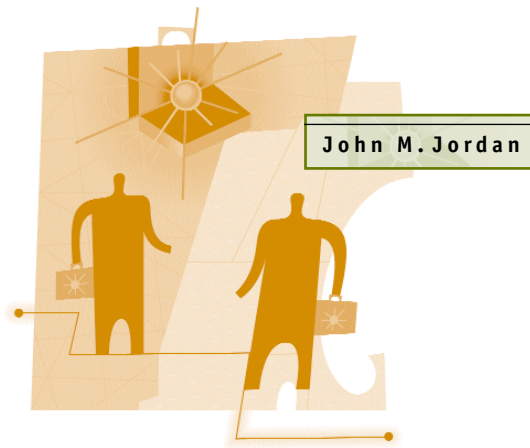


WEB COMMERCE AT AMAZON.COM



About the Author:

John M. Jordan leads the research in electronic commerce at the Ernst & Young Center for Business Innovation in Cambridge. He directs *Wired for Profit*, a multi-client research consortium of industry-leading companies exploring new directions in electronic commerce. John has spoken at numerous industry events, including Internet World, Internet and Electronic Commerce Expo, and the Wall Street Journal Technology Summit, and has been interviewed by BBC TV's World Business Forum.

Whatever one may think of its long-term prospects, Amazon.com clearly stands in today's front rank of online businesses. It can legitimately claim to be the first of the Web bookstores to reach a global mass market, to be "Earth's largest bookstore," and to have delivered significant value to shareholders, with an eighteen-month stock-price return in excess of 1,300%. These superlatives aside, Amazon continues to help define the Internet as a consumer environment, with rules, limits, and opportunities often different from those experienced in physical channels. Operating under assumptions at variance with conventional retailers, Amazon is a harbinger of successful business practices in a connected economy.

To anticipate this study's main points, they are the following:

- ⊙ Amazon uses software connected to a network to understand then meet customer needs for information goods. Prime goals are thus to increase the power of the software and the reach of the network, then to expand the scope of goods offered. One outcome of this outlook is a conscious decision to invest in reach (in the form of market share and penetration) at the cost of short-term profitability.
- ⊙ Outside of this core capability, Amazon tends to connect to resources that give it scale rather than adding internal physical mass.

Amazon.com has redefined what it means to be a successful company. With unprecedented growth, the company is defining the Internet and giving structure to this new channel of communication and transaction. With virtually no inventory on hand at any given time, Amazon has mastered its close ties with wholesalers. All of Amazon's products, books, music, videotapes, and even holiday gifts are "information goods" and thereby require a different kind of strategy - one based on invoking emotion in customers.

article abstract

- © Amazon's leadership team understands increasing returns economics as exemplified in the software industry, most notably by Microsoft, insofar as it seeks to promote lock-in, positive feedback loops, and other so-called network externalities.

Background

The worldwide book publishing industry, while not approaching the size of the health care or financial services sectors, is nonetheless an \$86 billion industry at retail, with \$26 billion of that accounted for domestically. The Association of American Publishers estimates that the industry, measured at wholesale in the U.S., will grow at a compound annual growth rate (CAGR) of 5% between 1996 and 2001. The industry is highly fragmented, with no single company controlling more than 10% of the retail market.¹ Inventory management is a major challenge: the number of titles in print at any given time is roughly 1.5 million, or six times as many as compact discs.

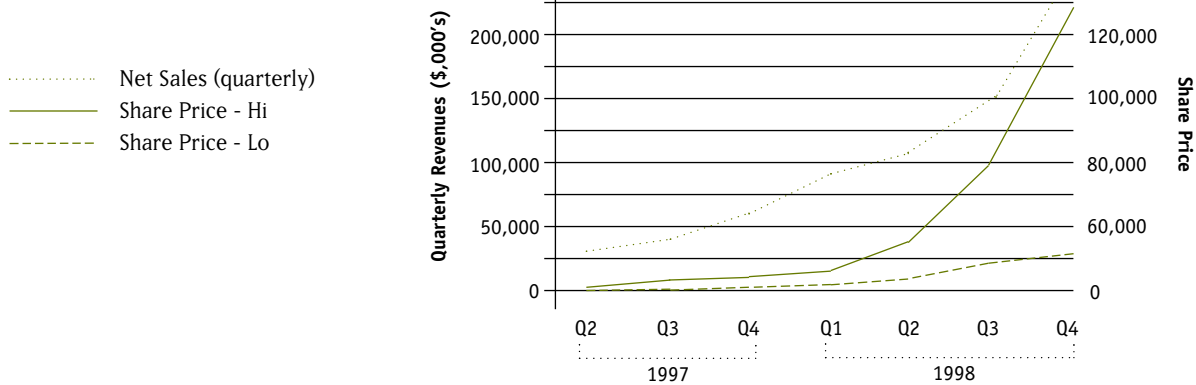
Amazon.com opened for business in July 1995 as an exclusively Internet-based business. It lists over 2.5 million book titles (including roughly a million out-of-print and used titles) in its online catalog. To manage this sizable inventory, Amazon uses a virtual model—the company physically holds only a fraction of those titles at any given time and has close ties to wholesalers, including Ingram Book, whose presence helped drive Amazon to set up shop in Seattle.² Amazon had over 4.5 million customers as of September 30, 1998, (up from 1.5 million 9 months

