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The Impact of E-Commerce Strategies on Firm Value: Lessons from Amazon.com

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Abstract

Managers would like to understand which strategies generate value in e-commerce environments, and researchers are just beginning to explore this issue. Which strategies are useful and which are not? In a step towards answering this question, we estimate the impacts of several competitive strategies on the value of Amazon.com, the well-known Internet retailer, during its first 1000 days as a publicly traded firm. The strategies analyzed include pricing, offline expansion, alliance formation, product line expansion, and service improvement. The results provide insight into the usefulness of various ways of competing online and could be useful for strategic planning in new Internet ventures.

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, we apply event study methodology to analyze strategies announced by Amazon.com, the pre-eminent Internet retailer, during its first 1000 days as a publicly traded firm. We focus on five types of strategies that are of particular interest in the e-commerce environment: 1) pricing strategy; 2) offline expansion, particularly customer service center, distribution center, and regional expansion; 3) promotional alliance formation and online advertising; 4) product line expansion and service improvement through alliances or acquisitions; and 5) product line expansion and service improvement without alliances or acquisitions.

The results yield several insights. First, Amazon.com's pricing strategy, which began with price discounts and has included more creative devices such as allowing web surfers to tip websites, appears to reduce Amazon.com's value. Bertrand price competition games suggest that price competition is one of the least profitable ways to compete, and Amazon.com's experience reinforces this claim. Second, Amazon.com's early domestic offline expansions of customer service and distribution centers have positive effects on value but its more recent expansions appear to have negative effects.

This suggests that Amazon.com's offline expansion was excessive. Third, Amazon.com's early promotional alliances with prominent portals have large positive effects on its value, but promotional alliances following its early ones appear to have no effect on its value. This suggests that promotional alliances are useful early on in an e-commerce firm's life cycle to build awareness of the firm and its products but that they have limited usefulness later on.

The results suggest that, overall, Amazon.com's efforts to expand its product line and improve its services increased its value, but the positive effects can be linked to a relatively small number of extremely successful acquisitions, alliances, products, and services. Music, health and beauty products, and videos are among the most valuable product line expansions, and auctions, 1-Click ordering, Amazon.com's Recommendations Centers, and zShops are among the most valuable service improvements.¹ The alliance with the highest estimated abnormal return is with Borders Group, one of the two largest offline bookstore chains. Amazon.com uses its online capabilities to operate an online bookstore for Borders Group.

As far as we are aware there are no other studies that use event study methodology to comprehensively assess a firm's strategies 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).² These studies employ a cross sectional approach

and estimate the average effects of announcements on the sample firms' stock returns. In contrast, we follow a single firm over time. Examining several categories of strategies allows us to compare different strategies and show how the effectiveness of some strategies changed over time as Amazon.com and its markets evolved.

Amazon.com

Amazon.com was founded as an online bookstore in July, 1995 and went public in May, 1997 (Nasdaq: AMZN). Since then it has become the most prominent Internet retailer. 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. Amazon.com has expanded nationally and internationally and now operates several customer service and distribution centers in the United States and international web sites customers in Europe and Japan.

There are several reasons for focusing on Amazon.com in this study. First, Amazon.com is an excellent example of a firm entering a new environment in which the impacts of competitive strategies on value were difficult to assess in advance. Second, Amazon.com has always announced its major strategies publicly on its web page, and the business press has followed Amazon.com's activities and fortunes very closely. Thus, it is possible to construct a comprehensive list of Amazon.com's key strategic decisions in each of the categories described above.³ Further, we can be confident that the market was informed about Amazon.com's changes in strategy.

Third, Amazon.com is interesting in its own right, not only because it was the first major Internet retailer, but also because it has had a fascinating experience in the stock market so far. Figure 1 shows Amazon.com's adjusted daily closing price over its first

1000 days of trading 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 March, 2001 Amazon.com's value had declined to 9.69 times its initial price. By contrast, the S&P 500 Index at its highest point was 1.84 and finished at 1.50.

Fourth, the lessons learned from analyzing Amazon.com 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 Amazon.com's strategies affected the market's assessment of its value will help us understand the forces shaping competition between e-commerce firms.

