languages, a European shipping center and over 100,000 additional international titles (8/18 Music Boulevard alters the commission structure of its Affiliates Program)	-.061 (-.37)	-.060 (-.42)
9/11/98	Yahoo!: CDNOW and Yahoo! expand their relationship. CDNOW becomes the premier music retailer throughout many of Yahoo!'s world sites.	-.085 a (-.37)	-.060 (-.42)
9/23/99	The Ministry of Sound, a British independent label: CDNOW becomes The Ministry of Sound's exclusive online retail partner	.029 (.18)	.014 (.10)

Table 11c. N2K Foreign Expansion

Date	Strategy	Method 1 CAR (t stat)	Method 2 CAR (t stat)
12/29/97	Announces an agreement with Shinseido Inc., the leading music retail chain in Japan, to add over 175,000 local-language music titles to the Japanese Music Boulevard, nearly doubling the number of titles offered	-.11 (-.71)	-.11 (-.63)
1/8/98	N2K will incorporate local versions of Music Boulevard into MTV Europe, MTV Brasil, MTV Japan, and MTV Asia. Music Boulevard will serve as the exclusive online music retailer for each site. MTV will provide the local Music Boulevard stores with news headlines relevant to the audience in each territory	-.20 a (-1.11)	.020 (.12)
1/21/98	Announces a two-year agreement with StarMedia Network, the most visited online network in Latin America, to create the first online music retailing area created specifically for residents of Latin America. N2K and StarMedia Network will develop Spanish and Portuguese language versions of Music Boulevard (1/19 CDNOW lowers prices: CDs are up to 30% off)	-.24 a (-1.46)	-.21 (-1.21)
2/10/98	N2K and MSI of Miami Corp. will create a European distribution hub for Music Boulevard. MSI will add up to 150,000 international titles to Music Boulevard's catalog, which will then exceed 550,000 titles. By mid-April, MSI will create a fulfillment center in The Netherlands to serve Europe and reduce delivery times	.12 (.77)	.12 (.72)

Table 12a. Amazon.com Competitor Announcements

Date	Announcement	Method 1 CAR (t stat)	Method 2 CAR (t stat)
8/20/97	BarnesandNoble.com enters a three-year promotional agreement with Lycos	-.047 (-.41)	-.046 (-.43)
9/15/97	BarnesandNoble.com enters multi-year promotional alliances with Excite and Infospace	-.0067 (-.58)	-.0055 (-.052)
10/6/97	BarnesandNoble.com becomes the exclusive online bookseller on Microsoft's leading news, financial and travel sites on the Web: MSNBC, Microsoft Investor and Expedia	-.037 a (-.31)	-.043 (-.40)
10/28/97	BarnesandNoble.com enters a promotional alliance with CompuServe	.21* a (1.80)	.28*** (2.59)
12/17/97	BarnesandNoble.com and America Online expand their alliance in a 4-year, \$40 million agreement	-.056 (-.49)	-.057 (-.53)
8/18/98	Music Boulevard alters the commission structure of its Affiliates Program	-.026 (-.23)	-.025 (-.24)
10/1/98	Shoppers now earn points for every dollar they spend on CDNOW products. The points can be used to buy products on CDNOW	.050 (.43)	.047 (.44)
10/7/98	CDNOW and N2K confirm that they are discussing a possible transaction between the two companies (10/6 Bertelsmann invests in BarnesandNoble.com)	-.14 (-1.22)	-.14 (-1.35)
10/20/98	BarnesandNoble.com expands its rare and used book selection through an alliance with Advanced Book Exchange (10/19 "My Music Boulevard," a first-of-its-kind individualized music service developed by Post Communications with N2K, goes live)	.084 a (.68)	.090 (.85)
10/23/98	CDNOW and N2K announce their merger	.087 a (.71)	.12 (1.12)
12/2/98	CDNOW launches a new automated business network program that extends its Cosmic Credit affiliate program to corporate web sites	.011 a (.082)	-.049 (-.46)
7/7/99	BarnesandNoble.com launches its music store	.14 a (1.01)	.010 (.096)
7/9/99	CDNOW begins offering digital downloads to allow consumers to listen to music before buying	-.26 a (-1.62)	-.087 (-.81)
12/20/99	Alibris will supplement BarnesandNoble.com's listings of rare, secondhand, and out-of-print books	.011 (.096)	.011 (.11)
7/20/00	Bertelsmann will buy CDNOW	-.073 a (-.55)	.043 (.40)
9/13/00	BarnesandNoble.com will acquire Fatbrain	.085 a (.72)	.067 (.63)
9/19/00	BarnesandNoble.com will be the premier bookseller on Yahoo!	-.13 (-1.14)	-.13 (-1.25)
10/26/00	BarnesandNoble.com and Barnes & Noble plan to integrate stores and website	.19 a (1.41)	.21** (1.99)
7/2/01	BarnesandNoble.com introduces free shipping on orders of two or more items and reduced shipping rates on orders of one item	-.13 a (-.97)	-.026 (-.25)