earlier) in 130 countries worldwide, with 64% of book revenues representing repeat business. Net sales were \$153 million with a loss of \$20.9 million as of the most recent quarterly statement. The firm offered 12% of its stock to the public in May 1997 at a price of \$18 per share. Roughly a year later, the stock was trading in the \$90 range, a 400% return. In November 1998, it crossed the \$200 mark.

The business's long-term direction is gradually being made public. In addition to books, Amazon initially expanded into books on tape, videotapes, and sheet music. It then moved into compact disks in the summer of 1998, becoming the top Internet music merchant in its first quarter of operation. In late November, Amazon announced that it was temporarily expanding into holiday gifts, including electronics, toys, gadgets, and games. This move, while expected, came earlier than most observers predicted, providing another instance where Amazon acted proactively and forced other industry players to respond. Compared to books, such products offer higher margins and force some pessimistic analysts to revise their opinions about the stock's long-term value.³

All of Amazon's core products are what Hal Varian, an economist at the University of California, calls information goods, products which have distinctive characteristics and behave differently from traditional products. Information goods often need to be sampled before purchase; cost-based pricing (especially for easily duplicated online digital information) becomes

Amazon.com Revenues and Share Price



irrelevant; and information goods are highly experiential, invoking strong emotional preferences.⁴ The company's mission statement makes no mention of books; according to its website, Amazon seeks "to become the authoritative source for information-based products."⁵

The business was started by Jeff Bezos, who studied computer science and electrical engineering at Princeton before working in investment banking until 1994. His interest in the Internet as a consumer environment began when he saw the growth rate of World Wide Web traffic in the spring of 1994. As Bezos recalled in an interview,

*I came across a statistic that the growth rate of Web usage was 2,300 percent a year. . . . It turned out that, though you couldn't measure the baseline usage, you could measure growth rate. And things rarely grow that quickly. . . . Just anecdotally, I could tell that the baseline was nontrivial. And therefore it looked like the Web was going to get very big very fast.*⁶

Bezo's immediate business goal—"Get big fast"⁷—reflects an understanding of increasing returns economics, the driving force in the software industry that is Amazon's main progenitor.⁸ Indeed, the story of how Bezos came to choose books as his domain has become part of Internet folklore. In the summer of 1994, he intensively researched different products to sell online, then chose books from among 20 different candidates. He and his wife moved to Seattle in part to capitalize on the area's large supply of talented

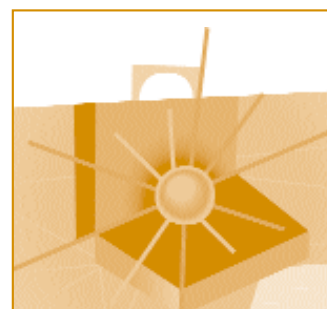
computer programmers, and focused on the opportunities presented by the fact of books being information goods, by the fragmentation of both supply and demand, and by the demanding inventory needs of a book retailer being easier to meet with connections to distributors' warehouses than with in-house stock.

It is important to note that from the outset, Amazon operated on a business model built to exploit the online environment, rather than from the standpoint of a product or service offering. This perspective directly contradicts conventional business wisdom which urges executives to set business goals and then to "enable" those goals with technology. Bezos, like FedEx's Fred Smith and other visionaries, instead studied a set of emerging technological capabilities and wrapped a business around them.

How Amazon delivers value

Amazon has consciously built a four-fold value proposition, each dimension of which directly relates to an understanding of the leverage uniquely generated by the online medium.⁹

© **Convenience:** The Internet is open for business all



the time, across time zones. The Amazon website offers multiple paths to a given book: via reviews, categorical browsing lists, multiple dimensions of search capability, referral from a previous search, email notification, a variety of recommendation engines,¹⁰ or personalized messages on the web interface. The site is designed to minimize download time for users on modems. (While the site is designed for home shoppers, Amazon logs significant traffic bursts at lunch hour as customers connect over their employers' corporate networks).¹¹

