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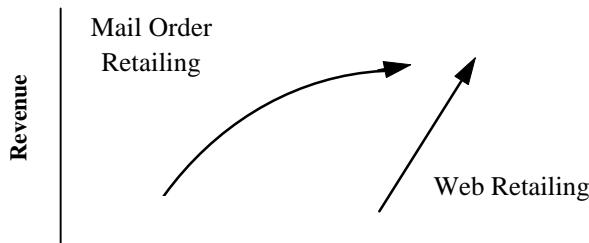
**Internet
Retail**

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The Internet Retailing Report

**The Future of Web-Based Retailing Should Mimic
The History of Mail Order-Based Retailing —
But with a Faster and Longer Ramp**



- Internet-based retailing/commerce is alive and well. Revenue and usage trends from Web-based retailing/commerce leaders (such as CUC, America Online, Dell, and E*Trade) are positive. Sequential rates of revenue growth for many other emerging Web-specific retailers (such as Amazon.com) have been encouraging, though early-stage losses are also high.

- In this report we describe the trends, the companies, and the outlook for Internet-based retailing. Based on our review of the development of retailing in the past, we conclude that, in time, the opportunity for retailing and direct-marketing cost savings on the Web will be significant, though it will likely only affect certain retailing sectors.

- The Internet is supporting unprecedented growth and is affecting many industries — we have found it useful to cross industry disciplines (in this case, technology and retailing) to fully understand the evolution of business on the Internet. This report is the third in a series that includes *The Internet Advertising Report* (published December 1996) and *The Internet Report* (published December 1995).

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The Internet Retailing Report

Introduction

We've been pondering the Internet and its many investment offspring for quite a few years now. We have watched America Online since it had just 300,000 subscribers and Netscape and CNET from their first days as public companies. We've covered Microsoft since its market cap was \$3 billion and people wondered if it would ever ship a copy of Windows that worked. In all that time, the Internet has continued to impress us as the most powerful new technology change that we have ever seen — with the potential to be a major channel for distributing goods and services.

But for investors, we have recommended a cautious approach to the Internet. Our first book, *The Internet Report*, emphasized the infrastructure companies like Cisco and content aggregators like America Online as primary beneficiaries of the Internet's buildout. Our second, *The Internet Advertising Report*, extended our list of potential Internet winners to include software companies like Microsoft and Netscape, and we added CNET as an early contender in Internet media and advertising. Although that space is still very small, the rapid growth of the Internet as a new mass medium suggests to us that the opportunity will be significant.

This report, *The Internet Retailing Report*, has us even more torn. Retail offers large market potential — and the

greatest uncertainty yet for Internet applications and companies. The Net provides a powerful, efficient new channel for retailing to more than 35 million Web users (we expect more than 150 million by 2000), who are just a mouse-click away from consummating transactions 24 hours a day, seven days a week. Yet the speed with which this channel will be implemented in different retail sectors — let alone which companies will capture excess returns — is highly debatable.

Morgan Stanley's technology and retailing analysts agree on many (but not all) of the likely outcomes of retailing on the Internet. The following are among our initial thoughts about what could be a major market opportunity:

- The Web won't displace traditional shopping and will remain a niche channel for some time, yet it will ramp rapidly in revenue and usage. Some segments will likely see relatively significant growth: We anticipate faster take-up in insurance, financial services, computer hardware/software, travel, books, music/video, flowers/gifts, and automobiles.
- Key criteria for successful retailing on the Net include market opportunity, leading brand, low cost structure with economies of scale, superior databases, having fast and effective fulfillment and distribution, leveraging the latest

technology, creating a sense of community, and ensuring ease of use and speedy delivery for customers.

- Companies that use technology to build and leverage the infrastructure for Internet retailing will likely be attractive investments, including **Dell** (\$107), **Microsoft** (\$120), **America Online** (\$50), and **Federal Express** (\$52) (see chapter 1 for investment details). We think it's still too early to tell, but the more risk-tolerant may also look at traditional retailers that are extending their franchises to the Web, such as **CUC** (\$25) and **Barnes & Noble** (\$41). We have also identified some new "virtual retailers" — **E*Trade** (\$16) and **Amazon** (\$17) — as potentially good public market proxies for the growth in Internet retailing, although we do not cover either stock. Many of these stocks have experienced significant runs in the year to date, and are trading at high relative valuations, so we wouldn't be surprised to see some volatility in the names.
- Business-to-business transactions are often overlooked in the fixation on consumer retail — but Internet commerce is already big for some major firms (and provides serious cost savings). By July, Cisco expects its sales over the Web will be at an annual run rate of \$2 billion, and GE buys more than \$1 billion in supplies over its Web-based trading network. Advances in EDI and other efficiency gains will drive increasing volumes through this channel.
- Internet retailing will likely grab share from mail order over time: we expect a few great Web franchises and investments to emerge — as well as many disasters, just like the boomlet, bust, and boom in mail order in the 1980s. Overall consumer mail-order sales, after 20 years of development, comprise only about 5% of U.S. retail sales, whereas business-to-business mail-order sales account for 10% of wholesale sales. So Internet retailing will likely remain quite small in the scheme of overall retailing.
- Buyers and sellers alike will find the new channel compelling, with large selections being offered conveniently and interactively. The channel should also offer attractive demographics — a big jump in the number of teenagers during the next ten years should add a PC-literate group of consumers. And we feel that it is significant that advertising is right at the point of purchase.

But our analysts are not in complete accord on other aspects of Internet retailing. The tech team thinks first-mover ad-

vantage may be important: Barriers to entry may rise in certain segments as established Web merchants (and powerful, focused traditional retailers of the Barnes & Noble ilk) gain solid brand positions. The retail group, by contrast, doesn't think being first matters much, since barriers to entry will likely remain low on the Web.

While Web retailing in general may be somewhat fragmented right now, with lots of market players, it's likely that real market share — and profitability — will be dominated by just a few. In other words, we may see a "Wal-Marting" of the Web, as sites consolidate under a few major brands in each category — just look at what Yahoo! has already done in the Web search-engine space. Regarding pricing, on a broad scale, it's not clear whether prices will be higher or lower on the Web, as shipping and handling costs must be factored into each purchase. The tech team believes that all-in prices may be comparable or lower, while retail sees them as comparable or perhaps higher.

There may prove to be a business-model paradox on the Web. While "virtual companies" enjoy inherent advantages of lower relative costs for facilities and support, sales and marketing expenses may rise rapidly as customer-acquisition costs ramp in what should be increasingly competitive markets. In the end, we expect it will be crucial for leading Web retailing brands to be the low-cost producers and the most efficient companies with scale. The ubiquitous, interactive, and searchable nature of the Web makes these attributes more important than ever; the price wars have already started. . . .

While many Internet retail companies may be high-growth, they may not be high-tech, high-margin, or high-valued. Retailing companies inherently carry low margins (and low valuations), and the retailing industry is highly competitive, suffers from frequent shifts in market share, is subject to the whims of fickle consumers, and typically provides for a lower return on investment than technology companies do. True, the Web offers an efficient distribution channel for goods and services and opportunities for high market share for the lowest-cost, best-positioned companies. But it also creates the possibility of killer, blood-bath competition as its opportunities continue to draw lots of new market entrants, leading to massive price-cutting and high cross-promotion costs. For most pure-play Internet-based retailers, this will likely mean the postponement of profits for a while.

The book industry offers a terrific example of the promise of Internet retailing . . . and of how uncertain its future appears to be. Morgan Stanley was an early investor in leading brick-and-mortar bookseller Barnes & Noble, and retail analyst Bruce Missett has been a longtime fan of the company and rates the stock Strong Buy. BKS, as the nation's largest bookseller (with more than \$2 billion in revenues in 1996), has in its recent Web site launch a new avenue for growth that leverages existing assets and extends its market dominance, the retail group believes. On the technology side, we've had long associations with first-of-a-kind companies, including Apple, Cisco, America Online, Netscape, and CNET, and we tend to give the benefit of the doubt to paradigm-shift companies like Amazon.com. Investors have followed suit: During AMZN's recent IPO

roadshow, tech investors tended to be enthusiastic (or at least very curious) about the company's prospects, while retail investors tended to be very skeptical.

Wicked price competition and pressure haven't made it easier to gauge the future profitability of Web shopping. In March, Barnes & Noble went live on America Online (and, as noted, on the Web in May) with 30% discounts on all hardcovers, and 20% discounts on all paperbacks. In May, Amazon.com announced 40% discounts on its top 500 selling books, augmenting its 10% standard discount for all books. On May 16, CUC announced 40% discounts on all best-sellers on Books.com, augmenting its 15–30% discounts on most of its titles and its Frequent Buyers Club discounts.

The Economics of Retail Surfing

Regardless of how Internet pricing evolves, there may be many users willing to pay to increase their "personal productivity." Below, Morgan Stanley Chief Economist Stephen Roach explores how the Internet has important appeal in an increasingly busy society.

The work-leisure tradeoff has long been a classic dilemma of economic theory. And it has increasing relevance in the high-stress 1990s. With most Americans working harder and longer than ever before, compression of leisure and family time has become endemic to high-stress lifestyles. In search of new tools to resolve this dilemma, we believe that Internet-based shopping may hold an important key.

First, consider the numbers. According to the results of a recent Harris poll, the median number of hours worked per week in the United States rose from 40.6 in 1973 to 50.6 in 1995. Over the same period, time devoted to leisure activities is estimated to have fallen from 26.2 hours per week in 1973 to 19.2 hours in 1995. Moreover, given the growing numbers of dual-earner households, there is good reason to believe that overall family leisure time has plunged sharply in the past 20 years.

It doesn't take a rocket scientist to figure out what's going on here. Reflecting Corporate America's newfound penchant for cost control, businesses have embarked on aggressive programs of headcount reductions. At the same time, the great American hiring machine has been less aggressive in adding to payrolls than has typically been the case in the past. Lacking the normal expansion of the work force, businesses have put more pressure on existing workers. The re-

sult is an acceleration in corporate productivity that has its counterpart in a contraction of "personal productivity"—the amount of time that individuals have for leisure and family.

Enter the Internet. Who knows how much time an individual devotes to the seemingly mundane tasks of grocery shopping, banking, dry cleaning, and gift giving? Depending upon income strata and personal tastes, we believe that an average family could spend anywhere from 10 to 30 hours per week on such activities. In America's increasingly suburban existence, there would be an additional increment of time devoted to transportation required for these activities. The day may well come when 20 hours of such maintenance activities could be accomplished through five hours of Web-surfing, complete with fee-based home-delivery and automatic payment options. These options are not costless, but they may well be within the means of an affluent society that is more than willing to pay for greater personal productivity. Needless to say, to the extent that new Web-based options can cut down on the "maintenance" portion of the average family's lifestyle infrastructure, it could play a key role in making the increasingly onerous work-leisure tradeoff of the 1990s seem more tolerable.

In technology land, the "killer app" is the new product that creates its own demand. Much of the new Internet-based retail activities are mere replacements of existing mail-order options. To the extent that new applications can facilitate an improvement of hard-pressed lifestyles, the electronic delivery of retailing may well have its greatest potential. The mail-order paradigm, in my view, is just the tip of the iceberg.

Nearly all investors have questions about the appropriate valuation methodology for Internet retailers. New Web merchants may suffer from heavy spending in the early years to acquire name recognition and customers without seeing sizable revenue; established retailers, though, could offset those Web-related expenses against a store-wide revenue base. Discounting future profitability is always tricky with early-stage growth companies. But we have to balance low retail margins and the severe multiple compression that high-fliers in mail order and TV shopping once suffered against the fast growth we expect for some long-term winners.

Our tech/Internet and retail analysts agree that the marketing and press generated by the aforementioned companies will help drive online sales of books, and act as a catalyst for online sales of other products. Online market share likely will be consolidated among far fewer players than the 10,000 or so retail booksellers in the U.S. Barnes & Noble's brand name is powerful, and the company's Web-based efforts — aided by rapid product delivery time — should support impressive revenue growth, both in the U.S. and internationally. BKS also has strong relationships with publishers and authors that may lead to more compelling online "chat" sessions. Moreover, the retail analysts believe that Barnes & Noble's size and low-cost infrastructure provide a powerful cost advantage on the Web. Still, Web revenues should remain a fraction of store-based sales.

We agree that book selling on the Web has the potential to become a large market. Both AMZN and BKS should support revenues that surprise on the upside. From the tech analysts' perspective, Amazon has powerful revenue and usage momentum because of its earlier start (although profitability timing and levels have yet to be determined). Amazon also has some compelling cash flow characteristics — annual inventory turns are between 50 and 60 times (since Amazon doesn't own its inventory, the retail analysts point out), compared with 2 to 3 times for Barnes & Noble. If Amazon can hit scale, improved purchasing power should help gross margins and the company could become cash-flow-positive again. A potential offset, however, would be rapidly rising customer acquisition costs. Our retail analysts are more skeptical about whether AMZN will become profitable — or even survive the competitive on-

slaught from BKS, a company whose brand-name recognition is evident in stores and advertising nationwide, not just on the Internet.

Yet when the tech/Internet folks think about Amazon vs. Barnes & Noble, we are constantly reminded of Dell vs. Compaq. Remember, both companies just sell PCs (commodities, you know), yet they have been two of the most successful public companies in creating shareholder wealth in the last 15 years. Now it's a question of determining the appropriate valuation . . .

Netting it all out . . . who will win? Read *The Internet Retailing Report* for some inspiration and insight into key issues, but in the end, you'll have to decide. Go buy a book on the Web!

Small (but Sweet) Signs of Web Sales Potential

America Online, with 8 million subscribers, indicates that in 1Q97 more than \$98 million in merchandise was purchased directly through AOL. Each user, on average, visited AOL's Marketplace 11 times and spent more than \$12 in the quarter, and at least 15% of all AOL subscribers have made a transaction in the last 12 months.

E*Trade estimates that, in 1Q, NASDAQ/NYSE trading volume through its 145,000 accounts drove 0.7% of total exchange volume, for \$32 million in revenue. At the end of the quarter, E*Trade held more than \$4.1 billion in customer assets. It is especially notable that as of 1Q, Charles Schwab had more than 750,000 online accounts and held more than \$50 billion in assets for those customers.

Amazon.com says that it ended 1Q with 340,000 customers — in 1Q, they purchased an average of \$47 in books through Amazon's Web site (or \$16 million in product). At an estimated \$20 per book, that's 800,000 books shipped in the quarter, or over two books per customer.

Auto-by-Tel estimates that in 1Q it assisted in the sales of 61,250 cars through its network of 1,400 subscribing dealers — that's \$1.3 billion in car sales in a quarter, or about 1.9% of all non-fleet light vehicles sold in the U.S. during the quarter.

Table 1

Captive Web Retail Data for Selected Companies

	1996				1997
	CQ1	CQ2	CQ3	CQ4	CQ1
AOL					
- Estimated Value of Total Merchandise Sold Via AOL (\$000)	\$42,110	\$56,120	\$55,901	\$87,000	\$98,300
<i>Q/Q Growth</i>	--	33%	0%	56%	13%
- Number of AOL Subscribers at Quarter End (000s)	5,782	6,193	6,612	7,852	8,036
- Number of AOL Subscribers that Visited Marketplace in Quarter	NA	NA	NA	1,100	1,600
- Pct. of AOL Users that Visited Marketplace in Quarter	NA	NA	NA	14%	20%
- Estimated Merchandise Sold per AOL Subscriber in Quarter	\$7.28	\$9.06	\$8.45	\$11.08	\$12.23
- Number of AOL Marketplace Visits in Quarter (000s)	9,100	7,500	15,500	49,200	90,000
- Average AOL Marketplace Visits per Subscriber	2	1	2	6	11
- Estimated Merchandise Sold per AOL Marketplace Visit	\$4.63	\$7.48	\$3.61	\$1.77	\$1.09
E*Trade					
- Transaction Revenue Generated (\$000s)	\$9,160	\$13,719	\$13,970	\$20,372	\$32,201
<i>Q/Q Growth</i>	--	50%	2%	46%	58%
- Number of Active Accounts at Quarter End	53,000	74,000	91,000	113,000	145,000
- Average Transactions per Day at End of Quarter	5,798	8,009	8,360	12,200	14,283
- Number of Transactions per Quarter	328,000	503,000	485,000	689,000	807,000
- Transactions per Account in Quarter	6.2	6.8	5.3	6.1	5.6
- Revenue per Transaction	\$27.93	\$27.27	\$28.80	\$29.57	\$39.90
- Transaction Revenue Generated per Account	\$173	\$185	\$154	\$180	\$222
- Total Assets Held in Customer Accounts at End of Quarter (\$B)	\$1.6	\$2.0	\$2.6	\$3.3	\$4.1
- Revenue per Internet User	\$0.76	\$0.86	\$0.67	\$0.73	\$1.01
Amazon					
- Quarterly Revenue (\$000s)	\$875	\$2,230	\$4,173	\$8,468	\$16,005
<i>Q/Q Growth</i>	--	155%	87%	103%	89%
- Customer Accounts at Quarter End	--	--	--	180,000	340,000
- Number of Visits per Day at End of Quarter	--	--	--	50,000	80,000
- Revenue per Account	--	--	--	\$47	\$47
- Revenue per Visit	--	--	--	--	\$2.74
- Revenue per Internet User	\$0.07	\$0.14	\$0.20	\$0.30	\$0.50
- Estimated Size of Average Book Purchase	\$20	\$20	\$20	\$20	\$20
- Estimated Number of Books Purchased (000s)	44	112	209	423	800
Auto-By-Tel (1)					
- ABT Quarterly Revenue (\$000s)	\$436	\$952	\$1,434	\$2,203	\$3,400
<i>Q/Q Growth</i>	--	118%	51%	54%	54%
- Number of ABT Paying Franchises of Subscribing Dealerships at Quarter End	546	728	978	1,206	1,400
- Revenue per Subscribing Dealer (2)	--	\$1,495	\$1,681	\$2,017	\$2,609
- Number of Purchase Requests Generated	42,000	75,000	105,000	125,000	175,000
- Revenue per Purchase Request Generated	\$10	\$13	\$14	\$18	\$19
- Estimated Closure Rate of Purchase Requests	25%	28%	31%	33%	35%
- Estimated Number of ABT Units Sold Through Service	10,500	21,000	32,550	41,250	61,250
- Estimated Price per ABT Unit Sold (3)	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000
- Estimated Dealer Sales Revenue from ABT Units Sold (\$000)	\$231,000	\$462,000	\$716,100	\$907,500	\$1,347,500
- Estimated ABT Revenue per Unit Sold	\$42	\$45	\$44	\$53	\$56
- Size of Domestic Retail New Light Vehicle Market, Excluding Fleet Sales (in MM of Units) (4)	3.2	3.2	3.2	3.2	3.3
- Size of Domestic Retail New Light Vehicle Market, Excluding Fleet Sales (\$B)	67,384	67,384	67,384	67,384	68,276
- Purchase Requests Generated as a % of Total Domestic Units Sold	1.31%	2.34%	3.27%	3.90%	5.38%
- Estimated Units Sold as a % of Total Domestic Units Sold	0.33%	0.65%	1.01%	1.29%	1.88%
- Estimated Revenue per Unit Sold as % of ABT Unit Price	0.19%	0.21%	0.20%	0.24%	0.25%
- Estimated Total Car Sales Passed Through ABT per Internet User (5)	\$28.73	\$43.10	\$50.90	\$48.37	\$62.85
Number of Total Internet Users (MM)	12	16	21	28	32

(1) All ABT Units are New Domestic Retail Sales of Light Vehicles

(2) Calculated using average number of dealers in quarter.

(3) Estimated price of each ABT unit sold (\$22,000) is slightly higher than average price for all units sold (\$21,000) due to the demographics of ABT customers.

(4) Fleet sales have been roughly estimated at 15% of total domestic retail new light vehicle market.

(5) We use our estimates for domestic Internet users as ABT services are only offered in North America.

The Internet Retailing Report — Chapter Summaries

Like *The Internet Report* and *The Internet Advertising Report*, this document is a beast to read; so for the tired, the weary, and the sane, we offer the summary points from each chapter in the following pages. (Note: Since each chapter is designed to stand alone if needed, we have repeated some key points in places.)

Chapter 1: Morgan Stanley's Internet Retail Stock Portfolio and Proxies

- ◆ In this chapter we provide a few **thoughts on building an Internet retail stock portfolio**. Companies that use technology to build and leverage the infrastructure for Internet retailing will likely continue to be attractive investments: **Dell, Microsoft, America Online, and Federal Express** are the core names in our Internet retail portfolio; they also have been Morgan Stanley focus stocks for quite some time. We think it's still too early to tell, but the more risk-tolerant investor might also want to look at traditional retailers that are extending their franchises to the Web, such as **CUC** and **Barnes & Noble**. We also identify some new "virtual retailers" — **E*Trade** and **Amazon.com** — as good public market proxies for the growth in Internet retailing, although we do not cover those two stocks.
- ◆ The **landscape for Web-based retailing should be much clearer in a year or two**, as a good deal of the dust will have settled as the pure-play first-movers (like Amazon) and the traditional retailers that have gone online (like Barnes & Noble) duke it out. In the interim, we think that investors should take a selective portfolio approach to investing in this emerging sector, choosing a mix of old and new companies that appear to be well positioned for this new opportunity. As usual, with tech-centric companies, valuations can shift like the wind . . . so timing is crucial. Note that many of these stocks have experienced significant runs in the year to date, and are trading at high relative valuations, so we wouldn't be surprised to see some volatility in the names.
- ◆ Given the history of other types of Internet-related and mail order companies, we believe **we are likely to see a "boomlet-bust-boom" cycle for Internet retailing companies**, where rapid growth is followed by a slowdown, skepticism, lack of momentum, and investor fears about competition. Successful companies will ride these out until they catch the next wave of positive investor sentiment, consolidation, increasing share, and real profit generation. Thus, after an initial burst of energy followed by some fits and starts along the way, a handful of leading Web retailing brands will likely emerge as great investments/franchises. We expect that many traditional retailers will also extend their franchises and market share via Web efforts (in part, through the power of cross-promotion).

Many more Web-specific retailers will likely be investment disasters, as were many mail-order firms in the 1980s. However, and again like mail-order, in Internet retailing **a select few well-managed/positioned companies should emerge as winners**; these might include such mail-order winners as Dell Computer, Gateway 2000, Lands' End, and Viking Office Products. When new retail distribution channels have been created in the past, new companies have capitalized on these changes: Consider telephone-based mail-order (LL Bean), discount superstores (Wal-Mart), television mail-order (QVC), and direct-marketing membership (CUC).

- ◆ **Internet retail companies may be high-growth, but may not be high-tech or high-margin. Valuations should reflect this over time.** While the best-of-the-best direct-marketing companies can trade at price-to-sales ratios (market capitalization to last 12-months' sales) in excess of 1.0 (for example, CUC trades at 4.2, Dell trades at 2.3, Viking Office Products trades at 1.0, and Gateway 2000 trades at 1.0), the average for our group of public direct marketers, excluding the aforementioned companies, is 0.4 times, and the average net margin is 1.0%. The tricks with valuing Internet retailers include factoring out the hype, determining normalized growth in a white-hot market, and determining the normalized financial model.

Chapter 2: An Update on Internet Usage Trends/Forecasts

- ◆ **The Internet is growing at an unprecedented pace**, and, for now, we believe most market data are suspect. There are numbers that seem solid, like the 8-million-plus America Online users (largely consumers) and the over 50 million users of Netscape Navigator (although Netscape believes that 80% of those users are Intranet users, and frequency of usage "beyond the firewall" is tough to predict).
- ◆ We believe there are **35 million Internet users (our point estimate for the end of 1996 was 28 million)**. This strikes us as especially impressive since we estimate there were only about 9 million users at the end of 1995. These users are a mix of both business and consumer users.
- ◆ We project **compounded annual growth in Internet users for the next four years of 54%**, and we believe that **more than 150 million people will use the Internet by the year 2000** — in fact, this assumption may be conservative, since there are already 230 million PC users worldwide.
- ◆ Given the early stage of Internet growth, **non-North American usage is at a higher rate of adoption than any other new technology** — using the number of Internet hosts as a proxy, while North America still dominates (with about 67% share), its share has fallen as the rest of the world catches up. In the last two years, Europe (with 22% share) has grown 222%, and Asia (which has doubled its share from 3% to 6%) has seen 550% growth.

Chapter 3: The Internet's Potential as a Retailing Channel

- ◆ We continue to believe that the Internet may be the next mass medium. The Internet has the potential to become a powerful new **distribution channel** for retailers. History has taught us that **changes in the distribution of goods and services can create substantial business opportunities for deft companies**. Though most Internet-based retailers will likely fail, the strongest companies should survive.
- ◆ The Internet provides great **one-to-one tailored marketing** — we believe that a vendor's ability to interact with users at the point where they view a site's ads and content may prove to be a key facet of Internet retailing.
- ◆ **The biggest retail market opportunities on the Internet will likely coincide with mail-order opportunities**. In our view, the markets for goods and services that have the best potential for Web retailing are as follows: insurance/financial services; computer software/hardware; travel; books; magazines; music/video; flowers/gifts; and autos. Specific retail categories that we believe may take longer to develop (or may never develop fully) include groceries/food; apparel; sporting goods; tools/home repair; and toys.
- ◆ The **convenience of online shopping is key** — given the increasing time constraints placed on the average consumer, the ability to "purchase time" by buying online should be an attractive alternative to many.
- ◆ **Web demographics are compelling for marketers and retailers. Favorable teenage demographics** over the next ten years could act as a **catalyst for Internet shopping**.
- ◆ A **variety of shopping formats** will likely be successful on the Internet.
- ◆ **Our Internet team thinks first-mover advantage for Web retailers may be important:** Barriers to entry may rise in certain segments as established Web merchants (and powerful, focused traditional retailers of the Barnes & Noble ilk) gain solid brand positions. **The retail group, by contrast, doesn't think being first matters much, since barriers to entry will likely remain low on the Web.**

- ◆ Strong **brand-name recognition** should be a critical success variable. We expect this branding element to result in a couple of companies in each sector dominating mind share and profits (what we call the “Wal-Marting” of the Web), while the rest struggle, with varying degrees of success.
- ◆ **Inventory risk** and who carries it, and who has **scale**, are key issues for Internet retailers.
- ◆ **Pricing benefits** for Web shoppers may, in many instances, be **offset by shipping costs**, though certain retailing categories (especially in mid-to-high-priced commodity-oriented products) should experience lower pricing in general. It also remains to be seen how much traditional retailers who experience margin expansion due to Internet-induced shipping/handling/inventory savings will use this advantage in lowering prices further.
- ◆ There will likely be **heavy price and marketing competition as retailers try to dominate the various retailing categories** on the Web. And **revenue growth should be easier to nab than profits**.
- ◆ Over the last few decades, several **new retail concepts** — category-killer retail stores, catalog companies, and home/TV shopping — were each expected to significantly alter the traditional retail landscape and adjust market shares; category-killer stores did, while home/TV shopping and mail order didn’t. This chapter includes a timely history of the mail-order industry.
- ◆ We believe that key criteria for successful retailing on the Internet will include: 1) pursuing a **viable market opportunity**; 2) possessing/creating a **leading Web brand**; 3) having a **low cost structure** with economies of scale to offset gross margin pressure; 4) superior database/fulfillment/distribution capabilities; 5) knowing how to **leverage technology** (and interactivity and databases) while **maintaining creativity**; 6) creating a sense of **community/membership** among customers; and 7) understanding how to **drive profits in addition to revenue**. Finally, retailers should provide customers with a **broad selection, competitive prices, and great service, as well as ease-of-use and speedy delivery**.

Chapter 4: Potential Size of the Internet Retail Market

Sizing the market for Internet retailing seems a bit like, “pick a number, any number...” When you do simple stuff like include online/Web assisted auto sales in Internet retailing data, Internet retail numbers get very big very fast.

- ◆ In this chapter we look at four different ways of sizing the market: 1) Using mail order as an analog; 2) Morgan Stanley forecasts using Web usage growth and estimated transactions per user; 3) International Data Corporation (IDC) forecasts; and Forrester Research forecasts. Using these sources, we arrive at a wide range of market size estimates for the year 2000 (from a base of sub-\$1 billion in market revenue in C1996E) — given the ubiquitous nature of the Web, these are all worldwide market size estimates (except for Forrester, which is U.S. only).

Respective year 2000 Internet estimated retail market sizes are: 1) Mail order analog — **\$115 billion in annual consumer sales plus \$260 billion in business sales within 5–8 years (rather than the 20 years it took mail order)**; 2) Morgan Stanley — **\$21.57 billion** — with a mid-point estimate of about **\$35 billion in sales in C2000E** — these forecasts are focused on the consumer market and if past is prologue, the business-to-business market could be 2-2.5 times larger; 3) IDC — **\$100 billion in online commerce revenue in C2000E** (including both consumer and business-to-business commerce); and 4) Forrester Research — **\$7 billion in U.S. online shopping revenue in C2000E**, with business-to-business commerce growing to \$66 billion in the same year.

- ◆ Clearly these C2000E market sizes for Internet retail vary widely, but one thing appears clear — there will be compelling market growth. Simply, it’s too early to responsibly predict how large the Internet retailing market for consumers and businesses may be, but we do believe that we have laid out appropriate frameworks for gauging/forecasting

market growth. And we look forward to obtaining market evidence that allows Morgan Stanley and others to corral, then fine-tune market growth estimates.

- ◆ **When new things like the Internet come along it's easy to make bold predictions about how the world will change – but as they say, the more things change the more they stay the same...** When mail order shopping began to hit its stride in the early 1980s and 800-numbers were launched by most cataloguers in the late 1980s (and also when TV-shopping, thanks to QVC and HSN, was aired for the first time), prognosticators did their thing and said people would stop going to stores and purchase everything from home and/or business. Remember the wealthy Texan in David Byrne's movie *True Stories* — she lived in her bed, shopped from her bed, got married in her bed? Well, it's 1997, and we aren't all living from our beds and traditional retailing in most sectors is alive and well. And, hey, traditional retailing is a form of entertainment...and entertainment never goes away...
- ◆ **But Internet retail should evolve and should be accepted more rapidly than mail order retail was.** Simply, the Internet is being deployed more rapidly than any new technology ever – call it velocity – there are 220 million PCs in use worldwide (and 35 million Internet users) – all of these PCs (and more) should be Internet-enabled within five years. And then there's the annual run rate of 100 million TV sets (and hope for cable modems), yes, Bill Gates, Larry Ellison and Marc Andreessen want those too...One can find and acquire millions of goods and services and in the not too distant future one will be able to do this consistently, quickly, interactively and in an entertaining way. By our math, the Web is ramping at a rate 3-5 times faster than the PC industry did...so using a little extrapolation...**it took the domestic mail order/direct marketing industry 20 years to rise from next-to-nil to roughly \$371 billion in revenue (for both consumer and business-to-business), with consumer reaching 5% of total retail sales and business-to-business 11% of total wholesale sales. One could extrapolate that Internet retailing could get to the same level in 5-8 years.**

Chapter 5: Where Do Users Spend Their Time Online?

- ◆ According to PC Meter's February survey, **the most popular Web sites based on reach were the Excite Group, AOL, Yahoo!, Netscape, and Microsoft** — we believe the highly trafficked Web sites are the Internet equivalent of Madison Avenue real estate.
- ◆ From July 1996 through February 1997, **those categories of Web sites that saw the greatest growth in reach included Travel and Tourism** sites like Travelocity and American Airlines (up 93%, to 16% reach), **Shopping-specific** sites like Amazon.com and Shareware.com (up 54%, to 31% reach), and **Marketing and Corporate** sites like Netscape and Real Audio (up 49%, to 66% reach).
- ◆ Shopping and shopping-related activities are becoming increasingly popular online — a recent CommerceNet survey indicated that **approximately 73% of Web-using respondents spent some percentage of their online time searching for information about specific products or services.** Of this group, 53% went on to make an actual purchase (either online or offline), and 15% actually made a purchase online.

Of those Web users who have made a purchase (either online or offline) as a result of looking at a Web site, 37% spent less than \$100, while 31% spent \$500 or more. **Convenience is clearly an important factor stimulating online shopping** as 69% of the respondents who have purchased products or services on the Web in the past, or believe they are likely to do so in the future, cite convenience as a major factor.

Chapter 6: The Latest and Greatest from Some of the Hottest Web Retailing Brands

- ◆ In this section, we show **examples of how various retailers and other businesses are approaching their online product and service offerings**, in the hopes of gaining traffic/users and generating revenue from online retail/commerce. Note

that all of these sites are focused on **building a sense of community among users and are attempting to become the “source” for their respective market spaces.**

◆ **If you aren’t inspired to take a Web shopping trip after perusing this chapter, we’d be surprised!** Even so, one should note that most, but certainly not all, of these sites still have limited product offerings compared with the brick-and-mortar world. For example, while Realtor.com has nearly one million home listings, its data cover the entire country; thus, pickings can be pretty slim on a region-by-region basis. Yet it’s also important to point out that the sites, in general, have improved significantly over the past 12 months — by including more content, features, and improving ease-of-use — and we believe this trend will likely continue.

Chapter 7: For Shoppers, the Web Offers Niche and Mass Markets, and Unique Ways to Find Products Quickly

◆ The Web has created many new interactive opportunities to bring buyers and sellers together and to facilitate and speed transactions. In this chapter, we **describe and then profile four distinct techniques (that link to retail-specific Web sites) for driving transactions**, specifically: 1) **yellow pages**; 2) **online malls**; 3) **special interest links**; and 4) **agenting technology**. All of these techniques are intended to improve the shopper’s experience on the Web by making it easier, faster, and more entertaining to find goods and services that are of specific interest to the individual shopper. We believe it’s essential that Web retailing sites create communities of interest in various areas, so that shoppers keep coming back.

◆ In time, **agenting technologies will likely prove to be a key tool for online shoppers** as, in effect, they allow users to have round-the-clock personal shopping assistants. Agenting technology, by its nature, can cause complications for many retailers but benefits for those who are smart facilitators.

Chapter 8: A Look at an Emerging Web Retailing Market — Book Selling — Amazon.com and Barnes & Noble

◆ As a relevant case study of the major issues in electronic commerce, we take a close look at online book selling, one of the most developed corners of Internet retailing. Amazon.com is one of the leading Web brands in the retailing space, created for the Web and by the Web. **Amazon’s early efforts have changed the way a growing number of consumers shop for books, and the company is creating a new business model for retailing — the financial model isn’t proven yet, but the work is in process.** Keep in mind that this chapter is simply a case study of online book selling, and not a recommendation of Amazon’s stock.

◆ **The strong consumer reception to Internet book shopping is quickly attracting dominant “bricks-and-mortar” retail booksellers.** Barnes & Noble recently launched its Web site, and Borders has plans as well.

◆ In this chapter, we **set the stage for our discussion of bookselling on the Web** with a brief history of Amazon.com. We then discuss the market opportunity, the dynamics, and the business model of online book retailing. We also compare and contrast the Internet efforts of Amazon and Barnes & Noble, their relative competitive advantages, and the operational and financial opportunities and challenges they face on the Web. Our discussion is intended to provide the details and the focus areas for understanding the key factors in the financial evolution of Web retailing.

◆ **Amazon has a wad of key ingredients that in our judgment may make for a successful company:** a large and rapidly growing market opportunity, first-mover advantage, a great brand name and product, leading market share on the Web, happy customers that do the “word of mouth” thing, and what we consider an impressive management team.

◆ In our view, the biggest issues for Amazon are that **the company hasn’t yet demonstrated that it’s a money maker** and the book business is a low-margin business — Barnes & Noble and Borders (\$2-billion-plus annual revenue players in the book retailing business) both support net margins of 2–3%; Amazon, meanwhile, has structural margin advantages, in that it doesn’t have capital investments related to storefronts and operating expenses for salespeople, but it has structural margin

disadvantages in that it doesn't have purchasing power because it's not a scale player in a scale business, yet; and finally, Barnes & Noble, especially, views Amazon as a very serious competitor and has aggressively launched its Web site (notably, two years later than Amazon's). So competition in the form of aggressive pricing and marketing is sure to rise.

- ◆ Barnes & Noble comes to the Web with a different perspective than Amazon. As the nation's leading bookseller — over 1,000 stores that generated \$2.4 billion in revenues in 1996 — **Barnes & Noble sees the Internet as an important new avenue for growth that leverages existing assets.** These assets include an established distribution center that will have the capacity to ship 400,000 titles overnight, relationships with 20,000 publishers, state-of-the-art inventory tracking and replenishment systems, and a national advertising program that promotes and supports the brand name. Barnes & Noble's Internet business is in its infancy but is expected to begin contributing to earnings in 1998.
- ◆ **Our conclusion is that, in the little world of Internet book selling, we are about to see a mini-marketing battle, like a junior version of Coke vs. Pepsi.** The likely results will be: strong revenue growth for both Amazon and Barnes & Noble, as the global book business provides a huge opportunity; increased acceptance of the Web as a medium for commerce; consolidation of book sales market share (at least on the Web); and insight into whether leading, first-mover Web companies can maintain share when powerful established players enter their markets. But the billion-dollar question remains: When will these businesses make money? Hang on for the ride as Amazon aspires to become the next Dell, and Barnes & Noble tries to head it off at the pass.

Chapter 9: General Considerations for Those Entering the Internet Retailing Business

- ◆ While it is certainly beyond the scope of this report to write a comprehensive business plan for an Internet retailing company, we do think it is relevant to discuss some of the **key strategies and ingredients that we believe entrepreneurs and investors should look for when evaluating online retail businesses.** Many of the traditional business requirements still hold true for the online space, but due to the rapidly changing economic dynamics of the medium and the scarcity of certain resources (like programmers and individuals who have a solid grasp of technology, retailing, and marketing), there are several basic requirements that we believe deserve more attention than usual.
- ◆ A couple of general, big-picture thoughts follow: 1) **Brand strength, excellent infrastructure, and economies of scale** should be key. 2) In terms of **barriers to entry, the tech team thinks first-mover advantage may be important, and barriers to entry may rise in certain segments** as established Web merchants (and powerful, focused traditional retailers of the Barnes & Noble ilk) gain solid brand positions; **the retail group, by contrast, doesn't think being first matters much, since barriers to entry will likely remain low on the Web.** 3) Real market share — and profitability — will be dominated by a few; we expect **a handful of Internet retailing concerns to be big successes, and boatloads to be disasters.** 4) **Retailing is a low-margin business** (a 2.1% net margin average for Morgan Stanley's universe of 134 domestic public retailing companies). **It's a sobering fact that we have not yet seen a big, positive-cash-flow winner in Web retailing.** And 5), we expect **Internet retailing companies, in time, to be valued like retailing companies, not technology companies.**
- ◆ We believe that the keys to success in the Internet retailing business include pursuing a large **market opportunity**, creating a leading **brand**, knowing how to **scale** the business, knowing how to **leverage technology** (including interactivity and databases) while **maintaining creativity**, creating a sense of **community or membership** among customers, and understanding how to **drive profits as well as revenue**. Finally, history shows that success in retailing results from **providing customers with excellent product selection, convenience and fast delivery, and low prices.**
- ◆ A key element of online retailing that we believe facilitates closer communication is the **e-mail addresss — the fact that the customer and the retailer can contact one another at any time or day is very powerful.** Furthermore, the cus-

tomer can, in effect, access the retailer's database 24x7, and the retailer has all of the customer's preference data at its fingertips — that's a huge asset.

- ◆ For those especially interested in developing a Web business, we recommend *Net Gain* (Harvard Business School Press), by John Hagel and Arthur Armstrong, which is available from your favorite book vendor's Web site. The authors point out that the **key to Web retailing success is driving critical mass in the following areas: membership, usage profiles, advertisers/vendors, transaction profiles, and transactions. Once the customers are nabbed, if they are kept happy, they can be retained and cultivated — thus, to coin some cliches, the big Web retailers will get bigger, and customer knowledge will be power.** In our "Are You My Mother?" children's book anecdote, every six months or so we ask Steve Case of America Online, "What's critical mass for AOL?" Well, first it was 500,000 subscribers, then 1 million, then 5 million, now 10 million. Because of AOL's constant pursuit of new members, its profits haven't risen with subscriber growth, although the revenue and market capitalization certainly have.

Chapter 10: Econ 101 Meets the Web

- ◆ In this chapter, we offer a little food for thought, sit back in our economist armchairs, and lift a little of what we learned in Econ 101 and apply it to business on the Internet. In time, the growth of Internet commerce may offer a new **economic proposition for both consumer and vendor.** For the **consumer**, the potential opportunities are **convenience, increased access to information and the ability to aggressively source**, while the opportunity for those **vendors** who **understand the underlying dynamics of this new market**, who may be **well-positioned to capture the potential benefits**, and who **execute** is the chance to capture a greater share of potentially **larger, more efficient markets** (though it is unclear if the endgame here is more or less profitable businesses, and it may well vary from market to market).
- ◆ We see the Web as a means by which **companies may expand the market into which they sell**, and the benefits derived could include **freedom from many current geographic limitations, more effective targeting for marketing and advertisement, an enhanced ability to deal with customers directly, and an increased propensity for customers to purchase.**
- ◆ This **critical mass of consumers in each market is important** — without the threat of significant erosion of market share, many businesses have little reason to alter current market dynamics.
- ◆ We believe these **economic shifts and lower prices may create a rise in incremental demand from consumers**, pushing up the volume of goods sold (but not necessarily increasing profits for vendors). Barnes & Noble has indicated that online book shoppers buy 5–10 times as many books as offline book buyers. While part of this phenomenon is due to the demographics of online shoppers, we think it is a directionally significant data point.
- ◆ Finally, we think that as the online user community grows and a critical mass of consumers is created in each online market, the **dynamics of pricing may continue to shift in favor of a more empowered consumer.** Where this leaves vendors is another question, and we believe this will vary from market to market. The outcome for consumers is pretty simple: **less vendor overhead, increased competition, and a more efficient purchasing process** may well lead to **lower prices** in general.

Chapter 11: Business-to-Business Electronic Commerce

- ◆ The **opportunity for businesses to take advantage of the Internet as a distribution channel is likely even larger than the consumer market in absolute size and impact.** This chapter focuses on the **size of the opportunity and the drivers of electronic commerce technology adoption over time, and discusses the technology and cost efficiencies that Internet-enabled products and services should bring**, and how they may create a shift in the way that much business-to-business commerce is conducted.