2. Methodology

Amazon.com's web site lists all of Amazon.com's press releases for its entire history. We collected the dates of all of the announcements in each of the five categories referred to in the introduction for Amazon.com's first 1000 days of trading. Focusing on these categories is useful because they are of particular importance in the e-commerce environment. The categories contain essentially all of Amazon.com's major announcements. Most of Amazon.com's other announcements do not pertain to strategy formulation (for example, an announcement that Amazon.com has just served its millionth customer is not an announcement of a strategy).

In a few cases, multiple announcements within the five categories occur on the same day or on adjacent days. In these cases we 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. Counted this way, there are 85 events in the sample. The tables presented below summarize the information that Amazon.com reveals that pertains to each event.

We use Amazon.com's adjusted daily closing prices to construct a daily returns series for Amazon.com from May 16, 1997 until May 3, 2001, and we use the S&P 500 Index to construct market returns. Both series are from Reuters and are provided online by Yahoo! Finance. There are 999 observations on returns. The standard deviation of Amazon.com's stock returns is 0.064, which implies that daily returns of plus or minus 5% are well within the range of ordinary fluctuations and daily returns must be plus or minus at least 12.8% in order to be in the tails of the distribution.⁴ 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 Amazon.com's announcements two days in advance, and the announcement typically appears in the Wall Street Journal the day after it is posted on the web page. Therefore, to estimate the announcement effects we 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 we use two methods. In the first, the estimation equation is

$$R_{it} = \alpha + \beta R_{mt} + \sum_{j=1}^{85} \gamma_j d_j + \varepsilon_t, \quad (1)$$

where R_{it} is Amazon.com's stock return on day t , R_{mt} is the market return on day t , d_j is a dummy variable that takes the value one during event j 's event window, ε_t is the error term on date t , and α , β , and the γ_j 's are the estimated coefficients. In this method, the t test of the significance of event j uses the t statistic of γ_j . To compute the CAR of event j , we multiply γ_j by four (the length of the event window). This parsimonious specification avoids double counting abnormal returns when event windows partially overlap and facilitates joint hypothesis tests. The R-squared is .28 with 999 observations. The estimated constant term $\alpha = -.000039$ with a standard error of .0022 and Amazon.com's estimated $\beta = 2.00$ with a standard error of .15.⁵

The second method computes CAR the standard way (as described by MacKinlay, 1997). We 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. In this case the number of observations used to estimate the market model is 680, the R-squared is .18, $\alpha = -.00026$ with a standard error of .0021, and $\beta = 2.03$ with a standard error of .17. 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 – only 16 are statistically

significant. Despite this, a relatively clear picture of the impact of Amazon.com's strategies on its value emerges when we look at categories as a whole. For example, Table 1, 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.

3. Results

The tables group events into categories of strategies: 1) pricing strategy; 2) customer service center, distribution center, and regional expansion; 3) promotional alliance formation and online advertising; 4) product line expansion and service improvement through alliances or acquisitions; and 5) product line expansion and service improvement without alliances or acquisitions. Each table lists events in the category and includes related follow-up events. When we report joint hypotheses tests and summary statistics we use the coefficients from method 1. Both methods yield similar conclusions.

Pricing Strategy

Table 1 lists Amazon.com's announcements of changes in its pricing strategy over its first 1000 days. The first three events are announcements of price discounts. 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 is more creative, although it still does not appear to increase value.

It is difficult to reach conclusions about Amazon.com's pricing strategy because the estimates in Table 1 are all imprecise. The null hypothesis that all of the effects in Table 1 are zero cannot be rejected at the 10% level of significance (Wald test statistic

2.47, 10% critical value 12.02). However, the point estimates tend to point in the same direction, and the CAR of all seven events in Table 1 ($\sum_{j \in J_p} CAR_j$, where J_p is the set of events in Table 1) is -.35. Therefore, in our discussion we assume the effects are negative, attempt to explain why, and consider implications for other e-commerce firms.

Price competition has long been thought to be a potential problem for online retailers. Traditional 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 of these results). Partly for this reason, manufacturers often have an incentive to provide local monopolies to their retailers (for a discussion see 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.

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.⁶ Ghemawat (1999, Case 9) shows that Amazon.com's first price cut in Table 1 (6/10/97) was part of a price war with Barnes & Noble's online site that began before Amazon.com's initial public offering. As noted in Table 1, on 5/17/99 Amazon.com's

price discounts on *New York Times* bestsellers provoked an immediate response from the book superstores 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 have not been 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. Although this is a creative pricing strategy, it does not appear to have increased Amazon.com's value. As shown below, investors reacted more favorably to service and product line enhancements.