- ◎ **Selection:** The 1.5 million new books, combined with roughly a million used and out-of-print titles, provides access to inventory roughly 100 times the size of a typical mall bookstore. Visualized differently, the printed Amazon catalog would be the size of 40 New York City phone books.¹²
- ◎ **Price:** Amazon owns inventory for a much shorter time than physical retailers. As of late 1998, the firm was estimated to average 26 inventory turns a year to approximately 2.7 for traditional competitors.¹³ Labor contributes less to selling price: Amazon's revenue per employee is \$300,000 vs. \$100,000 for traditional booksellers. Rent and depreciation (4% vs. 13% for retail) are significantly lower for the virtual merchant.¹⁴ Even with shipping added to an order of three books (which many shoppers mentally discount as the cost of convenience), Amazon comes out to be roughly 8-10% cheaper than a physical retailer, with cost

savings increasing with order size.¹⁵

- ◎ **Customer Service:** Amazon's shopping basket application lists estimated time to delivery reasonably reliably. Proactive notification of new books of interest, real-time shipping and backorder notices, and customer interaction (via reader reviews) all exploit the communications capabilities of the Web and email, and result in greater customer "touch" than is typically possible for booksellers—particularly if they offer discount pricing to a mass market.

Amazon's extraordinary performance on some traditional measurements indicates some benefits of their business model. Inventory turns that run 10 or more times their physical competitors point up some distinct advantages. The foremost of these may be cash flow: Amazon's operating cycle—the time from payment to suppliers until payment from customers—is in fact negative. Given that credit card companies typically pay Amazon within 24 hours of an order's receipt, and given that Amazon pays its suppliers 46 days after receipt of goods, the firm has use of the customers' money for a month and a half before bills come due.¹⁶ At this juncture, Amazon is seeking brand recognition and is spending heavily on advertising and promotion, but once global branding efforts level off, that operating model portends significant advantages in profitability over physical competitors.

Leadership Team

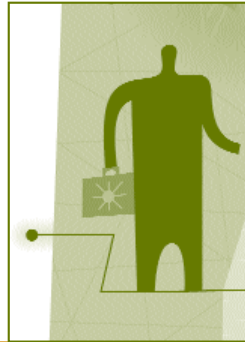
The bulk of the Amazon management roster comes out of high technology; nobody at the VP level or above ever held significant positions in mainstream book publishing. These executives do, however, represent decades of expertise in many sectors and functions relevant to the information business Amazon has become: consumer products branding, logistics, online publishing, and software development. Revealingly, Wal-Mart filed suit against Amazon in October 1998, alleging that the online retailer lured away key Wal-Mart executives to gain access to proprietary intellectual property: Wal-Mart's Retail Link data mining system. The two areas headed by former Wal-Mart executives—information systems and logistics—are indeed crucial to the future of online commerce, making the outcome of the suit important for both companies' plans moving forward.

Alliances

A central aspect of Amazon's business model is its connections with other business entities with which it can team in various ways. The terms "suppliers" and "customers" do not apply particularly strictly to most parties within Amazon's web of relationships. An example is the company's relationship with Digital Equipment Corporation, and now Compaq. Amazon's business runs on Digital's Alpha servers, but Amazon in turn has endorsed those servers. (The agreement as to who provides what to whom for how much is proprietary, but a partial barter agreement of hardware in exchange for visibility and "live ammo" field testing

would not be unusual.) Further complicating the model, Amazon has had a button on the Altavista search engine interface since October 1997. This converts Digital's (now Compaq's) highly trafficked site into a storefront for Amazon. The point here is that value can be exchanged in multiple ways beyond the conceptual limits of supply chain relationships, providing Amazon with exceptional flexibility in addressing its needs.

Agreements similar to that with Altavista are in place with other familiar Internet "portals," the directories and search engines that serve as hubs for vast quantities of Web activity. Amazon has struck relationships with Yahoo! (ranked #1 in the number of webpages served to viewers), Excite (ranked #2), Prodigy, Netscape, @Home, and Geocities. By contrast, Barnes and Noble—the reigning leader in American book-selling—moved later and has more limited relationships on the demand side; its agreements with Bertelsmann and Ingram make it potentially formidable on the supply side, however. At America On Line, for example, Barnes & Noble is visible only to subscribers to AOL's proprietary service, which would rank 16th among websites were it available on the open Internet; Amazon is featured on the AOL website, which ranks in the top ten. Alternatively, Barnes and Noble is forced into deals with second-tier players—the Lycos search engine, which has signed an agreement with Barnes and Noble, serves only about 10% of what Altavista, Excite, and Yahoo! serve in



The key to understanding Amazon as an electronic commerce paradigm lies in realizing that all the customer feedback this interactivity generates itself can become a product, a product directly or indirectly salable, and certainly one very useful internally. Customer feedback goes directly into a database of customer preferences and opinions which are also tied to buying patterns and viewing habits that Amazon collects and analyzes. Amazon will take as little or as much as it can get and turn it around into valuable marketing information.

article abstract

combination. It is also believed that Amazon was able to obtain its placements at a lower price than the \$10 million per year Barnes and Noble is paying AOL.¹⁷

On the supply side, Amazon works closely with Ingram Books, the nation's largest book wholesaler.¹⁸ Working with small suppliers, Amazon carefully keeps customer information hidden, even when ordering only small numbers of copies: all outbound shipments originate in an Amazon warehouse—and the supplier has no opportunity to contact the customer directly.