- ◆ We did a reality check on how big this market could be and came up with some impressive numbers — **Cisco believes that it will be on a \$2 billion run rate in sales transacted via the Internet by the end of its fiscal year (July 1997), and Dell Computer is doing more than \$1 million in online sales per day.** These companies primarily sell to corporate customers, so it seems that business-to-business sales on the Internet are on a rapid ramp.
- ◆ The opportunity for businesses to move commerce online is **fundamentally a cost savings story**, as companies should be able to leverage their Web presences into huge sales, service, and support savings — **Cisco says that without its Web site, it would need to double its engineering sales/support group to 2,000 engineers**, which is real savings. In many markets there may well be **consolidation of share**, as smaller players feel price and service pressure from the big players, who now can be everywhere (the ubiquity of the Web makes price and service comparison as simple as it has ever been); **new market share increases may mean increased revenue potential for the consolidators.**
- ◆ However, in an increasingly competitive market, **benefits and efficiencies achieved by businesses using the Web as a distribution channel will either be reinvested in future growth or passed along to customers** in the form of lower prices and improved service for retail goods and services. There will likely be big benefits for those companies that provide the products and services to facilitate Web-based retail. **Thus, it is still unclear if, for all but a few, the projected cost savings** (stemming from reduced transaction and sales support/service costs) **and volume increases** (due to lower pricing stimulating more purchases) **would result in more profitable businesses.**
- ◆ Much like the Internet's growth to date, we believe that development of the online business-to-business commerce market will be divided into several distinct segments, each ramping at a certain point, and each involving a different group of companies. These should include: hardware/**infrastructure** companies (Cisco, Ascend, Worldcom/UUNet and the ISPs generally); providers of **software and groupware/communications applications** for e-mail, teleconferencing, and so forth (Netscape, Microsoft, and IBM/Lotus); companies offering business-to-business "**merchant system**" **software** (Microsoft, Netscape, Open Market, IBM, and iCat); and **third-party providers of EDI and related products and services** for these new business-to-business marketplaces (IBM, General Electric, Sterling Commerce, and the Netscape/GE Information Systems joint venture, Actra Business Systems).
- ◆ Regarding the evolution of the market for merchant software, we make the following points: 1) **The demand for merchant system software is still in its infancy**; 2) **the market is not yet as large as many initially expected** (many companies have built their own software in-house, and there is a great deal of downward price pressure and demand for increased functionality without incremental cost increases); 3) **future growth should, over time, ramp nicely** as online commerce grows, **but we should see less of a "hockey stick" effect** than in other Internet-based product and service markets; and 4) over the next couple of years, **the majority of this merchant system software market growth should be in the business-to-business market.**
- ◆ **The most common form of structured business-to-business commerce is EDI (electronic data interchange)**, generally defined as the application-to-application exchange of formatted transactional data between business entities. This exchange may take place over any type of data network, including company-run private networks, value-added networks (VANs) run by third-party providers, and the Internet (the share of VAN-based transmissions has been estimated, according to the Gartner Group, to fall from 63% of the total in 1993 to 35% in 1999, with the majority of share being taken by Internet-based transmissions). Common applications of EDI include the sending of purchase orders, invoices, shipping notices, and other frequently used, standardized business documents and forms.
- ◆ **Benefits that companies can derive from the use of electronic commerce and EDI include:** a **shortening of business process cycles** by reducing delays caused by postal paper chains; **reduction of costs** for the creation, recording, and storage of paper documents and records; **shorter lead times** and **reduced inventory holdings**; and **improved customer service.**

- ◆ Though there are a number of estimates for the size of the business-to-business market, we think a reasonable example is IDC's prediction that business purchases will be on the order of \$80 billion in 2000. **Though we are not hanging our hats on exact numbers at this early stage** (the midpoint of our consumer retail estimate of \$35 billion in 2000, plus our rough estimate that business-to-business sales will be 2.0-2.5 times larger than consumer, yields a range of \$70-88 billion), **the point is that we believe this market, in time, will be big.** We would simply say that many of these market size predictions have real "directional significance."
- ◆ **While 95% of the Fortune 1,000 companies are using EDI, according to Forrester Research, there are 6 million businesses in the U.S., and only 2% of them are using EDI.** The low transaction costs and standardized communication protocols of Internet-based EDI should combine to create much-improved cost structures and larger markets for buying and selling, encouraging the adoption of business-to-business electronic commerce by even the smallest of businesses, and in turn raising the tide of value that electronic commerce creates for all of those who leverage it.
- ◆ The value created by **Internet-based commerce could result, if economic theory holds, in an increasing cycle of growth** as more businesses move online; as larger markets are created for vendors to sell into; as purchasers' enhanced ability to select and price product increases the potential for cost savings and for product and service-quality improvements; and as more efficient competition is created (and more demand along with it).

Chapter 12: A Look at the Universe of Emerging and Traditional Retailers on the Internet

- ◆ This is the "**where's the traffic?**" part of our report. In order to compile a list of the leading shopping sites on the Web, we have used PC Meter consumer data. The data aren't perfect (but they're some of the best stuff out there in Webland), yet they have directional significance. In this chapter, the "**Top 50**" **shopping sites on the Web are ranked based on February 1997 usage.** The **five most frequently used shopping areas** were: 1) **shareware.com** (CNET's software site), 2) **download.com** (another CNET software site), 3) **columbiashouse.com** (the Columbia House music and video site), 4) **Amazon.com** (Amazon's book site), and 5) **hotfiles.com** (Ziff-Davis' software site).
- ◆ It's not a surprise that **software downloading is one of the most popular means of shopping on the Web** —as most of this software is available for free from the sites. But the good news, for money-hungry entrepreneurs, is that for-sale software sites are popping up in the ranks. Other areas experiencing lots of traffic on their shopping sites, in addition to Columbia House and Amazon, are Surplus Direct (PC hardware and software), Gateway 2000 (PCs), and QVC (you name it).
- ◆ The traditional retailers that have shown the greatest interest in online commerce to date have largely been in hardlines, catalog/mail order, and industries where customers do not feel the need to touch merchandise prior to making a purchase.
- ◆ In this chapter, we **list and describe the top shopping Web sites** in many shopping categories, including **software, hardware/electronics, online malls, clothing/apparel, flowers/gifts, music/entertainment, specialty retail, direct-mail/marketing, auction, financial services, travel, and package delivery.** We also list and describe the top 20 shopping areas on America Online. We conclude with a look at the online efforts of some of the more traditional retailers.

Chapter 13: Internet Commerce Security

- ◆ To date, **the success of electronic commerce conducted over the Internet has been limited by several factors, including:** 1) **few compelling consumer products;** 2) **a lack of consumer bandwidth** required to advertise and market products and services in the most effective manner possible; 3) **a limited audience;** 4) **insufficient benefit for existing transaction service companies** (such as Visa, Mastercard, or American Express), resulting in their reluctance to market and endorse the concept; 5) **a dearth of time-proven, brand-name security technologies** available to enable secure transactions, and 6) the fact that routing sensitive data over a public network, such as the Internet, has raised **privacy and piracy** issues that did not exist before.

- ◆ We expect that **over the next several years, security technologies will come to market and profoundly affect the business models of retailers, wholesalers, and existing transaction service providers.** One such security technology is the SET (secure electronic transaction) protocol.
- ◆ We believe that **the business need for reliable security technologies will**, despite some likely bumps and bruises on the way, **drive the adoption of security standards and protocols.** According to the Yankee Group, the market for integrated network security, secure electronic commerce, and remote access and firewall markets will grow from \$1 billion in 1996 to \$5 billion in 2000. Secure electronic commerce alone is expected to grow from about \$270 million in 1996 to \$1 billion in 2000.
- ◆ In this chapter, we assert that **electronic Internet commerce is not as risky as one would be led to believe from reading much of the industry press**—we believe that **Internet commerce security's "bark" is much worse than its bite.** Like ATM cash machines, which initially were deemed unacceptable by some users, we believe that the Internet, over time, will become very broadly used.
- ◆ We think that **overcoming the psychological barriers toward Internet security could be more difficult than overcoming the technical challenges.** For all of the concerns that have been expressed about potential security breaches and online fraud, it is striking to us that, to date, there has been no real barrage of front-page stories detailing the horrors of little old ladies from Pasadena losing their savings to some type of online hoax or group of hackers. Still, it clearly will take time to ease the collective public consciousness about Internet security and for people to feel comfortable about making payments and purchasing items online.
- ◆ We divide the Internet commerce security industry into several distinct pieces: **software vendors** (Security Dynamics/RSA, Netscape, Microsoft, Open Market, Connect, Broadvision); **transaction service companies** (Cybercash, First Virtual, DigiCash, Hewlett-Packard/Verifone, Mondex); **traditional financial services organizations** (MasterCard, Visa, American Express); **companies developing smart card and related technology** (Gemplus, Security Dynamics/RSA, Motorola, Certicom); and **certificate authorization services** (VeriSign, CertCo, GTE/Cybertrust, U.S. Postal Service).

Chapter 14: A Trip Down Mail-Order Memory Lane, and Some Lessons Learned Along the Way

- ◆ We believe that the **growth trends seen in mail-order retail are a reasonable proxy for the potential growth trends in Internet retail.** Like mail order, **Internet shopping offers customers convenience, broad product assortments, competitive prices, sales tax benefits on a case-by-case basis, good customer service, overnight delivery (at a cost) to your door, and the comfort of shopping with a brand-name vendor.**
- ◆ However, we believe Internet shopping, in time, has the potential to provide an experience that does all of these things a little or a lot better than mail order (thanks to the interactive nature of the Web). **Near term, Internet issues related to slow access speeds, limited availability of many products, and still-low Web-retailer brand-name recognition are gaing issues to Web shopping growth versus mail-order growth, but this should change rapidly as bandwidth expands and retailers increase their Web-based offerings.** In addition, cross-promotion of Web-based retailing offerings from established brands, such as Barnes & Noble, should help drive sales.
- ◆ In this chapter, we **explore the history and trends of mail order**, to demonstrate trends that may show up during the development of Internet retailing. Historically, the highest revenue categories in mail-order include: 1) insurance/financial services; 2) apparel; 3) general merchandise/housewares/gifts; 4) magazines; 5) electronic goods; 6) sporting goods; 7) auto clubs; 8) collectibles; and 9) books. These trends will likely be similar in Web retailing, we think, although the dollars initially may be skewed less toward apparel, sporting goods, and collectibles, given the Web's current limits on presentation. It is worth noting that, **after lots of initial enthusiasm about mail-order retailing, that industry was inundated with new competitors, profitability declined, a recession kicked in, industry consolidation ensued, and profits declined**

further, although a few standout companies gained meaningful market share (to name a few: Dell, Gateway, Finger-hut, Lands' End, J.C. Penney, Eddie Bauer, L.L. Bean, and J. Crew). As with mail-order retailing, we expect a few outstanding Internet retailing companies to emerge as the winners over time.

Chapter 15: Glossary of Internet Terminology

Chapter 16: History of Retailing, a Time Line

Chapter 17: Appendix

1) General Thoughts on Internet Tax Issues

5) A Framework for Global Electronic Commerce — Clinton Administration Draft

2) Morgan Stanley Domestic Retail Company Universe

3) Morgan Stanley Domestic Technology Company Universe

4) Public Internet Companies

5) Internet IPO Market Environment

Chapter 1: Morgan Stanley's Internet Retail Stock Portfolio and Proxies

Summary

- ◆ In this chapter we provide a few **thoughts on building an Internet retail stock portfolio**. Companies that use technology to build and leverage the infrastructure for Internet retailing will likely continue to be attractive investments: **Dell, Microsoft, America Online, and Federal Express** are the core names in our Internet retail portfolio; they also have been Morgan Stanley focus stocks for quite some time. We think it's still too early to tell, but the more risk-tolerant investor might also want to look at traditional retailers that are extending their franchises to the Web, such as **CUC** and **Barnes & Noble**. We also identify some new "virtual retailers" — **E*Trade** and **Amazon.com** — as good public market proxies for the growth in Internet retailing, although we do not cover those two stocks.
- ◆ The **landscape for Web-based retailing should be much clearer in a year or two**, as a good deal of the dust will have settled as the pure-play first-movers (like Amazon) and the traditional retailers that have gone online (like Barnes & Noble) duke it out. In the interim, we think that investors should take a selective portfolio approach to investing in this emerging sector, choosing a mix of old and new companies that appear to be well positioned for this new opportunity. As usual, with tech-centric companies, valuations can shift like the wind . . . so timing is crucial. Note that many of these stocks have experienced significant runs in the year to date, and are trading at high relative valuations, so we wouldn't be surprised to see some volatility in the names.
- ◆ Given the history of other types of Internet-related and mail-order companies, we believe **we are likely to see a "boonlet-bust-boom" cycle for Internet retailing companies**, where rapid growth is followed by a slowdown, skepticism, lack of momentum, and investor fears about competition. Successful companies will ride these out until they catch the next wave of positive investor sentiment, consolidation, increasing share, and real profit generation. Thus, after an initial burst of energy followed by some fits and starts along the way, a handful of leading Web retailing brands will likely emerge as great investments/franchises. We expect that many traditional retailers will also extend their franchises and market share via Web efforts (in part, through the power of cross-promotion).

Many more Web-specific retailers will likely be investment disasters, as were many mail-order firms in the 1980s. However, and again like mail order, in Internet retailing **a select few well-managed/positioned companies should emerge as winners**; these might include such mail-order winners as Dell Computer, Gateway 2000, Lands' End, and Viking Office Products. When new retail distribution channels have been created in the past, new companies have capitalized on these changes: Consider telephone-based mail order (LL Bean), discount superstores (Wal-Mart), television mail-order (QVC), and direct-marketing membership (CUC).

- ◆ **Internet retail companies may be high-growth, but may not be high-tech or high-margin. Valuations should reflect this over time.** While the best-of-the-best direct-marketing companies can trade at price-to-sales ratios (market capitalization to last 12-months' sales) in excess of 1.0 (for example, CUC trades at 4.2, Dell trades at 2.3, Viking Office Products trades at 1.0, and Gateway 2000 trades at 1.0), the average for our group of public direct marketers, excluding the aforementioned companies, is 0.4 times, and the average net margin is 1.0%. The tricks with valuing Internet retailers include factoring out the hype, determining normalized growth in a white-hot market, and determining the normalized financial model.

Table 1-1

Morgan Stanley Internet Retail Stock Portfolio and Proxies (Ranked by Market Capitalization)

Company	Ticker	Price (5/16/97)	Mkt Cap	Description
Portfolio				
Microsoft	MSFT	\$115	\$157B	Everything — could be portal to Internet
Dell	DELL	97	18.0B	PC vendor — Should be able to leverage direct-mail leadership to Web
Federal Express	FDX	53	6.1B	Logistics/shipping — could be leading virtual warehouser
America Online	AOL	48	5.5B	Member marketplace — high membership, brand name can be leveraged
Proxies				
CUC	CU	23	9.8B	Member marketplace — early leader, now follower could lead again
Barnes & Noble	BKS	40	1.4B	Book seller — these guys are serious about the Web
E*Trade	EGRP	15	526MM	Stock trading — company with momentum in market sweet spot
Amazon.com	AMZN	20	470MM	Internet book seller — so far, the longest track record

Source: Morgan Stanley Technology Research.

B = Billion.

Additional Thoughts on Our Portfolio

The selective portfolio approach we have recommended for investing in this emerging sector should be tempered with old and new companies that appear to be well-positioned for this new opportunity. We think the portfolio stocks in Table 1 capture a large percentage of the new market spectrum. Dell is using its highly successful direct-mail model and applying it to the latest in direct-marketing channels — the Web. It is very possible, we think, that Microsoft could simply become the portal many users open to get to the Web, providing Microsoft with key rent-producing real estate plus the opportunity for software sales to build the Internet infrastructure. With the potential growth in the number of purchases made online, someone will be taking a profit on getting the orders from warehouse to front door, and Federal Express is our favorite story to capture the increased demand for these services. As for AOL, if Tel-Save will pay \$100 million to have access to AOL's captive audience, other companies may be willing to pay up for real estate to gain access to AOL's customers.

Among the proxies, E*Trade looks well positioned to capture the efficiencies and rapid growth we expect to see in the demand for online financial services, though this market will no doubt remain quite competitive. With 66 million members, CUC also has a formidable audience for its message, though the Web may create a huge transition for the company. Amazon is the largest (in terms of sales) and most experienced online seller of books, while Barnes & Noble has a considerable brand and presence in the traditional market, as well as a serious plan to be the dominant bookseller.

There will likely be two or three major market share winners in the different sectors, who will catch that second wave and reap the benefits of market dominance; these should include the players in various forms of financial services (from Intuit to E*Trade to Charles Schwab to CNN), music (with the likes of Tower Records, CD Now, Columbia House, and possibly even Amazon in the mix), software (CNET, ZD Net, and others). Over all of these companies hang the specters of Microsoft, CUC, and AOL, which, due to their sheer weight, can enter a particular vertical market with (more than) a fighting chance.

Relative Company Valuations, In Time, Will Likely Move Down For Pure-Play Internet Retailers

In time, valuations for Internet retail companies should tend to move down the valuation curve, away from higher technology and high-growth company valuations toward lower, retail company valuations. Consider the following valuation differences between Morgan Stanley's universe of 134 domestic retail companies and universe of 300 technology companies: 1997 P/E to EPS growth (based on the I/B/E/S five-year mean estimate) for retail = 1.0, for technology = 1.2; market capitalization/LTM sales for retail = 0.7, for technology = 2.0; mean operating margin for retail = 5%, for technology = 14%. While valuation metrics are somewhat consistent across retail sectors, valuation and margin ratios vary sharply across technology sectors, with software and networking companies (including Internet companies) carrying the highest relative valuation and distribution and hardware-oriented companies carrying the lowest valuations.

It will always be important to ensure that company and industry business fundamentals justify company valuations.

If Internet retailing, in general, takes longer to build a meaningful sales base, valuation corrections may be significant. This occurred in the public markets for mail-order companies in the late 1980s and early 1990s and for TV shopping in 1994. In the early/middle stages of their market evolutions, many companies in these sectors didn't live up to the hype.

The Internet has given rise to a significant amount of excitement for investors, and Internet IPO volume has been significant. We mark August 8, 1995, when Netscape had its public market debut, as Day 1 of the Internet for public investors. But it's worth noting that as of May 16, 1997, 55 Internet IPOs had been filed since Netscape's IPO (see Appendix for details), and only 10 (or 18%) were trading above their offering price. The combined market capitalization depreciation (excluding Netscape) of all the offerings was \$1.7 billion. On the flip side, already established Internet-related companies have seen their market capitalizations rise significantly since Netscape's IPO: Microsoft's is

up \$98 billion, Cisco up \$24 billion, Ascend up \$4.2 billion, and America Online up \$2.6 billion.

Nearly all investors have had questions about the appropriate valuation methodology for Internet retailers, particularly since the companies' profitability may suffer from heavy early-stage investments in customer acquisition without sizable revenue offset. In contrast, many traditional retailers can absorb lots of costs against their store-wide revenue base. For all early-stage growth companies, the valuation today is determined by discounting future years' levels of profitability. Unfortunately, however, the risk is that today's hype overshadows an appropriate valuation. We note four issues: 1) the meaningful valuation differential today between tech and retail companies, and what that implies for the sustained valuation of a hybrid tech/retail company; 2) the severe multiple compression for once high-flying mail-order and TV shopping ventures; 3) low retail margins; and 4) an uncertain outlook for the long-term winners.

The Portfolio Companies

Microsoft (MSFT, \$115; Outperform, covered by Mary Meeker): The 800 Giga-Byte Gorilla

Price	52-Wk Rng	Div	Yld	Shs(MM)	EPS 96A	EPS 97E	P/E	EPS 98E	P/E	5-Yr Proj Growth
115	124 - 54	--	--	1362	\$1.70	\$2.62	44.1	\$3.15	36.6	25%

Microsoft's interest in online commerce and retailing lies primarily with leveraging its core software competencies, and being a traffic cop or portal to Web usage. Microsoft's early initiatives in building Web retailing communities include: Expedia, its award-winning online travel agency; Music Central, its online music store; CarPoint, its auto-shopping service; Investor, its personal investing site; and Sidewalk, its online personal guide to entertainment. All of these services are accessed through MSN (The Microsoft Network), which like AOL seeks to drive profit growth from a mix of transaction and advertising revenues. The real-estate analogy is one we find useful in comparing online and traditional retailing — retail may be low-margin, but high-traffic Web site owners should be able to collect premium rents, just as mall owners in prime

locations do. Microsoft has a substantial opportunity to control a vast amount of cyber-estate, and will likely, in time, be able to leverage this ownership into all kinds of revenue streams.

One of Microsoft's key advantages in the online retailing game will be its distribution channels, where it is making a **strong push to achieve ubiquity**, and where it will be able to effectively cross-market its products and services. We estimate that Windows is installed on more than 155 million Intel-based PCs, and as more and more of these computers are hooked up to the Internet, Microsoft's ability to deliver content and product to them should rise considerably. Microsoft is also making decent progress with MSN, its online service, which recently passed the 2.2 million

subscriber mark, and its MSNBC Cable venture, which now reaches 31 million homes. The recently proposed acquisition of WebTV Networks should also give Microsoft leverage in bringing the Internet to the mass market, where many consumers are unable to purchase a computer but can afford the substantially more inexpensive WebTV device. Microsoft has become increasingly focused on the trend toward digital television: It sees an opportunity to incorporate relatively low-cost (but high-margin) operating systems into the new digital televisions, so that they can handle Internet content (which MSFT will also supply).

There's the leverage that MSFT can gain from Internet ubiquity. Imagine MSFT's revenue opportunity in the year 2000, when there should be more than 150 million Internet

users, many using MSFT software. If advertisers pay \$1.5 million for 30 seconds of airtime during the Super Bowl to nab an estimated 100 million sets of eyeballs, why wouldn't they pay \$1.5 million for a spot of primetime business-PC turn-on time? And then think about Microsoft's power as a Web portal in helping route customers where it wants them to go. Just a few thoughts. . . .

A by-product of the evolution of the Internet should be continued growth in information technology spending by businesses, with total business spending on all forms of information technology (computers, telecommunications equipment, and the like) now up to 43% of inflation-adjusted business outlays on capital equipment). Microsoft should continue to benefit from this spending expansion.

Dell (DELL, \$94; Outperform, covered by Mary Meeker, Gillian Munson): *Can Win With Net Revenue Plus Opex Savings*

Price	52-Wk Rng	Div	Yld	Shs(MM)	EPS 96A	EPS 97E	P/E	EPS 98E	P/E	5-Yr Proj Growth
94	110 - 20	--	--	184	\$2.77	\$4.53	20.8	\$5.60	16.8	25%

DELL should, in our opinion, be a primary beneficiary of the rapid growth in purchasing of PCs via the Internet. Dell has indicated that it is generating Web-based sales of \$1 million or more per day — up from zero a year ago. Dell's online customer mix is currently 45% individuals and 55% businesses. Currently, the company can transact credit-card-based sales over the Web and should soon be able to process purchase orders for large corporate customers. Dell believes a number of customers use the service to price product and then end up securing actual product over the phone. So actual Web-based sales may be low relative to actual use of the Web site. Dell surveys indicate that 70–80% of its Internet shoppers are new Dell customers.

In the PC space, we believe that Dell is the best-positioned company to benefit from Internet-based sales, owing to its direct-sales heritage. Dell is the leading direct PC vendor, with an estimated 25% share, compared with its 5% share of the overall PC unit market. Michael Dell is hyper-focused on this opportunity (given his days in his University of Texas dorm room with a telephone, the 32-year-old Dell has kind of “been there, done that”). And if our theory about the “Wal-Marting of the Web” is accu-

rate, Dell has the opportunity to nab more than 30% market share of Web-based sales, a market that could grow wicked fast. Michael believes more than half of Dell's revenue could come from Internet-based sales in the next two to four years, helping both top-line growth and margins.

Just as Dell tailors its current telephone-based selling efforts to specific market spaces (Individuals, Small and Medium Business, Large Corporate Accounts), **it plans to aggressively reach out to corporate customers with custom Internet-based selling solutions.** This is a very low-cost sales tool (read high-margin), and to date the mix of customers and revenue looks favorable: Configurations are richer, leads sourced from the Internet are “warmer,” (customers who call on the phone after having visited the Web site are significantly more likely to buy), the Internet aids in customer retention, and service and support costs are lower. Dell is measuring the cost of transactions and knows the efficiency the Internet delivers for them, yet it does become challenging to measure because all of Dell's business becomes intermixed so quickly.

From a competitive standpoint, **Gateway 2000 launched its Web site in May 1996** and has seen traffic grow from

25,000 visitors per day at the end of 2Q96, 35,000 at the end of 3Q96, 46,000 at the end of 4Q96, and 55,000 per day at the end of 1Q97. Gateway has indicated that in the first eight months of its Web site's existence (May-December 1996), it sold \$100 million of merchandise via the site. In general, GATE has found that purchasers of merchandise via its Web site order richer configurations

(more features like sound cards, additional memory, and so forth) and, though the company has not given specifics on margin impact, it did indicate that sales made via the Web required significantly less "talk time" for customer sales/support, which in turn reduces SG&A expenses per sale, thus improving the margins for online sales.

Federal Express (FDX, \$53; Strong Buy, covered by Kevin Murphy): *Come On, An Internet Play?*

Price	52-Wk Rng	Div	Yld	Shs(MM)	EPS 96A	EPS 97E	P/E	EPS 98E	P/E	5-Yr Proj Growth
53	58 - 36	--	--	114.6	\$2.69	\$3.09	17.0	\$3.60	14.6	15%

Several market forces may be converging to position Federal Express as a beneficiary of the evolution of the Internet as a communications and transactional medium.

FedEx has spent years developing a **logistical infrastructure designed to place as much importance on tracking data and information as it does packages**. This may become increasingly important as internetworking expands locally and globally. From a technology standpoint, the company is designed to leverage this infrastructure in many ways, from straightforward shipping logistics to analyzing and sorting the enormous amount of customer feedback and usage data to better serve customers, introduce more efficient processes in its design, and achieve cost savings.

Air express companies (and other service-intensive companies) stand to achieve cost savings through implementation of Internet technologies in servicing customers. FedEx, for example, currently receives about 600,000 package tracks per month through its Web site, with over half a million tracks per day through some online method (Powership, FedEx Ship, or the Internet). The company estimates that, to date, it is already saving millions of dollars per year through tracking, drop-off locator, shipping software downloads, and invoice adjustments online, and we expect this trend to continue to grow over time.

Web-based businesses such as Amazon.com and CUC leverage the logistical abilities of companies like FedEx to offer a vast array of products, while simultaneously eliminating the need to stock massive amounts of inventory. In many instances, they essentially "drop-ship" products directly from vendors to consumers, replacing a distribution pipeline that would normally contain lots of expensive inventory.

In addition, companies like Dell Computer are finding that an effective direct-sales model also melds well with this "virtual warehouse" concept. The efficiencies this creates are more than economically compelling enough to warrant ceding some small margin to FedEx in exchange for providing the logistical infrastructure that enables the process. We believe this dynamic will continue to increase in scale for more and more businesses over time, as they look to trim or eliminate their invoicing, inventory management, order fulfillment, and shipping operations, and focus on marketing and customer service.

Rapid growth (from a base of zero) of the Internet as a retailing conduit, should, in time, increase the shipment volume of packages by air carriers. We estimate that FedEx has experienced an incremental boost to revenue in each of the last few years due to growth in the mail-order business. We believe that with both mail-order and Web-based shopping, consumers have a fast-in, fast-out attitude.

**America Online (AOL, \$49; Outperform, covered by Mary Meeker):
*Amassing the Masses***

Price	52-Wk Rng	Div	Yld	Shs(MM)	EPS 96A	EPS 97E	P/E	EPS 98E	P/E	5-Yr Proj Growth
49	57 - 22	--	--	114	\$0.54	\$(0.29)	NM	\$1.00	49	--

AOL is the world's leading online service, with more than 8 million members, and has demonstrated its prowess in bringing mainstream consumers online. AOL estimates that **1Q97 gross product sales through its service were \$98 million**, up 13% quarter-to-quarter and up from \$42 million a year earlier. AOL gets a cut of each of these transactions. The best-selling products are in the classifieds, CDs, software and hardware, and books categories. AOL has made it clear that the future profitability of its business will lie mainly with non-subscription revenue streams like transaction fees and advertising. We believe that its large, broad-based customer base will give it an edge in continuing to attract top-notch merchants and advertisers.

At the end of 1Q, AOL had 58 online stores on its Marketplace channel, up from 16 a little over a year ago. Key stores (anchor tenants) include CUC's Shoppers Ad-

vantage, Tower Records, @Once (for downloading computer software), 1-800-Flowers, Eddie Bauer, JC Penny, Starbucks, Omaha Steaks, and Barnes & Noble.

In addition to increasing the number of traditional retailers on its Marketplace channel, AOL has added lots of merchants to other channels, most notably the Personal Finance channels' Banking Center, Mutual Fund Center, and Brokerage Center. Revenue is generated to AOL from these sites through up-front payment for screen positioning, cuts of transactions, advertising, and referral fees from brokers. Participating financial institutions include Bank of America, Wells Fargo, Citibank, Chase Manhattan Bank, First Union, E*Trade, PC Financial Network, Merrill Lynch, Charles Schwab, Fidelity Investments, Vanguard, T. Rowe Price, The Kaufmann Funds, and Dreyfus.

AOL's greatest risks, in our view, relate to Web competition and the need to become cash flow positive.

The Proxy Companies

**CUC International (CU, \$24; Outperform, covered by Mary Meeker):
*Building on Core Competencies***

Price	52-Wk Rng	Div	Yld	Shs(MM)	EPS 96A	EPS 97E	P/E	EPS 98E	P/E	5-Yr Proj Growth
24	28 - 19	--	--	415	\$0.53	\$0.70	34.1	\$0.87	27.4	--

With more than 66 million members worldwide, CUC is **the leading provider of membership-based consumer services (primarily served through telephone efforts).** Financially, we don't expect CU's Web efforts to drive upside earnings surprises for the company anytime soon, but in time, if the company is successful here, top-line growth outlook should be more secure and operating margins should improve — and we are in this camp. On the flip side, the Web could prove to be more of a transition than an opportunity for CU; we will be monitoring this closely.

The company reported brisk online and Web-related sales (more than 75% were online-based) in November and \$90 million in gross sales of various products, and it indicated sales could reach in excess of \$400 million for 1996. November traffic was busy, with over 60,000 transactions, representing a sales gain of over 100% in each category. This implies a hefty average purchase price of \$1,500, thanks in large part to sales of cars through AutoVantage.

The top-selling categories, by total dollar amount, were cars (a \$25,000 average selling price really helps drive CU's online revenue), travel, phones, VCRs, TVs, stereos, exercise equipment, consumer software and video games, books, and cameras. On a per member basis, the average dollar amount spent (excluding cars) increased 61% year-over-year. On an annualized basis, **CUC is ramping to well over \$1 billion in gross sales**, seasonally adjusted. In June/July, CUC plans to launch NetMarket, an online "mega-mall" for membership-based Web shopping that will include many of its traditional services. CUC notes that to date, its interactive-shopping members spend approximately twice as much money as phone-based members.

From a revenue perspective, CUC has indicated that it plans to continue to pursue a membership model with its new online service. Therefore, the model should roughly mirror the model of breaking even in year one and generating cash in subsequent years that CUC has followed throughout its history. Revenue will be a function of how quickly CUC can attract new members to the service and how much the company can get customers to pay for the service. So far, **CUC has found that online members are cheaper to acquire (though it's our bet that CUC must ramp its advertising spending which will offset a chunk of this benefit), and easier to retain than the company's traditional membership base.**

With NetMarket, CUC is aspiring to create something like a membership-based, truly interactive version of QVC for the Web. And with its current base of about 66 million phone-based members, we feel the company is in a strong position both to lever/convert a portion of its user base to lower-cost Web-based services and to capitalize on its experience with consumer databases and product distribution.

In our view, the compelling things about CUC's site are:

Variety (including travel, personal finance, hardware, cars, music, books, apparel, consumer products, local discounts, and more).

Value (advertised prices that are 10–50% below manufacturers suggested retail prices) — thanks to its membership model, CUC is able to price products near cost.

Various shopping venues — the ability to sort/shop by product brand, best values of the day, auction, flea market, or store type (like travel or books).

Search and index capabilities that are impressive — want a camera? Type "camera" into the search function.

In addition, the service will have enhanced features like *3-D, chat, profiling, and agenting*.

The service will be membership-based (e.g., \$59 for a one-year membership), but *many members will "save" the membership fee on their first purchase*. As in its core business, CU will allow partners to overtake the NetMarket interface and offer the product as if it belonged to them.

CU will augment marketing of its site by *bundling* a CD-ROM-based advertisement with all Davidson and Sierra software titles.

CU will introduce "*reward dollars*," which members receive when they make purchases online. These can either be redeemed for cash, used as a dollar-for-dollar credit off of goods and services, or actually multiplied in areas such as the flea market. Note that www.riddler.com also utilizes a reward-type system, and its site consistently demonstrates much higher-than-average usage times per member.

Barnes & Noble (BKS, \$40; Strong Buy, covered by Bruce Missett): A Lower-Risk Way to Play the Internet

Price	52-Wk Rng	Div	Yld	Shs(MM)	EPS 96A	EPS 97E	P/E	EPS 98E	P/E	5-Yr Proj Growth
40	44 - 26	--	--	36	\$1.48	\$1.85	21.6	\$2.30	17.4	25%

An investment in Barnes & Noble provides investors with a lower-risk way (versus pure Internet plays) to play Internet growth. Barnes & Noble intends to be a dominant player in

online books sales, and has recently opened its sites on America Online (Keyword: Barnes and Noble) and the Web (www.barnesandnoble.com). These sites offer over one

million titles and are discounting 30% off the retail price for all in-stock hardcover titles and 20% off all in-stock paperback titles. Barnes & Noble indicates that it currently has 100,000 titles available for next-day delivery (which should grow to 400,000 by year-end 1997), and that online sales are ramping nicely.

The good news for investors in BKS includes:

Dominant Market Position — BKS has increased market share, a strong brand franchise through an aggressive store opening program, and is the largest retail bookseller in the world, with 13% of current U.S. market share, a core strength that should provide a solid foundation for Internet expansion.

Well-Known Brand — In its quest to acquire significant share of both current and future Web buyers, BKS's strong brand presence among consumers (not to mention its sizeable sales and marketing budget) should serve the company well.

Increased Market Share Opportunity — Though in the short term we do not expect the Internet to have any impact

on BKS' traditional retail sales, we do believe that the increased "storefront" the Web affords the company, combined with its strong brand, excellent strategic relationships (it has exclusive agreements with AOL and *The New York Times*), and significant investment to date may allow BKS to capture a higher share of a fast-growing online market.

However, there are several issues that bear close monitoring, especially:

Fierce Competition — The traditional book superstore segment is dominated by two fierce competitors (BKS and Borders), and the online segment may well see several major players in the near term, including BKS, Borders (though it has not yet launched its site), Amazon.com and CUC. Intensified competition — in terms of real estate, pricing, and advertising — could put pressure on results.

Potential Cannibalization of Sales — In the mid- to long-term, it remains to be seen how much same store sales are affected by Internet-based sales in general, or perhaps even BKS' own Web-based sales in particular, though the company has indicated it is not yet overly anxious about this prospect.

E*Trade (EGRP, \$16; Not Rated)

A Great Start, But A Competitive Market Lies Ahead

Price	52-Wk Rng	Div	Yld	Shs(MM)	EPS 96A	EPS 97E	P/E	EPS 98E	P/E	5-Yr Proj Growth
16	27 - 8	--	--	29.6	\$(0.03)	\$0.34	46.9	\$0.51	31.1	80%

E = First Call estimates.

E*Trade is an electronic financial services company that, through its subsidiary E*Trade Securities, is a **leading provider of online investing services**. E*Trade offers independent investors the convenience and control of online access to securities markets and access to value-added information, such as new charts and fundamental data, along with attractive commission rates on trades. The company provides access to brokerage services through the Internet, online services (such as AOL and CompuServe), touch-tone telephone, and direct modem connection. The company also offers automated order placement, portfolio tracking, market information and news, and other information services 24 hours a day, seven days a week.

Revenues for 1Q97 were \$32 million, up 208% year-over-year and 29% quarter-to-quarter. New account growth, up 29% sequentially and 173% year-over-year in 1Q97, has for the past year grown consistently between 8% and 10% per month, with more than 145,000 active accounts at the end of March 1997, versus 53,000 a year earlier.

E*Trade has also reported an impressive 96% annualized customer retention rate — the company says that 0.3% of active accounts are closed or moved elsewhere each month. EGRP indicated that it is processing about 14,283 transactions per day, up 175% year-over-year — and roughly 50% of these trades are being made via the Internet service, which began in February 1996 (other transactions are made via touch-tone phone or by calling the customer service

reps). Given current trading volumes, E*Trade believes it handles a whopping 0.7% of all trading on the NYSE and NASDAQ.

Amazon.com (AMZN, \$21; Not Rated)

The Best of the New Wave

Price	52-Wk Rng	Div	Yld	Shs(MM)	EPS 96A	EPS 97E	P/E	EPS 98E	P/E	5-Yr Proj Growth
21	30 - 16	--	--	23.9	NA	NA	--	NA	--	NA

E = First Call estimates.

Amazon.com is the leading bookstore on the Web, providing users with the ability to easily (and quickly) search through its database of over 2.5 million books.

Amazon has a wad of key ingredients that have made for a successful company — a large and rapidly growing market opportunity; first-mover advantage; a great brand name and product; leading market share on the Web; happy customers that spread the message through “word-of-mouth”; and an impressive management team.

Based on mind share, traffic and revenue growth, Amazon, to date, is a clear leader in Internet-based retailing. First-quarter 1Q revenues of \$16 million rose 89% quarter-to-quarter, from \$8 million in 4Q. This rate of sequential growth is especially impressive given historical seasonal sales trends for the book industry: 4Q is typically the strongest seasonal quarter for book sellers, and 1Q is typically the weakest. By way of comparison, Amazon's 1Q annual revenue run rate of \$64 million is more than two times higher than the revenue forecast of \$27 million for Barnes & Noble's entire mail-order business in F1998 (January) — though based on first-month returns, Barnes & Noble's AOL revenue run rate is at 70% of its mail-order revenue level.

E*Trade's greatest risks, in our view, relate simply to competition (especially Charles Schwab) and the need to expand service offerings.

Amazon.com is one of the highest profile Web commerce success stories, and the revenue and usage data are impressive: Through March 1997, Amazon had cumulative (five quarter) sales of more than \$32 million to approximately 340,000 customers in over 100 countries. Daily customer visits have gone from around 2,200 in December 1995 to approximately 80,000 in March 1997, and average revenue per customer was an impressive \$47 in 1Q97. Amazon.com has indicated that a substantial 40% or more of its customers are repeat buyers.

Among the biggest issues for Amazon, are that **the company hasn't yet demonstrated that it's a money maker** and the book business is a low-margin business — Barnes & Noble and Borders (\$2 billion-plus annual revenue players in the book retailing business) both support net margins of 2-3%. While Amazon has structural margin advantages, in that it doesn't have capital investments related to storefronts and operating expenses for salespeople, it has structural margin disadvantages — it doesn't have purchasing power because it's not yet a scale player in a scale business. Barnes & Noble, especially, views Amazon as a very serious competitor and has aggressively launched its Web site (two years later than Amazon's), so competition in the form of aggressive pricing and marketing is sure to rise. **For investors, the biggest question is — how does one value an Internet retailer?**

Chapter 2: An Update on Internet Usage Trends/Forecasts

Summary

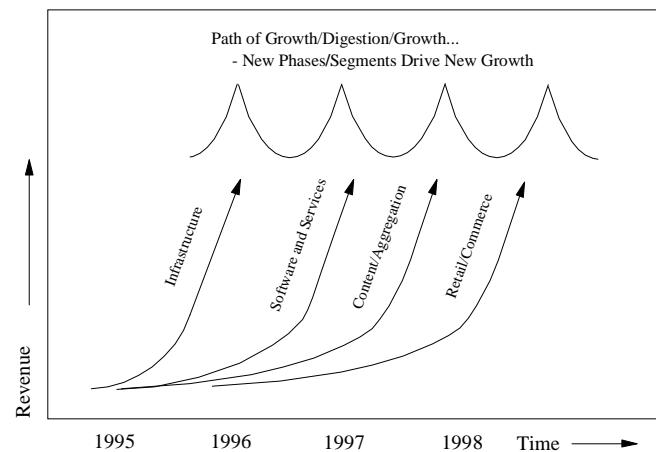
- ◆ **The Internet is growing at an unprecedented pace**, and, for now, we believe most market data are suspect. There are numbers that seem solid, like the 8-million-plus America Online users (largely consumers) and the over 50 million users of Netscape Navigator (although Netscape believes that 80% of those users are Intranet users, and frequency of usage “beyond the firewall” is tough to predict).
- ◆ We believe there are **35 million Internet users (our point estimate for the end of 1996 was 28 million)**. This strikes us as especially impressive since we estimate there were only about 9 million users at the end of 1995. These users are a mix of both business and consumer users.
- ◆ We project **compounded annual growth in Internet users for the next four years of 54%**, and we believe that **more than 150 million people will use the Internet by the year 2000** — in fact, this assumption may be conservative, since there are already 230 million PC users worldwide.
- ◆ Given the early stage of Internet growth, **non-North American usage is at a higher rate of adoption than any other new technology** — using the number of Internet hosts as a proxy, while North America still dominates (with about 67% share), its share has fallen as the rest of the world catches up. In the last two years, Europe (with 22% share) has grown 222%, and Asia (which has doubled its share from 3% to 6%) has seen 550% growth.

A Perspective on the Evolution of the Internet

The Internet continues to evolve in stages with the **infrastructure** build in full swing (per the latest stats at www.thelist.com, there are 5,184 Internet service providers); the foundation for **software and services** has been built through the efforts of Netscape and Microsoft with lots more to come; leadership positions are being established in the **content and aggregation** space by the likes of AOL, CNET, Microsoft and many others; and lastly **retailing and commerce** are just beginning. In our view, it was kicked off in a Wall Street sense by the successful IPO of Web-based book retailer, Amazon.com, on May 15, 1997.