Customer Service Center, Distribution Center, and Regional Expansion

Table 2 lists announcements of Amazon.com's domestic customer service center, distribution center, and regional expansion, and Table 3 lists announcements of foreign expansion. Amazon.com's strategy in these areas has consisted of continual domestic expansion to cut shipping times accompanied by international expansion to serve non-English speaking consumers, partly through foreign distribution centers.

Amazon.com's early domestic expansion had a positive effect on its value. The null hypothesis that Amazon.com's first two domestic distribution center expansions had no impact on value is rejected at the 10% level (Wald test statistic 5.60, 10% critical value 4.61). The CAR of these two events is .36. In contrast, the null hypothesis that Amazon.com's domestic expansion after its first two centers had no impact on value cannot be rejected at the 10% level (Wald test statistic 2.47, 10% critical value 12.02). The point estimates suggest that the CAR of these events is negative: -.33.

The main benefit of domestic expansion is that it improves delivery times. The results suggest that investors believed that the marginal 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.

The results suggest that e-commerce firms should avoid excessive offline expansion. Results presented below suggest that e-commerce firms would be better off investing in service improvements that make shopping easier and more informative. It may not be possible to expand product lines without increasing the number and size of the customer service and distribution centers, but if it is possible to do so then that is what should be done. Perhaps items that are physically small or have high value for their size should be emphasized. Another possible strategy is to expand with flexible leases to avoid committing the company to large overhead expenditures.

Table 3 suggests that Amazon.com's expansion into Europe, French-language markets, and Japanese-language markets increased value, but the effect is imprecisely estimated. The null hypothesis that Amazon.com's foreign expansion had no impact on value cannot be rejected at the 10% level (Wald test statistic 4.12, 10% critical value 9.24). The point estimates suggest that foreign expansion has been beneficial: the CAR of the events in Table 3 is .21. Foreign expansion improves delivery times but differs from

domestic expansion because it provides access to markets that would be untapped otherwise, and the positive effect might be due to market expansion.

Promotional Alliances and Online Advertising

Table 4 lists Amazon.com's announcements of promotional alliances. Amazon.com's strategy in this area was to form alliances with firms that had popular web sites. The firms' sites provide links to Amazon.com from their pages and promote Amazon.com's products. The sites 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 null hypothesis that all of Amazon.com's promotional alliances had no impact on its value is rejected at the 1% level (Wald test statistic 28.73, 1% critical value 24.72). The estimated CAR of these events is .66. However, the biggest impact clearly occurs early on. The null hypothesis that promotional alliances after 9/8/97 had no impact on Amazon.com's value cannot be rejected at the 10% level (Wald test statistic 8.18, 10% critical value 13.36). The estimated CAR of these eight most recent promotional alliances is -.019, which suggests that they had essentially no effect on value.

The main benefit of a promotional alliance is that it increases consumer awareness about the company's products and services. This must be balanced against the cost of maintaining the alliance, which includes fees and transactions costs. A promotional alliance is basically an advertising and promotion contract combined with a long-run relationship. Consider Amazon.com's alliance with Yahoo!, the popular search engine company. Yahoo! provides direct links to related Amazon.com book titles from every Yahoo! search result. Searchers are invited to buy books related to what they are

searching for on the web.

Table 4 shows that the alliances early on with the major portals AOL, Excite, and Yahoo! (7/7/97) generated a lot of value. Amazon.com also increased its value on 9/8/97 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. 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. One recommendation for new e-commerce firms is that during their early development they should attempt to create alliances with major portal and search engine sites, the most-visited sites on the web. The major portals include AOL, MSN, and Yahoo!.

It is worth noting that our results have implications for research on the effects of marketing alliances 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. Our results suggest that life cycle factors should be considered in such analyses because the value of a marketing alliance depends on how mature the firm is.

Product Line Expansion and Service Improvement through Alliances or Acquisitions

Table 5 lists Amazon.com's announcements of product line expansion through alliances or acquisitions. Amazon.com's strategy in this has consisted of aggressive product line

expansion in areas where another e-commerce firm has already demonstrated competence. Table 6 lists Amazon.com's announcements of services improvement through alliances or acquisitions. Amazon.com's strategy in this category is difficult to summarize because it is made up of several strategies. It includes alliances for auctions, books, a credit card, delivery time improvements, free music downloads that allow consumers to sample music before purchasing, internationalization, and wireless access.