Table 12b. BarnesandNoble.com Competitor Announcements

Date	Announcement	Method 1 CAR (t stat)	Method 2 CAR (t stat)
8/3/00	Amazon.com Associates will receive bonus payments based on the number of new customers they refer to the site through December 2000	-.35*** a (-3.02)	-.31*** (-3.07)
10/3/00	Amazon.com renews deal with Microsoft to extend music and video offerings throughout MSN	-.13 (-1.17)	-.13 (-1.27)
11/9/00	Amazon.com announces free shipping on orders over \$100 through 11/22/00 for the Christmas holidays	-.23** (-2.10)	-.23** (-2.28)
8/2/01	The Amazon.com Borders web site goes live	-.062 (-.58)	-.063 (-.63)
9/27/01	Amazon.com launches millions of tabs, which enables consumers to personalize their Amazon.com experience	-.15 (-1.41)	-.15 (-1.51)
10/10/01	Amazon.com launches Look Inside the Book, which allows customers to flip through the inside pages of over 25,000 books	.095 (.88)	.095 (.95)

Table 12c. CDNOW Competitor Announcements

Date	Announcement	Method 1 CAR (t stat)	Method 2 CAR (t stat)
3/16/98	N2K will create a co-branded version of Music Boulevard which will be fully integrated into the iVillage network	-.055 (-.34)	-.056 (-.39)
4/20/98	Music Boulevard will be a featured retailer on The Microsoft Plaza, a popular online shopping destination	.055 a (.29)	-.043 (-.30)
6/10/98	Amazon.com announces launch of music store	-.065 a (-.39)	-.069 (-.49)
6/15/98	N2K starts a summer sale offering the lowest prices of the year and free shipping to all customers who buy three items or more when shipped within the U.S.	.019 a (.11)	-.0069 (-.049)
9/9/98	Amazon.com adds classical CDs (9/10 Music Boulevard customers can use Music Connection's musicmaker.com system to create custom CD compilations)	-.0070 a (-.035)	-.053 (-.38)
10/19/98	"My Music Boulevard," an individualized music service developed by Post Communications with N2K, goes live	.0020 (.012)	.014 (.098)
4/20/99	Amazon.com begins offering free digital downloads to allow consumers to listen to music before buying	-.13 (-.81)	-.13 (-.94)
4/26/99	Amazon.com acquires Exchange.com, adding more than twelve million rare books and music items	.061 (.37)	.063 (.45)
7/7/99	BarnesandNoble.com launches music store	-.094 a (-.47)	.093 (.66)

Table 12d. N2K Competitor Announcements

Date	Announcement	Method 1 CAR (t stat)	Method 2 CAR (t stat)
1/26/98	CDNOW enters a promotional alliance with Geocities	.11 a (.68)	.042 (.25)
4/1/98	In a three-year agreement, CDNOW becomes the exclusive music retailer on the Lycos and Tripod web sites	-.031 (-.20)	-.027 (-.16)
4/7/98	CDNOW becomes the premier music retailer for Yahoo! Mail and music chat rooms	-.065 (-.42)	-.068 (-.40)
5/19/98	CDNOW and MTV Networks announce a three-year integrated marketing and content alliance	-.26* (-1.67)	-.26 (-1.55)
6/10/98	Amazon.com announces launch of music store	-.11 a (-.70)	-.15 (-.91)
10/1/98	Shoppers now earn points for every dollar they spend on CDNOW products. The points can be used to buy products on CDNOW	-.56*** (-3.55)	-.56*** (-3.34)
11/16/98	CDNOW launches a custom shop for creating custom CDs	-.15 (-.97)	-.15 (-.88)
11/24/98	Amazon.com will be the premiere music merchant on Microsoft's MSN	.25 (1.59)	.25 (1.50)
12/2/98	CDNOW launches a new automated business network program that extends its Cosmic Credit affiliate program to corporate web sites	-.47*** (-3.02)	-.48*** (-2.83)