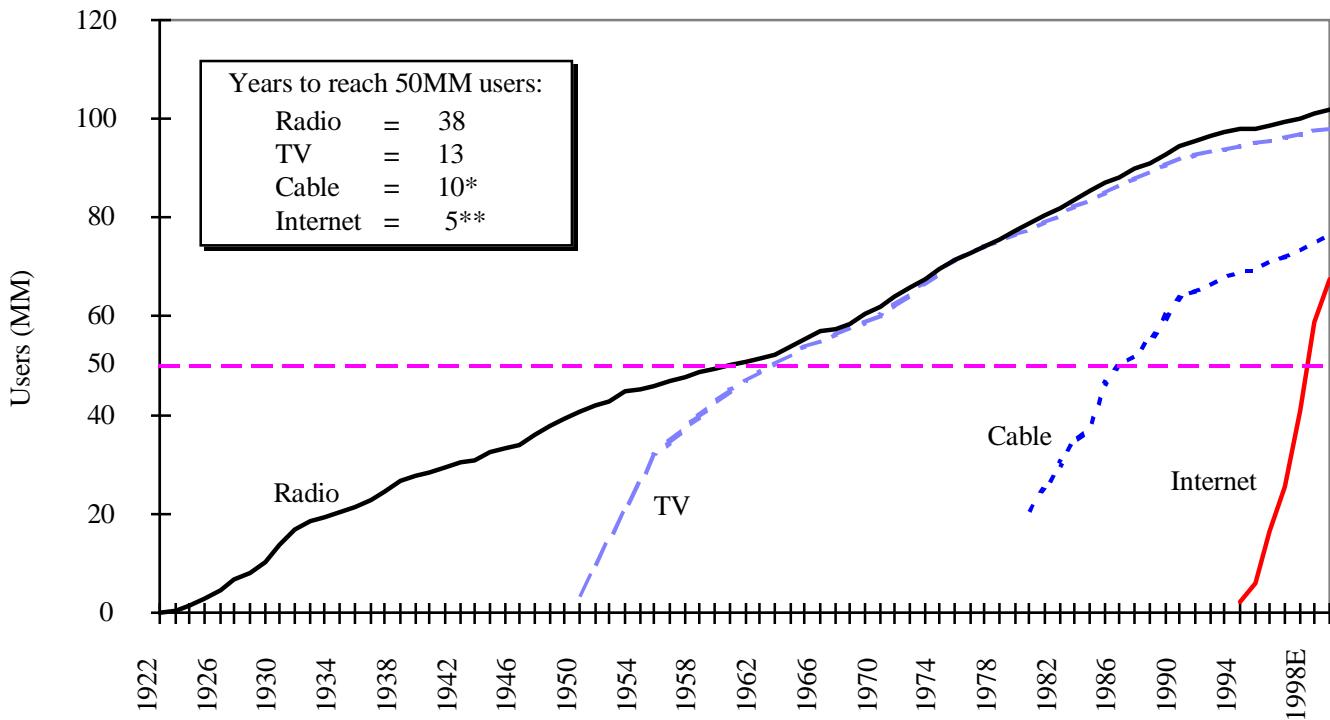
Since 1995, in large part thanks to the rapid deployment of the Netscape Web browser, Internet growth has been nearly unbroken. However, we do expect some fits and starts here...in Figure 2-1 we have illustrated a typical cycle of growth followed by slowdown/digestion followed by renewed growth driven by new uses of the Web followed by slowdown/digestion.

Figure 2-1
Timing and Development
Of Internet Market Segments



Source: Morgan Stanley Technology Research.

Figure 2-2

Adoption Curves for Various Media — The Web Is Ramping Fast

Source: Morgan Stanley Technology Research. E = Morgan Stanley Research Estimate. Data are for U.S. media adoption.

* We use the launch of HBO in 1976 as our estimate for the beginning of cable as an entertainment/advertising medium. Though cable technology was developed in the late 1940's, its initial use was primarily for the improvement of reception in remote areas. It was not until HBO began to distribute its pay-TV movie service via satellite in 1976 that the medium became a distinct content and advertising alternative to broadcast television.

** Morgan Stanley Technology Research Estimate.

Internet Adoption is Happening Faster Than In Other Media

We continue to believe that the **Internet is the next mass medium**, and one of the functions media provide is a forum through which companies gain access to potential customers and attempt to generate sales through marketing, advertising, and other selling techniques. To get a handle on the possibilities for the Internet as a new medium for retailing, we begin by taking a pass at the size of the customer base that could potentially be accessed online (both now and over the next several years) by looking at the size and

rate of user adoption and comparing them with other media. Figure 2-2 shows the adoption curves for several of these key media (radio, TV, cable, and the Internet). Although these numbers are not adjusted for population growth, it is clear to us that the adoption rates for new media have accelerated over time — TV was faster than radio, cable came on even faster (despite the new infrastructure it required that previous broadcast media did not), and we believe that the Internet has surpassed all of these in its rate of adoption. See Chapter 1 for further details and the latest data on the current state of Internet usage.

Table 2-1

Worldwide Connectivity Market 1996–2000E

(Millions)	1996	1997E	1998E	1999E	2000E
Users of:					
PCs	167	191	219	246	269
E-Mail	60	80	130	180	200
Internet/Web	28	46	82	134	157
Online/Hybrid	13	18	23	27	30

Source: Morgan Stanley Technology Research.

E = Morgan Stanley Research Estimate.

Internet Market Size — Big and Bigger

The Internet continues to grow at an unprecedented pace (Figure 2-2), creating enormous opportunities for investment and wealth creation (as well as massive capital losses), in our view. At the same time, because of this rapid growth, it can be difficult to gather accurate market data and make informed business decisions. As we discussed in *The Internet Report*, back in December 1995, **such fast growth should inevitably lead to breakage and dislocations in the Internet market.**

Internet Usage Growth Should Remain Quite High

Currently, Internet measurement seems somewhat analogous to Heisenberg's uncertainty principle — in that it's nearly impossible to determine exactly where the Internet is and where it is going at the same time. We believe there **are currently 30-35 million Internet users (our point estimate for the end of 1996 was 28 million).** This is especially impressive, in our view, since we estimate there were only about 9 million users at the end of 1995. These users are a mix of both business people and consumers. We project **compounded annual growth in Internet users for the next four years of 54%,** and we believe that **more than 150 million people will use the Internet by the year 2000** — in fact, this assumption may be conservative, since there are already 230 million PC users worldwide.

Corporate America Moves Online

IDC estimates that the number of Fortune 500 companies with a Web presence increased from 175 at the beginning of 1996 to nearly 400 at the beginning of 1997 (an increase

from 35% to 80% penetration) — an important barometer for how quickly the Web is becoming a mainstream channel for major corporations' marketing, communications, and business transactions.

Internet Domain Growth Remains High

InterNIC reports that, through March 1997, there were 1,178,886 registered Internet domains — these are the unique names, such as microsoft.com, that identify an Internet site — 74% of which were created in the last 12 months. Of the total sample, 1,040,089 (or 88%) were commercial (“.com”) domains. *At its ever-increasing pace, the Web is adding well over 3,000 new domains daily, or almost 100,000 per month. That's real growth!*

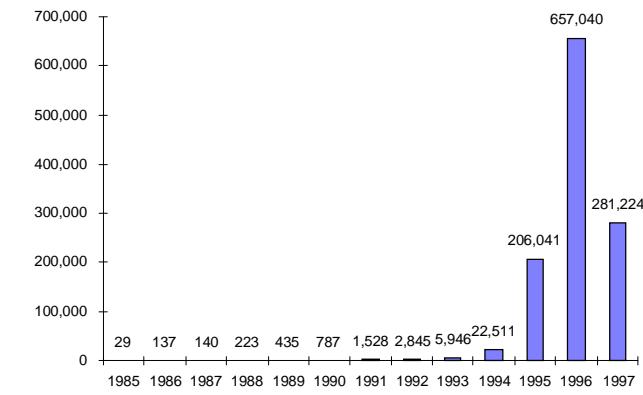
Table 2-2

Internet Domain Share through March 1997

Domain	Number	Share
.com	1,040,089	88%
.org	69,764	6%
.net	64,684	5%
.edu	3,558	<1%
.gov	585	<1%
Other	206	<1%
Total	1,178,886	100%

.com = commercial; .org = organization; .net = network; .edu = education; .gov = government. Source: InterNIC.

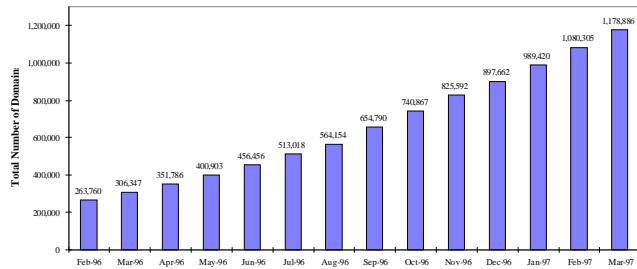
Figure 2-3

Internet Domain Name Registrations, 1985–1997 Year-to-Date*

* Data through March 1997.

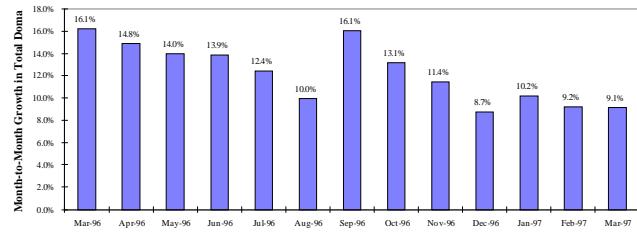
Source: InterNIC, Internet.org.

Figure 2-4

**Monthly Total Internet Domain Growth,
February 1996 through March 1997**


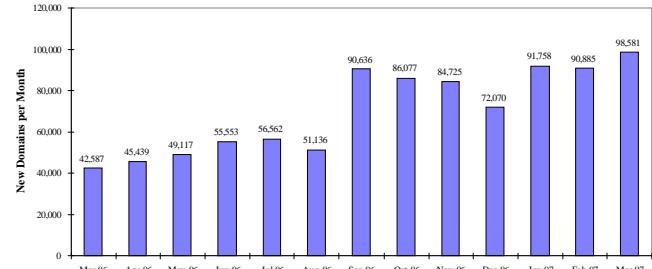
Source: InterNIC

Figure 2-6

**Month-to-Month Change in Number of Internet
Domains, February 1996 through March 1997**


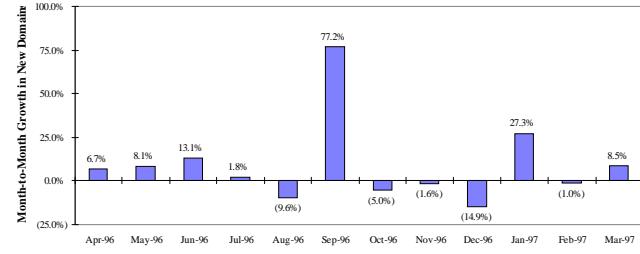
Source: InterNIC

Figure 2-5

**Monthly New Internet Domain Growth,
February 1996 through March 1997**


Source: InterNIC

Figure 2-7

**Month-to-Month Change in Number of New Inter-
net Domains, February 1996 through March 1997**


Source: InterNIC

Table 2-3

Monthly Trends by Internet Domain Type, February 1996 through March 1997

Month	.com		.org		.net		.edu		.gov		Other		Total	
	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share
Feb-96	232,004	88.0%	17,775	6.7%	10,890	4.1%	2,463	0.9%	460	0.2%	168	0.1%	263,760	100%
Mar-96	270,612	88.3	20,321	6.6	12,242	4.0	2,536	0.8	465	0.2	171	< 0.1	306,347	100
Apr-96	312,208	88.7	22,757	6.5	13,565	3.9	2,613	0.7	468	0.1	175	< 0.1	351,786	100
May-96	357,088	89.1	25,363	6.3	15,113	3.8	2,683	0.7	479	0.1	177	< 0.1	400,903	100
Jun-96	408,349	89.5	28,013	6.1	16,670	3.7	2,755	0.6	491	0.1	178	< 0.1	456,456	100
Jul-96	460,077	89.7	30,803	6.0	18,590	3.6	2,858	0.6	511	0.1	179	< 0.1	513,018	100
Aug-96	506,472	89.8	33,989	6.0	19,971	3.5	2,843	0.5	458	0.1	421*	0.1	563,733	100
Sep-96	586,998	89.6	38,863	5.9	25,189	3.8	3,018	0.5	533	0.1	189	< 0.1	654,790	100
Oct-96	662,731	89.5	43,966	5.9	30,264	4.1	3,171	0.4	541	0.1	194	< 0.1	740,867	100
Nov-96	734,707	89.0	48,123	5.8	38,774	4.7	3,251	0.4	543	0.1	194	< 0.1	825,592	100
Dec-96	796,039	88.7	53,141	5.9	44,431	4.9	3,309	0.4	548	0.1	194	< 0.1	897,662	100
Jan-97	875,907	88.5	58,148	5.9	51,214	5.2	3,395	0.3	559	0.1	197	< 0.1	989,420	100
Feb-97	954,139	88.3	63,807	5.9	58,099	5.4	3,482	0.3	578	0.1	200	0.0	1,080,305	100
Mar-97	1,040,089	88.2%	69,764	5.9%	64,684	5.5%	3,558	0.3%	585	0.0%	206	0.0%	1,178,886	100

* August 1996 was the one month in which InterNIC included ".US" as a domain type, which has been included in Other here but which likely was counted in several domain types in all other months.

Source: InterNIC

Table 2-4

**Monthly Trends by Domain,
February 1996 through March 1997**

Month	New Domains	Total Domains	M/M Growth in Number of New Domains	M/M Growth in Number of Total Domains
Feb-96	--	263,760	--	--
Mar-96	42,587	306,347	--	16.1%
Apr-96	45,439	351,786	6.7%	14.8
May-96	49,117	400,903	8.1	14.0
Jun-96	55,553	456,456	13.1	13.9
Jul-96	56,562	513,018	1.8	12.4
Aug-96	51,136	564,154	(9.6)	10.0
Sep-96	90,636	654,790	77.2	16.1
Oct-96	86,077	740,867	(5.0)	13.1
Nov-96	84,725	825,592	(1.6)	11.4
Dec-96	72,070	897,662	(14.9)	8.7
Jan-97	91,758	989,420	27.3	10.2
Feb-97	90,885	1,080,305	(1.0)	9.2
Mar-97	98,581	1,178,886	8.5	9.1

Source: InterNIC

Yet Another Cut at Domain Growth and Distribution

In the accompanying figures and tables, we provide further details on the monthly growth and distribution of Internet domains. It is unclear whether recent fluctuations in the number of new domains and the month-to-month change in domain growth is perhaps a function of a relative slowing of total domain growth, or maybe a function of the ability of the organizations involved in domain registration to handle demand. Regardless, the data are interesting to track, though one should be careful not to draw conclusions — at some point, the laws of large numbers simply have to take effect on Internet growth, and this may be as much a function of the transition to a focus on building out intranets (which are internet networks under a particular domain, usually in-house, browser-based corporate networks) as anything else.

Internet Host Growth Is Impressive

The number of Internet hosts (a host, simply defined, is any computer whose services are available to other computers on the Internet), tracked by Network Wizards, has shown similarly explosive growth (Figures 2-7 and 2-8).

A note on the technical difficulties of Internet measurement
 There are several fundamental technical difficulties faced in accurately measuring total Internet users, which we note here to clear up any misconceptions about the feasibility of true Internet measurement:

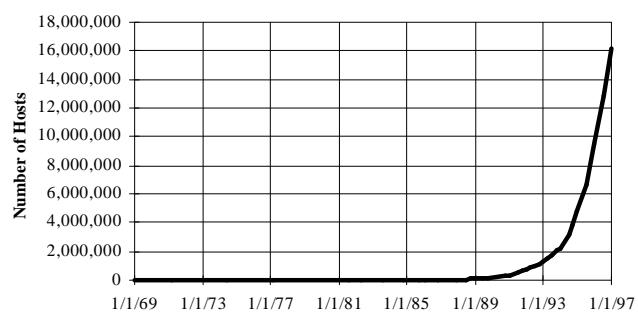
- 1) There is not necessarily any correlation between a host domain name and where it is physically located. A host

with a .UK domain name could easily be located in the U.S. or in any other country.

- 2) Hosts under the .edu, .org, .net, .com, or .int domains are assumed to be in the U.S. in our analysis of the geographic distribution of Internet hosts late in this section (a reasonably fair assumption), though they in fact could be located anywhere.

Figure 2-8

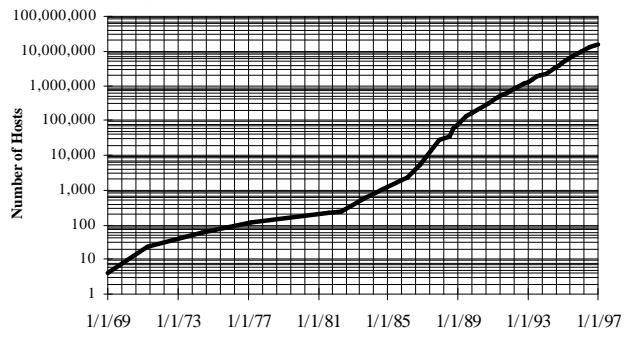
**Internet Host Growth (Normal Scale),
1969 through January 1997**



Source: Network Wizards (data updated each July and December and available at www.nw.com).

Figure 2-9

**Internet Host Growth (Semi-Log Scale),
1969 Through January 1997**



Source: Network Wizards (data updated each July and December and available at www.nw.com).

- 3) There is also not necessarily any correlation between a network number and a domain name (a single network number could span many countries, and a single domain may have hosts on multiple network numbers). A host used to be defined as a single machine on the Internet; however, the definition of a host has changed in recent years due to "virtual hosting," where a single machine acts like multiple systems and has multiple domain names and IP addresses. Ideally, a virtual host will act and look exactly like a regular host, so Network Wizards has treated them equally.

Finally, 4) it is impossible to tell if there are hosts or domains that could not be located. In summary, a safe rule of thumb is that it is not possible to measure the exact number of Internet hosts, where hosts are located, or how many users there are.

PC Growth Should Remain High at 15-20% Annually

We estimate there were 167 million PC users worldwide by the end of 1996 (Table 2-5), and we expect about 84 million PCs to ship in 1997. PC shipments are expected to pass TV shipments in the next year or two. Moreover, rec-

ord-high sales of modems and networking equipment imply that PC connectivity is on the rise. All of this lends credibility to the idea that the Internet as a medium for delivering information and entertainment content may become a significant alternative to TV. Coopers & Lybrand recently reported that 58% of Internet users indicated that their online time comes at the expense of watching television. **We estimate that, at the end of 1996, 28 million PC users, or 17% of total PC users, had Web access. We believe it's conservative to estimate that 157 million PC users may have Web access by the year 2000.**

Table 2-5

Base Case Estimates for PC, E-Mail, and Internet Users, 1984–2000E

Software Events												Windows 3.0			Web		Windows NT 4.0											
Hardware Events												486/CPQ LTE Portable			Pentium		Pentium Pro		Merced									
												1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997E	1998E	1999E	2000E
Worldwide																												
PC Unit Shipments (MM)	9	9	10	12	14	16	19	24	31	41	50	60	71	84	98	114	130											
Y/Y Growth	--	2%	12%	17%	17%	14%	19%	26%	29%	32%	22%	20%	19%	18%	17%	16%	15%											
PC Lifetime Shipments (MM)	23	32	42	54	68	84	103	127	158	199	249	309	380	464	563	677	807											
PCs in Use (MM) (a)	23	28	35	40	45	52	61	73	90	115	146	182	222	265	313	367	426											
Pct. with Two PCs (b)	2%	2%	3%	5%	6%	7%	8%	10%	15%	20%	22%	23%	25%	28%	30%	33%	37%											
Actual # of PC Users (MM)	23	27	34	38	43	49	56	66	77	92	114	140	167	191	219	246	269											
Y/Y Growth	--	22%	24%	13%	11%	14%	16%	17%	16%	20%	24%	23%	19%	15%	15%	12%	9%											
U.S.																												
PC Unit Shipments (MM)	6	6	6	7	7	8	9	12	16	19	23	26	30	35	40	46												
Y/Y Growth	--	-6%	3%	8%	6%	0%	12%	18%	31%	31%	23%	17%	15%	16%	16%	14%	15%											
U.S. Pct. of PC Unit Shipments	70%	65%	60%	55%	50%	44%	41%	38%	39%	38%	39%	38%	37%	36%	35%	35%	35%											
PC Lifetime Shipments (MM)	16	21	25	30	34	37	42	49	61	77	97	117	140	169	201	240	286											
PCs in Use (MM) (a)	16	18	21	22	23	25	28	35	44	57	69	82	96	112	130	151												
Pct. with Two PCs (b)	5%	6%	7%	8%	10%	15%	20%	22%	23%	25%	28%	30%	33%	37%	42%	48%	50%											
Actual # of PC Users (MM)	15	17	20	20	19	20	22	27	33	41	48	55	61	65	68	76												
Y/Y Growth	--	12%	14%	5%	0%	-5%	3%	9%	23%	24%	23%	18%	14%	11%	7%	4%	12%											
Worldwide Connectivity Estimates																												
# of PC Users (MM)	23	27	34	38	43	49	56	66	77	92	114	140	167	191	219	246	269											
# E-Mail Users (MM) (c)	1	1	2	3	4	5	6	8	12	18	25	35	60	80	130	180	200											
Pct. PCs with E-Mail Access	4%	4%	6%	8%	9%	10%	11%	12%	16%	20%	22%	25%	36%	42%	59%	73%	74%											
# Internet/Web Users (MM)	<1	<1	<1	<1	<1	<1	<1	<1	1	1	3	9	28	46	82	134	157											
Pct. PCs with Internet Access	1%	1%	1%	1%	1%	1%	1%	1%	1%	3%	7%	17%	24%	38%	55%	58%												
# Online/Hybrid Users (MM)	<1	<1	<1	<1	<1	<1	<1	<1	1	2	3	5	8	13	18	23	27	30										
Pct. PCs with Online/Hybrid Access	1%	1%	1%	1%	1%	1%	1%	1%	2%	3%	3%	4%	6%	8%	9%	10%	11%	11%										
Windows Installed Base (MM) (d)	<1	<1	<1	<1	<1	<1	<1	3	8	23	44	77	115	--	--	--	--	--										

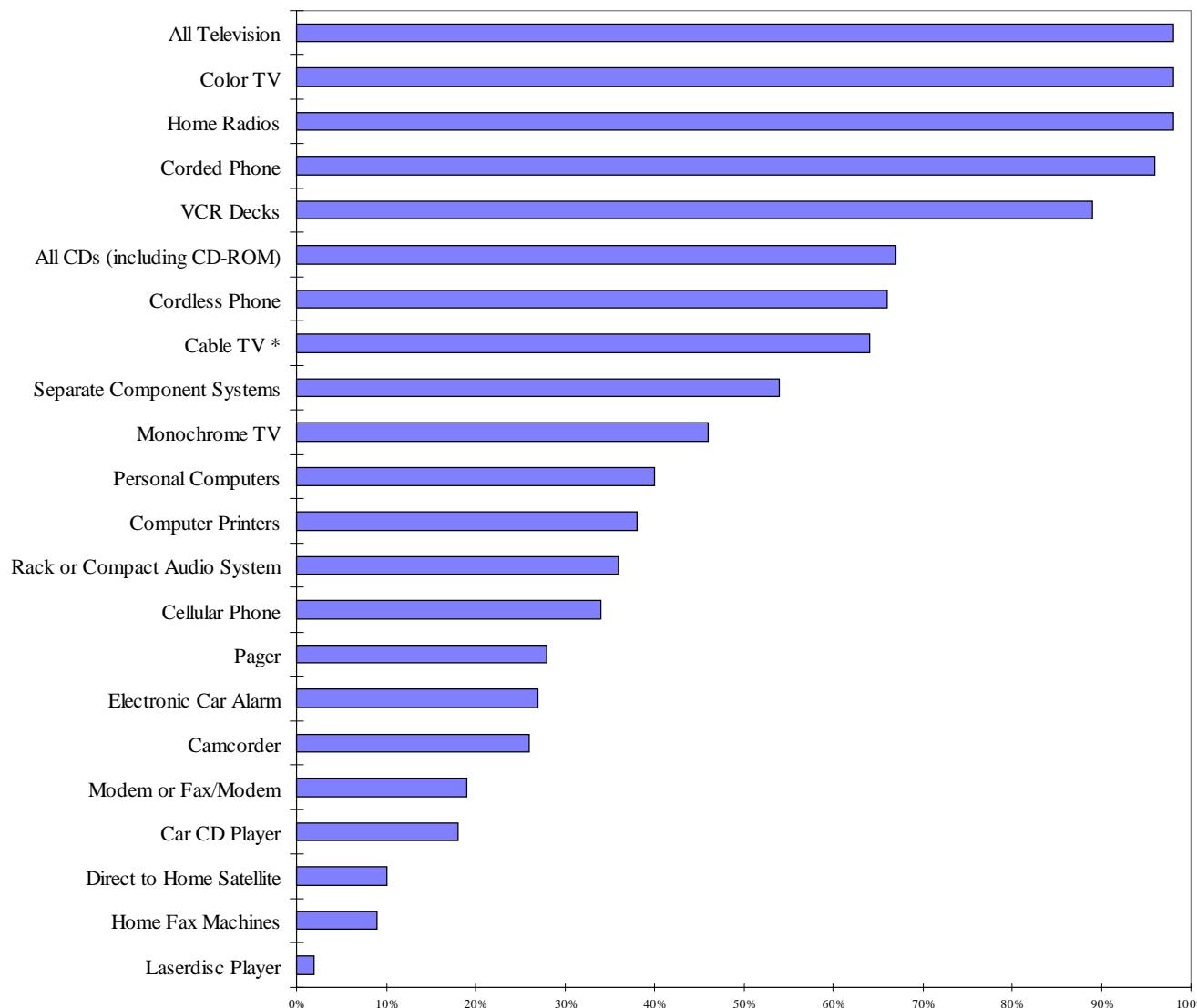
(a) Assumes that PCs have an average useful life of four years. (b) Estimated number of PC users that use second PCs: home, office, and portables.

(c) Estimates of all e-mail accounts. We estimate that 50% of 1995 e-mail users could be connected to the Internet. (d) Estimated legal (non-pirated/copied) shipments of Microsoft Windows. Arrows added to compare Windows ramp with Internet ramp.

Source: Morgan Stanley Technology Research.

E = Morgan Stanley Technology Research Estimate.

Figure 2-10

U.S. Household Penetration of Selected Consumer Electronics Products, January 1997

* Morgan Stanley Research Estimate.

Source: Consumer Electronics Manufacturers Association.

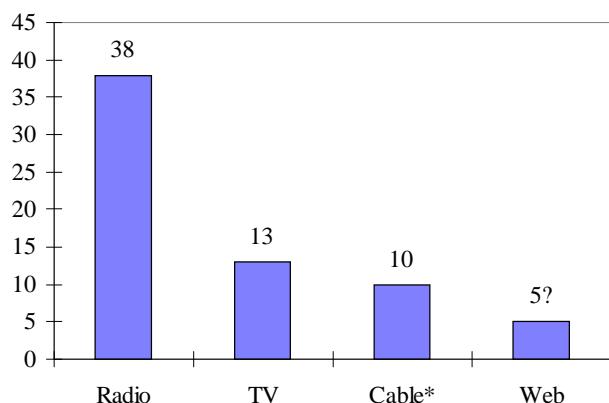
Table 2-6

U.S. Household Penetration of Selected Consumer Electronics Products

Video Products	January 1995	June 1995	January 1996	June 1996	January 1997
All Television	98%	98%	98%	98%	98%
Color TV	97	97	98	98	98
VCR Decks	85	87	88	88	89
Cable TV *	61	62	63	63	64
Monochrome TV	47	47	46	46	46
Camcorder	20	22	23	25	26
Laserdisc Player	1	2	2	2	2
Direct to Home Satellite	4	4	6	8	10
Mobile Electronics					
Electronic Car Alarm	24%	25%	25%	26%	27%
Cellular Phone	20	24	28	32	34
Pager	8	14	19	25	28
Car CD Player	11	13	15	17	18
Home Office Products					
Corded Phone	96%	96%	96%	96%	96%
All CDs (including CD-ROM)	N/A	65	66	67	67
Telephone Answering Device	54	57	60	63	65
Cordless Phone	52	55	59	64	66
Personal Computers	33	36	38	40	40
Computer Printers	30	33	36	38	38
Modem or Fax/Modem	10	16	16	18	19
Home Fax Machines	6	8	8	9	9
Caller ID Equipment	6	8	10	12	14
Audio Products					
Home Radios	98%	98%	98%	98%	98%
Separate Component Systems	53	53	53	54	54
Home CD Players	44	47	48	49	49
Rack or Compact Audio System	29	31	34	35	36
Personal Portable CD Player	N/A	18	18	19	20

Source: Consumer Electronics Manufacturers Association. * Morgan Stanley Research Estimate.

Figure 2-11

Number of Years for New Media To Reach 50 Million U.S. Homes

Source: McCann-Erickson, Paul Kagan Associates, and Morgan Stanley Technology Research. * We use the launch of HBO in 1976 as our estimate for the beginning of cable as an entertainment/advertising medium.

Figure 2-10 and Table 2-6 show the U.S. household penetration of various consumer electronics products. Given the growth in modem penetration, coupled with the likelihood that, soon, more PCs than televisions will ship in the U.S., and the expected rapid growth in Internet-enabled non-PC devices (such as TV set-top boxes that access the Internet through dial-up connections, like WebTV, or via cable modems) in the near future, we believe that **the percentage of Internet-enabled households will continue to ramp over the next several years**. We expect people and businesses to continue to spend more on personal computers and computer-related devices, as they have in the past, **and the Web to continue to reach penetration of the consumer sector faster than any other medium before it**.

Given the Early Stage in Internet Growth, Non-North American Usage Is at a Higher Rate of Adoption Than Any New Technology Ever

In determining the worldwide distribution of Internet usage, we believe the best proxy to use is the distribution of Internet hosts, as tracked by Network Wizards

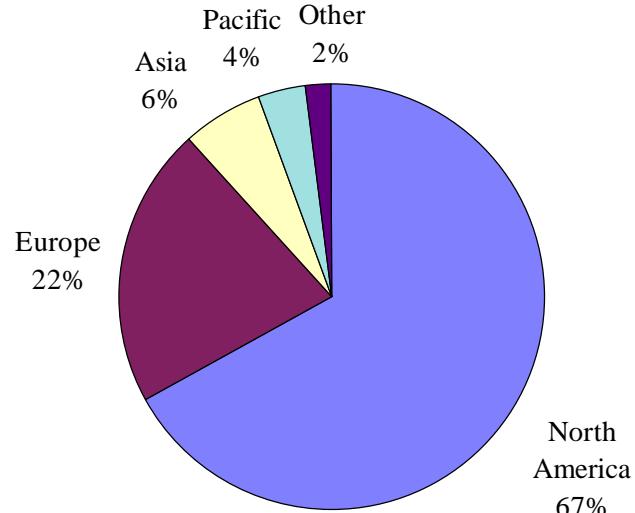
(www.nw.com). Despite the inherent technical issues connected with Internet measurement (detailed earlier in the chapter), using some basic assumptions it is possible, we believe, to paint a reasonable picture of the current geographic distribution of Internet usage. We use the host proxy for geographic distribution at each point in time, but not for usage growth over time, which we believe far outpaces the growth in the number of hosts.

North America still dominates, with 67% of hosts in January 1996 (down from 70% in January 1995), and growth of 219% over the past two years. The U.S. currently contains about 63% of the total number of hosts. Europe, the second largest region, has grown from 20% of total hosts in January 1995 to 22% in January 1997, and saw 222% absolute host growth. **Asia has had the most impressive growth in hosts, however** (550% over the course of the two years), **and has captured the most in terms of relative market share** (doubling from 3% to 6%).

We maintain that, though all regions should continue their rapid growth in hosts and usage, **regions outside the U.S. and North America will continue to capture share**. We roughly estimate that U.S./non-U.S. usage will reach parity around the turn of the century.

Figure 2-12

Regional Distribution of Internet Hosts, Jan. 1997



Source: Network Wizards (data updated each July and December and available at www.nw.com).

Table 2-7

Regional Distribution of Internet Hosts, January 1995 to January 1997

Region	Number of Domains January 1995	% of Total Domains January 1995	Number of Domains, January 1997	% of Total Domains January 1997	% Growth from January 1995 to January 1997
North America	3,372,551	70%	10,746,088	67%	219%
United States	NA	--	10,110,908	63	--
Canada	NA	--	603,325	4	--
Mexico	NA	--	29,840	< 1	--
Other North America	NA	--	2,015	< 1	--
Europe	1,085,317	20	3,495,269	22	222
Asia	151,773	3	985,792	6	550
Pacific	192,390	4	599,747	4	212
Latin America	NA *	--	134,267	1	--
Africa	27,130	1	105,428	1	289
Middle East	13,776	< 1	58,681	< 1	326
Other	NA	--	21,088	< 1	--
Total	4,851,873	100%	16,146,360	100%	233%

*Accurate Latin American results were not obtained. NA = Not Available.

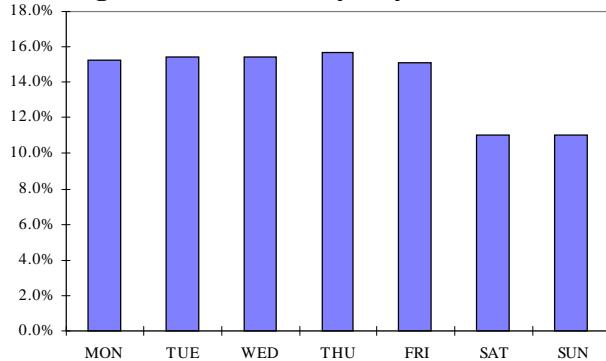
Source: Network Wizards (Data updated each June and December and available at www.nw.com).

Web Usage — Noontime, During the Week

Although the amount of Web traffic is rapidly increasing, Web usage patterns remain fairly stable. In a recent study, I/PRO found that daily traffic, which has a heavy business-user bias, is highest on weekdays (Figure 2-13), and that

Figure 2-13

Percentage of Web Traffic by Day of Week



Source: I/PRO Research.

Computer Spending — High and Higher?

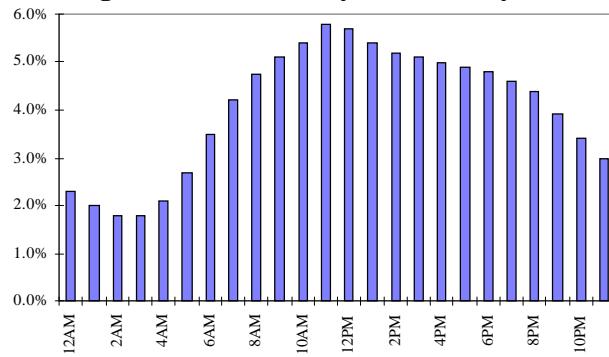
Computer spending has sustained solid growth in the past, as a result of both business and individual spending, and growth in spending on Internet technologies by both groups should extend this trend.

According to Steve Roach, chief economist at Morgan Stanley, with total business spending on all forms of information technology (computers, telecommunications equipment, and the like) now up to 43% of inflation-adjusted business outlays on capital equipment — easily the largest

about 60% of all traffic occurs during the nine-hour workday (9 a.m. to 6 p.m.), as recorded by each server in its time zone; the highest traffic level is around noon (Figure 2-14). America Online, unlike the Web, experiences a traffic surge during the prime-time evening hours.

Figure 2-14

Percentage of Web Traffic by Time of Day



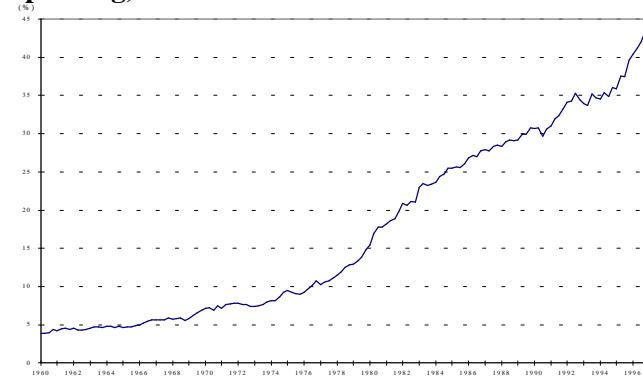
Source: I/PRO Research.

line item in corporate capital spending budgets — there can be no mistaking the commitment to the productivity bet related to technology purchases (Figure 2-15).

If past is prologue, we believe that businesses should continue to invest in technology in the effort to maintain and to enhance competitive advantage. Similarly, the share of disposable income individuals are spending on technology, specifically personal computers, has been consistently increasing since 1980 (Figure 2-16).

Figure 2-15

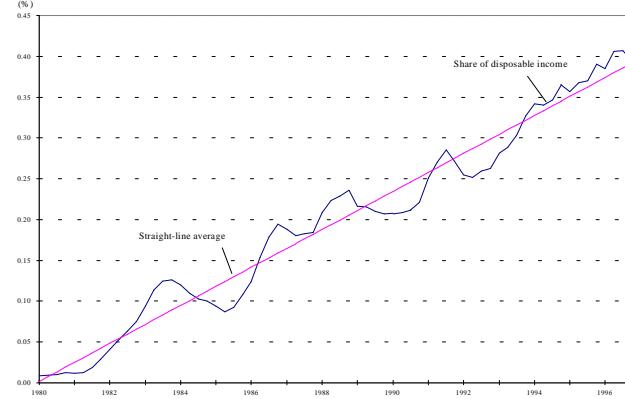
U.S.-based Information Technology Spending As a Share of Business Capital Equipment Spending, 1960–96



Source: U.S. Department of Commerce

Figure 2-16

U.S.-based Nominal Computer Expenditures As a Share of Personal Disposable Income, 1980–96



Source: U.S. Department of Commerce

Chapter 3: The Internet's Potential as a Retailing Channel

Summary

- ◆ With an estimated **35 million Web users today**, and our forecast of **150 million or more by the year 2000**, we continue to believe that the Internet may be the next mass medium. The Internet has the potential to become a powerful new **distribution channel** for retailers. History has taught us that **changes in the distribution of goods and services can create substantial business opportunities for deft companies**. Though most Internet-based retailers will likely fail, the strongest companies should survive.
- ◆ The Internet provides great **one-to-one tailored marketing** — we believe that a vendor's ability to interact with users at the point where they view a site's ads and content may prove to be a key facet of Internet retailing.
- ◆ **The biggest retail market opportunities on the Internet will likely coincide with mail-order opportunities.** In our view, the markets for goods and services that have the best potential for Web retailing are as follows: insurance/financial services; computer software/hardware; travel; books; magazines; music/video; flowers/gifts; and autos. Specific retail categories that we believe may take longer to develop (or may never develop fully) include: groceries/food; apparel; sporting goods; tools/home repair; and toys.
- ◆ The **convenience of online shopping is key** — given the increasing time constraints placed on the average consumer, the ability to "purchase time" by buying online should be an attractive alternative to many.
- ◆ **Web demographics are compelling for marketers and retailers. Favorable teenage demographics** over the next ten years could act as a **catalyst for Internet shopping**.
- ◆ A **variety of shopping formats** will likely be successful on the Internet.
- ◆ **Our Internet team thinks first-mover advantage for Web retailers may be important:** Barriers to entry may rise in certain segments as established Web merchants (and powerful, focused traditional retailers of the Barnes & Noble ilk) gain solid brand positions. **The retail group, by contrast, doesn't think being first matters much, since barriers to entry will likely remain low on the Web.**
- ◆ Strong **brand-name recognition** should be a critical success variable. We expect this branding element to result in a couple of companies in each sector dominating mind share and profits (what we call the "Wal-Marting" of the Web), while the rest struggle, with varying degrees of success.
- ◆ **Inventory risk** and who carries it, and who has **scale**, are key issues for Internet retailers.
- ◆ **Pricing benefits** for Web shoppers may, in many instances, be **offset by shipping costs**, though certain retailing categories (especially in mid-to-high-priced commodity-oriented products) should experience lower pricing in general. It also remains to be seen how much traditional retailers who experience margin expansion due to Internet-induced shipping/handling/inventory savings will use this advantage in lowering prices further.
- ◆ There will likely be **heavy price and marketing competition as retailers try to dominate the various retailing categories** on the Web. And **revenue growth should be easier to nab than profits**.
- ◆ Over the last few decades, several **new retail concepts** — category-killer retail stores, catalog companies, and home/TV shopping — were each expected to significantly alter the traditional retail landscape and adjust market shares; category-

killer stores did, while home/TV shopping and mail order didn't. This chapter includes some lessons from the history of the mail-order industry.

- ◆ We believe that key criteria for successful retailing on the Internet will include: 1) pursuing a **viable market opportunity**; 2) possessing/creating a **leading Web brand**; 3) having a **low cost structure** with economies of scale to offset gross margin pressure; 4) superior database/fulfillment/distribution capabilities; 5) knowing how to **leverage technology** (and interactivity and databases) while **maintaining creativity**; 6) creating a sense of **community/membership** among customers; and 7) understanding how to **drive profits in addition to revenue**. Finally, retailers should provide customers with a **broad selection, competitive prices, and great service, as well as ease-of-use and speedy delivery**.

Web Usage Growth and Demographics Are Compelling

According to our estimates, there are an estimated **35 million Web users** today, and there should be at least 150 million by the year 2000. We estimate that 15% of Web users have purchased an item over the past 12 months. So far, the product bias has been skewed toward the youngish, affluent male, who accounts for a disproportionate percentage of those Web users. Over the next five years, the rapid expansion of the channel should increase consumers' propensity to spend on the Web and rebalance today's gender bias.

In considering how much the Internet audience is worth to advertisers, it is useful to highlight the makeup of the market into which they are selling. Information about the demographics and purchasing patterns of Internet users is emerging, and current data offer what we think is compelling evidence for advertisers to consider the Internet as a viable option for branding, promoting, and selling products and services.

Contrary to some popular perceptions, Internet users are not young, poverty-stricken nerds — in fact, the average Internet/online age has been placed by various studies at between 35 and 40 years. A study by GVU (Georgia Tech's Graphics, Visualization, and Usability Center) from October 1996 indicated that 69% of Web users are male, 56% have a college or advanced degree, 88% are Caucasian, and the average mean income is \$60,800.

A recent IDC study places the mean income number for online subscribers (which probably excludes some lower-income college students) at about \$76,000. The IDC study also indicated that in 49% of online households, women are active online users — which clearly shows higher female participation than the GVU data above. IDC indicated that

in 75% of households, men are active online. While there is clearly a range in the numbers, there is definite directional significance here, in our view.

For many advertisers, these are attractive demographics, which we believe will mean an increased willingness among advertisers and retailers to spend, or spend more, for Internet exposure and to generate Web-based sales.

In addition, **strong teenage demographics** over the next ten years could act as a catalyst for Internet shopping. The advent of catalogers came at a time when the number of busy, dual-income families of the 1970s and 1980s was on the rise. The rollout of Internet retail is timed with extremely favorable teenage demographics. This is also the sector of the population that is most PC-literate — it's hard to find a middle-to-upper-income kid without an e-mail address. The surge of teenage consumers over the next ten years could meaningfully change and expand the viability of Internet retail sectors that are considered marginal today.

The Internet Is a New Distribution Channel

We believe the Internet has the potential to become a powerful new **distribution channel** for retailers. Many traditional retailers will likely adapt their businesses to take advantage of this channel. Catalogers have been among the first to build a Web presence, given their existing direct-marketing mindset and infrastructure. Many pure-play Internet retailers have emerged; however, we think the challenge will be to build scale, rather than simply niches. We expect most Internet-based retailers to fail, with only the strongest companies surviving — as the saying goes, "Retailing is a tough business."