Although some of the effects in Table 5 are statistically significant on their own, we cannot reject the null hypothesis that, collectively, the events in Table 5 have no effect (Wald test statistic 16.69, 10% critical value 28.41). However, the point estimates suggest that the CAR of these events is positive: .58. The null hypothesis that all of the coefficients in Table 6 are insignificantly different from zero can be rejected at the 1% level (Wald test statistic 36.71, 1% critical value 29.14). However, this is only because of the alliance with Borders on 4/11/01. The hypothesis that the remaining effects are all zero cannot be rejected at the 10% level (Wald test statistic 15.86, 10% critical value 21.07). The estimated CAR of the events in Table 6 is .62.

Product line expansion allows Amazon.com to reach additional consumers, sell more products to its existing consumers, and exploit economies of scope. These benefits must be weighed against the cost of maintaining the alliance or making the investment in the partner company. Only two types of events in Table 5 appear to have a substantial positive impact on value. First, 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 5) are associated with a CAR of .35. Second, Amazon.com's introduction of Amazon.com Auctions (see 3/29/99) and the expansion of

its auctions through alliances with five leading collectibles companies (11/5/99) and Greg Manning Auctions (2/3/00) are associated with a CAR of .50. The low or negative effects of the other products in Table 4 could be due to a variety of factors that we cannot distinguish between, 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.

Table 6 shows that Amazon.com's gains from service improvement can also be attributed primarily to two types of agreements. First, Amazon.com's alliance with Bidpath, a leading Internet auction infrastructure firm (7/18/00), to improve Amazon.com's auctions is associated with a CAR of .20. Internet auctions have proved to be quite popular, and the positive effect of improvements to Amazon.com's auction capabilities reflects this. Second, Amazon.com's recent alliance with Borders Group (4/11/01) is associated with a CAR of .52. 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 is extremely valuable because it combines Amazon.com's online capabilities and resources with Borders' offline strength.

The other events in Table 6 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 -.17), the alliance with Sprint on 12/8/99 has a significant positive impact (CAR .23).

Product Line Expansion and Service Improvement without Alliances or Acquisitions

Table 7 lists Amazon.com's announcements of product line expansion that did not

involve partnership with any other firms. Amazon.com's strategy in this area has consisted of expansion of its existing product lines and expansion into several new products. Table 8 lists Amazon.com's announcements of service improvement that did not involve partnership with other firms. Amazon.com has added value that is hard to imitate. Its strategy has been to make shopping more convenient and informative (1-Click, recommendations center, links to similar products, subject lists, purchase circles). Amazon.com's introduction of z-Shops allows it to market its service capabilities without transferring its know-how.

The null hypothesis that all of the coefficients in Table 7 are insignificantly different from zero is rejected at the 10% level (Wald test statistic 19.31, 10% critical value 18.55). If the two music store events are removed the hypothesis that the remaining coefficients in Table 7 are insignificantly different from zero cannot be rejected at the 10% level (Wald test statistic 6.91, 10% critical value 15.99). However, the estimated CAR of these events is .81, which exceeds the CAR of the music store events by a considerable margin. The null hypothesis that all of the improvements in Table 8 had no impact on Amazon.com's value is rejected at the 1% level (Wald test statistic 18.74, 1% critical value 16.81). The estimated CAR these events is .79.

Table 7 shows that Amazon.com's efforts at expanding its product lines without alliances or acquisitions have generally increased value. The largest value generators were the music store, the video store, the kitchen store, the children's store, and the downloadable software store.

Table 8 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 has generally increased value. Note that in contrast to the price reductions described above, these strategies are 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 expands its product line it tends to adapt its existing services like 1-Click shopping and recommendations to the new products. Therefore, there are economies of scope created when service improvements occur. Amazon.com's zShops exploits these capabilities further by allowing others to make use of Amazon.com's technologies.

4. Conclusion

This paper estimates the effects of Amazon.com's e-commerce strategies on its value. Among the conclusions for e-commerce firms are the following: First, price competition and offline expansion should be avoided. Second, promotional alliances should focus on the most prominent portals and are most useful early in the company's life. Third, 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.