In terms of demand-side operations, perhaps the most original alliances are the most visible ones: those with customers and associates. Amazon has ingeniously turned booklovers' predilections into a source of differentiation by soliciting and posting readers' comments in the book displays. This builds the loyalty of both the booklovers who write reviews (Amazon as vanity press) and the booklovers who find community among like-minded people (Amazon as Usenet without spam or flames). It turns current visitors into attractors for future ones, and makes the brand franchise that much more difficult to duplicate.¹⁹

The associate's program is perhaps the most striking example of Amazon's being able to touch more customer segments and niches without adding mass in the form of physical assets. An associate is a domain-specific content site usually run by enthusiasts for enthusiasts. Each of these can become what Bezos has called a "micro-franchise"²⁰ by pointing site visitors interested in its specialty to Amazon's offerings on the

subject. The specialty sites can focus on almost anything; the first of two samples encountered in a recent search was devoted to the Honeymooners television show while the second was run by the Libertarian Party of Indiana. Amazon thus increases its virtual expertise on thousands of often-arcane topics without adding staff. There is little risk, and the financial cost of sale is typically only 5%, paid as a commission. The program has vast reach: the firm added its 100,000th associate in 1998, and according to an Altavista search, over 215,000 pages hyperlink to Amazon. Revealingly, Amazon links to no outside pages: it is deliberately a black hole at the center of a vast network.

Competitors

Amazon's competitive set is unusual. Three major firms are attempting to make a hybrid play combining physical and virtual components. Barnes and Noble, a \$2.5 billion bookseller, operates mall stores and "category killer" superstores, along with a moderate mail-order business. A subsidiary runs college bookstores under contract. Barnesandnoble.com, another subsidiary, went online in mid-1997, earlier than the corporate parent had originally planned. Here as elsewhere, Amazon has forced its key competitors to react—to pricing, to alliances, to promotions—and maintained substantial early-mover momentum. Blackwells, headquartered in England, is making a similar run at the online market from a physical base, as is Borders, Barnes and Nobles' primary physical competitor.

One hazard facing Amazon's success is from organizations that may decide to publish directly on the Web, bypassing all traditional print publishing steps, including Amazon's distribution function. This "direct to web" model is one new possibility for what is called "on-demand" publishing. Simon and Schuster has already established a move toward printing books on demand. They currently have over 9,000 books stored digitally and ready for on-demand printing.

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In the purely online space, books.com is the entry from Cendant. This direct marketing giant was formed in 1998 by the merger of HFS (the franchiser of Ramada Inns, Avis Car Rental, Coldwell Banker Real Estate, and other businesses) and CUC International, which owns educational software publishing and significant subscription-based travel and other discount shopping services with over 70 million members. Books.com's long-term assumptions are based on the CUC subscription model, in which actual transactions can be conducted at wholesale cost or below because of the subsidy offered by annual membership fees in the \$40-\$70 range. Books.com also gains leverage by the range of cross-selling opportunities within Cendant's extensive netMarket site.²¹ Other virtual bookstores have emerged, but none outside those mentioned currently poses a credible threat.

Finally, what Shikar Ghosh has called "value chain piracy"²² threatens Amazon as well. Bertlesmann, the German media conglomerate, purchased book publisher Random House to add to a portfolio of publishers and is positioned to use its alliance with barnesandnoble.com to sell direct to consumers worldwide.²³ Elsewhere in the current constellation, the most important brand may not belong to the manufacturer (Compaq or Chrysler) or the reseller (Computer City or AutoNation) but rather to the evaluator (Computer Shopper or Consumer Reports). A similar scenario could unfold in book publishing, rendering Amazon vulnerable, notwithstanding the company's efforts to build original content.²⁴

What's Next?

For all of the hype surrounding it, Amazon has successfully reinvented its industry, introduced new strategies and behaviors to online commerce, and returned in excess of 1,000% to its investors. The firm has consistently surprised its observers and competitors, and satisfied its customers. Just as Lou Gerstner successfully brought lessons from branded consumer products to IBM, so may Jeff Bezos and similar leaders be applying the principles of software economics to new sectors of the economy. Many observers will be watching the race between Amazon's quest for market share and the capital markets' demand for profitability to see if investing in promises of increasing returns is indeed viable. If it is, the implications for both business leaders and investors will be significant as old yardsticks are made obsolete.