History has taught us that **changes in the distribution of goods and services can create substantial business opportunities for deft companies.** The following are instances of companies that were able to capitalize upon different channels of distribution (Figure 3-1): Sears and postal mail orders; Avon and automobile/door-to-door-based marketing; Lands' End and Dell and telephone mail order; Federal Express and overnight package delivery; Wal-Mart and superstores; QVC and widespread consumer usage of cable TV; CUC and direct-mail membership marketing; Microsoft and PC OEM software; and Netscape and Internet software.

In time, we believe that the **Internet may help drive commerce to maximum efficiency**, and that purchases can be made at wholesale (plus shipping) plus $n\%$, where $n\%$ represents sales and marketing costs. While catalogers can't afford to use this approach, given the high fixed cost of mailing catalogs, Internet retailers should be able to. A customer who is prepared to complete the purchase directly should be given the opportunity to buy at wholesale plus shipping costs. However, once shipping cost is factored in, the equation can be a wash for many purchases.

Efficiency in all areas should be key, and critical mass should be the key driver of the economics in a highly price-

driven mode of distribution. Certainly, one of the beauties of retailing on the Internet for businesses is that customer service and support costs can be reduced substantially, as more customer support can be completed by customers themselves and e-mail support/response can be efficient. We believe that companies with scale, critical mass, or unique value-added services offered through their Web site(s) have opportunities for market share gains and the ability to acquire new customers on a global basis.

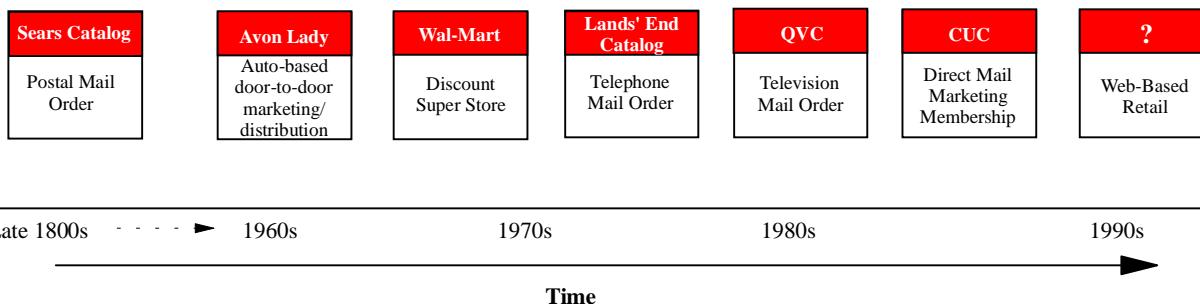
The Web Provides One-to-One Marketing Capabilities

The Internet can provide excellent one-to-one tailored marketing — we believe that a vendor's ability to interact with users at the point of ad/site/content viewing may well prove to be a key facet of Internet retailing. We think the distinction between traditional advertising and marketing messages on TV, radio, and in print and product sales resulting from that type of promotion may become blurred on the Internet, as advertising becomes seamlessly integrated with the purchasing process. This should lead to streamlined transaction processing and online help directly to the user through the Web.

Figure 3-1

The Multiplication of Retail's Distribution Channels

- The Internet represents the potential creation of the greatest, most efficient distribution vehicle in the history of the planet. E-mail addresses will rival phone numbers
- Changes in the distribution of goods and services create substantial business opportunities for deft companies



Source: Morgan Stanley Equity Research.

Biggest Retail Market Opportunities on the Internet Will Likely Coincide with Mail-Order Opportunities

In order to determine which retailing segments might ramp fastest on the Web, we looked at the highest-volume areas in the mail-order market. Our summary chart (Figure 3-2) divides retail into a handful of subsegments. We compare fragmented markets, where selection, information, convenience, and price are especially critical shopper variables, and where shoppers may prefer to do their own legwork if it's easy to do, with the revenue/market opportunity for Web-based revenue. In our view, the markets for goods and services that have the best potential for Web retailing are **insurance/financial services, computer software/hardware, travel, books, magazines, music/video, flowers/gifts, and autos.**

In general, we believe certain types of products should do well in terms of Internet sales: commodities/durable goods; products with a good brand name and consumer recognition; new, innovative, or technically superior products; products where the consumer believes that pricing varies widely and that it's hard to get the best deal (e.g., cars or airplane tickets); and hard-to-find, specialty items.

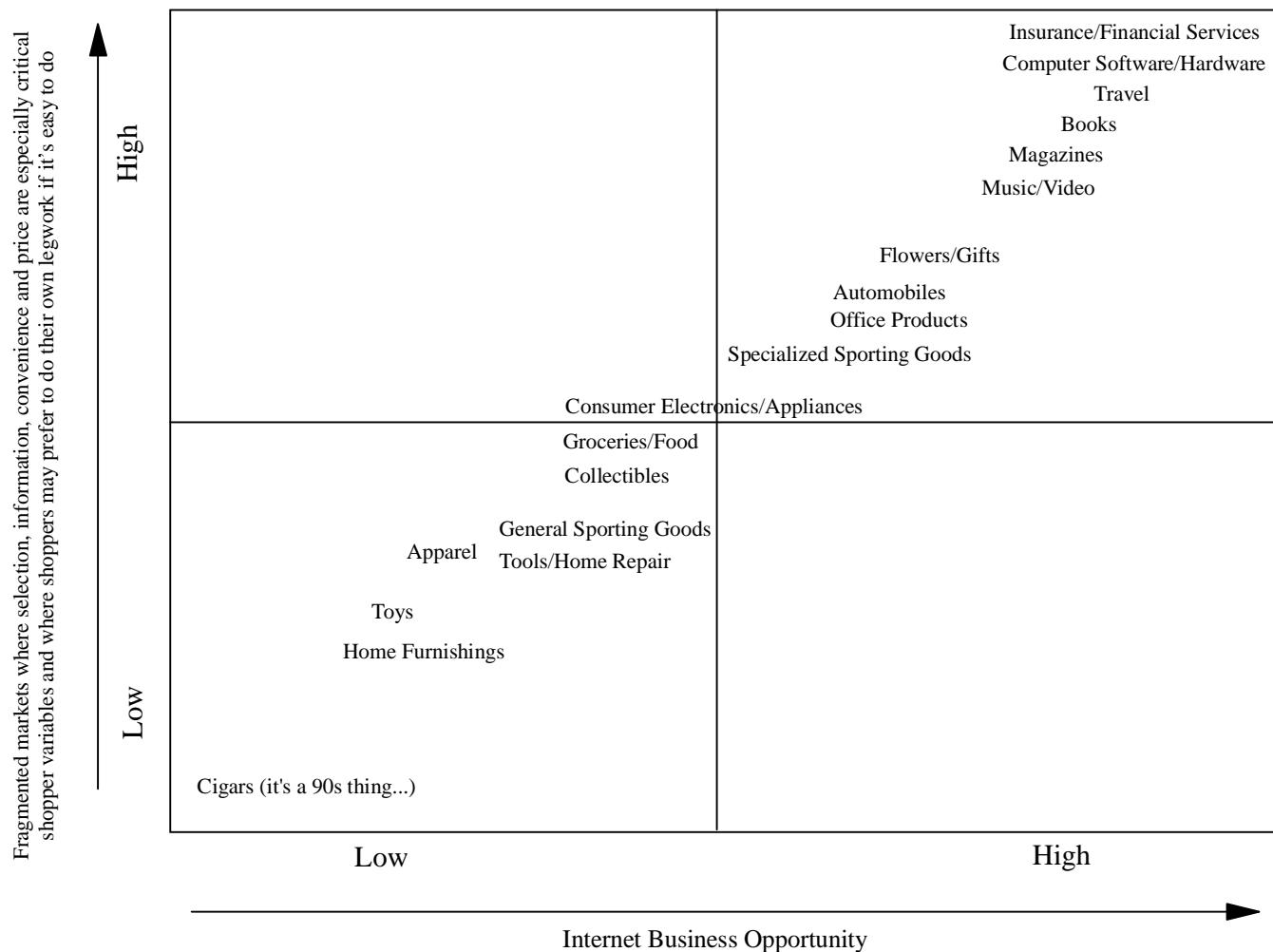
We think specific retail categories that may take longer to develop, or may never fully develop, include groceries/food,

apparel, general sporting goods, tools/home repair, and toys.

Over the next several years, Internet retailing will likely pose the greatest challenge to traditional mail-order retailers whose product areas overlap with the faster-growing Internet sectors, such as PCs, books, or music. Current male dominance on the Internet may adversely affect store sales of these kinds of products. Here, those retailers will probably need to develop a viable Internet strategy, as CompUSA, Barnes & Noble, and Tower Records (to name a few) have already done.

Currently, we see some significant challenges to selling products that appeal to women on the Internet. Easy replenishment items (cosmetics and personal care) are low-priced and cannot be distributed profitably due to the high shipping costs. Other issues for these kinds of products include: apparel looks poor online due to technology limitations; impulse component of shopping is lost online; and long-term, Internet retailing could adversely affect the growth of the catalog industry, as women's participation in Internet shopping increases and technological issues are resolved. Again, for catalogers today, the strategy should clearly be to build a strong Internet presence and eventually shift capital investments to the Internet rather than traditional cataloging.

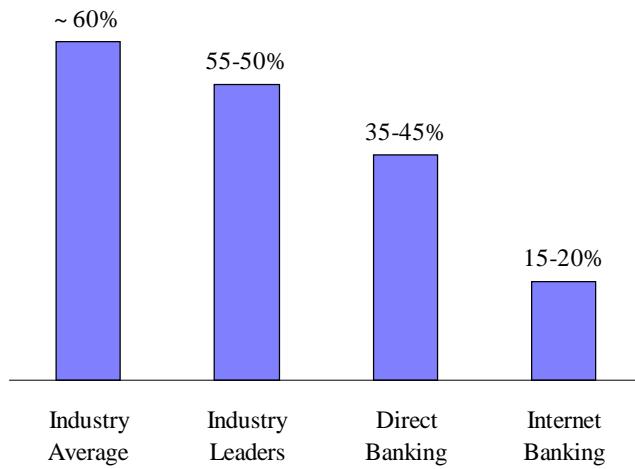
Figure 3-2

Internet Opportunities for Various Retail Categories

Source: Morgan Stanley Equity Research

Figure 3-3

Traditional Bank Expense Ratios Compared to Estimated Internet Banking Expense Ratios



Source: Booz-Allen & Hamilton, Inc.

Internet-Based Financial Services — A True Sweet Spot

One area that is likely a true “sweet spot” for Internet retail is in the insurance and financial services industries.

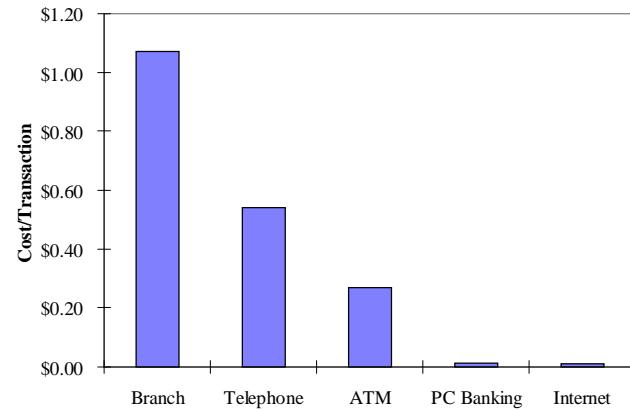
Clearly, the Internet offers the opportunity for significantly decreased transaction costs, coupled with increased savings and convenience for customers.

Lower Operating Expenses

In July 1996, Booz-Allen Hamilton conducted a study of Internet-based banking, including a survey of 285 bank-

Figure 3-4

Internet Transactions Cost Far Less Than Those in Traditional Branches



Source: Booz-Allen & Hamilton, Inc.

sponsored Internet sites (commercial banks, credit unions, savings banks, and thrifts). The results confirm that Internet-based banking offers an improved cost structure: Figure 3-3 shows Booz-Allen’s estimate for expense ratios for Internet banking of 15–20%, versus the industry average of about 60%. For financial services organizations, moving customers online can mean reduced headcount, lower transaction costs, improved service hours (24x7), reduced exposure to fraud, better data integrity, and increased information about customer activity, which translates into a greater opportunity to sell more product.

Reduced Cost-per-Transaction

Taking another pass at savings from a cost-per-transaction perspective, Booz-Allen also estimated that **Web-based transactions would cost over 100 times less than traditional branch-based transactions**, and would even be more than 25 times cheaper than ATM transactions (Figure 3-4 and Table 3-1).

Reduction of Dependence on Bricks and Mortar

The ubiquity of Internet-based business is especially relevant for banks, which have had to spend a great deal of capital to open and maintain many branches to provide the convenience that customers have demanded. Online banking provides the opportunity to centralize costs in one “super-branch,” creating huge leverage and reducing the need to maintain as many branches. Though Figure 3-5 is a bit extreme (banks will, of course, not be able to abandon 500 branches for a single Internet site anytime soon), the concept of efficient centralization of customer contact through a virtual channel will become increasingly important for financial services organizations.

Table 3-1

Internet Transactions Cost Far Less Than Those in Traditional Branches

Channel	Cost/Transaction
Branch	\$1.07
Telephone	\$0.54
ATM	\$0.27
PC Banking	\$0.02
Internet	\$0.01

Source: Booz-Allen & Hamilton, Inc.

Many Web Shopping Formats Should Do Well

While it's way too early to tell, we believe that cyber-shopping will likely mimic traditional shopping, with multiple channels of distribution.

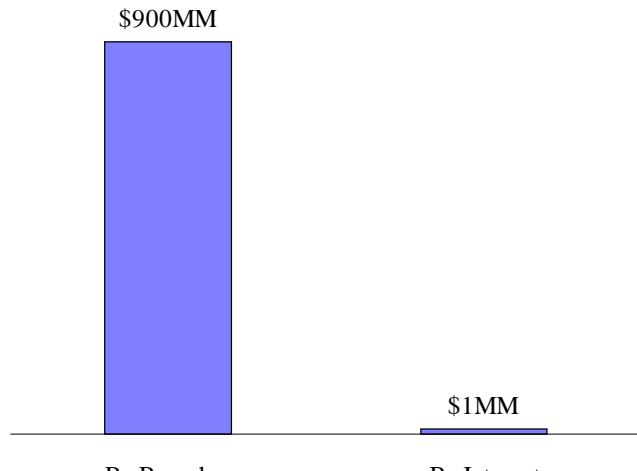
If one looks at a continuum of retailing types from broad-line to speciality retailing (Figure 3-6), the Web looks like the traditional world: Shopping malls with branded products and stores (like the Stanford Mall in Palo Alto, Calif., and AOL Marketplace) at one end, and micro-niche stores that carry only specific products (like The Gap) at the other end.

A variety of shopping formats will likely be successful on the Internet. Just as traditional retailing has developed to offer a myriad of different ways to sell to the consumer, Internet retailing will likely do the same. We should have the membership form of shopping (CUC), the shopping mall (America Online), discounters (Wal-Mart), pure-play category-killers (Amazon and Barnes & Noble), niche specialty plays (1-800-Flowers), new mega-brands (Microsoft), and supermarkets and drug stores (Peapod).

We believe that the pace of retailing on the Internet, and the rapid development of new technologies, will force retailers to actively improve and restructure their online stores. In the bricks-and-mortar world, retailers must continually remodel stores to keep them fresh and attractive to customers. On the Web, we think retailers will have to

Figure 3-5

Estimated Investment Cost to Reach a Market Area With 10 Million Potential Customers



No. of Sites: 500–600

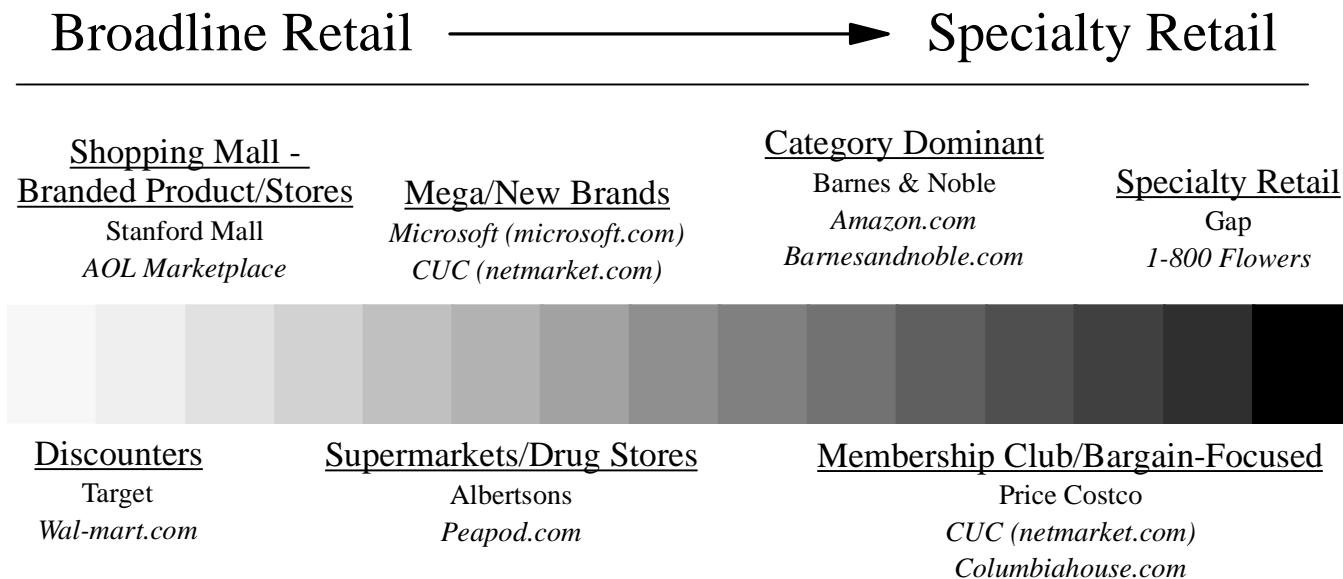
1

Cost/Site: \$1.5–2.0MM
\$1MM

Source: Booz-Allen & Hamilton, Inc.

work harder to keep sites fresh. The rapid pace of technological change should make it easy for an upstart to hit the net with the latest technology. While we don't think such upstarts will be able to win market share on technology alone, it should still force the established players to work harder to keep their sites up-to-date.

Figure 3-6

Retail Cyber-Shopping Will Likely Mimic ‘Concrete’ Shopping, but With More Market Share Concentration

Italics indicate Web-based companies.

Source: Morgan Stanley Equity Research.

Barriers to Entry — Low or High?

While Web retailing barriers to entry are even lower than in traditional retail, **our Internet team believes that barriers to entry for Web retailers have been very low but are rising quickly**. Our team also thinks we are close to “game over” for Internet retail start-ups, and that traditional retailers may have about 12 months to aggressively ramp their Web sites before the going gets tougher for new entrants on a sector-by-sector basis. Traditional vendors with the most powerful brands, combined with powerful advertising and compelling cross-marketing capability (especially TV-based; both CNN and QVC have been very successful at driving traffic to their Web sites by using their TV reach), should have the most upside for share gains in their respective retailing sectors.

Our retail team believes that Web retailing barriers to entry will remain low. In traditional retail, almost anyone can and does open stores or start up catalogs. On the Web, shoppers are only a click away from trying a new store that they believe may offer better products, selection, service, or technology. When these new stores are being promoted by established retailers with lots of marketing dollars and brand recognition, driving new visits should be relatively easy.

Increasingly though, as the larger dollar sectors of retail become more mature and, we expect, become dominated by just a couple of powerful retailers, new market entrants should find themselves in smaller and smaller niches. In traditional retail, we've gone from Wal-Mart's market entry 35 years ago, which transformed the entire retail landscape, to today, where we have seen the debuts of many more niche-oriented retailers — for example, the pet-store category killers.

As always, sustained competitive advantage and sustained market share growth and profitability should be elusive and shared by just a few.

In the near term, online market fragmentation and clutter should ultimately gravitate to market concentration, much as we have seen in the traditional retail world. Note that there are currently more than 10,000 consumer bookstores in the U.S., and, even at the Internet's early stages of growth, already more than 500 Internet booksellers. This has always been the way of retail. The perceived attractiveness of a marketplace draws multiple competitors. This results in highly competitive prices and, eventually, the emergence of two or three dominant players. In the traditional retail book business, we believe this will be Barnes &

Noble and Borders, primarily. On the Web, perhaps there will be three or four: Barnes & Noble, Borders, Amazon, and CUC's Book Stacks.

Brand-Name Recognition Should Be Key

In Internet retailing, as in traditional retailing, strong **brand-name recognition** should be a critical success variable. This branding element likely will result, as it usually does, in a couple of companies in each sector dominating mind share and profits, with the rest struggling to achieve varying degrees of success. The opportunity for retailers to gain market share by optimizing the Internet as a new channel may be significant — already, Barnes & Noble's AOL revenue run rate is at 70% the pace of its mail-order business, and it just launched on AOL a month ago. And it is notable that Charles Schwab had five times more online accounts than E*Trade at the end of 1Q.

Cyberbrands or Traditional Brands?

Some of Each Will Likely Be Winners

We believe that on the Web, there will be a few super-cyberbrands in each category that garner the lion's share of the market. So far, we have seen it in a number of online categories, such as: search, where Yahoo!, AOL, and Excite are battling it out for the top slot, currently held by Yahoo! (Figure 3-7); software, with Netscape and Microsoft; technology news, with CNET and Ziff-Davis; books, with Amazon.com, and now Barnes & Noble; sports news and information, with ESPNET SportsZone and CBS SportsLine; and travel, with AMR/Sabre's Travelocity and Microsoft's Expedia.

One thing that's really tough to determine is whether new brands created on the Web, like Yahoo!, Amazon.com, or E*Trade, will win or whether traditional brands that are migrating to the Web, like Barnes & Noble, Charles Schwab, and Intuit will win. Time will tell, of course. But it's our sense that the winners will be a combination of both sets of players, with success being determined by the best brand names accompanied by great infrastructure, economies of scale, and quality of experience. Those companies that don't create a significant Web presence in the next two years may have a tough go of it when they get there (e.g., see our discussion below of Yahoo!'s market-share battle).

Web studies have shown that users prefer to go to a small number of sites (via bookmarks) once they have become

accustomed to Web usage. This argues for a few leading brands in each category of Web usage. Typically when retailing market share has been fragmented, it has usually been related, in part, to geographic limitations of store fronts.

The Big Dogs Tend to Win in Media

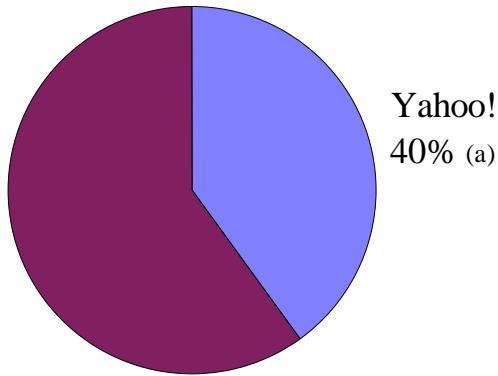
Since we believe the Internet will emerge as the next mass medium, it is significant to note that media tend to be ruled by oligopolies. Scale is important, and being No. 1 in a market is far more lucrative than being No. 2. In newspapers, there is typically one leading paper in each major city. Time Inc. magazines receive about one-third of all magazine advertising. In each of the top 50 radio markets, the top three operators control an average 65% of revenues. Furthermore, the top five radio operators in the U.S. control 20% of the \$12-billion-plus in industry revenue, and the top 15 control over one-third (34%). In broadcast TV, ABC, CBS, NBC, and Fox rule. In cable television, there is usually one leading brand per category — for example, MTV owns music, ESPN owns sports, and CNN owns news. In the online world, AOL is winning today based on total subscribers.

In media, a few brands typically lead each category of "programming," but a few companies tend to own leading brands across media. At first, relatively low barriers to entry for creating Internet-related businesses will likely allow for many players to compete in the same market. However, given the power that a strong brand (combined with key cross-marketing efforts) affords the companies which have one (and the prohibitive cash burn of many of the Internet content providers to date), we expect eventual consolidation of properties and brands for Internet companies as well.

Real estate, location, and distribution channels will remain important assets on the Internet. In the bricks-and-mortar retailing world, location is just about everything. Consumers shop in places that are convenient. Retailers duke it out to capture the best real estate in any given market. On the Web, retail location is still important, but takes the form of banner advertisements and site links on frequently trafficked locations. On the Web, we have seen quite a bit of jockeying for prime real estate on high-traffic areas like Netscape, Yahoo!, AOL, and MSN (note Barnes & Noble's recent agreement with *The New York Times* to lock up ac-

Figure 3-7

Web Brands — A Lesson Learned from Yahoo!
(Search Engine Market Share)



(a) Market share in pages delivered per day.
Source: Morgan Stanley Equity Research.

C2Q96 — Top four search engines (Yahoo!, Excite, Lycos, Infoseek) complete IPOs. Uncertainty about concept/viability of Web search engines is high, and stocks volatile. But Yahoo! (\$32) is share/reach leader.

C2Q97 — Yahoo! still the leader, and its stock market valuation is up \$675 million (to about \$1 billion) since its IPO. Competitors agonize over how to compete — others, arguably, have worked harder and smarter but can't beat the leading search brand, Yahoo! The ability of a non-Web brand to knock Yahoo! out of its leadership position is nearly nil, in our view. Best prospects probably belong to AOL, Microsoft, and Excite.

cess to *The New York Times Book Reviews* as a prime example of this phenomenon.)

Scale, Scale, Scale

Inventory risk and who carries it, and who has scale, are key issues for Internet retailers. There are a few retail sectors where Internet companies can take advantage of a very well developed wholesale/distribution network. This is true of the book industry, where Amazon's claim of carrying 2.5 million titles is only possible because other manufacturers/distributors carry most of the inventory risk — note that many of these books are out-of-print. However, for most other retail sectors, it is the retailer, not the manufacturer/distributor, that bears the inventory risk. Therefore the ability to carry a dominant assortment of

product and have real scale requires a powerful capital structure in many cases. This would mean that the scale advantage could go to a Home Depot, a Circuit City, a Toys R Us, or a Wal-Mart almost every time, since the Internet start-up can rarely offer that dominant an assortment of products.

There May Be Lower Inventory Costs Online

However, thanks in part to the massive streamlining of communications that can be offered by the Internet (from consumer to vendor to distributor to manufacturer to air courier), the amount of inventory that needs to be carried by retailers may be reduced in many instances — this is clearly CUC's expectation.

At a minimum, Internet retailers should be able to eliminate the duplicative inventory that bricks-and-mortar retailers use to display offerings in each store. At a maximum, Internet retailers should be able to eliminate inventories altogether, by relying on wholesalers (e.g., CUC, Amazon.com). As a point of comparison, Amazon.com had 1996 inventory turns of 42, compared to Barnes & Noble's 1996 turns of 2.1. But retailers who rely solely on wholesalers pay a hefty price in terms of lower gross margins. In comparing Barnes & Noble and Amazon.com (noting that Amazon has yet to hit scale), we estimate this gross margin penalty at about 600–800 basis points. The lesson learned by bricks-and-mortar retailers over the years is that there is a point of scale and volume where it no longer makes sense to rely on wholesalers, because customers won't pay the price premium.

Internet Retailing Should Require Less Overhead

Internet retailing's relatively low overhead provides it with inherent cost advantages compared to bricks-and-mortar book retailing. First and foremost, the need for most physical selling assets is eliminated, such as the stores, the fixtures and cash registers in them, and the sales associates. The Web site becomes the store in which the customer browses, and it's cheaper to maintain a single Web site than a multi-location store front.

Internet retailing is also highly automated, and the use of human staffers can be more efficient and effective. In addition, advertising is currently cheaper on the Web than in traditional advertising mediums, such as television, radio, and newspapers, though this may change as the Web ma-

tures as an advertising medium (and cross-marketing requirements grow). Customized service can be provided much more economically on the Internet as well. And the Internet retailers will have the ability to customize their sites to customers' needs and, in part, shape demand. We do believe, though, that total advertising costs and the costs of customer acquisition for Web retailers may well continue to rise, as competition increases and traditional players come online with big brands, big pocketbooks, and a willingness to invest heavily in building a customer base.

Competitive Dynamics — Is It All About Price? Not Quite, but Close

A challenge for the development of Web retailing is that transformation in retail has only occurred historically when retailers were able to offer consumers meaningfully better value. On the Web today, the perception is that Internet retail will offer tremendous product selection, 24-hour shopping (read: great convenience), and, above all, lower prices.

In the bricks-and-mortar world, retailers generally compete on price, convenience/location, product selection, and customer service/ambiance. The basic competitive framework shouldn't change on the Net, but the dynamics of competition within each of these categories should be different.

All else being equal, consumers would prefer to pay less for any particular item. Some customers are very price-sensitive, and will perform time-intensive cost comparisons. Others are less sensitive and will not spend time shopping around. On the Internet, we think pricing will become even more important than it is in bricks-and-mortar retailing, due to the ease with which consumers can compare prices. Shoppers will literally be able to compare prices within seconds by switching from Web site to Web site (or by having intelligent agents do it for them). Provided that shipping services are equal, there will be little incentive to order from the higher-price provider.

However, it's notable that when the cost of shipping and handling — charged to the consumer — is included in the total price, in many instances the apparent price gap becomes a wash with traditional retail prices. Our retail team believes that the lack of major price benefits in many categories may govern retail growth over the Internet. Instead, the Net may share similar characteristics to catalogs: Mail

order grew substantially, but it never forced substantially lower prices across the board for mail-order companies or traditional retailers.

One aspect of traditional retailing that customers have been willing to pay proportionally for is service/convenience. On the Web, technology has a substantial opportunity to change the way service is provided and how much it costs, through the use of automated customer support tools and intelligent shopping agents. This is clearly an area where thrifty customers will be able learn much more about products and services than they have in the past, while paying substantially lower prices. Financial services (Charles Schwab, E*Trade, Intuit) are leading the way here.

We believe that product selection will be less of a differentiator on the Internet because it will be relatively easier and less expensive for retailers to showcase complete selections of products. On the Web, the cost of retail display space is not an issue, and the possibility of virtual inventories makes it even cheaper. We would also lump distribution issues into the product selection dynamic. In the bricks-and-mortar world, a retailer's decision to carry an item also depends on how well it believes it can distribute the item. Does the implied gross margin cover the costs and provide enough return?

Competition Should Be Fierce — Revenue Growth Should Be Easier to Nab Than Profits

Given the size of the potential Internet audience and the opportunity to thereby increase distribution and simultaneously cut costs, combined with the relatively low barriers to entry in retail markets in general and on the Internet specifically, there will no doubt be heavy competition to dominate the various retailing categories.

On the flip side, one might argue that the vendor community could resist undermining the current structure, but significant demand will likely be met by supply from smaller vendors or new entrants in the market, with potential market share losses for the non-participating vendors.

On the Web, the prospect of potentially smaller margins and less profit for these smaller vendors should not outweigh the potential upside to gaining market share, shifting consumer loyalties, and establishing brand. The result may well be an increase in overall demand, but a decrease in profit levels due to the pricing power and choice that the

Table 3-2

Average Operating Statistics of Selected Retail Categories and Companies, as a Percentage of Total Revenue

	Mall-Based Apparel, Specialty	Apparel, Strip-Center/Off-Price	Dept. Stores/Mass Merchants	Discount Stores	Direct Marketers	Hardlines	Niche Retailers	Barnes & Noble (BKS)	Borders (BGP)	Amazon
Net Sales	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Gross Margin	36	27	34	22	34	28	34	37	27	22
Operating Expenses	24	21	25	17	30	21	28	32	22	50
Operating Margin	11	6	9	5	4	6	6	5	5	(28%)
Net Income	7	4	4	3	2	4	3	2	3	(27%)

Note: Category margins are computed from a market-capitalization-weighted sample of selected companies in that category.

Sources: Morgan Stanley Equity Research, company reports.

Web affords consumers. In addition, customer acquisition costs for Web vendors should pressure profit levels.

Note the operating statistics for selected retail categories and companies in Table 3-2.

Thoughts on New Retailing Concepts

Over the last few decades, some **new retail concepts have emerged: category-killer retail stores, catalog companies, and home/TV shopping. The latter two were expected to significantly alter the traditional retail landscape and adjust market shares — although category killer stores did just that, home/TV shopping and mail order didn't.**

Category-killer retail formats (like Barnes & Noble and Bed, Bath and Beyond) transformed the retail landscape, significantly shifted market shares, and forced many retailers to substantially change the way they did business in order to compete with these new players.

The catalog industry and home/TV shopping were launched with lots of hype and expectations that these formats would nab lots of share from traditional retailers. In the end, catalogs simply created just another distribution channel, and did not force many retailers to fundamentally change the way they did business.

It's too early to call which direction Internet retailing will take. History has it that fundamental market share changes occurred in retail when new concepts or channels offered consumers meaningfully lower prices, a better selection, and an improved shopping experience.

Originally, catalogers were positioned as a retail sector that would offer lower prices, broader assortments, no sales tax, tremendous convenience, with the opportunity for high-quality customer support. In the end, the only advantage catalogers have is convenience — shopping from home with a trusted brand name. The catalog cost structure (related to paper and mail costs) has proven to be higher than anticipated. In time, customer response rates moved lower. Catalogers carry inventory, so product assortments remain somewhat limited. Prices are comparable, and, in time, sales tax became an issue (see our sidebar on Internet tax issues in the Appendix). As a result, for catalogers, convenience alone was not enough to transform the retail landscape as many initially thought.

And the Winners Will Be Determined by...

We think the key criteria for successful retailing on the Internet will include: pursuing a **viable market opportunity**; possessing/creating a **leading Web brand**; having a **low cost structure**, with economies of scale to offset gross margin pressure; superior database/fulfillment/distribution capabilities; knowing how to **leverage technology** (and interactivity and databases) while **maintaining creativity**; creating a sense of **community/membership** among customers; and understanding how to **drive profits in addition to revenue**. Finally, it should be essential for retailers to provide customers with a **broad selection, competitive prices, and great service, defined as ease of use and speed of delivery**.

The Wal-Marting of the Web?

We call our Web market-share consolidation view the “Wal-Marting of the Web.” Of course, time may prove us wrong, and the ability for just about anyone to set up a storefront on the Web may lead to huge market share fragmentation (rather than aggregation). But, put simply, we believe that companies with brand name, scale, efficient distribution, and competitive prices will be the bookmarks of choice for Web users, and that, indeed, market share aggregation will occur.

Wal-Mart’s “small-town/low prices” strategy has been successful because it is supported by an extremely efficient and low-cost distribution system. The efficient distribution systems, low prices to customers, market share, and profitability could be viewed as a continuous loop. Wal-Mart’s system allows it to offer low prices profitably, letting it win market share and leading, in turn, to greater economies of scale and even lower cost distribution. Any retailer can make short-term market share gains by offering competitive pricing. However, sustainable market share gains, and ultimately shareholder value, are created only when efficient systems are at the foundation of the pricing strategy.

The history of Wal-Mart (Figure 3-8) demonstrates what the Web may someday bring.

If T. Boone Pickens was the corporate raider of Wall Street during the 1980s, Wal-Mart was the retail raider of Main Street. The story is well known: Sam Walton opened his first Wal-Mart store in Rodgers, Ark., in 1962, which was also the year that K-Mart, Target, and Woolworth's Woolco opened. Within five years, K-Mart had 250 stores and annual revenue of \$800 million, while Wal-Mart had only 19 stores and revenue of approximately \$9 million. Today, K-Mart has 2,429 stores and had \$31 billion in revenues for 1996, compared to Wal-Mart's 3,055 stores and \$105 billion in 1996 revenues.

Wal-Mart went public on October 1, 1970, at a split-adjusted price of \$0.01658 — total appreciation from the IPO is 174,000%, implying a 33% CAGR.

Wal-Mart began its super-aggressive growth plans in 1970 when the company went public, as it was able to more aggressively finance store openings.

Table 3-3

Wal-Mart: Store and Sales Growth, 1970–80

(\$ Millions)	Stores	Sales
1970	32	\$31
1972	51	\$78
1974	78	\$168
1976	125	\$340
1978	195	\$678
1980	276	\$1,200
CAGR	24%	44%
1996	3,055	\$105,000

Sources: Company reports, “Made in America” (Sam Walton & John Huey).

One of Wal-Mart’s key store-opening strategies was related to real estate — the company would find inexpensive land with a large amount of space, but with good traffic flow, and would then rely on word of mouth and low prices to drive lots of traffic. And then Wal-Mart would offer consumers its nearly unparalleled shopping convenience, huge product selection, and low prices.

The Web Creates One, Big Small Town

A large part of Wal-Mart’s success came from its ability to make its formula work in small towns. While competitors like K-Mart wouldn’t open stores in towns smaller than 50,000, Wal-Mart was able to successfully target towns with populations even below 5,000, and this provided a large number of opportunities. While malls in general have had a massive market share aggregation impact on shopping in many mid-size communities, Wal-Mart is a great case study on the impact of market share aggregation on traditional retailers in small-to-mid-size towns in America.

Wal-Mart proceeded to gain lots of share in the retailing space, primarily at the expense of small-town retailers.

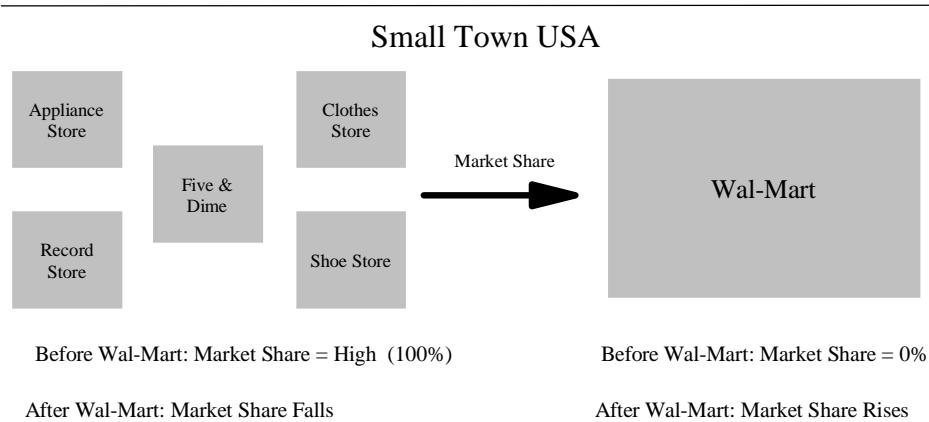
An interesting element of the Web is that it provides consumers with the ability to shop from their desktops with compelling convenience, huge product selection (only in a few categories for now), and low prices (again, in selected categories for now). The Web, in effect, creates one, big small town. And we may see just a few leading retailers in each retailing category.

Figures 3-8 and 3-9 illustrate the market share changes caused by Wal-Mart, as well as the hypothetical market shares on the Web for the book industry.

Figure 3-8

Wal-Marting of the Web — Part I

- Wal-Mart Strategy - Move into small town with average of distinct types of retail store per 1,000 people.
- Within 3 years, Wal-Mart obtains a significant portion of retail spending in the community. Why? Convenience, price, product breadth...



Source: Morgan Stanley Equity Research

Figure 3-9

Wal-Marting of the Web — Part II

- The Web is one, big small town. Whether a user is in Shanghai, Peoria, or New York City, they shop at the same virtual store.
- Within five years, Web shopping should obtain 1–4% of global retail spending. Why? Convenience, price, product breadth.
- We should see super-consolidation, with a few winners—who needs thousands of bookstores?

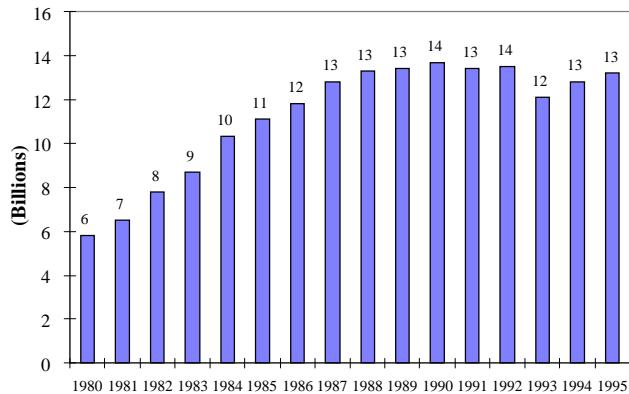
Bricks-and-Mortar World		Hypothetical Virtual World*	
Amazon.com	0 stores (0% market share)	Amazon.com	1 Store (20% market share)
Books.com	0 stores (0% market share)	Books.com	1 Store (15% market share)
Barnes & Noble	1,009 stores (13% market share)	Barnes & Noble	1 Store (40% market share)
Borders	1,118 stores (11% market share)	Borders	Soon: 1 Store (15% market share)

In the bricks-and-mortar market, share is restricted by physical location/distribution and thus share is highly fragmented.

Source: Morgan Stanley Research. *Morgan Stanley Research Estimate.

Lessons From the History of Mail Order in the 1980s: Though Opportunities Were Significant, Expectations Got Out of Control, And Too Many Players Spoiled a Lot of the Fun and Profits

Figure 3-10
Estimated Catalogs Mailed per Year in U.S.



Source: DMA/USPS

Early Mail-Order Growth Was Driven by Demographic Trends and Superior Profit Dynamics

During the early to mid-1980s, the mail-order industry experienced tremendous growth. Between 1980 and 1985, consumer mail-order sales grew 43% (using our midpoint estimates), versus a 37% increase for overall retail sales. Catalog distribution in the U.S. more than doubled, from 6 billion catalogs mailed in 1980, to 11 billion in 1985 (Figure 3-10).

Mail-order success was paced by the growth of dual income and non-family households during the 1970s and 1980s, and a rising percentage of women in the work force — these trends led to an increase in disposable income and a need for more convenient shopping formats. Rising gasoline prices during the early 1980s also created an additional incentive to shop by mail, rather than drive to the mall. Mail order seemingly provided the solution for a population with rising disposable income and less time to spend it. As time passed, technological advances (like faster delivery services, credit card processing by mail, and 1-800 phone numbers) enhanced the convenience that mail-order companies could offer consumers, and consequently, consumers' comfort with shopping by mail.

From the retailers' point of view, mail order offered the appeal of higher profit margins and a convenient way to target a specific niche audience or to build brand awareness. Ac-

cording to Maxwell Sroge, from 1980–83 mail-order companies supported operating margins that were three times higher than those of traditional retailers.

High relative profits were supported by: 1) high initial response rates related to the novelty of mail order; 2) relatively few vendors — in the early days — chasing fast-growing demand; 3) stable and historically low paper and postage costs; and 4) the perceived better value of catalog shopping due to the lack of sales tax.