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.⁷ 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.⁸ 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

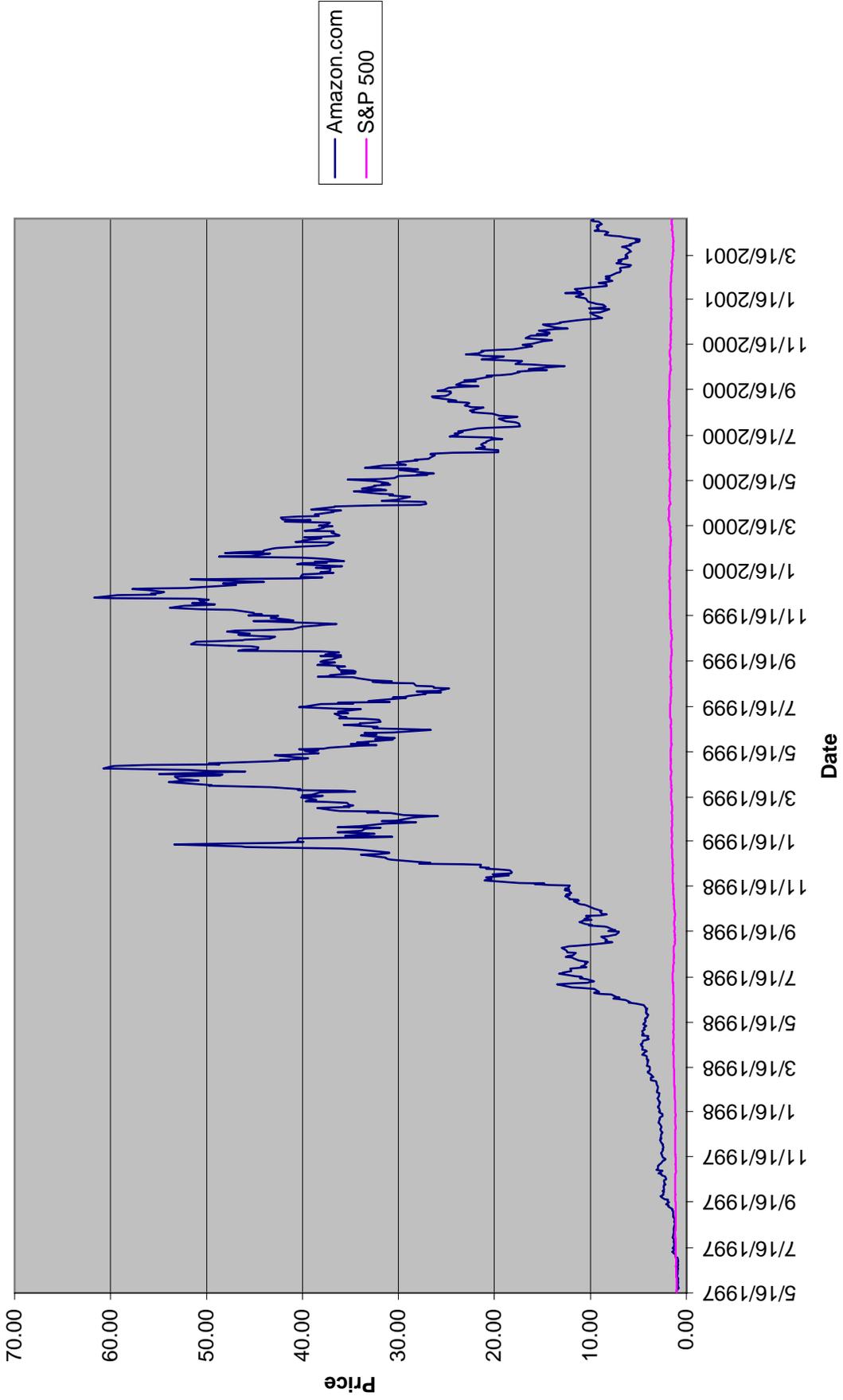


Table 1. Pricing Strategies

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.	-.056 (-.49)	-.056 (-.51)
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%.	-.090 a (-.76)	-.059 (-.53)
5/17/99	Announces 50% discounts on all <i>New York Times</i> bestsellers. The <i>Wall Street Journal</i> reports that Barnes & Noble and Borders match Amazon.com's discounts the next day. (On 5/18 Amazon.com acquires 35 percent of HomeGrocer.com, a web-based grocer, for \$42.5 million)	-.027 (-.23)	-.025 (-.23)
5/8/00	Announces Bid for Featured Placement, which allows sellers to bid for placements on the Amazon Auction page	.045 (.40)	.046 (.42)
11/9/00	Announces free shipping on orders over \$100 through 11/22/00 for the Christmas holidays	-.090 a (-.76)	-.092 (-.84)
2/6/01	Announces the Honor system, which allows online visitors to tip their favorite sites	-.019 (-.17)	-.018 (-.16)
2/28/01	Announces a new free music downloads area with MP3 and Liquid Audio files – includes a virtual tip jar	-.11 (-.93)	-.11 (-.96)

In all of the tables:

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 2. Domestic Customer Service Center, Distribution Center, and Regional Expansion

Date	Event	Method 1 CAR (t stat)	Method 2 CAR (t stat)
11/18/97	Opens a 200,000 square foot distribution center in New Castle, Delaware – Amazon.com’s second distribution center	.12 a (1.03)	.10 (.91)
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.	.24** (2.14)	.24** (2.23)
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)	-.038 (-.33)	-.037 (-.33)
5/25/99	Will open two distribution centers in Kentucky: 570,000 and 600,000 square feet, respectively. Both centers are leased.	-.019 (-.17)	-.017 (-.16)
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)	.057 (.50)	.058 (.52)
10/15/99	Will open a second U.S.-based customer service center in Tacoma, Washington	-.043 (-.37)	-.040 (-.37)
11/11/99	Will expand its Grand Forks customer service center acquired from Tool Crib of the North (see 11/9/99 on Table 6).	-.17 a (-1.18)	-.062 (-.56)
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.	-.082 (-.71)	-.081 (-.74)
4/26/00	Opens the center	-.031 (-.27)	-.030 (-.28)

Table 3. Foreign Customer Service Center, Distribution Center, and Regional Expansion

Date	Event	Method 1 CAR (t stat)	Method 2 CAR (t stat)
4/27/98	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)	.19* (1.64)	.19* (1.73)