Table 13a. Amazon.com Financial Announcements

Date	Announcement	Method 1 CAR (t stat)	Method 2 CAR (t stat)
7/10/97	2 <sup>nd</sup> quarter	.057 a (.48)	.15 (1.42)
10/23/97	3 <sup>rd</sup> quarter	.25** a (2.08)	.32*** (3.03)
11/7/97	Obtains commitment for \$75 million credit facility (11/10 promotional alliance with @Home Network: Amazon.com will be the premier bookseller throughout @Home service, the leading high-speed Internet service via the cable infrastructure)	-.11 (-1.00)	-.12 (-1.10)
12/30/97	Competes the credit facility	.013 (.11)	.015 (.14)
1/22/98	4 <sup>th</sup> quarter	.043 (.38)	.042 (.40)
4/27/98	1 <sup>st</sup> quarter (Also acquires Bookpages, one of the largest online bookstores in the United Kingdom, and Telebook, Germany's number one online bookstore. Both are expected to be important for Amazon.com's expansion into Europe. Also acquires the Internet Movie Database, which will support Amazon.com's entry into online video sales. 4/24 announces \$275 million offering of senior discount notes)	.19* (1.67)	.19* (1.77)
5/5/98	Announces increase in size of offering of senior discount notes	.0020 (.018)	.0011 (.010)
7/22/98	2 <sup>nd</sup> quarter (Also a promotional alliance with Intuit, a personal finance company: Amazon.com will be Quicken.com's exclusive bookseller in the United States, and the preferred bookseller in the United Kingdom and Germany. Amazon.com also confirms that it has an agreement with Compaq to feature Amazon.com in Compaq's Presario personal computers).	.16 (1.38)	.16 (1.46)
10/28/98	3 <sup>rd</sup> quarter	.044 a (.37)	.066 (.62)
1/26/99	4 <sup>th</sup> quarter	.30** a (2.19)	.18* (1.69)
1/28/99	Announces \$1.25 billion offering of subordinated convertible debentures	-.18 a (-1.31)	-.022 (-.21)
4/28/99	1 <sup>st</sup> quarter	-.32** a (-2.43)	-.19* (-1.77)
7/21/99	2 <sup>nd</sup> quarter	-.15 (-1.30)	-.15 (-1.43)
10/27/99	3 <sup>rd</sup> quarter	-.16 (-1.35)	-.15 (-1.45)
2/2/00	4 <sup>th</sup> quarter (2/1 Alliance with Living.com, a home living store: Amazon.com will acquire 18% of Living.com, with warrants for another 9%, and will make Living.com the exclusive Amazon.com Home Living Store in return for \$145 million over five years. 2/3 alliance with Greg Manning Auctions. Amazon.com owns \$5 million of the company's stock and will offer its collectibles on the Amazon.com auction site)	.25* a (1.75)	.25** (2.31)
2/7/00	Announces that it will file a prospectus supplement with the SEC to allow it to sell up to 1600MM of Euro Denominated Convertible Subordinated Notes due 2010	.15 a (.99)	.17 (1.57)
2/11/00	Announces pricing of Public Offering of 6 7/8% Convertible Subordinated Notes Due 2010 (2/14 a promotional alliance with LookSmart, a global leader of Internet search infrastructure: Amazon.com will be the exclusive book and music seller on LookSmart)	.012 a (.085)	-.035 (-.33)
4/26/00	1 <sup>st</sup> quarter (Also opens a customer service center in Huntington, West Virginia)	-.027 (-.23)	-.026 (-.25)
7/26/00	2 <sup>nd</sup> quarter	-.21* (-1.86)	-.22** (-2.02)
10/24/00	3 <sup>rd</sup> quarter	.088 a (.66)	.18* (1.72)

Table 13a, continued. Amazon.com Financial Announcements

1/8/01	4 <sup>th</sup> quarter highlights (1/5 revises the terms of its alliance with Ashford.com)	.017 (.15)	.015 (.14)
1/30/01	4 <sup>th</sup> quarter	-.095 (-.83)	-.095 (-.90)
4/9/01	1 <sup>st</sup> quarter highlights	.048 a (.36)	.30*** (2.85)
4/24/01	1 <sup>st</sup> quarter (Also an alliance with All-Clad Metalcrafters, a kitchenware firm: Amazon.com will launch an All-Clad store within its Kitchen & Houseware Store. Also plans to add 5,000 Mightywords digital titles to its ebookstore)	.051 (.44)	.049 (.46)
7/23/01	2 <sup>nd</sup> quarter (Also announces that AOL has made a \$100 million equity investment in Amazon.com common stock and Amazon.com will promote AOL on its web site.)	-.033 a (-.23)	-.18* (-1.69)
10/23/01	3 <sup>rd</sup> quarter	-.032 a (-.24)	-.097 (-.92)