These profit dynamics attracted many non-retailers to the industry, and a steadily rising number of the estimated 5,000 to 8,000 catalogers were acquired by corporate giants, such as ITT, Beatrice Foods, and W.R. Grace. In these earlier days of mail order, it was not uncommon for these companies to achieve a return on equity (ROE) of 20% or more, compared with 10–15% for major retailers. Other corporations, such as Armstrong Cork, RCA, CBS, and Xerox, developed mail-order divisions. The mood surrounding these initial corporate forays into mail order is summarized in this quote from the *San Diego Union Tribune*, November 14, 1984: “When it comes to doing business by mail, the future looks as bright as sunrise over Fort Knox.”

And Along Came the Mail-Order Glut and Shakeout

Time and again the adage is proven, “Nature abhors a vacuum.” This seems to hold especially true in the case of an untapped or semi-untapped opportunity for profits. Mail-order companies were achieving more than twice the rates of sales growth of traditional retailers — and subsequently super high mail-order revenue/profit growth predictions became common place, as did portents of doom to retailers that did not jump on the mail-order bandwagon:

- In 1982, industry pundit Maxwell Sroge stated that “U.S. managers of retail stores, in ignoring the growth of mail-order sales, are in danger of falling into the same trap General Motors, Chrysler, and Ford did in the early days of the Japanese car invasion.”
- Harold Schwartz, president of Hanover Industries, claimed in 1982 that “by 1995, 50% of all consumer shopping in the United States will be done by mail....” Today,

(according to Sroge) mail order represents merely 6% of all consumer retailing, or 8% excluding autos.

- By 1990, according to a survey of leading retail executives conducted by the newspaper advertising bureau, it was estimated that mail order's share of consumer expenditures for department store goods would grow by five times in short order.

The number of catalogs mailed in the U.S. continued to grow at a rapid clip, from 10 billion in 1984 to slightly over 13 billion in 1988, before stabilizing at that level. Between 1980 and 1988, 34 companies with mail-order divisions went public, and 14 of these had mail order as the primary business. Mail-order consulting firms sprouted up, to guide would-be catalogers through the process of developing a business. Just for kicks, go to your favorite bookseller's Web site and search for "mail order," and you'll be inundated with get-rich-quick books. Compounding this glut was the fact that many catalogers were mailing to the same lists of people, and therefore over-flooding a single name base. Although there was not yet the perception of a finite market for mail-order buyers, prospecting efforts recovered the same territory, and therefore left no opportunity to expand the market.

Mail-order companies were quickly impacted by the increased competition. Several major catalogers, such as L.L. Bean and Williams-Sonoma, showed below-plan sales or profits for Christmas 1983. In 1984, revenue growth slowed from the 11% achieved in 1983 to 9%. Hanover Industries' Harold Schwartz noted that as more and more catalogs were launched, "customers were spreading their purchases across 200 catalogs instead of 50." Moreover, although sales growth continued to be achieved, profit margins were squeezed. For example, Montgomery Ward generated \$1.3 billion in catalog sales in 1984, but lost about \$50 million per year since 1980. We think that Internet retailing will likely play out the same way.

The increasingly competitive environment was also reflected in the performance of catalog company stocks: In 1985, Wall Street retail analysts indicated that, over the preceding four quarters, the median publicly held non-store retailer generated a year-over-year sales gain of 2% and an earnings decline of 49%, versus sales growth of 14% and earnings growth of 21% for the median publicly held retailer. Many of the fastest-growing catalogs were too small to invest in, or to consider going public.

Despite these early warning signals, industry experts justified the continued entrance of new participants: Maxwell

Sroge stated, "If a household doesn't get an average of seven catalogs a week this fall, or about 70 in all....it's because they aren't regarded as prime mail order buyers. Seventy catalogs might sound like a lot, but when you consider the number of retail stores to which the family is exposed, it really isn't that many." Major catalogers continued to expand, even as others (e.g., Esprit de Corps, Pier 1 Imports, and Montgomery Ward) closed operations, cut back on circulation, or eliminated certain books.

The competitive spirit was well-captured in an article in *Fortune* magazine, dated July 9, 1984: "Several big outfits are still pumping out more catalogs than ever, and newcomers are still leaping into the business. Sears, the largest presence in mail order, is forging ahead with specialty catalogs as well as its giant Wish Book. Hanover House, which doubled mailings last year to 220 million catalogs, will up the number again this year by almost 25%." As Harold Schwartz put it: "Rather than pull back, we intend to force competitors out as quickly as we can."

In order to increase sales and preserve profit margins in the increasingly competitive environment, many catalogers developed a more specialized focus, and a plethora of niche catalogs sprang up catering to a variety of hobbies and selling everything from food to collectibles. Others catalogers, such as Bloomingdales "By Mail," accepted advertisements (e.g., for cigarettes and liquor). Some mail-order companies even opened retail stores to build name recognition. Companies also moved away from the traditional "shotgun" approach to prospecting, and developed more targeted mailing strategies to contain costs.

And Along Came Teleshopping

Another major source of competition arose in the mid-1980s in the form of teleshopping, the principal players of which were Home Shopping Network (HSN) and QVC. During the early boom in the industry in the late 1980s and early 1990s, these players achieved impressive annual sales growth (HSN saw compounded annual growth of 58% from 1986 through 1990, and QVC saw compounded annual growth of 57% from 1987 through 1992), before sales more or less flattened at slightly over \$1 billion apiece, with approximately \$3 billion in total for the industry.

Much of the initial excitement surrounding teleshopping was driven by the prospect of tremendous expansion in the cable industry, specifically the ideas of "500" channels and interactive television. Secondary to this was the cost advantage obtained by bypassing the print medium. As was the case during the early stages of the catalog boom, industry experts

predicted the replacement of other forms of retailing by teleshopping within 5 to 10 years. Also, as with the mail-order industry, the promise of powerful profitability and growth potential led to a rush of entrants, which, in turn, when the supply of cable space did not expand at the forecast rate, caused the cost of existing "air space" to rise sharply, and made the financial prospects of the new sector less appealing.

Moreover, as the industry matured, it became apparent that the market for this retail format was limited to a certain consumer base (mostly middle-aged women) and was most successful in selling a narrow range of products (like apparel and jewelry). Attempts to expand the market, such as MTV's "The Goods" (aimed at a younger, more upscale audience) and QVC's "Q2" (which targeted a more upscale customer, later converted into a "greatest hits of QVC channel") met with little success.

Hello, Recession —

The Mail-Order Reality Check of the Early 1990s

The "reality check" for the mail-order business was precipitated by the recession of 1990–91, when the combination of a weaker economy, the shift in consumer sentiment from the chic of the late 1980s to a value orientation, and a major postal rate increase drove mail-order companies into a period of cost-cutting and consolidation. Catalogers eliminated books, shifted to lower-grade paper, reduced book size and page count, refined mailing lists, and pared back prospecting.

As the economy emerged from the recession and consumer demand rose, catalogers once again began to add pages and increase circulation. However, just as a cyclical recovery should have occurred, the catalog industry was confronted by a series of surges in paper prices. This resulted in another cycle of cost-cutting measures. In January 1993, another of the original "big four" general merchandise catalogs, the Sears catalog, closed after more than a hundred years of operation. In 1995, catalogers were again hit by postal rate increases, the largest yet, and more than 60% of the 23 domestic catalog companies surveyed by *Catalog Age* in 1995 had depressed or negative earnings.

The DMA predicts that the 7% revenue growth achieved by catalogers since 1990 will likely continue for the rest of the decade. A few catalogs have done well, especially those that have been aggressive in their marketing efforts. But over time, profitability levels for the industry have fallen significantly — the average net margin for the 12 public direct-marketing companies in Morgan Stanley's retail stock uni-

verse is 0.8%, with CUC supporting the highest net margin of 7% and Hanover Direct supporting the lowest net margin of -15%.

Business-to-Business Mail-Order Trends: A Better Place to be in Recent Years

In the 1980s, business-to-business mail-order companies grew rapidly (18% CAGR since 1980, according to Maxwell Sroge). Fueling the growth of this market were both the increasing trend of office automation among small businesses and the relative cost advantages of direct mail versus a direct sales call. According to *Direct Marketing News* (1990), the average cost of making personal on-site calls rose from \$178 per call in 1981 to \$250 in 1989.

As with the consumer catalog industry, the business-to-business mail-order sector experienced "growing pains" during the mid-Eighties. Issues facing catalogers included increased competition and production costs, list fatigue, and slower-than-forecast growth in the computer supplies market. In addition, business-to-business catalogers faced greater difficulty than did consumer catalogs in getting the catalog into the hands of the person responsible for purchase decisions. The challenge of obtaining the correct name, title, and address of a company's buyer was compounded by high turnover in many industries, which limited business-to-business catalogers' abilities to test new product concepts, build accurate client databases, and cross-sell effectively. The degree to which the lack of a sophisticated database held back these companies is expressed in this quote from Bernice Grossman, president of Direct Marketing Resource Services, in 1986: "(Business-to-business mail-order companies) still cannot answer the questions of how much their prospects spend for their products, how often they spend, and what kind of businesses their prospects and customers are. They don't know yet what the factors are that can be correlated to bring in a sale for a reasonable cost."

As with consumer catalogs, responses to the increasing commoditization of the business included list refinement and more targeted marketing efforts, specialization of catalogs, and competition based on price and service levels. In addition, some companies turned to traditional magazine advertising to build brand awareness.

The early 1990s brought competition from off-price office product superstore chains (e.g., Staples, Office Depot) and computer superstores — which in turn put downward pressure on margins — as well as the increasing production costs faced by consumer mail-order companies. However, several factors enabled business-to-business catalogers to overcome

these challenges better than their consumer counterparts: 1) Business-to-business catalog purchases are based on need rather than discretion (as with consumer catalog purchases), and purchases are paid for by “the boss,” rather than the individual’s disposable income. 2) Business-to-business catalogs generally use lighter paper stock and less sophisticated graphics than consumer catalogs, and therefore have lower production costs — a 1994 survey conducted by W.A. Dean and Associates indicated that printing and production accounted for 12–14% of sales for typical business-to-business catalogs, versus 21–22% for consumer catalogs. 3) Business-to-business catalogers can better defray increased paper and postal costs by raising the price to vendors of co-op advertising space. And 4) strength was seen in the computer, telecommunications, and office supplies industries, both absolutely and relative to the retailing industry.

Lessons for Web Retailers from Mail-Order Retailers

Prognostications Are What They Are — In the mail-order industry, early rosy predictions proved wildly exaggerated. The catalog industry began with lots of hype about to the damage it would do to traditional retail, but it became just another distribution channel, which did not force any retailers to alter, fundamentally, the way they did business.

Genuine Opportunities Exist, but Expectations Rapidly Get Out of Hand — Initially, mail order and teleshopping represented low cost ways for retailers to access new audiences or delve deeper into their existing ones. In the initial years, sales growth for both industries substantially outpaced that of store retailers. However, industry players and experts have a dangerous tendency toward euphoria, in our opinion, and their sweeping predictions frequently come to pass only in a very modified form.

It's worth noting here that Internet retailers have substantial cost advantages over mail-order retailers and home shopping channels, and some have the added convenience of enabling

consumers to make purchases online rather than through a separate procedure.

The moral of this story is this: If you build it, they may come. But when, how many, and at what cost are critical variables that bear close monitoring. The *explosion of a new market by a deluge of new entrants can significantly change the financial dynamics of the business*. Key to success will be a company’s ability to monitor turning points in the trend, and execute ahead of the tide.

Differentiation and Brand are Key — These will become even more important for Internet retailers who depend on customers deliberately turning to their Web sites. Companies must develop brand franchises and a sense of trust through other marketing vehicles. In addition, a different style of marketing may be required, since Internet companies will, at least initially, be targeting an audience that is largely male, versus the majority of traditional mail-order consumers, who are female.

No Single Form of Retailing Will Replace All Others — Despite what may be said at the time, history has shown that although new forms of retailing arise, traditional store retailing still is used for the bulk of consumer shopping. Although significant cost advantages may exist for Internet retailers who can figure out how to manage the supply chain, it is likely that this too will prove to appeal to a limited segment of the population, only. And, hey, many people like to go shopping — it's not only a necessary chore but also a popular pastime.

Fundamental Market Share Shifts in Retail Have Occurred Only When the Pricing Structure Is Much Lower — Discount stores, off-price retail, and category killers all forced significant market-share shifts because of their ability to offer consumers meaningfully lower prices. While catalogers may offer a broader assortment and brand-name recognition, the differentiation provided by greater convenience alone has not proven sufficient to upset the traditional market structure.

Chapter 4: Potential Size of the Internet Retail Market

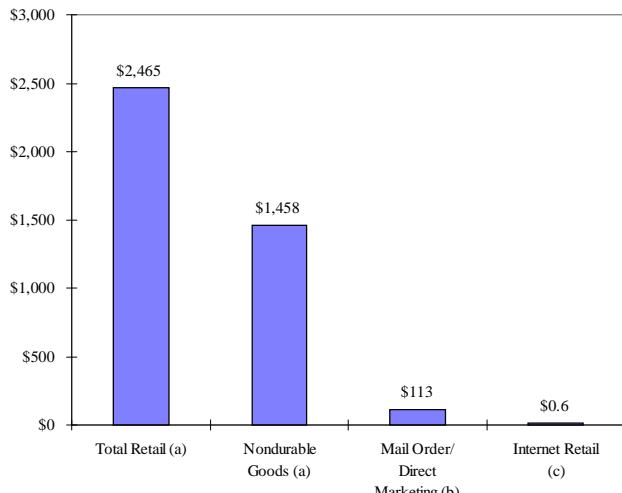
Summary

Sizing the market for Internet retailing seems a bit like, “pick a number, any number...” When you do simple stuff like include online/Web assisted auto sales in Internet retailing data, Internet retail numbers get very big very fast.

- ◆ In this chapter we look at four different ways of sizing the market: 1) Using mail order as an analog; 2) Morgan Stanley forecasts using Web usage growth and estimated transactions per user; 3) International Data Corporation (IDC) forecasts; and Forrester Research forecasts. Using these sources, we arrive at a wide range of market size estimates for the year 2000 (from a base of sub-\$1 billion in market revenue in C1996E) — note the ubiquitous nature of the Web, these are all worldwide market size estimates (except for Forrester, which is U.S. only).
 - ◆ Respective year 2000 Internet estimated retail market sizes are: 1) Mail order analog — **\$115 billion in annual consumer sales plus \$260 billion in business sales within 5-8 years (rather than the 20 years it took mail order)**; 2) Morgan Stanley — **\$21-57 billion, with a midpoint estimate of about \$35 billion in sales in C2000E**; these forecasts are focused on the consumer market and if past is prologue, the business-to-business market could be 2-2.5 times larger; 3) IDC — **\$100 billion in online commerce revenue in C2000E** (including both consumer and business-to-business commerce); and 4) Forrester Research — **\$7 billion in U.S. online shopping revenue in C2000E**, with business-to-business commerce growing to \$66 billion in the same year.
 - ◆ Clearly these C2000E market sizes for Internet retail vary widely, but one thing appears clear — there will be compelling market growth. Simply, it's too early to responsibly predict how large the Internet retailing market for consumers and businesses may be, but we do believe that we have laid out appropriate frameworks for gauging/forecasting market growth. And we look forward to obtaining market evidence that allows Morgan Stanley and others to corral, then fine-tune market growth estimates.
 - ◆ When new things like the Internet come along it's easy to make bold predictions about how the world will change – but as they say, the more things change the more they stay the same...When mail order shopping began to hit its stride in the early 1980s and 800-numbers were launched by most cataloguers in the late 1980s (and also when TV-shopping, thanks to QVC and HSN, was aired for the first time), prognosticators did their thing and said people would stop going to stores and purchase everything from home and/or business. Remember the wealthy Texan in David Byrne's movie *True Stories* — she lived in her bed, shopped from her bed, got married in her bed? Well, it's 1997, and we aren't all living from our beds and traditional retailing in most sectors is alive and well. And, hey, traditional retailing is a form of entertainment...and entertainment never goes away...
 - ◆ But Internet retail should evolve and should be accepted more rapidly than mail order retail was. Simply, the Internet is being deployed more rapidly than any new technology ever – call it velocity – there are 220 million PCs in use worldwide (and 35 million Internet users) – all of these PCs (and more) should be Internet-enabled within five years. And then there's the annual run rate of 100 million TV sets (and hope for cable modems), yes, Bill Gates, Larry Ellison and Marc Andreessen want those too...One can find and acquire millions of goods and services and in the not too distant future one will be able to do this consistently, quickly, interactively and in an entertaining way. By our math, the Web is ramping at a rate 3-5 times faster than the PC industry did...so using a little extrapolation...it took the domestic mail order/direct marketing industry 20 years to rise from next-to-nil to roughly \$371 billion in revenue (for both consumer and business-to-business), with consumer reaching 5% of total retail sales and business-to-business 11% of total wholesale sales. One could extrapolate that Internet retailing could get to the same level in 5-8 years.
-

Figure 4-1

U.S. Revenue for Various Retail Categories, 1996 (\$ Billions)



Sources: (a) WEFA, (b) midpoint of WEFA/Maxwell Sroge data, as per Table 4-1, (c) Morgan Stanley Equity Research.

The Size of the Internet Retail Market — Pick a Number... .

Sizing the market for Internet retailing seems a bit like, “pick a number, any number....” Adding in simple stuff like online/Web-assisted auto sales in Internet retailing data, and Internet retail numbers get very big, very fast.

For example, in November, CUC indicated it hit a \$1 billion revenue run rate for sales of goods and services through its online and Internet efforts (sales of \$25,000 cars through AutoVantage has a lot to do with the high number). Auto-By-Tel indicated that it assisted in the sale of 61,250 cars through its network of more than 1,200 dealers in 1Q, or almost 2% of all cars sold in the U.S. in the quarter.

In addition, Michael Dell has indicated that half of Dell’s revenue in two to three years may be generated via Internet-based transactions (this alone could be \$9–10 billion of Dell’s sales).

The data for high-priced goods and services can drive the numbers up quickly, and make Amazon’s impressive 1Q annual revenue run-rate of \$64 million pale in comparison.

Four Approaches to Sizing the Internet Retail Market

1) Mail-Order Market as an Internet Analog

According to WEFA, total U.S. retail sales were \$2.5 trillion in 1996, up 5% from 1995, and have supported a compound average growth rate (CAGR) of 6% since 1980. U.S. consumer mail-order/direct marketing has supported higher sales growth, with a CAGR of 10% since 1980 (Table 4-1), and supported sales of \$113 billion in 1996 (or 5% of total retail sales). These estimates were derived by taking the midpoint of Maxwell Sroge’s estimated data and the WEFA non-store retail sales data.

As for business-to-business sales, WEFA estimates total U.S. wholesale sales were \$2.4 trillion in 1996, up 6.8% from 1995, and have had a CAGR of 5% since 1980. U.S. business-to-business mail-order/direct marketing has also outstripped overall industry growth, according to Maxwell Sroge, and has had compounded annual growth of 18% since 1980 (Table 4-2), with sales of \$258 billion in 1996 (or 11% of total wholesale sales).

We believe that the revenue ramp for Internet retailing can occur 3–5 times faster than the mail-order ramp did — this is based on the logic that the number of Web users is growing very rapidly and on our view that transacting on the Web is much easier and more efficient (though not true for many cases, yet) than ordering from a catalog.

Using this methodology, we think Internet-based retailing can grow from an estimated \$600 million in revenue in 1996 to **an estimated \$115 billion in consumer sales, plus \$260 billion in business sales, annually within five to eight years** (Table 4-3).

The Backup on Retail Market Statistics

We have relied heavily on retail market size data from several sources (especially WEFA and Maxwell Sroge Co.) — and the data varies by source. Descriptions of the sources and data follow.

The *WEFA* Group was formed in 1987 through the merger of two leading consulting firms: Wharton Economic Forecasting Associates and Chase Econometrics. It aggregates data from various sources, with most retail data collected by the U.S. Census Bureau. *Maxwell Sroge* Co. is a consulting firm specializing in mail-order and catalog consulting.

Total retail sales, generated by WEFA and collected by the U.S. Census Bureau, represent total sales and receipts from all establishments primarily engaged in retail trade net of refunds. It does not include sales at the retail level by manufacturers, wholesalers, service establishments, and others whose primary activity is other than retail trade.

Non-store retail sales, generated by WEFA and collected by the U.S. Census Bureau, are strictly for companies that sell through catalogs, mailings, and by operating catalog stores that carry little stock other than display items (i.e., strictly collected by SIC code). These companies receive most of their orders by phone or mail and fulfill most of their orders by mail. Thus, the data do not include direct-marketing/mail-order sales from many market segments, including department stores, insurance/financial services companies, auto clubs, educational services, prescription orders, and photofinishing.

Wholesale sales, generated by WEFA and collected by the U.S. Census Bureau, are the sales of all establishments engaged in selling to retailers, jobbers, or businesses rather than to consumers.

Consumer mail-order/direct-marketing sales, generated by Maxwell Sroge, incorporate all types of direct sales to consumers, including those made through catalogs, direct mail, telemarketing, television, and any other form of direct marketing. It includes direct sales made by companies whose primary business is not necessarily direct marketing, such as department stores who also sell via catalogs. It includes data for many of the industries and companies that the SIC-code-based WEFA data do not.

However, as we believe Sroge's methodology in estimating these sales is fairly aggressive, we thought it reasonable *to estimate U.S. consumer retail mail-order/direct-marketing sales by taking the midpoint of these two data sets* (WEFA and Sroge), which we show in Table 4-1 (Sroge refers to this as simply mail order, but it implies much more than simply ordering via mail, so we believe pending "direct marketing" is more accurate).

Business-to-business mail-order/direct-marketing sales, much the same as consumer mail-order/direct marketing, are also generated by Maxwell Sroge and incorporate all types of direct sales to business (this is sales of merchandise or services to retailers, other wholesalers, or industrial, commercial, institutional, farm, construction contractors, or professional business users; as well as companies acting as agents or brokers in buying or selling merchandise to other companies). These data include sales made through catalogs, direct mail, telemarketing, television, and any other form of direct marketing.

2) Morgan Stanley Forecast Using Various Assumptions

Using our own instincts and experiences to make reasonable assumptions, and using the methodology employed in *The Internet Advertising Report*, we believe that Internet retailing may grow from a \$600 million business in 1996 to **\$21-57 billion — with a mid-point estimate of about \$35 billion — in 2000**. We know this is a huge range, but our wits tell us to be nimble. We use the following assumptions: 28 million Web users worldwide in 1996, rising to

157 million in 2000, and the estimated percentage of these users completing a transaction rises from 14% in 1996 to 45% in 2000. Furthermore, the mid-case annual value of transactions per customer per year rises from \$150 in 1996 to \$500 in 2000 — by way of comparison, the average mail-order shopper in the U.S. purchases about \$1,000 in mail-order products per year — these data are clearly skewed by the purchase of high-priced items.

These forecasts are focused on the consumer market, and if past is prologue, the business-to-business market could be 2.0–2.5 times larger.

3) International Data Corporation (IDC) Forecast

IDC uses a methodology that is similar to ours, which forecasts a big ramp in Internet usage globally, accompanied by an increase in the number of users buying and selling online. The result of these two waves of growth will be a dovetail that drives **worldwide online commerce to an annualized run rate of \$117 billion in December of 2000 (both consumer and business-to-business)**.

Using IDC's estimate for the share of this commerce that will be conducted from devices in the home, and using our own assumption that this is a rough proxy for the amount of consumer-oriented commerce (i.e., we assume the amount of home-generated commerce for business use will wash out with the amount of consumer purchases made from devices in business locations), **this equates to about \$37 billion in consumer online commerce in 2000** (Table 4-4).

In addition, IDC has estimated that the amount of commerce conducted over the Internet in 1996 was around \$3 billion. IDC here defines Internet commerce as purchasing goods and services via the Web, and though transactions do not have to be completed over the Web (e.g., telephone or fax completion is acceptable), the transaction must be initiated from the Web. These data exclude, however, funds transfer and home banking (except activity charges), stock trading (except fees, if any, for the privilege of trading over the Internet), and charges for basic Internet access.

IDC's assumptions include:

Web-enabled devices (defined as any device that access the Web, including PCs, terminals, video games, TV set-top boxes, and other Internet appliances) numbered almost 13 million worldwide at the end of 1995, growing to 233 million by the end of 2000.

Web users will increase from more than 16 million at year-end 1995 (versus our estimate of 9 million) to 163 million at year-end 2000 (versus our estimate of 157 million-plus). These data differ from Web-enabled device estimates in

Table 4-1

U.S. Total Retail Sales:

Maxwell Srogé Estimate for U.S. Consumer Mail-Order/Direct-Marketing Sales, WEFA Estimate of U.S. Non-Store Retail Sales, and Average of Estimated U.S. Mail-Order/Direct-Marketing Sales

Year	Total Retail Sales (a)			Consumer Direct Marketing Sales (b)			Non-Store Retail Sales (a)			Avg. of WEFA/Srogé Estimates for Mail Order/Direct Marketing Sales		
	Annual Sales	Y/Y Growth		Annual Sales	Y/Y Growth	% of Total Retail	Annual Sales	Y/Y Growth	% of Total Retail	Annual Sales	Y/Y Growth	% of Total Retail
1980	\$957,350	--		\$28,750	--	3.0%	\$22,786	--	2.4%	\$25,768	--	2.7%
1981	1,038,698	8.5%		31,560	9.8%	3.0	23,555	3.4%	2.3	27,558	6.9%	2.7
1982	1,070,747	3.1		34,070	8.0	3.2	23,819	1.1	2.2	28,945	5.0	2.7
1983	1,170,163	9.3		37,430	9.9	3.2	25,298	6.2	2.2	31,364	8.4	2.7
1984	1,286,914	10.0		41,420	10.7	3.2	27,810	9.9	2.2	34,615	10.4	2.7
1985	1,375,027	6.8		45,300	9.4	3.3	28,275	1.7	2.1	36,788	6.3	2.7
1986	1,449,636	5.4		49,700	9.7	3.4	30,283	7.1	2.1	39,992	8.7	2.8
1987	1,541,299	6.3		54,200	9.1	3.5	35,913	18.6	2.3	45,057	12.7	2.9
1988	1,656,202	7.5		63,500	17.2	3.8	40,476	12.7	2.4	51,988	15.4	3.1
1989	1,758,971	6.2		73,000	15.0	4.2	43,637	7.8	2.5	58,319	12.2	3.3
1990	1,844,611	4.9		81,700	11.9	4.4	45,632	4.6	2.5	63,666	9.2	3.5
1991	1,855,937	0.6		91,500	12.0	4.9	49,066	7.5	2.6	70,283	10.4	3.8
1992	1,951,589	5.2		100,600	9.9	5.2	55,183	12.5	2.8	77,892	10.8	4.0
1993	2,075,083	6.3		112,670	12.0	5.4	58,415	5.9	2.8	85,543	9.8	4.1
1994	2,231,233	7.5		126,200	12.0	5.7	64,031	9.6	2.9	95,116	11.2	4.3
1995	2,340,817	4.9		138,800	10.0	5.9	69,770	9.0	3.0	104,285	9.6	4.5
1996	2,465,409	5.3		155,480	12.0	6.3	71,048	1.8	2.9	113,264	8.6	4.6
CAGR 1980-96	6.1%			11.1%			7.4%			9.7%		

Sources: (a) WEFA, (b) Maxwell Srogé Company.

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that users may share or use multiple devices — in fact (as these estimates demonstrate), IDC believes the ratio of devices to users will rise over time as more Internet-enabled devices enter the home (extra PCs, video games, Web TVs, and the like).

- Growth of users and devices outside the U.S. should be even more substantial than growth within the U.S. — IDC believes that the percentage of total Web users in the U.S. will drop from 77% at the end of 1995 to 50% by the end of 2000.
- The percentage of users buying goods and services online will rise from 24% at the end of 1995 to 28% by the end of 2000, with some dampening as a result of the influx of international users. IDC expects the percentage of users in the U.S. who are “buyers” to grow from 29% to 45% in the same period.
- This increase in the number of Web buyers and the average transaction size will combine to create a rapid increase in the amount of commerce conducted over the Web — from \$318 million during 1995 to \$95 billion during 2000. IDC estimates a December 1995 Internet commerce revenue run-rate of \$1 billion, and predicts it will be \$117 billion in December 2000.
- IDC’s primary research indicates that already one-third of Web transactions are completed over the Web (as opposed to by fax or phone). By 2000, that fraction should be much greater than two-thirds.

4) Forrester Forecast

In a super low-ball, likely inaccurate (in our view) forecast, Forrester Research has projected revenues from U.S. online consumer shopping to rise from \$530 million in 1996 to **\$7 billion by 2000E** (Table 4-5). Forrester has also estimated total business-to-business commerce will grow from an estimated \$600 million in 1996 to \$66 billion in 2000.

Table 4-2

U.S. Total Retail Sales: Maxwell Srogé Estimate for U.S. Consumer Mail-Order/Direct-Marketing Sales

Year	(\$ Millions)		Business-to-Business		
	Total Wholesale Sales (a)	Annual Sales	Mail Order/Direct Marketing (b)	Annual Sales	% of Wholesale
	Annual	Y/Y Growth		Y/Y Growth	
1980	\$1,117,187	--	\$17,580		1.6%
1981	1,214,156	8.7%	18,680	6.3%	1.5
1982	1,142,535	(5.9)	19,770	5.8	1.7
1983	1,190,705	4.2	23,120	16.9	1.9
1984	1,346,392	13.1	27,500	18.9	2.0
1985	1,361,507	1.1	31,050	12.9	2.3
1986	1,379,514	1.3	34,910	12.4	2.5
1987	1,475,613	7.0	43,090	23.4	2.9
1988	1,614,249	9.4	53,220	23.5	3.3
1989	1,725,123	6.9	64,900	21.9	3.8
1990	1,794,072	4.0	73,630	13.5	4.1
1991	1,779,673	(0.8)	89,160	21.1	5.0
1992	1,849,798	3.9	109,740	23.1	5.9
1993	1,940,175	4.9	139,700	27.3	7.2
1994	2,075,678	7.0	172,980	23.8	8.3
1995	2,265,732	9.2	210,070	21.4	9.3
1996	2,420,679	6.8	257,740	22.7	10.6
CAGR					
1980-96		5.0%			18.3%

Sources: (a) WEFA, (b) Maxwell Srogé Company.

Table 4-3

Morgan Stanley — Estimated Web Users vs. Transaction/Goods and Service Revenue; Market Data Focused on Consumer Market, 1995–2000

	1995	1996	1997E	1998E	1999E	2000E
Estimated Web Users (MM)	9	28	46	82	134	157
Estimated Pct. of Users Transacting	10%	14%	20%	30%	35%	45%
Estimated Web Users Transacting (MM)	0.9	4	9	25	47	71
Annual Transaction/Goods & Service Spending per User Transacting (\$)						
- Low Case	\$50	\$150	\$200	\$225	\$250	\$300
- Mid-Case	50	150	250	300	400	500
- High Case	50	150	300	400	600	800
Total Annual Transaction/Goods & Service Spending (\$MM)						
- Low Case	\$45	\$601	\$1,840	\$5,535	\$11,725	\$21,195
- Mid-Case	45	601	2,300	7,380	18,760	35,325
- High Case	45	601	2,760	9,840	28,140	56,520

E = Morgan Stanley Equity Research.

Table 4-4

IDC — Worldwide Internet Commerce Estimates, 1995–2000E

	1995	1996	1997	December 1998	1999	2000	1995 - 2000 CAGR (%)
World Wide Web devices (MM) (1)	13	30	66	106	168	233	79%
% of installed base (2)	6%	12%	22%	30%	41%	48%	--
World Wide Web users (MM) (3)	16	35	69	95	129	163	59
World Wide Web buyers (MM) (4)	4	9	18	25	35	46	64
Web buyers / Web users	24%	26%	26%	26%	27%	28%	--
Run rate (\$/year/buyer) (5)	284	599	1,157	1,593	2,033	2,558	55
Commerce run rate (\$B) (6)	1	5	21	40	71	117	154
Commerce by Segment (\$B) (7)							
Home	0.5	2	8	15	25	37	139
% of total	44%	40%	39%	37%	35%	32%	--
Business (8)	0.6	3	13	25	46	79	164
% of total	56%	60%	61%	63%	65%	68%	--
World Wide Web pages (MM) (9)	18	72	268	502	805	1,142	19

(1) The number of devices accessing the Web at least quarterly. (2) The percentage of total PC and Internet access device installed base accessing the Web. (3) The numbers of users accessing the Web (users may share or use multiple devices). (4) The number of users actually buying goods and services via the Web (funds transfer and stock trading are excluded.) (5) Annualized amount spent per buyer in December of year. (6) Annualized commerce in December of year. (7) Commerce by segment are IDC estimates of commerce taking place at home versus commerce conducted at various places of business. This is not IDC's estimate of consumer versus business-to-business commerce (as users purchasing from home may do so for business reasons and users may make consumer purchases from work). (8) Business segment includes all size businesses, federal, state, and local government, and education. (9) The total number of URLs on the Web.

Source: International Data Corporation.

Among the various consumer retail categories that Forrester focused on, computer products, travel, and entertainment capture 70% of estimated total spending in 2000 (Figure 4-2). Forrester's estimates of consumer-based sales do not include information, banking, investing, or financial products.

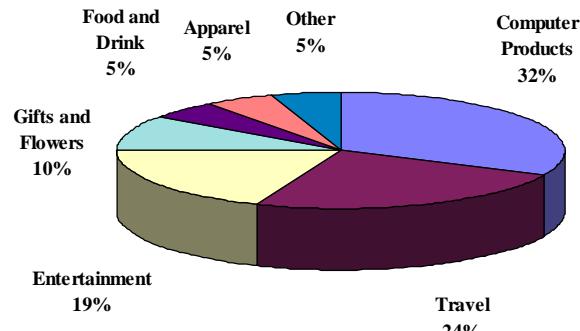
Table 4-5

Forrester's View of U.S. Online Consumer Shopping Revenues, 1996–2000E

(\$ Millions)	1996E	1997E	1998E	1999E	2000E
Computer Products	\$140	\$323	\$701	\$1,228	\$2,105
Travel	126	276	572	961	1,579
Entertainment	85	194	420	733	1,250
Gifts and Flowers	45	103	222	386	658
Food and Drink	39	78	149	227	336
Apparel	46	89	163	234	322
Other	37	75	144	221	329
Total	\$518	\$1,138	\$2,371	\$3,990	\$6,579

Note: This data does not include online fees from intermediaries, which Forrester has estimated at \$10 million in 1996 and \$590 million in 2000, bringing total estimated U.S. online consumer shopping revenues in 2000 to \$7.1 billion. Source: Forrester Research, October 1996.

Figure 4-2

Forrester's View of U.S. Online Shopping Revenues By Category in 2000E

Source: Forrester Research.

Chapter 5: Where Do Users Spend Their Time Online?

Summary

- ◆ According to PC Meter's February survey, **the most popular Web sites based on reach were the Excite Group, AOL, Yahoo!, Netscape, and Microsoft** — we believe the highly trafficked Web sites are the Internet equivalent of Madison Avenue real estate.
 - ◆ From July 1996 through February 1997, **those categories of Web sites that saw the greatest growth in reach included Travel and Tourism** sites like Travelocity and American Airlines (up 93%, to 16% reach), **Shopping-specific** sites like Amazon.com and Shareware.com (up 54%, to 31% reach), and **Marketing and Corporate** sites like Netscape and Real Audio (up 49%, to 66% reach).
 - ◆ Shopping and shopping-related activities are becoming increasingly popular online — a recent CommerceNet survey indicated that **approximately 73% of Web-using respondents spent some percentage of their online time searching for information about specific products or services**. Of this group, 53% went on to make an actual purchase (either online or offline), and 15% actually made a purchase online.
 - ◆ **Of those Web users who have made a purchase (either online or offline)** as a result of looking at a Web site, 37% spent less than \$100, while 31% spent \$500 or more. **Convenience is clearly an important factor stimulating online shopping**, as 69% of the respondents who have purchased products or services on the Web in the past, or believe they are likely to do so in the future, cite convenience as a major factor.
-

Where Do Users Spend Their Time Online?

Given the difficulty of Web measurement in these first few years, a great deal of Internet data remain somewhat suspect. For data on consumer traffic across Internet sites, we think the best current proxy are the data on audience “reach” collected by PC Meter. PC Meter tracks online consumer traffic (no business users are included) via software it has installed on PCs in roughly 9,000–10,000 homes. PC Meter ranks the top sites based on a measurement called “reach,” which is defined as the percentage of the total available audience in a given time period that makes a request at that site. (PC Meter data are strictly a consumer measurement, and therefore can be somewhat skewed based on the method of selection for the user sample).

According to PC Meter's February survey, the five most popular Web sites based on reach (Table 5-1) were the Excite Group (with a reach of 44.3), AOL (43.5), Yahoo! (38.4), Netscape (36.1), and Microsoft (21.9). Note that the Excite Group is composed of Excite (www.excite.com), WebCrawler (www.webcrawler.com), and Magellan (www.mckinley.com).

PC Meter also tracks the popularity of various Web categories. We have listed the top 10 sites in the “shopping” category in Table 5-2, though we discuss reach data for online shopping sites in particular in much greater detail in our later chapter on emerging and traditional retailers. Keep in mind that these sites are devoted primarily to shopping, and that many sites with shopping components do not neatly fall into these categories (e.g., Dell's site, www.dell.com).

Table 5-1

Top 25 Web Sites Based on Reach, February 1997

Rank	Site	URL(s)	Reach (%)
1	Excite Group	(1)	44.3
2	AOL	www.aol.com	43.5
3	Yahoo! Sites	(2)	38.4
4	Netscape	netscape.com	36.1
5	Microsoft	microsoft.com	21.9
6	GeoCities	geocities.com	18.0
7	Lycos	(3)	17.6
8	Infoseek	infoseek.com	17.0
9	Microsoft Network	msn.com	15.3
10	AltaVista	digital.com	14.5
11	CNET	(4)	11.8
15	ZD Net	(5)	10.5
12	Prodigy	prodigy.com	10.3
13	Compuserve	compuserve.com	9.7
14	Four11	four11.com	8.0
16	AT&T World Net	att.net	7.6
17	Pathfinder	pathfinder.com	7.4
18	Switchboard	switchboard.com	7.0
19	Earthlink	earthlink.net	7.0
20	Netcom	netcom.com	6.8
21	Tripod	tripod.com	5.8
22	PSINet	inter.net	5.7
23	Concentric Network	concentric.net	5.6
24	Disney	disney.com	5.6
25	Angelfire	angelfire.com	5.5

(1) Excite Group consists of www.excite.com, www.webcrawler.com, www.mckinley.com, and www.city.net.

(2) Yahoo! sample includes www.yahoo.com, www.yahoo.co.uk, www.yahoo.jp.co, www.yahooligans.com, www.yil.com, www.bguide.com, and www.unfurled.com.

(3) Lycos sample includes www.lycos.com, www.newsalert.com, www.pointcom.com, and www.topnews.com.

(4) CNET sample includes www.cnet.com, www.gamecenter.com, www.search.com, www.shareware.com, www.download.com, www.news.com, www.activex.com, and www.mediadome.com.

(5) Ziff-Davis sample includes www.anchordesk.com, www.cdrom.com, www.cieurope.com, www.cobb.com, www.compint.com, www.complife.com, www.computerlife.com, www.csshopper.com, www.downloadnow.com, www.egm2.com, www.egmmag.com, www.cdrom.com, www.familypc.com, www.gamespot.com, www.hotfiles.com, www.interactive-week.com, www.macuser.com, www.macweek.com, www.netbuyer.com, www.nuke.com, www.pccomp.com, www.pccomputing.com, www.pcmag.com, www.pcmagazine.com, www.pcaged.com, www.pcweek.com, www.pview.com, www.techlocator.com, www.thesite.com, www.topfive.com, www.transfusion.com, www.underground-online.com, www.videogamespot.com, www.wsources.com, www.yahooocomputing.com, www.yil.com, www.zd.com, www.zdbop.com, www.zdil.com, www.zdimag.com, www.zdlabs.com, www.zdnet.com, www.zdtv.com, www.zdu.com, www.ziff-davis.com, and www.ziff.com.

Source: PC Meter.

Table 5-2

Top 10 Shopping-Specific Sites Based on Reach, February 1996

Shopping Domain	Reach (%)	Rank
shareware.com	4.1	1
download.com	4.0	2
columbiashouse.com	3.7	3
amazon.com	2.9	4
hotfiles.com	2.7	5
surplusdirect.com	2.4	6
freeride.com	1.7	7
jumbo.com	1.5	8
gw2k.com	1.4	9
bluemountainarts.com	1.3	10

Source: PC Meter.

Shopping Use Is Rising Steadily on the Web

Shopping (which we specifically define as the seeking of information about a product or service one is considering buying) appears to be rapidly becoming one of the most popular online activities. Just as browsing through the local mall can be considered shopping (even if no purchases are made), so can browsing on the Web.