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	-.050 (-.43)	-.051 (-.46)
3/30/00	Opens a 103,000 square foot customer service center in The Hague, the Netherlands	-.075 a (-.56)	-.050 (-.46)
8/29/00	Launches Amazon.fr, a French-language site (Amazon.com also announces an extension of its promotional alliance with AOL)	.098 (.86)	.099 (.90)
11/1/00	Launches Amazon.co.jp, a Japanese-language site	.051 (.44)	.051 (.46)

Table 4. Promotional Alliances and Online Advertising

Date	Ally: Description of Alliance	Method 1 CAR (t stat)	Method 2 CAR (t stat)
7/7/97	<p>Yahoo!: Amazon.com will be the premier bookseller featured on Yahoo!, with direct links from Yahoo searches to related books at Amazon.com.</p> <p>Excite: Amazon.com will make a multi-million dollar advertising buy on Excite and will become Excite's exclusive bookseller integrated throughout Excite's channels.</p> <p>AOL (on 7/8/97): Begins a three-year comprehensive promotional agreement under which Amazon.com will be the exclusive bookseller on AOL.com and AOL's NetFind search engine. In return AOL will receive \$19 million over three years with the possibility of additional payments if Amazon.com's revenues exceed specified thresholds.</p>	.39*** (3.38)	.39*** (3.52)
9/3/97	Prodigy: Amazon.com will be the exclusive bookseller on the Prodigy Shopping Network.	-.074 a (-.62)	.016 (.15)
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	.36*** a (3.04)	.34*** (3.11)
10/9/97	Altavista: Amazon.com will be the exclusive bookseller on the Alta Vista search service	-.041 (-.36)	-.040 (-.36)
10/20/97	Netscape: Amazon.com will be the exclusive bookseller on Netscape Marketplace	.12 (1.07)	.12 (1.12)
11/10/97	@Home Network: Amazon.com will be the premier bookseller throughout @Home service (the leading high-speed Internet service via the cable infrastructure)	-.16 (-1.44)	-.16 (-1.48)
12/3/97	Geocities: Amazon.com will be the exclusive bookseller in the Geocities communities	.052 (.45)	.052 (.47)
4/7/98	iVillage.com: Amazon.com will be the exclusive bookseller throughout the iVillage.com community, the number one online destination for women.	-.035 (-.30)	-.033 (-.30)
7/21/98	Intuit: 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).	.21* (1.86)	.21* (1.95)
9/2/98	Yahoo!: Amazon.com expands its relationship with Yahoo! and is now the premier bookseller throughout many of Yahoo!'s world sites.	-.095 (-.83)	-.093 (-.84)
2/14/00	LookSmart, a global leader of Internet search infrastructure: Amazon.com will be the exclusive book and music seller on LookSmart	-.070 (-.59)	-.068 (-.61)