Table 13b. BarnesandNoble.com Financial Announcements

Date	Announcement	Method 1 CAR (t stat)	Method 2 CAR (t stat)
7/22/99	2 <sup>nd</sup> quarter	.078 (.73)	.075 (.75)
10/28/99	3 <sup>rd</sup> quarter	-.16 a (-1.28)	-.085 (-.85)
1/6/00	4 <sup>th</sup> quarter highlights (Also announces an agreement with Microsoft Corp. to create an ebook superstore)	.11 a (.90)	.14 (1.36)
2/8/00	4 <sup>th</sup> quarter	-.068 (-.63)	-.069 (-.69)
5/1/00	1 <sup>st</sup> quarter (5/2 expands wireless access)	.072 (.68)	.071 (.71)
7/31/00	2 <sup>nd</sup> quarter	-.17 a (-1.56)	-.26*** (-2.61)
10/30/00	3 <sup>rd</sup> quarter	-.10 a (-.85)	-.049 (-.49)
1/9/01	4 <sup>th</sup> quarter	-.15 a (-1.30)	.024 (.24)
2/7/01	4 <sup>th</sup> quarter, more information	-.062 (-.58)	-.064 (-.64)
4/17/01	1 <sup>st</sup> quarter (4/16 Mightywords and Fatbrain team to offer digital content)	.087 (.81)	.089 (.89)
7/26/01	2 <sup>nd</sup> quarter	-.090 (-.84)	-.090 (-.90)
10/25/01	3 <sup>rd</sup> quarter	.082 (.77)	.082 (.82)

Table 13c. CDNOW Financial Announcements

Date	Announcement	Method 1 CAR (t stat)	Method 2 CAR (t stat)
4/30/98	1 <sup>st</sup> quarter	.18 a (.95)	.19 (1.32)
5/11/98	Announces proposed secondary public offering.	-.12 (-.74)	-.12 (-.86)
6/3/98	Terminates proposed secondary public offering (6/2 announces acquisition of SuperSonic Boom, the first company to offer customized CDs on the Internet)	-.013 (-.078)	-.015 (-.11)
7/20/98	2 <sup>nd</sup> quarter	.17 a (.92)	.19 (1.36)
7/28/98	Completes 1,250,000 Share Common Stock Offering	-.27* (-1.67)	-.28** (-1.98)
10/23/98	3 <sup>rd</sup> quarter (Also announces merger with N2K)	-.032 (-.20)	-.033 (-.24)
2/3/99	4 <sup>th</sup> quarter	-.011 (-.066)	-.021 (-.15)
5/5/99	1 <sup>st</sup> quarter	-.12 (-.74)	-.12 (-.88)
7/13/99	2 <sup>nd</sup> quarter expectations (Also announces merger with Sony's and Time Warner's Columbia House, creating the world's leading music and video e-commerce company. Columbia House is the leading club-based direct marketer of music and videos, owned equally by Sony Corp and Time Warner Inc.)	-.12 a (-.61)	.064 (.45)
8/5/99	2 <sup>nd</sup> quarter	-.13 (-.77)	-.13 (-.95)
10/26/99	3 <sup>rd</sup> quarter	-.019 (-.12)	-.019 (-.14)
2/3/00	4 <sup>th</sup> quarter	-.096 (-.59)	-.093 (-.66)
3/13/00	CDNOW, Time Warner and Sony announce the termination of the pending merger of CDNOW with Time Warner's and Sony's Columbia House. The parties have a new strategic alliance. Time Warner and Sony Corp commit \$51 million to CDNOW. CDNOW retains Allen & Company to explore its strategic options following the termination of the proposed merger.	-.19 (-1.19)	-.20 (-1.41)
3/20/00	Refutes Barron's information on cash position	-.43*** (-2.61)	-.41*** (-2.93)
3/29/00	Clarifies statements made by Arthur Andersen about its financial status	-.16 (-.99)	-.17 (-1.22)
5/2/00	1 <sup>st</sup> quarter. CDNOW unveils new operating plan.	-.076 (-.47)	-.088 (-.63)
6/2/00	Following its announcement on March 13 that it was seeking a merger partner or investor, CDNOW announces that the process continues on its planned schedule and the company expects to be able to announce a transaction by June 30. This attracts strong interest among potential merger partners and investors. (6/5 CDNOW clarifies its 6/2 statement by saying that it has not agreed on terms with any companies regarding a merger or acquisition.)	.68*** (4.18)	.69*** (4.88)
7/20/00	Bertelsmann AG, one of the world's leading media companies, and CDNOW announce an agreement under which Bertelsmann will acquire CDNOW in an all-cash tender offer for \$3.00 per share (approximately \$117 million)	.11 (.65)	.097 (.69)
7/27/00	2 <sup>nd</sup> quarter	.052 (.32)	.041 (.29)