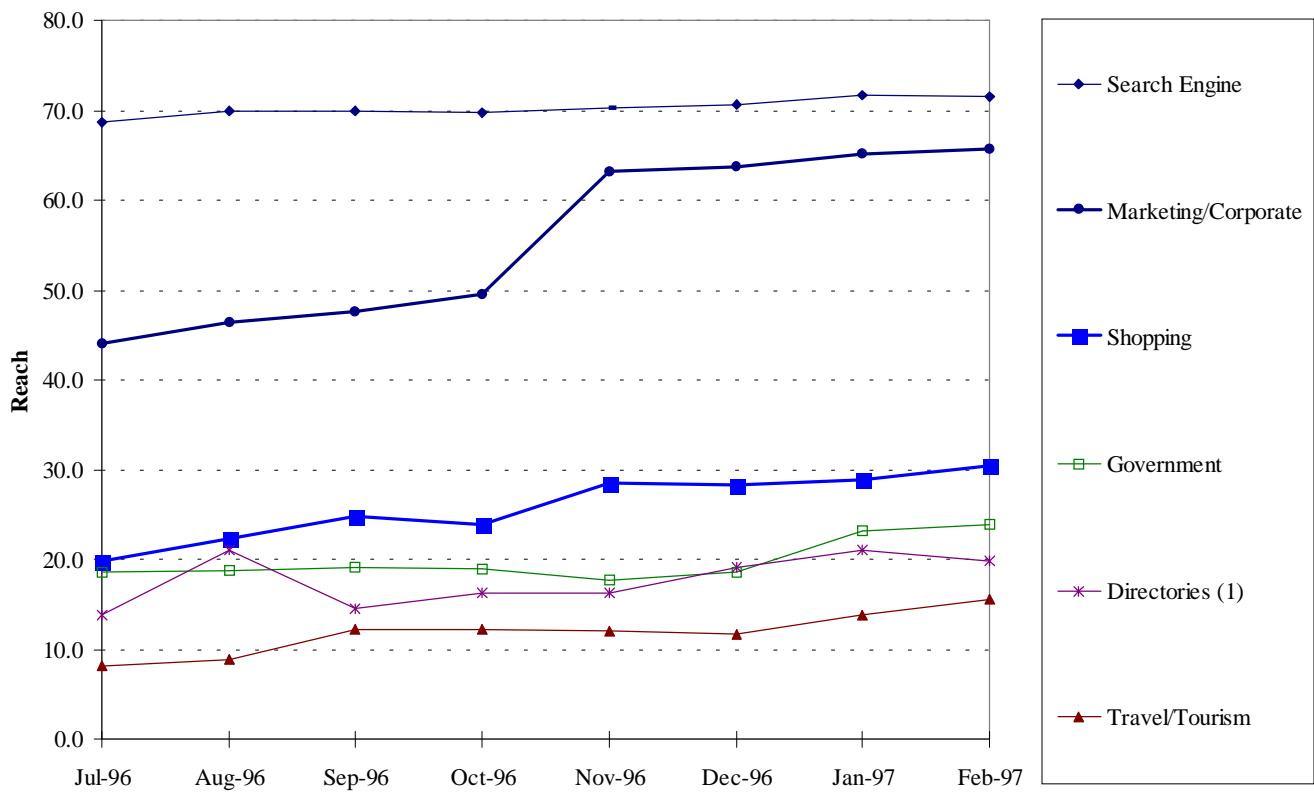
An important part of the purchasing process for many consumers is gathering product, pricing, and service information before making a purchase, and we think the Web provides an efficient and effective means for doing so.

While the rate of growth of such information search-and-retrieval is likely growing at a much quicker pace than actual online transactions (i.e., *shopping* online is definitely more popular than *buying* online), we believe that, as more efficient, reliable payment methods evolve and become more widely available (and consumer confidence in the security of these transactions increases), transactions will also begin to ramp.

And the Surveys Say... Many Users Are Already Shopping

A recent CommerceNet/Nielsen survey revealed what we believe are some interesting insights into the current state of online shopping and buying (we include these data for their directional significance, not necessarily as exact estimates; Web measurement remains an inexact science). The survey indicates that approximately 73% of Web-using respondents spent some percentage of their online time searching for information about specific products or services. Of this group, 53% went on to make an actual purchase (either online or offline) and 15% actually made a purchase online.

Figure 5-1

Trended Reach (%) for Various Web Site Categories*

(1) August 1996 included att.net in directory classification.

* Reach data tracked by PC Meter.

The survey also focused on demographics, and found that:

- 1) the majority of online shoppers surveyed were males aged 25 to 49; 2) males were more likely to search for product information online than females (80% versus 63%), and were more likely to do so prior to making an actual purchase (58% versus 43%); and 3) adults aged 25 to 49 were most likely to search for product information, compared with both older and younger respondents (81% versus 63%). The survey's results showed that women comprised only 38% of the respondents who had used the Web in the past six months, and indicated that for these women, the Web had not yet provided as compelling a shopping experience as it does for men. Only 8% of female Web users had made an online purchase, compared with 18% of male Web users.

According to PC Meter, which tracks the Web surfing habits of a consumer sample of about 9,000–10,000 households, the percentage of its consumer-based sample of the

Web audience that visits shopping-specific sites has been rising (Figure 5-2 and Table 5-3). In February, 1997, **shopping-specific sites as a category had a reach** (defined as the percentage of the user sample that visited a shopping-related site) **of 31% among the U.S.-based consumers surveyed and ranked 8 times among the 12 most used categories of Web service.** This means that 31% of PC Meter's user sample visits sites that are *exclusively* for shopping and buying — the real percentage of users “shopping” online, using our definition above, is much higher, as many of the sites where shoppers go (such as Dell, Cisco, Microsoft, American Airlines, Yahoo!, or AOL Marketplace's 1-800-Flowers or Tower Records areas) are not limited to shopping and are thus are not categorized by PC Meter in its shopping category.

From July 1996 through February 1997, the categories of Web sites that saw the greatest change in their reach were as follows:

- *Travel/tourism sites* (e.g., Travelocity, American Airlines) saw reach grow 93% over the seven months, or 13% per month, from 8% reach in July 1996 to 16% in February 1997.
- *Shopping-specific sites* (e.g., Shareware.com, Amazon.com) expanded their reach 54%, or 8% per month, from 20% in July 1996 to a reach of 31% in February 1997.

- *Marketing/corporate sites* (e.g., Netscape, Real Audio), saw reach grow 49%, or 7% per month, from 44% reach in July 1996 to 66% in February 1997.

Although these shopping-specific and travel/tourism sites have a relatively low reach compared with search engines, marketing/corporate sites (many of which offer product and service information for shoppers), and news/information/entertainment sites, we view the upward trend in the share of Web users that visit these sites as very positive.

Table 5-3

**Trended Reach for Selected Web Site Categories:
(Ranked by Average Monthly Percentage Change in Consumer Audience Reach, July 1996 – February 1997)**

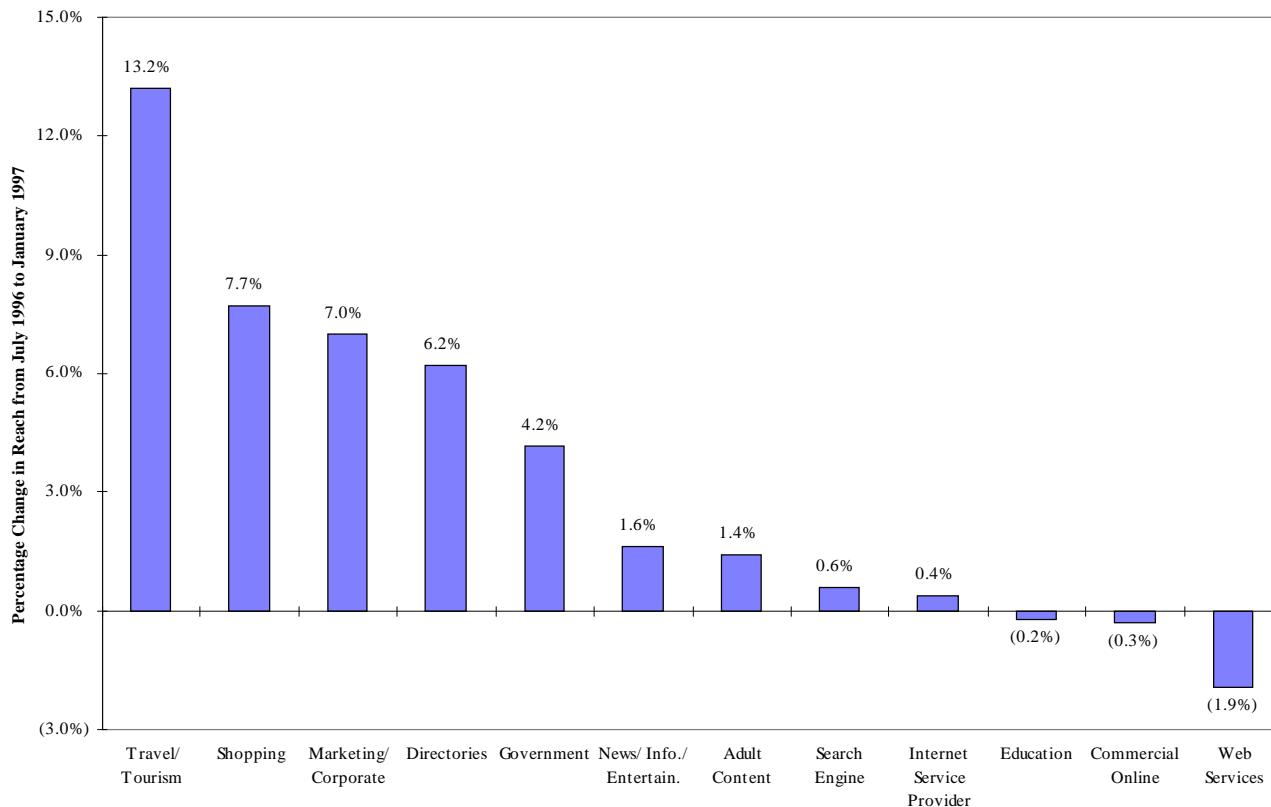
Web Classification	Reach (%)								Change from 7/96 to 2/97	Avg. Monthly Change from 7/96 to 2/97
	Jul-96	Aug-96	Sep-96	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97		
Travel/ Tourism	8.1	8.8	12.3	12.3	12.1	11.6	13.8	15.6	93%	13.2%
Shopping	19.8	22.3	24.8	23.9	28.5	28.4	28.8	30.5	54	7.7
Marketing/ Corporate	44.0	46.4	47.6	49.5	63.1	63.8	65.2	65.6	49	7.0
Directories	13.8	21.0	14.6	16.3	16.3	19.1	21.0	19.8	43	6.2
Government	18.5	18.7	19.1	19.0	17.7	18.5	23.1	23.9	29	4.2
News/ Info./ Entertain.	54.0	54.8	56.3	55.0	57.6	58.8	60.5	60.1	11	1.6
Adult Content	23.0	23.0	24.3	25.8	24.5	26.8	26.5	25.3	10	1.4
Search Engine	68.7	69.9	70.0	69.8	70.2	70.6	71.7	71.5	4	0.6
Internet Service Provider	56.9	57.4	59.1	58.2	58.0	58.1	57.8	58.4	3	0.4
Education	46.3	45.6	46.4	46.2	45.0	44.9	45.7	45.6	(2)	(0.2)
Commercial Online	61.9	62.2	61.5	61.5	61.9	63.0	62.3	60.6	(2)	(0.3)
Web Services	62.5	61.7	62.2	62.2	53.1	53.2	54.5	54.0	(14)	(1.9)

Reach for a Web site is defined here as the percentage of the user sample that visited a specific site in a given month.

Source: PC Meter

Figure 5-2

**Average Monthly Percentage Change in Consumer Audience Reach for Selected Web Site Categories
July 1996 to February 1997**



Reach for a Web site is defined here as the percentage of the user sample that visited a specific site in a given month.

Source: PC Meter

User Buying Habits

Of the 15% of respondents in the Commerce Net/Nielsen survey who have made a purchase online, most (68%) spent less than \$100 on their latest purchase, while a sizable number (7%) spent over \$500. Of those Web users who have searched for information online and then made either an online or offline purchase, 37% spent less than \$100, while 31% spent \$500 or more. Also, 79% of respondents expressed satisfaction with their online purchases (though the survey provided no comparable offline purchase satisfaction data). Of the satisfied group, 51% indicated that convenience was their primary cause for satisfaction.

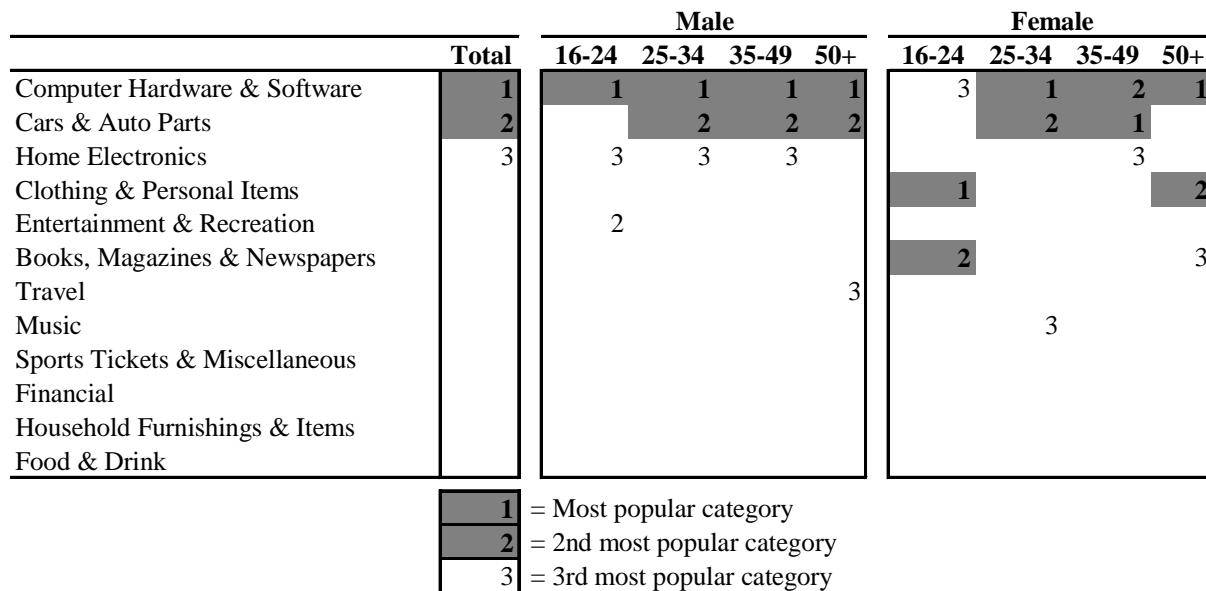
Convenience seems to be the most significant driver of online purchases — in fact, 69% of respondents who have purchased products or services on the Web in the past, or believe they are likely to do so in the future, cite convenience as a major factor for doing so.

As for what users are buying, the survey respondents' top three categories of merchandise for online and offline purchases (Figures 5-3 and 5-4), ranked computer hardware and software as the most popular, followed by cars and auto parts and home electronics. This confirms much of the anecdotal data we have gathered from retail sites (and maps well to many of the sites we profile in our earlier chapter profiling some of the latest and greatest Internet retailing brands) and correlates well with many of the highly ranked shopping sites in PC Meter's survey.

The survey also indicates that categories such as cars and home electronics are very popular with those seeking out information, but are not the type of items that are actually purchased online. While computer hardware and software still ranks first overall, other categories, such as books, magazines, and newspapers, as well as clothing, do much better in terms of those items actually purchased online.

Figure 5-3

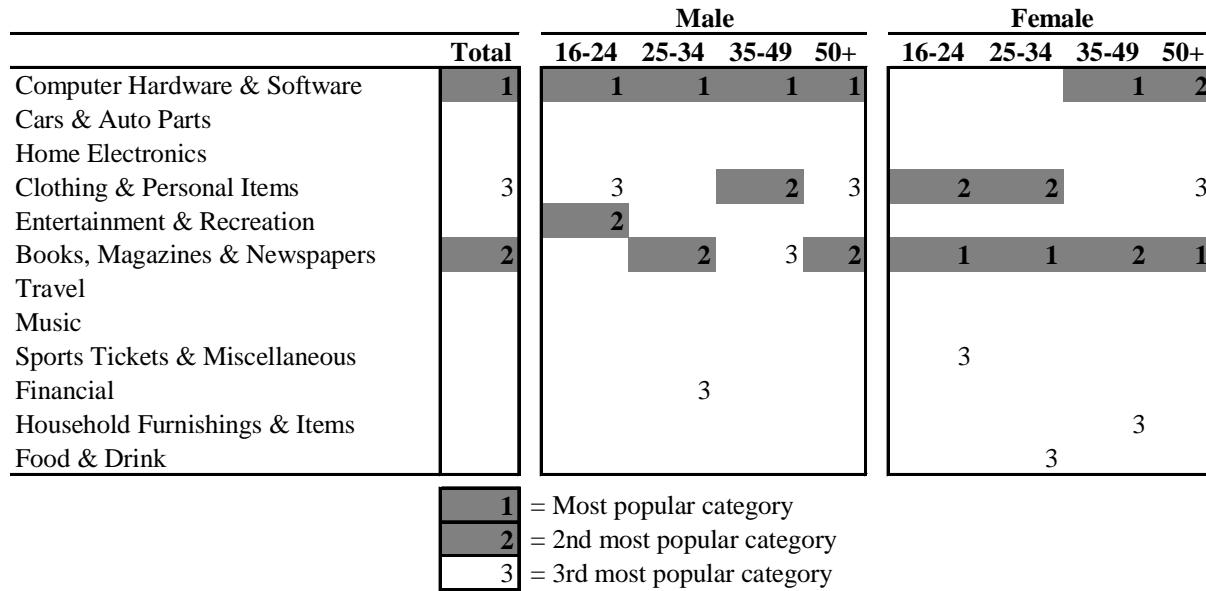
**Commerce Net/Nielsen Survey — Respondents' Top 3 Categories of Merchandise
For Online and Offline Purchases, in Aggregate and by Gender and Age**



Source: CommerceNet/Nielsen Media Research

Figure 5-4

**Commerce Net/Nielsen Survey — Respondents' Top 3 Categories of Merchandise
For (Strictly) Online Purchases, in Aggregate and by Gender and Age**



Source: CommerceNet/Nielsen Media Research

Chapter 6: The Latest and Greatest From Some of the Hottest Web Retailing Brands

Summary

- ◆ In this section, we show **examples of how various retailers and other businesses are approaching their online product and service offerings**, in the hopes of gaining traffic/users and generating revenue from online retail/commerce. Note that all of these sites are focused on **building a sense of community among users and are attempting to become the “source” for their respective market spaces**.
 - ◆ **If you aren’t inspired to take a Web shopping trip after perusing this chapter, we’d be surprised!** Even so, one should note that most, but certainly not all, of these sites still have limited product offerings compared with the brick-and-mortar world. For example, while Realtor.com has nearly one million home listings, its data cover the entire country; thus, pickings can be pretty slim on a region-by-region basis. Yet it’s also important to point out that the sites, in general, have improved significantly over the past 12 months — by including more content, features, and improving ease-of-use — and we believe this trend will likely continue.
-

If Web site traffic grows and commercial benefits can be garnered, we expect retailers to crank up the volume of dollars they spend on the Web. In this chapter, we take a quick look at what some of the best and brightest companies are doing to boost business at their sites by encouraging consumers and other businesses to spend at their sites. Table 6-1 lists the sites profiled in this chapter. We started with PC Meter’s list of the top shopping sites and augmented it with those sites we felt had a significant level of activity to warrant inclusion.

We have also broken out these sites into sub-categories to help classify the different types of shopping on the Internet. These sub-categories, in alphabetical order, are: **auction** (Onsale); **classifieds** (Classifieds 2000, Yahoo! Classi-

fieds); **clothing and apparel** (L.L Bean, Fashionmall); **direct mail and marketing** (CatalogLink and Firefly); **financial services** (E*Trade , Intuit, insWeb); **flowers and gifts** (Virtual Florist, Greet Street); **hardware and electronics** (Surplus Direct, Dell, Cisco); **magazines and periodicals** (The Electronic Newsstand); **music and entertainment** (Columbia House and Ticketmaster); **online malls** (QVC, iMall, ISN, CUC’s NetMarket, Microsoft, Wal-Mart); **real estate** (Realtor.com); **shipping** (Federal Express); **software** (such as CNET’s Shareware.com); **“supersites”** (AOL Marketplace); **traditional specialty retailers** (Amazon.com, Barnes & Noble, Auto-By-Tel, Virtual Vineyards, Garden Escape, GolfWeb, Peapod, Cyberslice); and **travel** (Travelocity).

Table 6-1

Top Web Shopping Sites in Specific Categories, Ranked by February 1996 Reach (PC Meter)^{(a)(b)}

(Bolded Sites Are Profiled in This Chapter)

Software	Hardware/ Electronics	Online Malls	Clothing/Apparel	Flowers/Gifts	Music/ Entertainment
shareware.com	surplusdirect.com	qvc.com	llbean.com	bluemountainarts.com	columbiahouse.com
download.com	gw2k.com	imall.com	landsend.com	virtualflorist.com	cdnow.com
hotfiles.com	bmgmusicservice.com	ishops.com	(fashionmall.com)	virtualflowers.com	musicblvd.com
jumbo.com	cdw.com	compass-ent.com		giftone.com	(ticketmaster.com)
tucows.com	netbuyer.com	viamall.com		(greest.com)	
cdrom.com	compusa.com	cuc.com			
buydirect.com	insight.com	zmall.com			
egghead.com	pbfactoryoutlet.com	isn.com			
galttech.com	warehouse.com	wal-mart.com			
32bit.com	(dell.com) (cisco.com)	cybersuperstores.com			
		internet.net			
		shopsite.com			
		cybershop.com			
		(microsoft.com)			
		(netmarket.com)			
Other Specialty Retail	Direct Mail/ Marketing	Auction	Financial Services(b)	Travel /Tourism(b)	Classifieds(b)
amazon.com	cataloglink.com	onsale.com	(qfn.com)	(travelocity.com)	(classifieds2000.com)
autobytel.com	freeshop.com	ebay.com	(dbc.com)		(yahoo.com)
pacificcoast.com			(galt.com)		
cbooks.com			(quote.com)		
(golfweb.com)			(cnfn.com)		
(barnesandnoble.com)			(wsj.com)		
(gardenescape.com)			(etrade.com)		
(peapod.com)			(secapl.com)		
(virtualvin.com)			(insweb.com)		
(cyberslice.com)					
Magazines & Periodicals(b)	Supersite	Miscellaneous	Shipping	Real Estate(b)	
(www.ewnews.com)	(AOL Marketplace)	freeride.com register.com	(fedex.com)	(realtor.com)	

(a) *Sites in parentheses are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them here because, in addition to other purposes these sites may serve, online shopping/commerce at these sites is significant and is an important element of the site's activity.*

(b) *Financial Services, Travel/Tourism, Classifieds, Real Estate, and Magazines/Periodicals are categories separate from Shopping in PC Meter's survey. We include them here as they are essentially a form of commerce.*

A Quick Look at Some Cutting-Edge Web-based Retailers

To give a sense of trend and scale, we have listed some of the early stage consumer and business-to-business Internet-based brands with commerce/retail success stories (Table 6-2). Traditional retailers that have launched transaction-based Web sites include Wal-Mart (www.wal-mart.com),

LL Bean (www.llbean.com), Lands' End (www.landsend.com), J Crew (www.jcrew.com), Eddie Bauer (www.ebauer.com), and Spiegel (www.spiegel.com). Note that we use data for various time periods — week, month, quarter, year — in the following table. We have annualized the data to determine, admittedly, some shoot-from-the-hip revenue run rates.

Table 6-2

Transaction-Based Web Sites' Annualized Online Gross Revenues

Company	Business Line(s)	Stated Online Revenue/Period	Annualized Online Revenue*
Cisco	Internetworking products	\$5MM — per business day (4/97)	\$2,000MM run-rate by 7/97E
CUC	Various consumer products	\$90MM — 11/96	\$1,080MM
America Online	Various consumer products	\$98MM — C1Q97	\$392MM
Dell Computer	Personal computers	\$7MM — per week (2/97)	\$364MM
Gateway	Personal computers	\$100MM in transactions online, May-December 1996	\$150MM
E*TRADE	Securities trading	\$32MM — C1Q97	\$128MM
ONSALE	Auctions	\$18MM — C1Q97	\$72MM
Amazon.com	Books	\$16MM — CQ197	\$64MM
1-800-FLOWERS	Flowers, gifts	\$4MM — 12/96	\$48MM
Peapod	Groceries	\$12.7MM — CQ197	\$51MM
Auto-by-Tel	Automotive Shopping Services	\$2.2MM — CQ496	\$9MM

* To calculate annualized online revenue (or value of goods/services sold through the site), we have simply annualized stated online revenue. We have not factored in seasonality or growth. These respective businesses are growing rapidly, so actual annual revenues will likely be higher than our annualized estimates. For Cisco, we have not annualized stated online business line revenue but have used Cisco's own projection for mid-C1997 revenue run rate for its online business. E = Morgan Stanley Technology Research Estimate. NA = Not available.

Software

Shareware.com (www.shareware.com) — CNET's Shareware.com is a site that allows users to search for, browse, and download the best software on the Web (including freeware, shareware, demos, fixes, patches, and upgrades) from the top-managed software archives and computer vendor sites on the Internet. Users can subscribe to Shareware Dispatch, a weekly e-

mail newsletter, which announces the arrival of new software and the most popular files. Software companies can register to have their archives included in Shareware.com's search directory. Shareware.com, like its parent and sibling sites, CNET.COM and NEWS.COM, uses an advertising model for revenue generation.

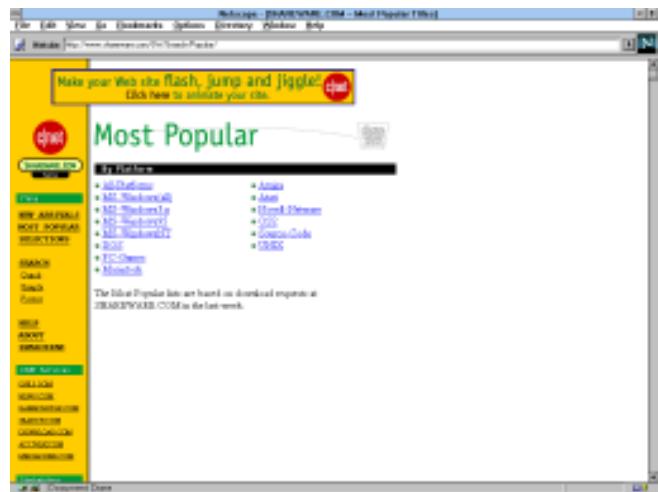
Shareware.com — Home Page



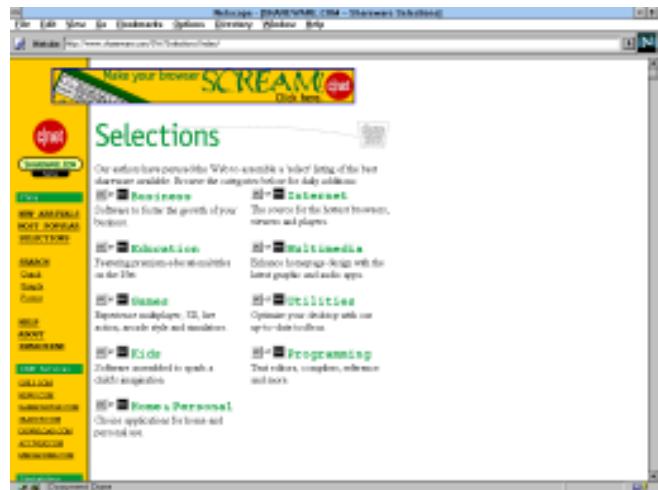
Shareware.com — New Arrivals



Shareware.com — Most Popular



Shareware.com — Selections



Hardware/Electronics

Surplus Direct (www.surplusdirect.com) — Surplus Direct is one of the more popular (in terms of reach) of the several computer hardware and software retail sites on the Web. The site

offers consumers around-the-clock online ordering, extensive product category listings, newly released "hot products," and promotions (like the ad below advertising a car giveaway).

Surplus Direct — Home Page



Surplus Direct — 'Hot Product' Page



Surplus Direct — Product Category Listings



Surplus Direct — Promotional Page



Hardware/Electronics *(continued)*

Dell Computer (www.dell.com) — Dell has indicated that it is generating Web-based sales of about \$7 million per week, up from zero a year ago. The company believes that a number of customers use the service to price product and then secure the actual product over the phone. So actual Web-based sales may be low relative to actual use of the Web site. Dell recently indicated that Internet-based sales could account for 50% of its business in two to three years.

Dell plans to offer two Web-based sales plans over time: one for consumers and one for businesses. The consumer version will essentially be the evolution of the company's current Web site.

Dell Store — Home Page



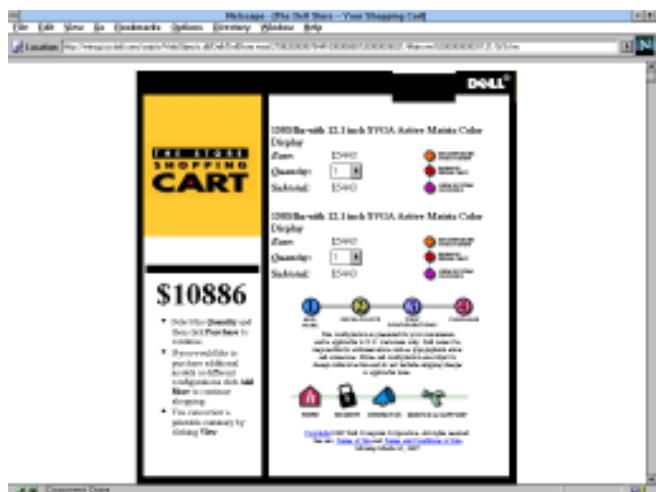
Dell Store — Configuration Page



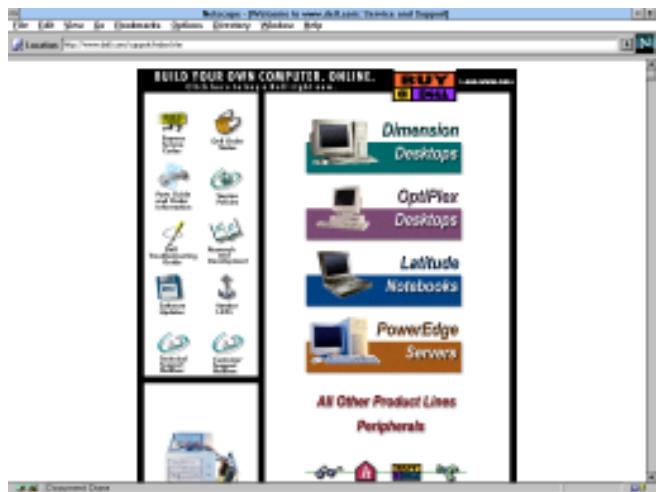
The business offering will consist of customized Web pages for specific accounts — for example, Dell will build and customize versions of its current Web site with customers' pre-set configuration, standards, and approval priorities. For Dell, a corporate offering is important for two reasons: 1) it builds another tie to customers, and 2) it should, over time, save substantial sales costs by replacing sales people with online access.

Dell believes that a strong online presence will be incremental to revenue but also believes adamantly that it will be an important tool to drive down selling costs while still delivering a comparable level of service to its customers.

Dell Store — Shopping Cart



Dell Store — Service and Support



Hardware/Electronics *(continued)*

Cisco (www.cisco.com) — Cisco, the internetworking company, established a business-to-business commerce area (Cisco Connection Online) on its Web site in June 1996 and recently indicated that it had generated \$75 million in product sales through mid-December. Note that the company's products sell at prices ranging from hundreds of dollars to hundreds-of-thousands of dollars. Cisco believes its Web-related sales could reach a \$2 billion run-rate by July 1997. The efficiencies and gross margins

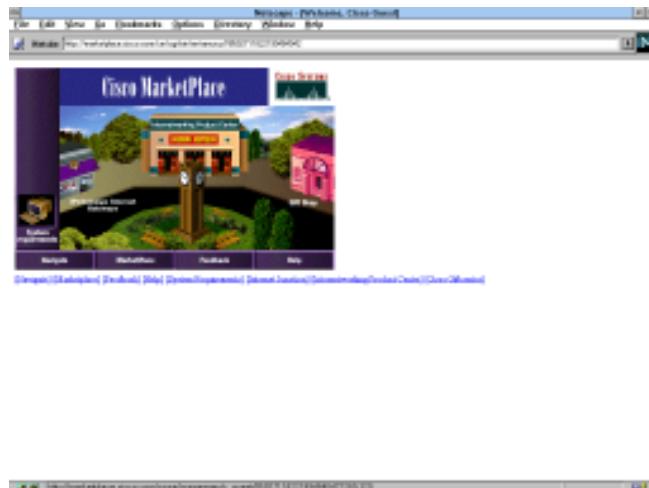
that Cisco can achieve through selling on the Web can be pretty sweet, and, yes, it's keeping its customers happy and providing fast response time and around-the-clock service and support.

Cisco's online marketplace provides customers with a complete product catalog, a configuration agent, a pricing agent, and an order tracking agent. There is even a gift shop for the truly devoted.

Cisco Products — Home Page



Cisco — MarketPlace



Cisco — Configuration Agent



Cisco — Product Catalog



Online Malls

iQVC Shop (www.qvc.com) — iQVC Shop is QVC's online interactive shopping division, and works from the same inventory of product. The site features searches by product category, as well as special promotions and a page featuring the current online item. iQVC is able to leverage the huge order-taking, distribution, and supplier infrastructure that the company has built up through its TV home-shopping efforts.

iQVC — Shop Site



iQVC — Special Promotion: Packard-Bell PC



Key product categories include jewelry (QVC is one of the largest purveyors of jewelry in the world), beauty, books, computers and software, domestic, electronics, furniture, hardware, lawn and garden, kitchen, office supplies, personal, sports and apparel, and women's accessories.

iQVC — Current On-Air Item



iQVC — Sporting Equipment: Golf / Fatboy Irons



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Online Malls *(continued)*

iMALL (www.imall.com) — iMALL is one of the more popular online “shopping malls.” It offers links to more than 1,000 stores, both within its site and to affiliated retailers with sites of their own, and receives fees from these retailers for featuring their sites. Retailers include Big Dog Sportswear, Hanes, MGM

Grand, and Circus Circus. The site has recently been redone to include travel and financial services, and more new features are expected to be added, including an entertainment area, a sports area, and a gift registry.

iMALL — Home Page



iMALL — Guide



iMALL — Big Dog Sportswear



iMALL — Gift Shop



Online Malls *(continued)*

ISN (www.isn.com) — ISN is the online counterpart of HSN, the Home Shopping Network. ISN focuses on selling computer-related products, and offers daily specials along with its extensive category listings. ISN also features a product advice section, which carries recent articles from industry publications like *PC Magazine*, *Computer Shopper*, and *MacUser*.

Product categories include hardware, software, modems and networking equipment, monitors, printers, scanners, and accessories,

ISN — Home Page



ISN — Product Special: US Robotics 56K Modem



and there are more than 35,000 product listings. Members have immediate access to software through the Downloadable Software store. The site also features a product search engine that helps customers quickly locate what they are looking for, or compare products more easily. ISN is able to leverage the infrastructure that HSN has built up through its TV home-shopping efforts.

ISN — Product Advice



ISN — Notebook Computers



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Online Malls (*continued*)

Wal-Mart (www.wal-mart.com) — Wal-Mart's online store follows the same model as its retail stores: a targeted selection of heavily discounted products, and it even includes a greeter at the "front door." The site features promotions and specials, and access to products such as apparel, automotive, jewelry, computers, books, music, sporting goods, electronics, baby products, lawn and garden, pets, toys, hardware, a flower shop, and even groceries (a 12-pack of Sam's Choice Cola is only \$1.97!).

Wal-Mart — Home Page



Wal-Mart — Special Deals



While the selection of products in certain categories (such as music or books) may not equal those of other specialty retailers on the Web (such as Columbia House or Amazon.com), Wal-Mart remains a formidable brand name with deep pockets and impressive pricing power.

Wal-Mart — Online Store



Wal-Mart — Bookstore



Online Malls (*continued*)

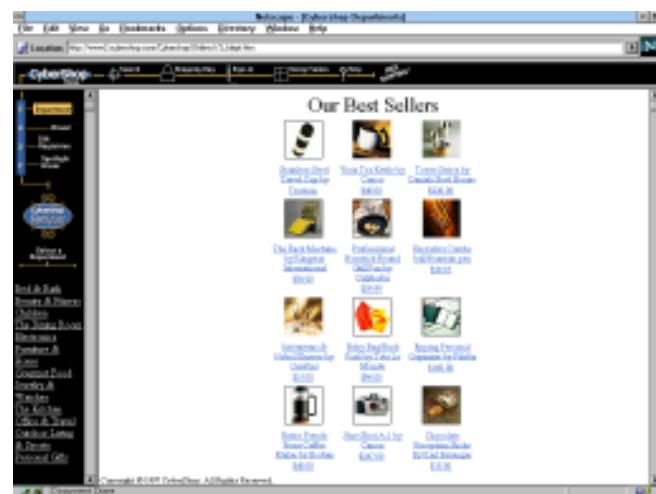
CyberShop (www.cybershop.com) — CyberShop is focusing its efforts on becoming a high-end department store on the Web. The site features more than 15,000 products from brand-name manufacturers, and has received critical acclaim from industry magazines. The site provides a number of specialty boutiques, an on-

line gift registry, as well as a listing of best-sellers or special promotions. Cybershop's products include home furnishings, sporting goods, watches, jewelry, electronics, and gourmet food. Cybershop also offers guaranteed prices and free shipping.

CyberShop — Home Page



CyberShop — Departments



CyberShop — Boutiques



CyberShop — Birthday Boutique



Online Malls (continued)

Microsoft (www.microsoft.com) — Microsoft is placing large bets in several major Internet commerce areas, including travel (Expedia), automotive (CarPoint), music (Music Central), and finance (Investor). All are part of the publicly accessible MSN (www.msn.com) and boast slick graphics, quick software, and deep content.

Expedia (www.expedia.msn.com) provides travelers with a large number of resources and tools, including an interactive travel agent, a fare tracker, a hotel directory with maps included, travel reviews, and tips, as well as a world guide, weather information, and even a currency converter.

Microsoft — Expedia Travel



Microsoft — CarPoint



CarPoint (www.carpoint.msn.com) provides consumers with a wealth of information, such as news, reviews, dealer invoice information, complete model listings, and a dealer locator.

Music Central (www.musiccentral.msn.com) provides audiophiles with an online store of more than 80,000 titles, as well as music news, reviews, celebrity interviews, and even a bulletin board room for listener comments.

Microsoft Investor (www.investor.msn.com) is designed to help individual investors research, plan, execute, and monitor their investments. Investor supplies news, commentary, quotes, portfolio tracking, historical information, market information, as well as direct links to online trading with Charles Schwab, E*TRADE, Fidelity Investments, and PCFN.

Microsoft — Music Central



Microsoft — Investor



Online Malls *(continued)*

CUC NetMarket (www.netmarket.com) — CUC's preview version of its new and improved NetMarket site basically takes the current version of www.netmarket.com and quadruples the number of features. The product looks like CNET (www.cnet.com) for shopping. With NetMarket, CUC is aspiring to create something like a membership-based, truly interactive version of QVC for the Web. And with its current base of about 64 million phone-based members, we believe the company is in an excellent position to 1) leverage/convert a portion of its user base to lower-cost Web-based services and 2) capitalize on its extensive experience with consumer databases and product distribution.

In our opinion, the impressive things about CUC's site are/will be the following: 1) variety (offering travel, personal finance, hardware, cars, music, books, apparel, consumer products, local discounts, and more); 2) value (advertised prices are 10–50% below manufacturers' suggested retail prices) — owing to its membership model, CUC is able to price products near cost; 3) various

CUC NetMarket — Home Page



CUC NetMarket — TravelVantage



shopping venues — the ability to sort/shop by product brand, best values of the day, auction, flea market, or store type (like travel or books); 4) searching and indexing capabilities — if you want a camera, just type the word into the search function; 5) enhanced features, like 3-D, chat, profiling, and agenting; 6) membership-based service (like \$59 for a one-year membership) — note that many members will "save" the membership fee on their first purchase; 7) as it has done with its core business, CUC will allow partners to overtake the NetMarket interface and offer the product as if it belonged to them; 8) CUC will augment marketing of its site by bundling a CD-ROM-based advertisement with all Davidson and Sierra software titles; 9) CUC will introduce the use of "reward dollars," which members will receive when they make purchases online. These dollars can either be redeemed for cash, used as a dollar-for-dollar credit for goods and services, or multiplied in areas such as the flea market. Riddler.com (www.riddler.com) also utilizes a reward-type system, and its site consistently demonstrates much higher-than-average usage times per member.

CUC NetMarket — AutoVantage



CUC NetMarket — Book Stacks



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Clothing/Apparel

L.L. Bean (www.llbean.com) — L.L. Bean has brought its famous catalog online, offering Web surfers the same 24 hour-a-day, 365 day-per-year service that its store in Freeport, Maine, offers. Unlike the Freeport store, the online store has “locks” on the doors, so that customers can make transactions in a secure environment. Customers can order online, via phone, fax, or through the mail. Bean has set up shopping convenience features like shopping lists, a gift registry, and an address book, which can contain frequently used addresses for quick access. Visitors can also request free catalogs.

Bean's online version currently contains only a slice of the retailer's full product line-up, but it does cover all of the major

categories, including clothing, home and camp furniture, hunting, fishing, camping and sporting goods, and of course the famous Bean Boots.

Bean also provides access a service called “Park Search,” which allows visitors to search through more than 1,500 outdoor areas, including national and state parks, national forests, and national wildlife refuges. Visitors can select activities that interest them, and the service will list those parts best suited to their interests.

All that's missing is the Ben & Jerry's Ice Cream shop out front.

L.L. Bean — Home Page



L.L. Bean — Boots



L.L. Bean — Product Guide



L.L. Bean — Adirondack Furniture



Clothing/Apparel *(continued)*

Fahionmall.com (www.fashionmall.com) — Fashionmall has staked out the high end of the online retail market, providing customers with products from famous designers and shops, online runway shows, product and shopping guides, online fashion

Fahionmall.com — Home Page



Fahionmall.com — Guide Page



magazines, as well as profiles of the designers. Could this be the future of Madison Avenue and Rodeo Drive? Possibly, but it takes some of the enjoyment out of the people-watching!

Fahionmall.com — Magazine Page



Fahionmall.com — Runways Page



Flowers/Gifts

Virtual Florist (www.virtualflorist.com) — The Virtual Florist provides customers with the ability to send both real flowers and arrangements, as well as “virtual bouquets.” Real flowers are delivered through FTD, Teleflora, and Redbook services, while

“virtual flowers” are announced to recipients via e-mail, and can be viewed with a standard Web browser on the Virtual Florist site. While the real flower service is paid for, the “virtual flowers” are free to send and receive, and help drive traffic to the site.

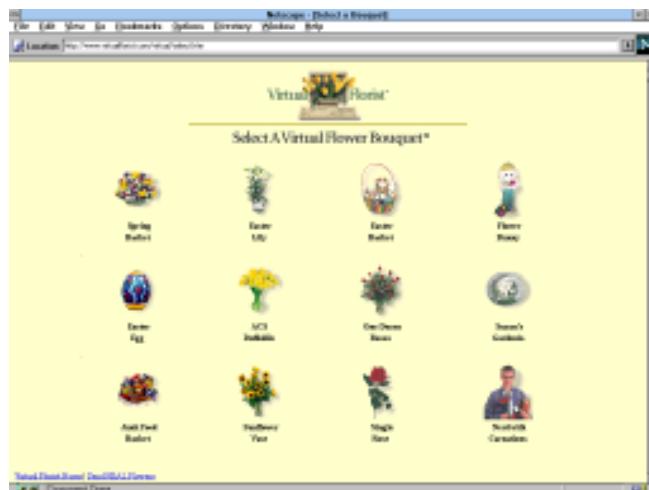
Virtual Florist — Home Page



Virtual Florist — Order Form



Virtual Florist — Virtual Bouquet Page



Virtual Florist — Roses



Flowers/Gifts *(continued)*

Greet Street (www.greetst.com) — Greet Street has taken the dash out of the dash to the card shop, and allows customers to browse through a large selection of paper greeting cards online, which can then be ordered and mailed, either immediately, or on a specified date (like right before your mother's birthday). Cards can even have a customized message inscribed in a variety of creative fonts and mailed directly to the intended recipient. Fre-

quent greeters are able to keep a large amount of personal information online, including important dates and addresses, which speeds the ordering process. Greet Street has also implemented an experimental search engine which attempts to help customers find appropriate cards for certain events, and even search for cards written in different humorous styles.