Table 5. 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* (1.80)	.21* (1.89)
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 (.94)	.11 (1.00)
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)	.029 (.25)	.030 (.27)
8/23/00	Greenlight.com: Amazon.com introduces the new car-buying service	-.0093 (-.081)	-.0087 (-.079)
3/29/99	Pets.com: Amazon.com will acquire 50% of Pets.com (On 3/30 Amazon.com opens Amazon.com Auctions)	.25** (2.19)	.25** (2.28)
6/14/99	Amazon.com increases its stake in Pets.com to 54%	-.18 a (-1.35)	-.12 (-1.13)
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 the three companies.	.11 (.92)	.11 (.97)
11/5/99	Five leading collectibles companies: Amazon.com adds their products	.034 a (.24)	.14 (1.25)
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)	-.031 (-.27)	-.030 (-.27)
2/1/00	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 (On 1/31 Amazon.com will acquire 5% of Audible.com, a spoken audio content firm, and will add Audible.com's products. In return Amazon.com will receive \$30 million dollars over three years)	-.084 a (-.63)	.027 (.24)
5/19/00	Living.com: Amazon.com launches its home living store	-.049 a (-.41)	-.030 (-.28)
5/31/00	Audible.com: Amazon.com expands spoken audio content and has more than 4,700 audiobooks. It also expands speeches, lectures, and other material (also deepens its Internet infrastructure alliance with HP)	.011 (.095)	.010 (.094)
11/14/00	Audible.com: Amazon.com launches its ebooks store	-.017 a (-.14)	-.038 (-.35)
2/3/00	Greg Manning Auctions: Amazon.com owns \$5 million of the company's stock and will offer its collectibles on the Amazon.com auction site	.22* a (1.66)	.18 (1.61)
3/22/00	Imdb.com (see 4/27/98 in Table 3): Amazon.com expands independent films	-.057 a (-.42)	-.033 (-.30)
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	.046 a (.35)	.0097 (.088)
8/10/00	Toysrus.com, an online toy retailer: to create a co-branded toy and video games store. Amazon.com will receive a combination of periodic fixed payments, per unit payments and a single-digit percentage of revenue	.014 (.12)	.015 (.14)
10/4/00	Ofoto, an online photography service: cameras and photos	-.13 (-1.13)	-.13 (-1.17)
11/28/00	AT&T Wireless, Sprint PCS, and Voicestream Wireless: wireless phones	.057 (.50)	.057 (.52)
4/24/01	All-Clad Metalcrafters, a kitchenware firm: Amazon.com will launch an All-Clad store within its Kitchen & Houseware Store	.047 (.41)	.049 (.44)