Table 13d. N2K Financial Announcements

Date	Announcement	Method 1 CAR (t stat)	Method 2 CAR (t stat)
1/12/98	4 <sup>th</sup> quarter revenue	.46** a (2.54)	.35** (2.10)
2/18/98	4 <sup>th</sup> quarter (2/17 N2K and CBS Cable announce an exclusive agreement to create and promote a country music retailing site with a \$30 million campaign)	-.027 a (-.17)	-.047 (-.28)
3/4/98	Announces that it has filed a registration statement with the Securities and Exchange Commission to register for sale 3.8 million shares of Common Stock. 2 million shares will be offered for sale by N2K and 1.8 million shares will be offered for sale by certain stockholders	-.14 (-.91)	-.14 (-.85)
4/23/98	1 <sup>st</sup> quarter (4/22 Music Boulevard will be the exclusive music partner for the AOL services offered in Europe)	-.25 a (-1.53)	-.26 (-1.53)
7/22/98	2 <sup>nd</sup> quarter	-.15 (-.94)	-.15 (-.91)
10/23/98	3 <sup>rd</sup> quarter (Also announces merger with CDNOW)	-.034 (-.22)	-.033 (-.19)
1/19/99	4 <sup>th</sup> quarter revenue	-.14 (-.89)	-.14 (-.81)
2/3/99	4 <sup>th</sup> quarter	.010 (.064)	.0066 (.039)

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<sup>1</sup> In other work on e-commerce strategies, Bakos and Brynjolfsson (1999, 2000) examine bundling strategies for digital information goods, Zaheer and Zaheer (2001) study business-to-business online marketplaces, and Schultz and Zaman (2001) examine motives for dotcom IPOs.

<sup>2</sup> Several other studies exist, but these are the most closely related to this paper. For a partial review see McWilliams and Siegel (1997). They critically review the 29 event studies that were published during 1986-95 in the three top management journals *Academy of Management Journal*, *Strategic Management Journal*, and *Journal of Management*. Some of these studies, such as Woolridge and Snow (1990), examine several categories of strategies.

<sup>3</sup> 1-Click ordering speeds up shopping times by reducing the number of mouse clicks and downloaded pages required to purchase products. Amazon.com's zShops allows other businesses to offer products for sale through Amazon.com.

<sup>4</sup> Business and popular press accounts that include interviews with key participants clearly indicate that managers were focused on sales. Olim, Olim, and Kent (1998) provide the founders' account of CDNOW's early goals and strategies.

<sup>5</sup> I used a variety of selection criteria to select only important press releases, including whether the firm's name appeared in the headline, whether the firm issued the release, whether a firm contact person was listed on the release, and the content of the release.

<sup>6</sup> As a robustness check I allowed a firm's  $\alpha$  and  $\beta$  to change every time Method 1 yielded a CAR that was significant at the 5% level. The null hypothesis that  $\alpha$  and  $\beta$  are constant during the sample period cannot be rejected at the 10% level of significance for any firm. Further, no substantial changes in the sign or magnitudes of the CARs occurred when I allowed  $\alpha$  and  $\beta$  to change.

<sup>7</sup> Olim, Olim, and Kent (1998) describe CDNOW's emphasis on promotional activities in detail.

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<sup>8</sup> Gennotte and Trueman (1996) examine the strategic timing of corporate disclosures and suggest that multiple announcements should be spread out over time if the manager believes that announcements have positive implications for value. However, they assume that the manager is at least as well informed as other market participants, so they do not analyze how the manager can use announcements to learn from trading. Diamond and Verrecchia (1981) explore how investors can learn from trading.

<sup>9</sup> Of course, it is possible that the manager's private information dominates the public's information. Jennings and Mazzeo (1991) provide evidence that suggests that managers do not change the terms of mergers and acquisitions when the market responds unfavorably to announcements. However, this result could be due to agency problems that result from the separation of ownership and control in large corporations. In contrast, many firms that enter new environments are entrepreneurial startups in which the Chief Executive Officer has a significant equity stake. In new environments learning from experience is important. For example, Anand and Khanna (2000) provide evidence that firms learn through experience how to create value through alliance formation. The market reaction to announcements provides information that could inform this learning process.