Greet Street — Home Page



Greet Street — Card Selection

Greet Street — Lex's Nest



Greet Street — Best-Sellers

Music/Entertainment

Columbia House (www.columbithouse.com) — Columbia House (that oh-so-familiar direct marketer) is one of the more popular entertainment retailers on the Web (it ranks second among all shopping sites in terms of reach in PC Meter's January

survey). Columbia House members (it does not cost anything to join) may purchase any of a large number of music and video titles, and frequently receive many discount and promotional offers.

Columbia House — Home Page

Columbia House — Star Wars Promotion

Columbia House — Member Center

Columbia House — 'Zine & Heard

Music/Entertainment (continued)

Ticketmaster Online (www.ticketmaster.com) — Ticketmaster's Web site allows customers to directly access information and purchase tickets for concerts, sporting events, shows, the theatre, family activities, and other events all over the U.S. Ticket shoppers can search by city, venue, date, or artist, and can conduct more advanced searches with those variables. Ticketmaster processes about 1.8 billion ticket orders per year, and has exclusive rights to be the ticket sales agent for nearly two-thirds of the nation's more than 10 million seats at theaters, stadiums and concert halls. We think Ticketmaster Online is a very compelling service because it significantly improves a customer's ability to find an event that best suits his or her interests and schedule and to quickly gather all of the relevant information about that event. Ticketmaster Online is a clear example, in our opinion, of how

consumers can be empowered with an online tool, allowing them to purchase a product more quickly, more efficiently, and more accurately than before. Note that online ordering capability is dependent on whether the local Ticketmaster service is enabled for it, as online orders are actually channelled through a local office.

The Ticketmaster site also features an online chat area, a shopping area for T-shirts and such, an area called Jackpot, where shoppers can win free tickets and merchandise, a travel area, a news site, and an online magazine called *Live!* The site is packed with information, including directions to venues, seating charts, and links to music artists. Shoppers can also look at the top 25 events listed for all types of activities.

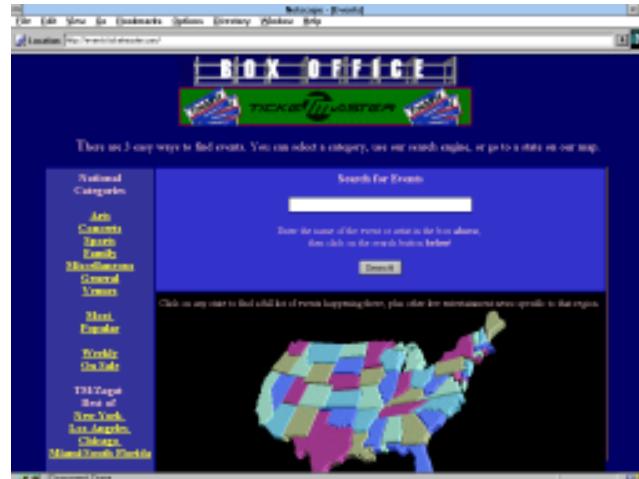
Ticketmaster Online — Home Page



Ticketmaster Online — U2 Tickets



Ticketmaster Online — Box Office



Ticketmaster Online — Top 25 Events

Top 25 Events as of May 17, 1997.		
	Today	Performance
1	15	3
2	LOCHINVARA	2
3	SEA TURTLES	5
4	ATLANTA BRAVES	4
5	DAIRY MASTERS BARN	8
6	CONTINENTAL CROWN	—
7	COZY GROOVIE	10
8	FISH	10
9	EDGERTON	7
10	WORLD WRESTLING FEDERATION	11
11	EMI LADY EXCUSE	16
12	EMI LADY EXCUSE	8
13	ADD-ONITE	—

Specialty Retail

Amazon.com (www.amazon.com) — Amazon.com has one goal: to sell books. And to date, the company has not aggressively pursued advertisers for its site, but has aggressively discounted its titles. Amazon.com is one of the leading bookstores on the Web, providing users with the ability to easily search through its database of over 2.5 million books. It's very easy, with a credit card, to purchase books from the company's Web site at competitive prices for delivery by mail.

Amazon.com — Home Page

[Amazon.com — Search by Subject>Title/Author](#)

 Home Search Books CDs Software Movies & TV Music Audiobooks eBooks Kindle Gift Cards Gift Registry Wish List Cart Log In Sign Up																					
<h2>Search by Author, Title, and Subject</h2> <p>Type Author, Title, or Subject for any combination of the first/last name(s) or words below. You can enter entries in all three fields.</p> <p>Question? Read our Search Help or see the Help Examples at the bottom of this page.</p> <p>From other ways to search the Amazon.com Catalog by: Author Title Subject</p> <hr/> <table border="0"> <tr> <td style="width: 150px;"> Author: </td> <td> <input style="width: 150px; height: 1.5em;" type="text" value=""/> </td> </tr> <tr> <td colspan="2"> <input checked="" type="checkbox"/> First Name <input type="checkbox"/> Last Name, First Name (or Initials) <input type="checkbox"/> Last of First Name </td> </tr> <tr> <td colspan="2"> <hr/> </td> </tr> <tr> <td> Title: </td> <td> <input style="width: 150px; height: 1.5em;" type="text" value=""/> </td> </tr> <tr> <td colspan="2"> <input checked="" type="checkbox"/> Exact Start of Title <input type="checkbox"/> Title (Words) <input type="checkbox"/> Start(s) of Title Word(s) </td> </tr> <tr> <td colspan="2"> <hr/> </td> </tr> <tr> <td> Subject: </td> <td> <input style="width: 150px; height: 1.5em;" type="text" value=""/> </td> </tr> <tr> <td colspan="2"> <input checked="" type="checkbox"/> Exact Subject <input type="checkbox"/> Start of Subject <input type="checkbox"/> Subject (Words) <input type="checkbox"/> Starts(s) of Subject Word(s) </td> </tr> <tr> <td colspan="2"> <hr/> </td> </tr> <tr> <td colspan="2"> Author Search Tip Title Search Tip Subject Search Tip </td> </tr> </table>		Author:	<input style="width: 150px; height: 1.5em;" type="text" value=""/>	<input checked="" type="checkbox"/> First Name <input type="checkbox"/> Last Name, First Name (or Initials) <input type="checkbox"/> Last of First Name		<hr/>		Title:	<input style="width: 150px; height: 1.5em;" type="text" value=""/>	<input checked="" type="checkbox"/> Exact Start of Title <input type="checkbox"/> Title (Words) <input type="checkbox"/> Start(s) of Title Word(s)		<hr/>		Subject:	<input style="width: 150px; height: 1.5em;" type="text" value=""/>	<input checked="" type="checkbox"/> Exact Subject <input type="checkbox"/> Start of Subject <input type="checkbox"/> Subject (Words) <input type="checkbox"/> Starts(s) of Subject Word(s)		<hr/>		Author Search Tip Title Search Tip Subject Search Tip	
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The company has expanded its offerings to include book-club-like services and book reviews. It highlights hot books, compiles a best-seller list (which, yes, included *The Internet Report* for a while), groups books by interest area, offers interviews with authors, and provides customer book reviews.

Amazon.com — Journal

Amazon.com — Titles in the News

Titles in the News

Stay up-to-date on the latest books everyone's reading about... from Oprah's Book Club to the newest film, *Book*. *Times* book reviews— and they've been hot for a while.

Book [Book Club](#) [Book Reviews](#) [Booksellers](#) [Bookshelf](#)
Book reviews, interviews, and more for the best books

In the *New York Times* Book Review — April 13
Book reviews

"We have an option for everyone here, and I can't imagine it. If it's not a top-notch novel, I won't say so." (For the right book) *Sidney Lumet*, New York's chief judge and a strong political one, especially concerned about choices of genetics. But his spiky bit into teachers, librarians, and drug dealers found him on the other side of the line, looking up with genuine affection at the students and parents.

Brought up 15 miles from her birthplace, the former Adjei seems a born teacher—confident and well-motivated by a desire to learn. He respects her, gives her an unusual perspective on the realities of urban independence, and has respect. *Afua Hirsch* is thoughtful consideration of personal isolation and political commitment on several levels: death panels to mandatory community sentencing.

OBRAH'S [OBRAH'S](#)
Book reviews

This memorandum is based on information available to the public. No representation is made that it is accurate or complete. This memorandum is not an offer to buy or sell or a solicitation of an offer to buy or sell the securities mentioned. Morgan Stanley & Co. Inc. and others associated with it may have positions in and effect transactions in securities of companies mentioned and may also perform or seek to perform investment banking services for those companies.

Specialty Retail *(continued)*

Auto-By-Tel (www.autobytel.com) — Auto-By-Tel provides auto shoppers with an online service where they can request a price quote on a new or used car, which it then forwards to a participating, accredited dealer, who offers the shopper a low rate on the vehicle. Consumers do not pay for the service, but dealers pay annual and monthly fees to be marketed by Auto-By-Tel and for exclusive territorial rights. Auto-By-Tel also provides consumers with links to informational sites, such as Microsoft's CarPoint, as

well as auto-financing and auto-insurance sites, where car buyers can get discounted rates and quotes.

During the first quarter of calendar 1997, Auto-By-Tel had revenues of \$3.4 million, up 54% sequentially from \$2.2 million in C4Q96. In the same quarter, Auto-By-Tel received 175,000 purchase requests, up 40% from 125,000 in C4Q96. At the end of C1Q97, Auto-By-Tel had 1,400 paying franchises of subscribing dealers.

Auto-By-Tel — Home Page



Auto-By-Tel — Purchase Request

Auto-By-Tel — Financing



Auto-By-Tel — Insurance



Specialty Retail (*continued*)

GolfWeb (www.golfweb.com) — GolfWeb's motto of "everything golf" seems to hold true, as the company's Web site provides breaking news, tips for one's game, suggestions on where to play, online travel reservations through American Express, as well as a complete online pro shop with discounted prices. The pro shop is geared to customers from around the

world, and has a dedicated Japanese section. Visitors can buy golf clubs, bags, shoes, apparel, sunglasses, software, and a host of accessories. Rather than offering the ubiquitous "shopping cart," GolfWeb provides customers with their very own online golf cart when shopping. Replace your divots, please!

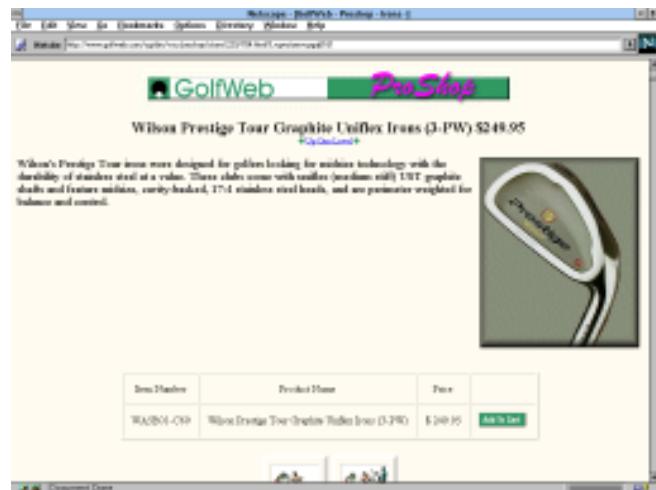
GolfWeb — Home Page



GolfWeb — ProShop



GolfWeb — Product Description



GolfWeb — American Express Travel Service



Specialty Retail (continued)

Barnes and Noble (www.barnesandnoble.com) — Barnes and Noble recently unveiled its Web site with much fanfare, and is making an aggressive push to outcompete Amazon.com, the early online bookselling leader. Barnes and Noble offers more than 1 million titles, and discounts its hardcovers by 30% and its paperbacks by 20%. Overnight delivery is available on over 100,000 titles, and the company believes that this will grow to 400,000 titles before the end of 1997. Barnes and Noble also has an agreement to be the exclusive bookseller on AOL, and the site is structured in much the same way that the Web site is set up. Barnes and Noble can be found on AOL at keyword: Barnes and Noble.

The company's site allows shoppers to search by author, title or subject, or browse by subject. There is a best-sellers section,

Barnes and Noble — Home Page

Barnes and Noble — Book Search

which lists the top titles in hardcover fiction, paperback fiction, hardcover nonfiction, and paperback nonfiction. Each subject area contains related articles from Barnes and Noble editors, interviews with authors, as well as a top 10 books list. Barnes and Noble has also built a large community area, which features live chats with authors, a book review bulletin board, articles by Barnes and Noble editors, and a book forum that allows shoppers to chat about a host of subjects. The company has also partnered with the Firefly Network to launch a personalized book recommendation area, which leverages Firefly's personal preference software and should help create a highly customized level of service.

Barnes and Noble — Community Section

Barnes and Noble — Hardcover Bestsellers

Specialty Retail *(continued)*

Garden Escape (www.gardenescape.com) — Garden Escape is designed to provide avid gardeners with a comprehensive resource for purchasing gardening products, purchasing gifts, designing

gardens, researching plants and flowers, as well as discussing issues online with other green thumbs. Garden Escape even provides a gift registry.

Garden Escape — Home Page

Garden Escape — Gift Center

Garden Escape — Shopping Page

Garden Escape — Magazine

Specialty Retail (continued)

Peapod (www.peapod.com) — Peapod is a leading online grocery shopping and delivery service, available to consumers in six major metropolitan markets (Chicago, Boston, San Francisco/San Jose, Houston, Atlanta, and Columbus), and is accessed using Peapod's proprietary software via the Internet or through a direct dial-up connection. Peapod had approximately 43,000 members as of March 31, 1997 (up 29% from C4Q96 and up 244% since January 1996), with a service area encompassed over 5 million households (about 5% of total U.S. households). Peapod has partnered with four of the nation's five largest supermarket chains (American Stores, Safeway, Stop and Shop, and Kroger) to fulfill customer orders, and provides interactive marketing services to several national consumer goods companies, including Anheuser-Busch, Frito-Lay, Gillette, Kraft Foods, M&M Mars, and Tropicana.

Peapod had total revenues of \$29 million in 1996 (up 83% year-over-year), and \$9.5 million in C4Q96 (up 38% sequentially, or \$38 million annualized). The company had an operating loss of \$10 million in 1996, compared to a \$6.6 million operating loss in 1995. The U.S. retail supermarket business was about \$312 billion in 1996 (according to *Progressive Grocer's* 1996 Marketing Guidebook) and has been growing just slightly ahead of inflation

(2.8% for the trailing 12 months as of 3/97, according to Morgan Stanley data).

Peapod revenue per member can be broken into three pieces: membership fees (\$5–7 per month), delivery fees (averaging about \$5–7 per delivery), and merchandise premiums (a 5% markup of the total value of the merchandise delivered). Peapod also provides commercial delivery services, which have no monthly fee but carry a higher delivery fee and rate.

Peapod's proprietary software provides an easy-to-use, graphical interface and offers several ways to shop. Members can browse by section (meat, breads, beverages, and so on) or search for specific items, and can view such product details as size, weight, nutritional information, and even a picture. Peapod allows for specific comments on items ordered, such as whether bananas should be ripe or green, or what should be substituted if an item is out of stock. Customers can create personal lists, which speeds shopping for regularly ordered items, and are also able to use coupons and keep track of their spending relative to a budget. Payment can be made via check, credit card, or debit card, and customers can specify delivery date and time. In some locations, members can pick up groceries at their own convenience for a lower fee.

Peapod — Home Page



Peapod — Main Menu



Peapod — Grocery Store



Peapod — Product Details



Specialty Retail *(continued)*

Virtual Vineyards (www.virtualvin.com) — Virtual Vineyards provides customers with online access to a wide variety of California wines from small (and some big) vineyards, as well as a growing list of international vintages. The site also offers an international gourmet food shop to go along with the wine, and has recently added a cookware site. Virtual Vineyards provides its customers with regular reviews, specials, and even events,

such as online wine tastings. The site boasts a monthly wine club, and, of course, the “Ask the Cork Dork” section.

Virtual Vineyards has received high praise from both reviewers and customers, and seeks to provide its clientele with a unique, affordable, and constantly changing selection of wines and food, with a heavy focus on quality and customer service.

Virtual Vineyards — Home Page

Virtual Vineyards — Wine Shop

Virtual Vineyards — Food Shop

Virtual Vineyards — Cookware Shop

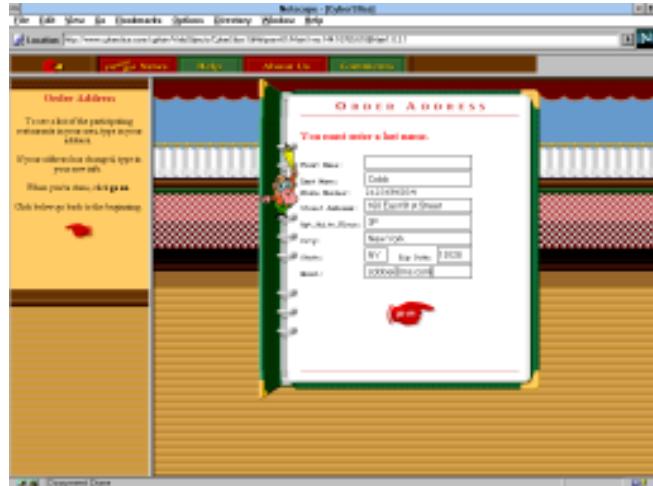
Specialty Retail *(continued)*

Cyberslice (www.cyberslice.com) — Cyberslice makes it quick and easy to order hot pizza (and other food) online. The slick but simple interface quickly moves customers through the ordering process. Customers are first prompted for their telephone number to see if they fall within a delivery area. If so, they are asked for a delivery name and address, and then given a list of pizzerias delivering within their area, as well as some advertised specials. After choosing a pizzeria, a menu appears, from which customers can make selections and view prices. Selected items appear on an order form, which a customer can review before completing the order.

Cyberslice — Home Page

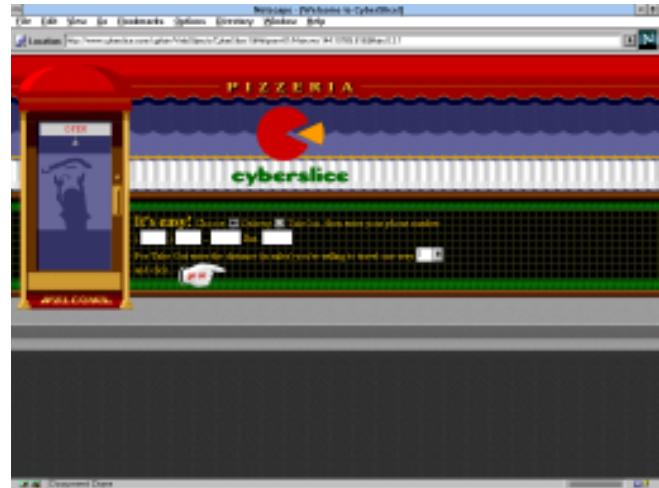


Cyberslice — Address Form

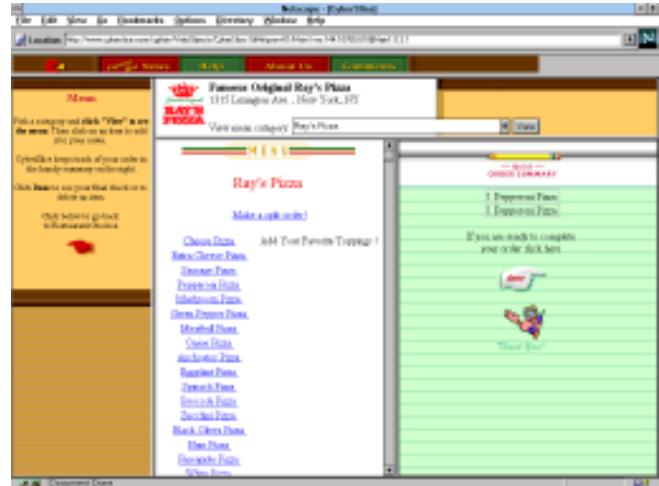


Cyberslice is currently available in Seattle, Silicon Valley, Boston, and New York. Cyberslice generates a transaction fee of between \$0.50 and \$6.00 per order. The company has also developed a program called Pizza Now!, which allows other Web sites to post Cyberslice banner ads; it collects 10% of the transaction fees generated by customers linking from those sites to Cyberslice and ordering food. Cyberslice provides merchants with an online presence without requiring them to have a computer.

Cyberslice — Pizzeria Locator



Cyberslice — Order Form



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Direct Mail/Marketing

CatalogLink (www.cataloglink.com) — CatalogLink provides visitors with a link to a wide variety of both online and paper catalogs that focus on both consumer goods and business-to-business goods and services. Visitors can request or visit catalogs

on such topics as apparel, electronics, and office computers and supplies. The site serves mainly as a marketing tool for catalog companies, and effectively provides consumers with simple listing and navigation aids.

CatalogLink — Home Page

The CatalogLink home page features a sidebar with categories: Business to Business, Apparel, Electronics, CDs, Home/Family, Office/Commerce, and Recyclable/Hobbies. The main content area includes a 'What's New' section with links to various catalog categories like Pet Supplies, Dog and Cat Supplies, Pet Training Aids, Pet Supplies, Pet Grooming, Pet Accessories, Pet Health, Pet Books, and Wild Bird Catalogs. A large 'ATTENTION SHIPPERS' button is visible at the bottom of the sidebar.

Click on your category of interest and browse the catalog. To order, just click the "Send for catalog" button and fill out the order form. If you are interested in doing our catalog with CatalogLink, contact [Mike.Thorn](mailto:Mike.Thorn@juno.com) telephone # 205-333-3637 or fax # 205-331-1452.

CatalogLink Environmental Do's and Don'ts for Earth Friendly Catalog Shopping

[Download Document](#)

CatalogLink — Apparel Links

The CatalogLink Apparel Links page features a sidebar with categories: ACCESSORIES, CHILDREN, HATS, MEN, LICENSED APPAREL, MEN'S APPAREL, MEN'S SPECIAL SIZES, SPORTS APPAREL, SUNGLASSES, and SWIMWEAR. The main content area lists links to specific catalog pages for Andover Apparel Catalog, The Territory Ahead Spring 1997 Catalog, Woolmark, After the Rain, Tailored Kids, Stock and Leger Hats, Blue and Gold Sports Shop, David's, Inc., Fox A. Bank, Orvis, Paul Frederick Men'swear, Sierra Trading Post, The Territory Ahead Spring 1997 Catalog, Shortstop, Wenggaard Woolwear, Orange Pipeline, Designer Sunglasses, and Gap.

CatalogLink — Business Computer Links

The CatalogLink Business Computer Links page features a sidebar with categories: FURNITURE, GENERAL, HARDWARE, INSTRUCTIONAL, SOFTWARE, and SUPPLIES. The main content area includes links to various catalog categories like AT&T Workline Business Wholesale Furniture Catalog, AT&T-American School Wholesales Furniture Catalog, Compaq Direct, Edutronics, I and R Music World, and E Computer World, MacWorld, Microsoft, Macintosh, PC Computer Product Guide, TidBITS, ASK400 Education and Training Catalog, Investor's Software, MacWay Micro, Quality Credit, and Cisco.

[COMPUTERS | OFFICE FURNITURE | EQUIPMENT | MATERIEL | HANDLING AND SAFETY | BUSINESS WORK APPAREL | MOTIVATIONAL AND TRAINING | OPTICAL FIBER | STATIONERY | SUPPLIES | ADVERTISING/PROMOTION]

CatalogLink — Orvis Link

The CatalogLink Orvis Link page features a sidebar with categories: ACCESSORIES, CHILDREN, HATS, MEN, LICENSED APPAREL, MEN'S APPAREL, MEN'S SPECIAL SIZES, SPORTS APPAREL, SUNGLASSES, and SWIMWEAR. The main content area shows a product image of a deer head mounted on a wall and a 'Send Catalog' button. The text below the image reads: Since 1856 Orvis has provided its affluent customers with top quality merchandise. Orvis' enormous range of products is an interesting mixture of traditional clothing classics for men and women, fine furnishings, pet stores, luggage, gifts, linens, accessories, sporting goods and decorative outdoor items.

[CLOTHING | ACCESSORIES | CHILDREN | GIFTWARE | HOME FURNISHINGS | LEISURE | OUTDOOR | PET CARE | SPORTS]

Auction

Onsale (www.onsale.com) — Onsale is the leading retail auction service on the Web. It's part Price Club, part QVC, part casino, and part stock market. The company specializes in selling refurbished and close-out computers, peripherals, and consumer electronics. From its first auction in May 1995 through December 31, 1996, the company had sold over \$32 million in merchandise to more than 60,000 customers. Gross merchandise sales (the total amount paid for goods and services sold through or by Onsale) were \$14.4 million in 4Q96, up 56% quarter-to-quarter from \$9.2 million.

Onsale — Home Page



Onsale — Promotional Page



To date, Onsale has had over 2 million visitors to its site (and currently gets over 25,000 visitors per day, the size of a large shopping mall), with 180,000 registered bidders at the end of C1Q97 (up from 103,000 at the end of 1996), and over 400,000 merchandise items shipped. The company now auctions over 15,000 units a week from 60 suppliers and 100 manufacturers, usually ranging in value from \$50 to \$1,500 and sold in quantities of one to several hundred per auction.

Onsale — Auction Category Page



Onsale — Product Page



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Financial Services

Quicken Financial Network (www.qfn.com) — Intuit's Quicken Financial Network (QFN) has two objectives: 1) provide a customer service and support area for the 10-million-plus users of its personal finance software (Quicken and TurboTax), and 2) create a leading financial-services aggregation site (or hub) on the Web. Quicken is one of the most successful software products ever, in our view — over the years, Intuit has built a strong brand name and developed expertise in creating easy-to-use software for a variety of financial needs. With its Web efforts, Intuit hopes to: 1) sell more software by expanding the need for its product offerings; 2) encourage more users to use PC-based online banking; and 3) generate revenue from its financial-services aggregation efforts. To the last point, because of the Web's interactive nature and volume of information, it has the potential to significantly change the way financial services business is conducted, in our opinion. We believe that, over time, there will be major business

opportunities for several financial services superstores operated by intermediaries on the Web.

Intuit's Web sites already contain: 1) data on about 60 mutual fund families, plus Morningstar data; 2) the ability to obtain real-time insurance quotes and purchase policies from six of the top 20 insurance companies; and 3) information about online banking and bill payment with financial institutions. Intuit generates revenue from its Web efforts through: 1) selling placement/advertising space on its sites to various financial institutions — it has 100 advertisers on its site, the largest being American Express, Charles Schwab, Merrill Lynch, and Lotus; 2) generating leads or sales commissions for, or from, financial institutions; 3) generating royalties related to online banking efforts; and 4) making software sales. Intuit hopes to reduce its relative operating expenses by providing online product support.

QFN — Home Page



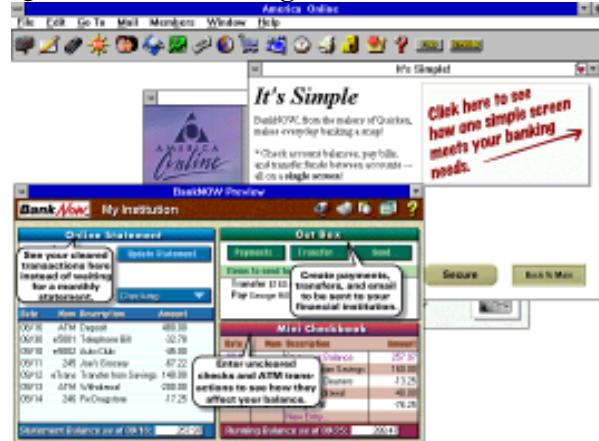
QFN — Investment Center



QFN — InsureMarket



QFN — BankNow Page on AOL



Financial Services *(continued)*

E*TRADE (www.etrade.com) — E*Trade is a leader in the new wave of online retail brokerage firms, which are leveraging the low transaction costs and high value-added services that the Internet provides in an attempt to grab market share from established players like Merrill Lynch and Charles Schwab. E*Trade offers customers a fast and reliable trading interface through their browser, personalized Web pages, and instantaneous access to market and account information.

E*Trade focuses primarily on the segment of the individual investor community that does not require the resources of a full-service

E*TRADE — Home Page



E*TRADE — Market Information



broker. The company generates revenues mainly through the execution of transactions and from interest payments on margin accounts. At the end of C1Q97, in which E*Trade generated over \$32 million in revenue, the company had over 145,000 accounts, \$4.1 billion in assets held in customer accounts, and was processing over 14,000 trades per day. Forrester Research estimates that there are currently about 1.5 million online brokerage accounts, and with total U.S. brokerage accounts running at about 60 million, it looks like there is plenty of market left for online players like E*Trade to penetrate.

E*TRADE — Account Balances



E*TRADE — Portfolio Summary



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Financial Services *(continued)*

InsWeb (www.insweb.com) — InsWeb provides consumers and insurance companies with a marketplace on the Web where consumers can easily shop for insurance in a variety of categories from a number of carriers, and where insurers can easily market to and acquire new customers. InsWeb offers some quotes directly online (depending on both policy type and state of residency), and some quotes through referrals to brokers. InsWeb also offers access to policies, including auto, homeowner's, life, health, dental, hearing, vision, personal watercraft, and wedding.

InsWeb estimates that for most commodity insurance lines, it costs insurance companies about \$350 to take a single customer policy from application to final binding — traditionally an activity of the insurance agent. InsWeb says it can deliver this essential (yet often boilerplate) service for as little as \$20 per application. InsWeb is seeking to become a one-stop shopping Internet trans-

action broker for customers requiring fairly uncomplicated coverage (auto, life, homeowner's) by matching online applicants with the more than 30 carriers that it has developed relationships with. InsWeb has also signed up more than 6,000 agents for its customized Web design and presence offering. Participating carriers who use an independent agent structure will forward policy requests from InsWeb to an agency in the prospect's vicinity. In these cases, InsWeb actually supports the individual agents, as they receive a commission on any policy they sell, even if they didn't need to do a lot of legwork to find the customer. This raises the question of whether other carriers will rework their distribution mechanisms entirely (to a more direct model, like Geico's) if customers begin flocking to InsWeb to find and buy their insurance.

InsWeb — Home Page

InsWeb — Instant Quotes

InsWeb — Consumer Insurance Center

InsWeb — Nationwide Auto Insurance Quote

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Travel

Travelocity (www.travelocity.com) — Travelocity is one of the most popular and powerful travel sites on the Web. The site runs on AMR's SABRE travel reservations engine, which has been used by professional travel agents and airlines for many years. Travelocity offers schedules, reservations, bookings, and tickets for airlines, hotels, and rental car companies, and provides cus-

tomers with toll-free support. Travelocity also provides an online travel guide for destinations throughout the world, and includes commentary and suggestions from well-known travel journalists and columnists. The site also provides visitors with access to travel-related merchandise.

Travelocity — Home Page

The screenshot shows the Travelocity homepage with a flight search result for a flight from New York (JFK) to Paris (CDG) on March 30, 2001. The result includes flight details, prices, and links to book the flight. The page features a green header bar, a sidebar with travel links like "Last Minute Deals", and a footer with payment method information.

Travelocity — Travel Reservations

The screenshot shows the Travelocity Travel Reservations page. It features sections for "Flights", "Cars", and "Cruises". Each section has a brief description and a call-to-action button. A note at the bottom states that the Travelocity Customer Center (toll-free and direct) is available to residents of the United States and Canada only. The page has a blue header bar and a footer with payment method information.

Travelocity — Destinations & Interests

The screenshot shows the Travelocity Destinations & Interests page. It features a world map with various travel destinations highlighted. To the right, there are sections for "Destinations" (including cities like Tokyo, Paris, London, and New York) and "Interests" (such as "Travel Guide", "Hotels", "Resorts", "Entertainment", "Food & Beverage", "Sports", "Business", and "Events"). The page has a green header bar and a sidebar with travel links.

Travelocity — Merchandise

The screenshot shows the Travelocity Merchandise page. It features a "Travel Guide" section with a "FREE GUIDE TO TRAVELING AND CAMPING" offer. Below it are sections for "TRAVEL GUIDE", "TRAVEL SHIRT", and "TRAVEL APPAREL". The page has a blue header bar and a sidebar with travel links.

Classified Advertising

Classifieds2000 (classifieds2000.com) — Classifieds2000 is one of the top-rated free-to-list, free-to-search classified services on the Web. The site offers a powerful, classifieds-specific search engine, and also a service called "Cool Notify," which allows users to specify what they are searching for, and to receive matches from new listings via e-mail everyday. The site has received numerous awards from Yahoo!, CNET, Infoseek, Webcrawler, and BigBook.

Classifieds2000 contains listings for vehicles, general merchandise, personals, rentals and roommates, computers and software,

Classifieds2000 — Home Page



Classifieds2000 — Sport Utility Vehicle Search



tickets and events, and expects to be adding employment listings soon. The site boasts over 150,000 vehicle listings, and provides services including VINguard, which provides vehicle history reports to check for accidents, and so forth. There is also a free oil-change reminder via e-mail, as well as helpful information for computer and auto buyers. The vehicle listings also provide links to Auto-By-Tel for new car quotes, as well as links to an auto insurance provider.

Classifieds2000 — Vehicles



Classifieds2000 — Ford Explorer Search Results



Classified Advertising *(continued)*

Yahoo! Classifieds (classifieds.yahoo.com) — The Yahoo! Classifieds service, which is free for both advertisers and users, contains listings for such categories as cars, air and water craft, anniversary and birth announcements, business opportunities, employment, computers, general merchandise, pets, personal ads, real estate and rentals, services, and tickets.

Listings can be searched by state, metro area, or simply by product category. Each product category allows users to search for listings by certain criteria. For instance, someone looking for an apartment can search by number of bedrooms, number of bath-

Yahoo! — Classifieds



Yahoo! — Classifieds: New York / Automobiles



rooms, or by price. The listings contain direct e-mail links to the advertiser, phone numbers, and so forth. For the personals section, each ad comes with a confidential e-mail box. Advertisers are not limited in the amount of information they can post.

We believe Yahoo! is in a unique position to leverage its very high search traffic by migrating it to different revenue-producing areas, such as classifieds. Yahoo! generates revenue from its classified area from banner advertising, so it encourages the free placement of classified ads.

Yahoo! — Classifieds: New York



Yahoo! — Classifieds: New York / Autos / Porsches



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Magazines & Periodicals

The Electronic Newsstand (www.eneews.com) — The Electronic Newsstand (Enews) provides a number of services, including a guide to over 2,000 online magazines and a magazine shop where customers can subscribe to print versions of magazines at substantial discounts. Enews also features a customized newsstand service, where members can place hyperlinks to their favorite online magazines and newspapers; Enews by Email, which deliv-

ers original Enews content to members via e-mail; and the Magazine Monitor, which provides a quick summary of articles in the latest issues of a select group of magazines in several categories.

Enews also has a section called Off the Rack, which provides some original content in a variety of areas, but which mainly serves to link members to noteworthy articles elsewhere online.

The Electronic Newsstand — Home Page



Electronic Newsstand — Magshop



Electronic Newsstand — Monster Magazine List



Electronic Newsstand — Off the Rack



Supersite

AOL Marketplace (AOL Keyword: Marketplace) — AOL, the world's leading Internet online service, also provides a well-run, viable shopping marketplace for its subscribers. Many different retailers have set up storefronts here, with products that vary as widely as financial services, entertainment, cards and gifts, computer hardware and software, and even online classifieds. Mar-

ketplace sites ranked by March 1997 usage are: Classifieds, Tower Records, @Once Software, AutoVantage, Gift Valet, Card-O-Matic, AOL Credit Card, 1-800-FLOWERS, Magazine Outlet, Prime Host, Copeland Products, Reward Town, Comp-U-Store, Sign on a Friend, Eddie Bauer, J.C. Penny, Starbucks, and Premier Dining. Another notable AOL retailer is Barnes & Noble.

AOL Marketplace



AOL Marketplace — Shoppers Advantage



AOL Marketplace — 1-800-FLOWERS



AOL Marketplace — Tower Records



Shipping

Federal Express (www.fedex.com) — Federal Express gained early recognition on the Web for giving customers the ability to track their packages online. FedEx has now expanded upon this with InterNetShip, which allows FedEx customers to arrange their shipments online. InterNetShip helps customers create airbills and schedule pickups, and it links directly into FedEx's online tracking capability. This online functionality should allow FedEx

Federal Express — Home Page



Federal Express — Tracking Page



to more closely integrate with its corporate customers' growing usage of the Web.

As Web-based shopping grows, we think overnight shipping will probably rise along with it — Federal Express (and other air carriers) should continue to be indirect and direct beneficiaries of Internet growth.

Federal Express — Dropoff Locator



Federal Express — Software



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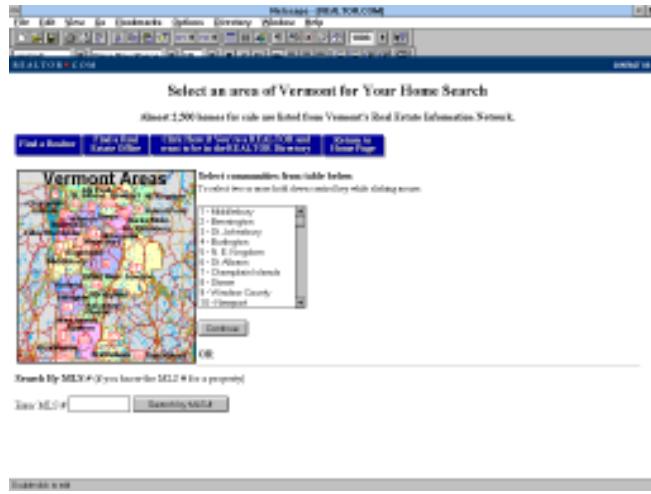
Real Estate

Realtor.com (www.realtor.com) — Realtor.com is one of the largest and most popular real estate sites on the Web, providing home shoppers with real estate listings and services from around the country. The service does not currently offer rental properties. The site was developed in conjunction with the National Association of Realtors, and now has more than 748,000 properties listed, which are updated weekly. Agents are charged between \$100 and \$200 per year for a home page and listing information to be carried on Realtor.com.

Realtor.com — Home Page



Realtor.com — Locality Selector

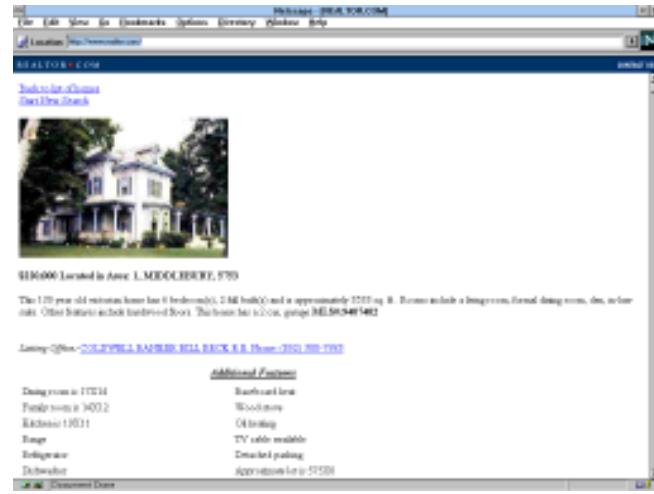


Realtor.com uses an advanced searching technique that allows home shoppers to narrow their search by geographic area and price range, and then conduct a detailed search for properties matching specific criteria, like number of bedrooms, bathrooms, square footage, garaging, and pool. The site then returns a list of homes ranked by how closely they match the selected criteria, along with pictures of many of the houses, as well as Realtor contact information, e-mail addresses, and links to local Realtor's home pages.

Realtor.com — State Selector



Realtor.com — Property Listing



Chapter 7: For Shoppers, the Web Offers Niche and Mass Markets, and Unique Ways to Find Products Quickly

Summary

- ◆ The Web has created many new interactive opportunities to bring buyers and sellers together and to facilitate and speed transactions. In this chapter, we **describe and then profile four distinct techniques (that link to retail-specific Web sites) for driving transactions**, specifically: 1) **yellow pages**; 2) **online malls**; 3) **special interest links**; and 4) **agenting technology**. All of these techniques are intended to improve the shopper's experience on the Web by making it easier, faster, and more entertaining to find goods and services that are of specific interest to the individual shopper. We believe it's essential that Web retailing sites create communities of interest in various areas, so that shoppers keep coming back.
 - ◆ In time, **agenting technologies will likely prove to be a key tool for online shoppers**, as, in effect, they allow users to have round-the-clock personal shopping assistants. Agenting technology, by its nature, can cause complications for many retailers but benefits for those who are smart facilitators.
-

Descriptions of Those Crafty Web Techniques Designed to get Shoppers to Spend Money

Yellow Pages

One of the most frequently used techniques for driving transactions on the Web is the “yellow pages” method. Consumers looking to purchase a specific item go to a site like the **All-Internet Shopping Directory** (www.all-internet.com). There, they will find a list of shopping categories (such as arts and entertainment, computing, hobbies and services), each with a complementary list of links to companies offering related products. These sites survive on marketing dollars from retailers, so the content and links are often biased toward whichever vendor is paying the most. Classifieds are another excellent example of how this method can be used effectively (see our description of **Classifieds2000** and **Yahoo! Classifieds** earlier in this report). Although the yellow pages technique is a bland consumer experience, at best, it can be a very quick and efficient route if a user knows what he or she wants.

Online Malls

Another widely adopted model is the “online mall” structure, which aggregates a wide variety of retailers into a single site, allowing consumers to browse through a virtual mall. Limitations may include a small number of retailers, and a lack of vendor choice in specific niche markets (music, books, and so forth). Online malls do provide a

more enjoyable shopping experience than the yellow pages method, but they may be less efficient in terms of speed and product breadth and quality. One advantage that online malls have is the ability to cross-promote links to other areas within the mall.

We have not included an example of an online mall here, as we profile several good examples earlier in this report, such as **AOL's Marketplace**, **CUC NetMarket**, **Cyber-Shop**, **FashionMall.com**, **iMall**, **ISN**, **Microsoft's MSN**, **QVC**, and **Wal-Mart**.