Table 6. Service Improvements through Alliances or Acquisitions

Date	Ally: Description of Alliance or Acquisition	Method 1 CAR (t stat)	Method 2 CAR (t stat)
8/4/98	PlanetAll, which provides a web-based address book, calendar, and reminder service, and Jungle, which provides web-based virtual database technology: Amazon.com will acquire both companies in exchange for equity worth approximately \$280 million	.041 (.36)	.044 (.40)
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 becomes the first Internet retailer to offer free digital downloads to promote an upcoming release by a major recording artist (Sarah McLachlan). Amazon.com intends to expand this service.	.076 (.66)	.076 (.69)
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 (.80)	.016 (.15)
11/19/99	Launches Sothebys.amazon.com, an online auction site	.020 (.17)	.020 (.19)
10/10/00	Sothebys.com and Sothebys.amazon.com will combine into one online auction site which will bear the name Sothebys.com	-.079 (-.69)	-.077 (-.70)
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 launch Amazon.com Anywhere, which provides shopping from wireless devices	-.26** a (-1.99)	-.080 (-.72)
12/8/99	Sprint: Amazon.com and Sprint will offer Internet shopping from Internet-ready Sprint PCS wireless phones	.23** (2.00)	.23** (2.10)
2/18/00	Basis Technology, a provider of internationalization technology: Amazon.com makes a minority investment in Basis Technology	-.075 (-.65)	-.073 (-.66)
2/28/00	Motorola: to promote mobile e-commerce. Amazon.com introduces a web address for mobile shopping	-.028 (-.25)	-.028 (-.25)
3/15/00	AirTouch Cellular: for wireless e-commerce	-.11 a (-.93)	-.10 (-.91)
3/20/00	Kozmo.com, the leading Internet-to-door delivery service: Amazon.com invests \$60 million in Kozmo.com, has warrants to acquire more, and intends to introduce 1-hour delivery as an option	.048 a (.35)	-.0096 (-.087)
5/16/00	NextCard: Amazon.com launches credit card with NextCard	.064 a (.54)	.052 (.47)
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 (-1.24)	-.14 (-1.29)
7/18/00	Bidpath, an auction infrastructure firm: to improve Amazon.com's auctions	.20* (1.70)	.20* (1.79)
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	.52*** (4.57)	.52*** (4.76)

Table 7. 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	.077 (.67)	.077 (.70)
6/10/98	Announces launch of music store with over 125,000 titles	.40*** (3.48)	.40*** (3.64)
9/9/98	Adds more than 42,000 classical and opera CDs to its music store	-.067 (-.58)	-.066 (-.60)
11/17/98	Opens a video store with more than 60,000 videos and a holiday gift store	.20* (1.72)	.20* (1.79)
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)	.076 (.66)	.077 (.70)
8/31/99	Opens Christian store with thousands of Christian products	-.056 a (-.48)	-.025 (-.23)
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)	.21 a (1.27)	.14 (1.28)
2/9/00	Tools and equipment	.0054 a (.046)	-.011 (-.10)
4/5/00	Lawn and patio store	-.043 (-.38)	-.042 (-.39)
5/2/00	Kitchen store	.099 (.86)	.10 (.92)
9/8/00	Computer and video games	-.050 (-.44)	-.049 (-.44)
2/12/01	Downloadable software store	-.046 (-.40)	-.045 (-.40)

Table 8. 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*** (2.78)	.32*** (2.91)
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)	.072 (.63)	.072 (.65)
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)	-.15 (-1.26)	-.14 (-1.31)
8/20/99	Introduces purchase circles, the location-specific bestseller lists	.062 (.54)	.062 (.57)
8/26/99	Modifies purchase circles to let individuals and firms withhold purchasing habits	.12 a (1.01)	.11 (.97)
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 (2.78)	.24** (2.15)

¹ 1-Click ordering speeds up shopping times by reducing the number of mouse clicks and downloaded pages required to purchase products. In the standard “shopping cart” approach, the customer must click on each product and then download a new page to confirm purchases with additional clicks. 1-Click removes the necessity to use a shopping cart – once Amazon.com obtains the customer’s payment and shipping information the customer can purchase products with a single click. Amazon.com’s Recommendations Centers allow customers to post their reviews of products on Amazon.com’s web pages. As an information-enhancing device, the recommendations centers give Amazon.com an advantage over other web retailers and offline retailers. Amazon.com’s zShops allows other businesses and individuals to offer products for sale through Amazon.com, which allows others to use Amazon.com’s services.

² Several other studies exist, but these are the most closely related to our work. 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.

³ We considered examining other less prominent online firms such as BN.com and CD-Now, but these firms have not been as diligent at announcing strategies and have received much less press coverage than Amazon.com. Therefore, we restrict our attention to Amazon.com.

⁴ In contrast, the standard deviation of the S&P 500 returns during the sample period is .013.

⁵ As a robustness check we allowed α and β to change every time Method 1 yielded a CAR that was significant at the 5% level. The null hypothesis that α and β are constant during the sample period cannot be rejected at the 10% level of significance (Wald test statistic .0055, 10% critical value 25.99). Further, no substantial changes in the sign or magnitudes of the CARs occurred when we allowed α and β to change.

⁶ 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.

⁷ 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.

⁸ 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.