Special Interest Links

The niche, or special-interest, shopping model has been around for quite some time in the mail-order world, but has been given new life in the online world. Many Americans have one or two hobbies or sports interests that are slightly “out of the mainstream” and require equipment or supplies not readily available at the local hobby shop or sports store. Examples might include fly-tying (fly fishing), Ultimate Frisbee, or water polo.

Many of these activities are covered by newsletters, which often feature advertisements for, or recommendations of, mail-order retailers selling these hard-to-get items. But the mail-order model has always been hampered by accessibility and speed. Consumers must first find, or subscribe to, the newsletter, wait, order a catalog, wait, purchase what

they are looking for, and wait again. The whole process can take several weeks to several months.

The Web significantly changes this model, as special interest sites are able to easily link specialty retailers to their sites and can review the quality of the services provided by these retailers. This speeds up the transaction process substantially and creates many more “impulse” buying opportunities. In the example we provide later in this chapter, a transaction begins as a simple exploration of an Ultimate Frisbee site, and ends with the purchase of some hard-to-find cleats.

Another example of how efficient and effective this model can be is an online book club, which provides subscribers with a variety of reviews, and then offers a one-step link to purchase the book being reviewed — from an online retailer like Amazon.com. This is a substantial improvement from a paper-based model, where time and inconvenience were always impediments to transactions.

Agents

Agenting represents one of the most intriguing (and possibly unsettling) opportunities on the Web, in our view, and its effect on retailing could be tremendous. While the potential applications are seemingly limitless, the basic idea behind agenting technology is to have intelligent software agents (or personal assistants) go out on the Web, gather information, and recommend or purchase a product for the consumer who sent it. For example, if a consumer wanted the new U2 album, and price was the major concern, he or she would start up an agent, which would go out to all of the known music sites on the Web and find the site that offered the product at the lowest total cost. If delivery time were the concern, the agent would go out and find which site could deliver it fastest. Agents could also contain all of the customer’s mailing and billing information, so that transaction times would be even quicker.

NetBot (www.netbot.com) recently introduced a beta version of an application called Jango, which is an “intelligent shopping assistant” and works in concert with a user’s browser. A user simply enters the name of a product, and Jango automatically determines which online stores and information sites might have it. Jango consults this list of

sites and quickly prepares reports for the shopper, including detailed product information, comparative reviews, product pricing, and manufacturers’ specifications. Once a shopper decides to make a purchase, Jango accelerates the process by automatically filling in order forms with shipping and billing information previously provided by the user.

CUC’s Book Stacks (www.books.com) uses agenting technology to help readers determine whether certain titles fall within their areas of interest. The program is called Affinity, and allows consumers to see what other titles have been purchased by people who have bought the book being evaluated. The service has been developed using five years of customer purchase information, is completely anonymous, and requires no effort on the part of the consumer.

Say, for example, that a shopper is considering Tom Clancy’s *Executive Orders*, but is still unsure. By clicking on the Affinity link at the bottom of the description, the customer can see which other books have been purchased by buyers of *Executive Orders*. In this case, 100% of *Executive Orders* buyers have also purchased Ken Follett’s *The Third Twin*, and 75% have purchased Michael Crichton’s *The Lost World*. Based on that information, the reader should be able to make a better purchasing decision, by leveraging a vast store of community information, enabled by agenting software.

Firefly (www.firefly.net and www.firefly.com) has taken a unique approach to commerce on the Web, using its intelligent agenting technology to help its 1.4 million individual members find more of what they are interested in online. Firefly uses “advanced collaborative filtering technology,” developed in the MIT Media Lab, to collect people’s tastes, preferences, and opinions and show them information suited to those preferences. Firefly is also able to use this information to help its retail partners (such as Barnes & Noble and AOL’s Greenhouse Studios) to more accurately target advertising and marketing messages at consumers. For instance, if the Barnes & Noble site was aware that a visitor was a fly fishing fan, and a new fly fishing novel had just been released, then it would likely be much more effective to target the visitor with an ad for fly fishing than a randomly selected ad.

An Example of ‘Yellow Pages’

The All-Internet Shopping Directory (www.all-internet.com) is a good example of the “yellow pages” method, as it provides extensive listings of shopping sites on the Web. Categories include Arts & Entertainment, Lifestyle, Malls, Computing, Hobbies, Home, Services, and Business to Business. There are more than 30 categories, which contain thousands of sites. The directory provides retailers with several levels of service, just like yellow pages directories. Free hyperlinks and a brief description are provided for each retailer in a category. The site also

1) The All-Internet Shopping Directory Home Page



3) The All-Internet Music Directory Details



offers “focus” listings, which give more visibility to a retailer’s site. Retailers can also place banner advertisements on the site.

The series of links below shows the progression from the main shopping directory page (1), to the music directory, where there is a highlighted list of music retailing sites (2), followed by a detailed list of sites (3). From there, shoppers can link to any of the sites listed on the page, in this case, Newbury Comics Interactive (4), at www.newbury.com.

2) The All-Internet Music Directory Highlights



4) Newbury Comics Interactive Music Site



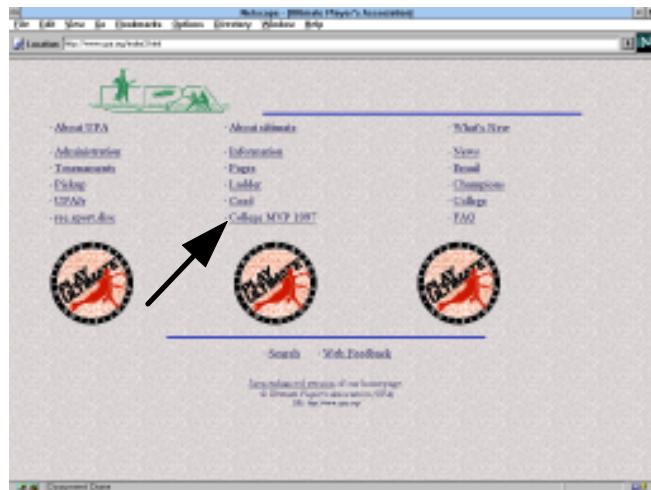
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An Example of Special Interest Links

The following series of screen shots illustrates an example of how niche retailing can be integrated with niche content, and how this integration facilitates transactions and creates purchases that might not have otherwise happened.

The series begins with the home page for the **Ultimate Players Association (UPA)** (www.upa.org), which is a

1) Ultimate Players Association (UPA) Home Page



3) Eurosport Banner Ad in UPA Article



non-profit organization for Ultimate Frisbee players (1). The site contains several links, one of which is related to the award for the 1997 college ultimate player of the year. At the bottom of this article (2 and 3) is a banner ad linking to Eurosport (www.soccer.com), a soccer retailer and sponsor of the award. Next comes a flashy graphics page (4).

2) UPA College Ultimate MVP Article



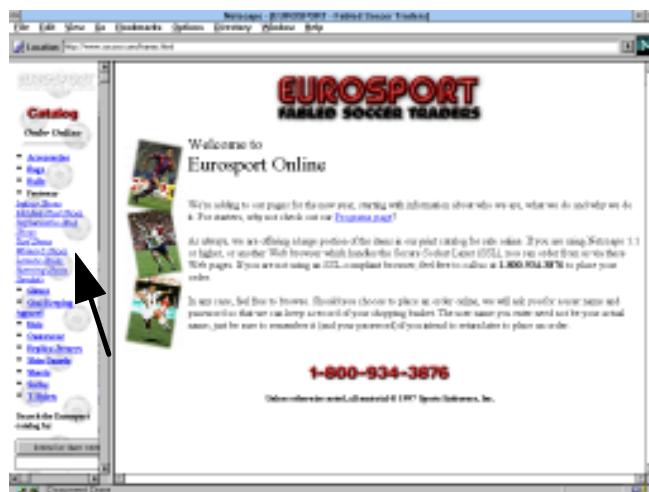
4) Eurosport Home Page



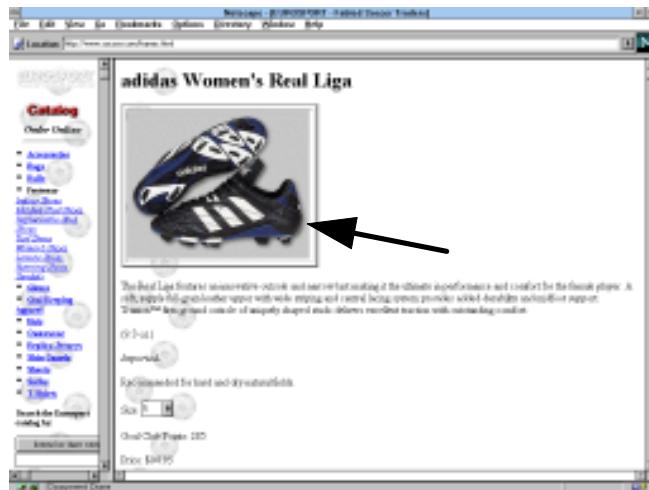
Then comes a catalog page with a list of products, and a search engine (5). One of the featured items includes women's shoes, and brings up a list of four, high-quality cleats, ranging from \$50–95 (6), for which we can get pictures and details (7). From there, it is a hop, skip, and a jump to place the shoes in a shopping basket, input the shipping info, and link to the secure server to complete the transaction (8). Time elapsed: about 5 minutes after arriv-

ing at the UPA home page. We think that's a clear improvement over the concrete world for both consumers and retailers. As any turf warrior in any sport knows, a good cleat is hard to find, and every Ultimate Frisbee player wants the best cleat he or she can afford. Thus, the Web solves a serious problem (finding good cleats) for a small, but rabid, crew of Ultimate Frisbee players.

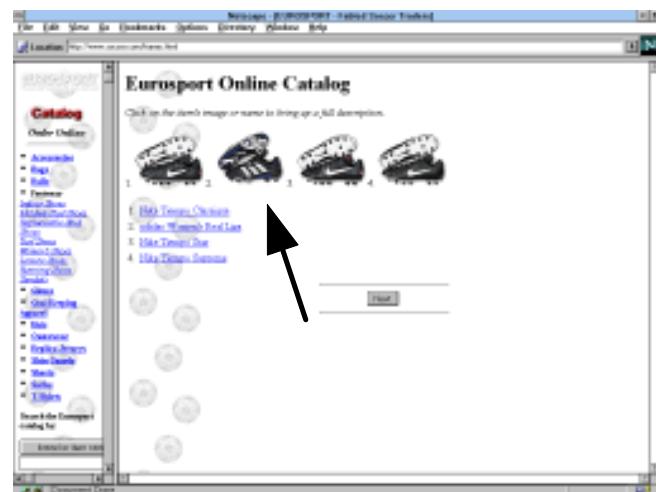
5) Eurosport Online Catalog



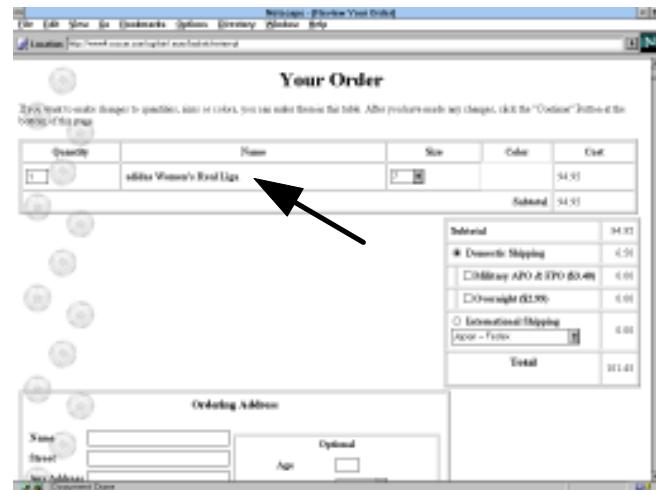
7) Women's Adidas Soccer/Ultimate Cleats



6) Women's Adidas Soccer/Ultimate Cleats



8) Eurosport Order Information



An Example of Agenting Technology

Firefly (www.firefly.net and www.firefly.com) partners with other Web retail sites, such as Bignote and Filmfinder, that leverage its agenting technology to provide its members with access to goods and services. The Firefly Passport enables members to log in from the Firefly.com home page (1) and carry their personal information (such as shipping address, favorite artists or films, and so forth) to participating sites, so that both the consumer and the retailers can leverage past experiences. Firefly claims to have more than 1 million users of its agenting software.

On the Bignote music site, Firefly members can input their ratings on a bunch of albums, and the Firefly agenting technology will then return several suggested albums, based on members' preferences. Members can then link to a

number of music retailing sites, including CDNow, Columbia House, Music Boulevard, and BMG Entertainment, where they can purchase the CD.

At Filmfinder (3), Firefly Passport holders can build a profile of themselves containing information about which films they liked and which they didn't like. The data can then be linked with data from other member profiles to determine what other films a particular member might like. All of this is done using Firefly's agenting software. In Venues (4), passport holders can join discussions on a wide variety of topics, building up their chat profiles and getting recommendations from Firefly agents about what other topic areas might interest them.

1) Firefly.com's Login and Passport



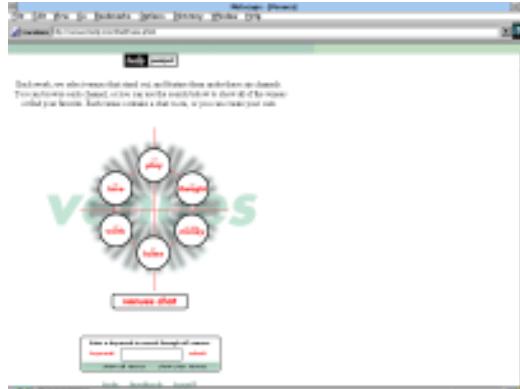
3) Firefly.com and Filmfinder



2) Firefly.com and Bignote



4) Firefly.com's Venues



Chapter 8: A Look at an Emerging Web Retailing Market — Book Selling — Amazon.com and Barnes & Noble

Summary

- ◆ As a relevant case study of the major issues in electronic commerce, we take a close look at online book selling, one of the most developed corners of Internet retailing. Amazon.com is one of the leading Web brands in the retailing space, created for the Web and by the Web. **Amazon's early efforts have changed the way a growing number of consumers shop for books, and the company is creating a new business model for retailing — the financial model isn't proven yet, but the work is in process.** Keep in mind that this chapter is simply a case study of online book selling, and not a recommendation of Amazon's stock.
- ◆ The strong consumer reception to Internet book shopping is quickly attracting dominant “bricks-and-mortar” retail booksellers. Barnes & Noble recently launched its Web site, and Borders has plans as well.
- ◆ In this chapter, we set the stage for our discussion of book selling on the Web with a brief history of Amazon.com. We then discuss the market opportunity, the dynamics, and the business model of online book retailing. We also compare and contrast the Internet efforts of Amazon and Barnes & Noble, their relative competitive advantages, and the operational and financial opportunities and challenges they face on the Web.
- ◆ **Amazon has a wad of key ingredients that in our judgment may make for a successful company:** a large and rapidly growing market opportunity, first-mover advantage, a great brand name and product, leading market share on the Web, happy customers that do the “word of mouth” thing, and what we consider an impressive management team.
- ◆ In our view, the biggest issues for Amazon are that the company hasn't yet demonstrated that it's a money maker and the book business is a low-margin business — Barnes & Noble and Borders (\$2-billion-plus annual revenue players in the book retailing business) both support net margins of 2–3%; Amazon, meanwhile, has structural margin advantages, in that it doesn't have capital investments related to storefronts and operating expenses for salespeople, but it has structural margin disadvantages in that it doesn't have purchasing power because it's not a scale player in a scale business, yet; and finally, Barnes & Noble, especially, views Amazon as a very serious competitor and has aggressively launched its Web site (notably, two years later than Amazon's). So competition in the form of aggressive pricing and marketing is sure to rise.
- ◆ Barnes & Noble comes to the Web with a different perspective than Amazon. As the nation's leading bookseller — over 1,000 stores that generated \$2.4 billion in revenues in 1996 — **Barnes & Noble sees the Internet as an important new avenue for growth that leverages existing assets.** These assets include an established distribution center that will have the capacity to ship 400,000 titles overnight, relationships with 20,000 publishers, state-of-the-art inventory tracking and replenishment systems, and a national advertising program that promotes and supports the brand name. Barnes & Noble's Internet business is in its infancy but is expected to begin contributing to earnings in 1998.
- ◆ **Our conclusion is that, in the little world of Internet book selling, we are about to see a mini-marketing battle, like a junior version of Coke vs. Pepsi.** The likely results will be: strong revenue growth for both Amazon and Barnes & Noble, as the global book business provides a huge opportunity; increased acceptance of the Web as a medium for commerce; consolidation of book sales market share (at least on the Web); and insight into whether leading, first-mover Web companies can maintain share when powerful established players enter their markets. But the billion-dollar question remains: When will these businesses make money? Hang on for the ride as Amazon aspires to become the next Dell, and Barnes & Noble tries to head it off at the pass.

A Brief History of Amazon.com

Launched in July 1995, Amazon.com has enjoyed rapid revenue growth in its short existence. Its founder and CEO, Jeff Bezos, left his job as a principal at D.E. Shaw in early 1994 to pursue retailing on the Web. He and his wife (and dog) picked up and moved from Manhattan to Seattle, and Mr. Bezos tapped out his business plan on a laptop along the way.

His idea was to take advantage of the Internet as a new distribution channel by offering consumers products that, by their nature and the manner in which they were distributed, could best leverage the ubiquitous, virtual nature of this new channel. The key was combining the convenience of shopping right from the home, 24 hours a day, seven days a week, with the benefits of being a Web retailer to provide a huge value add for consumers and relatively low production cost for the vendor.

Mr. Bezos's goal was to achieve a key win in retailing — to quickly develop a positive win-win relationship (based on trust and positive feedback) with a large number of customers.

After compiling a list of 20 or so products that consumers might want to purchase online, he narrowed his list to two: music and books. Their attraction lay in the fact that there are far more titles of each than any one store could stock, and offering them online allowed consumers to go to one central place to find a selection many times larger than any conventional store.

In choosing between these two, Mr. Bezos decided that an online music business could have some potential distribution problems of its own — since there are only a handful of major record companies, the potential for them to control distribution and bypass his new company loomed much larger than in the publishing business.

In contrast, the book industry is highly fragmented on both the publishing and distribution sides.

So, for Mr. Bezos, books it was, and Amazon was off to the (Internet) races. For what it's worth, from our days as an early Amazon customer and fan, we have often replayed the statement, "This sure reminds us of Michael Dell selling PCs out of his dorm room at the University of Texas in Austin."

Amazon, originally run out of Mr. Bezos's garage, opened in a 400-square-foot office/warehouse after raising the money required from private investors. In its first 30 days, the company (named after the river which carries more water than any other) shipped books to customers in all 50 states and 45 countries. In six weeks, the company moved to a space five times the size, and in six months relocated again to its current office/warehouse, eight times larger than the previous one.

Books Are Well-Suited for Online Sale

Bookselling is one of the most developed — and most promising — retail concepts on the Internet today. Books, as a product category, have inherent characteristics that make them easily salable over the Internet. These include:

Books are well-known commodities. Everyone knows what a book is. It is a simple concept, without add-on features. You don't have to worry about how it will fit or whether the colors will work.

Books are inexpensive and often purchased on a whim.

Huge variety translates into mass appeal. Books offer something for everyone, thus everyone is a potential customer.

Books are easy to ship and don't require fancy packaging, and they won't go bad if they sit in your mailbox for days. See Figure 8-1 for more details.

Figure 8-1

Books: Well Suited for Online Sale

Product-Related	Purchase Decision	Distribution
Sheer Quantity of Books	Easy to Make Educated Purchase Decision	Industry Dynamics
<ul style="list-style-type: none"> ● Millions of unique: <ul style="list-style-type: none"> - Titles - Authors - Subjects ● Physical search is impractical ● Inventory and warehousing is expensive in general and impossible to this scale 	<ul style="list-style-type: none"> ● Reviews and ratings are easily available ● Can test product on computer (e.g. read a chapter) ● Don't need to feel/experience a book to make purchase decision 	<ul style="list-style-type: none"> ● The traditional book retail industry is very fragmented <ul style="list-style-type: none"> - Thousands of physical stores - #1 book seller only has 15% market share ● Different model for Web-based retailing <ul style="list-style-type: none"> - More analogous to publishing and cable models - Converge to 2-3 dominant Internet market players
Books Are Text-Based	Books Are Relatively Cheap	Books Are Small
<ul style="list-style-type: none"> ● Easy to create a database of books (no one liked the Dewey Decimal System anyway!) ● Easy to text-search for titles, authors, subjects, book reviews,... 	<ul style="list-style-type: none"> ● Inexpensive enough that consumers will part with dollars without touching the product 	<ul style="list-style-type: none"> ● Easy to ship <ul style="list-style-type: none"> - Easy to receive - May even fit into a post office or mail box

Source: Morgan Stanley Research

The Web Offers Retailers Key Abilities

- *Huge product selection* (or “unlimited shelf space”), with impressive search, retrieval, information, and targeting attributes;
- Products can be demonstrated in an *interactive* way;
- *Easy ordering*, combined with storage of key customer attributes;
- *Fast product delivery plus rapid customer communication/confirmation via e-mail*;
- *Customers in any geography can be tapped*;
- *Competitive prices*.

Market Opportunity for Book Selling on the Internet*It's a Huge Market*

The online bookselling market has the potential to be a real winner, as it combines the already large, growing market

for consumer books with the high growth in online commerce. The U.S. consumer book market was estimated by Veronis Suhler at \$17 billion (with 1.7 billion units sold) in 1996, growing to \$21 billion in 2000, a 5% CAGR (Figure 8-2). Revenues for worldwide total book sales (consumer, academic, and otherwise) were estimated by Euromonitor at approximately \$82 billion in 1996, growing to \$90 billion in 2000, implying a 2% CAGR.

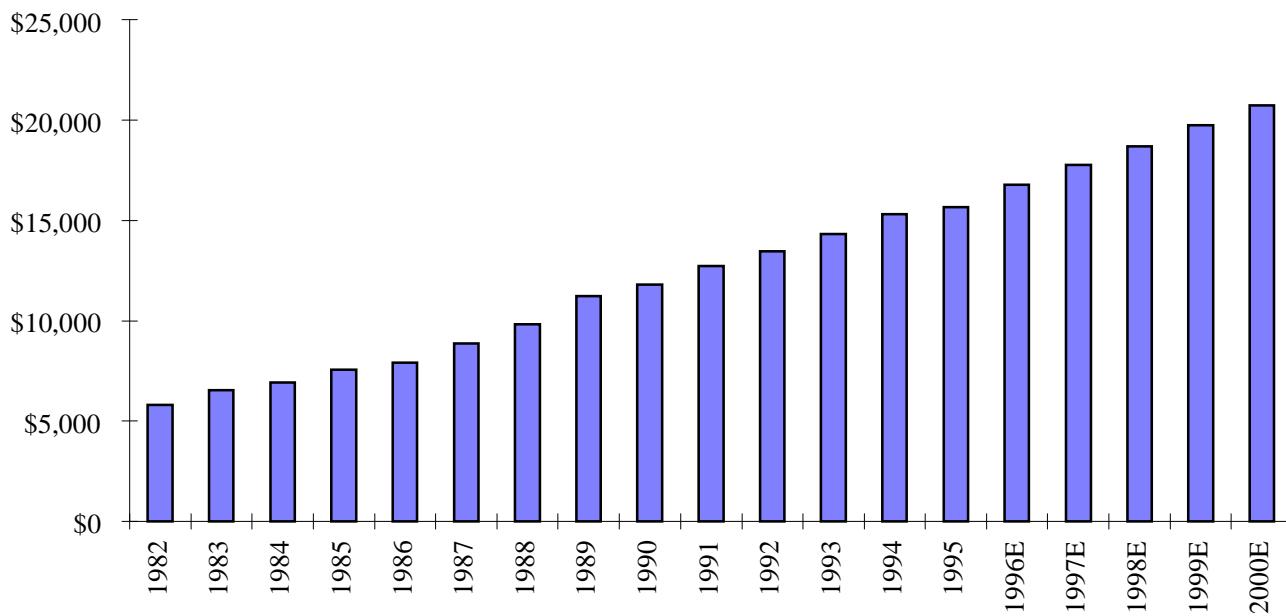
It's important to note that online book retailers are, and will be, active participants in the international book market. Amazon, for example, generated 39% and 33% of its revenues from non-North American sales in 1995 and 1996, respectively.

Last year, U.S. mail-order-based consumer book sales, estimated at \$588 million on 92 million units, accounted for 4% of 1996 total consumer book sales revenue of \$17 billion, and 6% of total consumer book unit sales of over 1.6 billion.

Figure 8-2

US Retail Consumer Book Revenue

(\$ Millions)

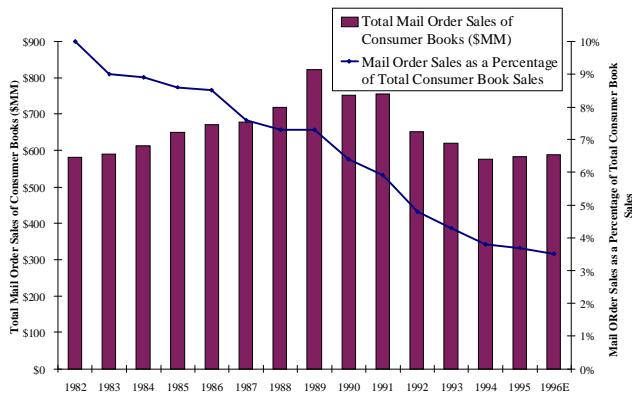


Source: Veronis, Suhler & Associates

Figure 8-3

Consumer Book Sales Made Via Mail Order

(\$ Millions and as Percentage of Total Consumer Book Sales)

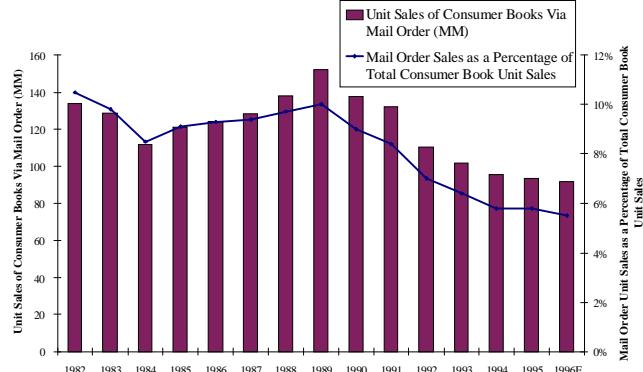


Sources: Veronis, Suhler & Associates. Wilkofsky Gruen Associates. Book Industry Study Group.

Figure 8-4

Consumer Book Sales Made Via Mail Order

(Millions of Units and as Percentage of Total Consumer Book Unit Sales)



Sources: Veronis, Suhler & Associates. Wilkofsky Gruen Associates. Book Industry Study Group.

It's a Highly Fragmented Market

Books In Print lists almost 50,000 publishers, and there are thousands of independent bookstores in the U.S. Even the largest players (Barnes & Noble and Borders) combined are estimated to have less than 25% of the total North American book market (about 13% and 11%, respectively, for the two companies).

In Manhattan alone, there are more than 250 retail bookstores listed in the Yellow Pages (plus more than 100 used and rare book dealers) that focus on more than 70 book specialties, ranging from astrology to French to gambling to railroads to yoga. Barnes & Noble lists eight superstores in the directory (plus seven smaller stores and two B. Dalton's), so Barnes & Noble has an impressive 17 stores in the New York City area (mostly Manhattan) that target Manhattan's population of 1.5 million folks and the five-borough crowd of 7.3 million people. That's one store per 88,000 Manhattanites, or one store per 430,000 true Yankees or Mets fans. And it's notable that cruising around NYC, it's hard not to pass a crowded Barnes & Noble offering Starbuck's coffee, leather chairs, and an impressive, entertaining retailing experience.

On the other hand, an online retail site, in effect, has 35 million people in its neighborhood — not bad math, if you can get people's attention. And while the Web offers streaming audio and video, the "steaming" aroma of Starbuck's coffee is nowhere on the horizon.

It's a Highly Competitive Market

While the online bookselling market is still in its very early stages, competition is hot and heavy, and there are already substantial price wars going on.

On March 18, Barnes & Noble went live on AOL, with 30% discounts on all hardcovers and 20% discounts on all paperbacks — BKS maintained this pricing with its Web debut on May 13. In early May, in anticipation of Barnes & Noble's Web site launch, Amazon.com announced 40% discounts on the Amazon 500, its list of best-sellers and other hot titles, in addition to 10% discounts on all of its other books. On May 16, CUC's Book Stacks announced 40% discounts on *New York Times* best-sellers, in addition to its discounts of 15–30% on most of its 465,000 titles. Book Stacks also offers to members of its Frequent Buyers Club (\$29.95 per year) discounts of 30% on 350,000 titles. All Book Stacks buyers can earn Bookmarks, which work like frequent-flier miles. All of these competitors are looking for a marketing advantage on the pricing front, and these early, aggressive moves set the stage for what we expect to be a battle royal in the online book market.

Product pricing is likely to be competitive on the Web, in part because of the ease with which consumers will be able to compare prices. Shoppers can compare prices within seconds by switching from Web site to Web site. Provided that shipping costs are equal, in many instances there should be little incentive for customers to order from higher-priced providers.

Amazon.com: The Pioneer in Internet Bookselling

Based on mind share, traffic, and revenue growth, Amazon, to date, is a clear leader in Internet-based retailing. First-quarter revenues of \$16 million were up 89% quarter-to-quarter, from \$8 million in the December period. This rate of sequential growth is especially impressive, given historical seasonal sales trends for the book industry: Calendar 4Q is typically the strongest seasonal quarter for book sellers, while C1Q is typically the weakest. In a point of comparison, Amazon's C1Q annual revenue run rate of \$64 million is more than two times higher than the revenue forecast of \$27 million for Barnes & Noble's entire mail-order business in fiscal 1998 (January). However, based on

first-month returns, Barnes & Noble's AOL revenue run rate is at 70%+ of its mail-order revenue level.

Amazon.com's Competitive Advantages And Investment Positives

Amazon is the largest seller of books on the Internet today, with an annual revenue run-rate of \$64 million at the end of C1Q97. There are hundreds of other book sellers on the net, but Amazon was the first to aggressively go after the business. Amazon offers over 2.5 million titles (including more than 1 million out-of-print books that are not readily available) and is open 24 hours per day, seven days a week,

365 days a year (and yes, it's right in your home). The traditional book superstore offers approximately 175,000 titles. Barnes & Noble is currently offering over 1 million titles on its Web site and plans to offer an out-of-print search service sometime this summer.

Amazon.com also sells a small number of audio tapes, CDs, and videotapes, and the company has expressed an interest in potentially expanding these product areas.

As a pioneer in the Internet commerce space, Amazon enjoys several significant competitive advantages over conventional and online booksellers alike. The *global market for books is huge*. As a “*first mover*” in its space, it has a great *brand and mind share among Internet users*. Its *reduced cost and inventory structure* should provide it with an efficient economic model — with no need to invest in “bricks-and-mortar” and a large sales staff (we discuss this later in this chapter — but with a serious competitor like Barnes & Noble, reducing opex is easier said than done). Its *strong management team* has an ingrained, educated (backed up by lots of data) understanding of the Web, its users, and what motivates them. In terms of customer reach, it is already one of the most popular shopping sites on the Web. And its established, strong *customer loyalty*, combined with a *great user experience*, has generated high levels of repeat purchases.

Prospects for top-line growth in the online book space are excellent, in our view, and Amazon is beginning to wage its war for market share. Furthermore, we believe that the influx of competitors — recently Barnes & Noble, and soon Borders — will increase the overall market for books on the Web. As evidenced by other online participants (Netscape, Yahoo!, CNET, E*Trade), as well as traditional players, the battle for market share (and mind share) in the online world is most cheaply and easily fought in the early stages of market development. And with Amazon’s two-year history, the market is quickly moving past these early stages.

Great Brand Awareness

In a medium flooded with brands and buzzwords, Amazon has widespread brand awareness among Internet users. It is one of the best-known names on the Internet, and, we think, has the potential to sell to any and every Web user — one should not discount the value of the name-brand alone. This *brand awareness and loyalty should create a barrier*

to entry for competitors — mind share has equaled market share in many online categories (e.g., AOL, Netscape, Yahoo!, E*Trade).

We point to Yahoo! as a Web brand that hasn’t stopped; it has been able to expand from being a simple Web searching function to more of a content aggregator and destination site. Amazon, in time, should also be able to expand from a simple book-buying function to more of a broad-based retailer (though Yahoo! was not faced with a traditional competitor the way Amazon is). On the Web, the Web brands get the traffic (and the bookmarks), and the traffic generates the transaction or advertising revenue, which drives the ability to finance site improvements, which should, in turn, continue to drive more traffic....

Compelling Business Model

Amazon’s *low overhead* provides it with inherent cost advantages compared to bricks-and-mortar-based retailers. The business is *highly automated*, and editorial staffers are used efficiently and effectively. Advertising also represents a potential revenue driver — this, in theory, should help Amazon compete on price with less trafficked book sites, both in general and online. So far, and we stress that, there are no overhead costs for large, redundant inventories (as traditional booksellers have); in fact, Amazon has been able to warehouse only a small percentage of its books sold (about 700 titles) and to *benefit from the logistics of others*, like Ingram Books (the world’s largest book distributor) and the air couriers. While Amazon pays for these logistical services through lower overall profitability, it has no large leases for retail or “superstore” space (that also require lots of sales and support staff), and no cannibalization of existing retail channels. In addition, Amazon, through its online interface, has the ability to customize its area to customer needs and, in part, shape demand.

Inventory turns should continue to be high, due to Amazon’s use of wholesalers like Ingram Books. As a point of comparison, Amazon had 1996 inventory turns of 42, compared to Barnes & Noble’s 1996 inventory turns of 2.1. And thanks to fast turn payments, Amazon also benefits from *rapid cash conversion*. Amazon’s business, for now, is less capital-intensive than offline retailing, due to the higher inventory turns, but the use of wholesalers also cuts into gross margins (we estimate by about 600–800 basis points, for now, as AMZN is not yet a scale player). At

Figure 8-5

Netscape: Books for Developers — Amazon Associate Program Member



some point, when Amazon hits a certain level of scale (perhaps at a \$150 million or more revenue run rate), it will be able to more aggressively ramp the volume of books it purchases directly from publishers versus wholesalers, and gross margins should then rise, though inventory turns may fall.

Well-Developed Alliances — The Amazon Associates

Amazon has aggressively expanded a broad, incremental distribution channel called the *Amazon Associates program*, which provides a broad, incremental distribution channel that should enhance its brand and revenues. The program allows other Web sites to link directly to Amazon.com, allowing them to provide visitors with a retail purchase option (usually for a book that has a theme link to the Associates site) through Amazon — this gives Amazon an effective and *cheap Web-based cross-marketing tool*.

Amazon already has signed up over 8,500 associates since the program was initiated in July 1996. Notable Associates include Netscape, *Upside*, and Dr. Ruth. Netscape has set up a book section in its Developer area, which links Netscape developers to popular books related to Netscape products, software development, Web publishing, Java, and many other relevant topics. The section is co-branded between Netscape and Amazon.com, and, according to both companies, is generating good traffic and sales. *Upside Books* features books related to business technology and reviews and suggestions, along with links to Amazon.com

to make purchases. Dr. Ruth's site features links to Amazon.com to purchase books about — well, you figure it out.

Associates receive a commission on sales generated through the link to Amazon from their site. The Associates' commission structure is two-tiered: 15% on 300,000 core titles (recently raised from 8%), and 5% on an additional 1.2 million titles. The power of Amazon's already established links with many like-minded Web entrepreneurs is a powerful asset, in our opinion.

Low Fixed Overhead Costs

From an investment perspective, we think it would be unwise to dismiss the *operating efficiencies and direct-to-customer model* that Amazon has implemented. Dell Computer and CUC International are both good examples of companies that pioneered the direct model in their sectors. By doing so, both firms not only changed the economic value proposition and purchasing experience for their customers but also forced change upon their suppliers. Dell now requires suppliers to locate warehouses within minutes of Dell factories, and it has minimized inventory cost and exposure by assembling computers only after they are ordered, and by ordering and buying inventory only when needed. As a result, Dell is able to produce solid margins in a low-margin business.

CUC has eliminated the inventory problem in its shopping service by having manufacturers deliver products directly to the consumer. Initially shunned by manufacturers, CUC now represents a crucial channel and works in concert with

Figure 8-6

Upside: Amazon Associate Program Member



leading manufacturers like General Electric. Amazon founder Jeff Bezos wisely chose a sector (books, as opposed to music) with a large number of suppliers who can be more easily influenced by large retailers. Note that Amazon's largest supplier, Ingram Books, has a major distribution center located in Oregon, keeping Amazon's "virtual inventory" close to home.

Successful, Experienced Management Team and Board

From CEO Jeff Bezos on down, Amazon has built a first-class organization, in our view, and thanks to its IPO should be able to continue to offer compelling stock options. Before founding the business, Jeff helped build Wall Street quantitative hedge fund D.E. Shaw. CFO and Vice President of Finance and Administration Joy Covey was formerly CFO at DigiDesign (purchased by Avid Technology). Shel Kaplan, vice president and CTO, spent several years at Kaleida Labs, a multimedia joint venture between Apple Computer and IBM. Vice President and Executive Editor Rick Ayre was Executive Editor for Technology at *PC Magazine*. Vice President of Operations Oswaldo Dueas was a managing director at Federal Express during his 20-year tenure there. Mark Breier, vice president of marketing, held the same title at Cinnabon World Famous Cinnamon Rolls, and has also worked for Kraft Foods and Parker Brothers. Amazon's board is also top-notch, including the likes of John Doerr (Kleiner Perkins Caufield & Byers), Scott Cook (Intuit), and Patty Stonesifer (formerly of Microsoft).

Figure 8-7

Dr. Ruth: Amazon Associate Program Member



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Personalized Product

We expect Amazon to continue its all-out effort to create a rich, *engaging, entertaining Web site* that will encourage customers to return to the *Amazon site/community* again and again. Its latest Web site re-engineering, unveiled in April 1997, was designed in part to encourage users to "drop in" to see what's new at Amazon. Another key competitive differentiator Amazon has over other booksellers is its *editorial content* — Amazon strives to create a personalized product (an area that has proven to make retailing more effective over time). Book reviews are a helpful way to aid customers in understanding what they are getting when making book purchases. Conventional book reviews generally are written by a few individuals and published in places like *The New York Times Book Review* and *The New Yorker*.

Amazon's editorial content allows consumers to get more than just the publisher's comments — one can also get comments by other consumers and the author, as well as professional book reviews and rankings from Amazon.com editors, excerpts and featured titles from *The New York Times Book Review*, National Public Radio, *The Atlantic Monthly*, *Entertainment Weekly*, *The New Yorker*, "The Oprah Winfrey Show," and *Wired* magazine.

The *Amazon.com Journal* is a section of the site that provides author interviews, feature articles, and special columns, including the twice-weekly *Eclectica*. The Book of the Day section highlights several books in a number of categories, and there is also a listing of the top books by category.

We believe these *features enhance reader involvement in the site, and create a community which draws consumers back to the site for reasons other than selection and price*. In the past, the average consumer did not often have access to reviews for many of the books they were looking for, and rarely are reviews available at the point of purchase. Amazon.com fills this need by taking advantage of the Internet's interactive nature and allowing its customers to write reviews for any of the titles it sells.

Another competitive advantage of retail on the Internet is the ability to actively engage customers in a *membership-type environment*. Amazon.com offers two free e-mail notification services, which let users know when books with a particular title, subject, or author come in. "Eyes" is an

automated service that tracks every newly released book, and “Editors” is run by departmental editors who scour advance reviews and inform readers of interesting new releases in particular genres or subject areas.

Amazon also provides a gift-wrapping service, quick e-mail responses to let customers know that their order has been received, and also when it has shipped.

One of Amazon’s most convenient features is its record of member shipping addresses and credit card information, so ordering is easy and fast. We look forward to the day when we can log in birthdays and other key events for family and friends into Amazon’s database, along with themes and past purchases, and be notified via e-mail before the event and reminded to send a gift. Then, it’s a simple matter of picking a selection. Clearly, *Amazon’s growing list of user profiles (and e-mail addresses) is a nice asset*.

Amazon.com Has Broad Reach

According to PC Meter, which tracks a representative sample of the consumer Internet audience, *Amazon is among the most widely visited shopping sites on the Web*. In its February survey of over 2,000 Web sites, Amazon.com ranked fourth among shopping sites in terms of reach (the percentage of the available audience that visits a site within the month) — in fact, Amazon ranked second, behind Columbia House, for non-software sites.

Customers Seem Happy

Amazon makes it easy to become a customer and enjoys a *high rate of repeat purchases (in excess of 40%)*. In C1Q, each customer spent \$47 on average, and by our math (assuming a \$20 average book price) purchased 2.4 books in the quarter. In addition to the raw demand for books anytime, anywhere that Amazon can fulfill, there are ancillary benefits to the Amazon model for customers. Amazon allows consumers to examine the product closely online — such as reading reviews and previewing chapters — and, furthermore, find what they want quickly or browse leisurely.

Investment Risks

Competition — Book Selling Is One Tough Business

Amazon got off to a big lead in the online space (it was online for almost two years before Barnes & Noble launched its Web site). Nonetheless, Amazon does face serious challenges from other online bookstores as well as traditional booksellers — notably, Barnes & Noble, CUC’s

Book Stacks (www.books.com), and Borders, which is planning its own Web site.

Key financial metrics will clearly be revenue growth (seems baked in the near term); gross margin (negatively affected by pricing and positively by scale and own warehousing); and opex (negatively affected by marketing expense and positively, for Amazon, by low human requirements of online business style).

Specifically, we believe Amazon will need to ensure that aggressive pricing doesn’t crush gross margins, that delivery time doesn’t become a competitive disadvantage, and that marketing expense doesn’t become a huge cost (especially in a cross-promotion world).

On the competitive front, Barnes & Noble has opened its Internet sites with a 30% discount off the retail price for all in-stock hardcover titles and 20% off all in-stock paperback titles. The bookseller plans to have 400,000 titles available for next-day delivery by the fall, and says that initial sales are ramping nicely. Barnes & Noble also noted that 80% of total sales come from only 30% of the available titles, which suggests that the company should be able to quickly fill demand for the vast majority of consumers out of its own warehouses.

Amazon has responded to Barnes & Noble’s online debut with the Amazon 500, which are 500 of the most popular books, all at 40% off list price; in addition, Amazon, in general, offers 10% off retail for most other hardcover books and paperbacks.

At the same time, we note, online customers must incur shipping costs, so total online book purchase prices are not as compelling as they first appear to be and can often end up being more expensive than store purchases. Finally, in time, the adoption of agenting technology could increase the need for lower pricing as price competition accelerates.

Amazon’s *gross margin* of 22% is painfully lower than Barnes & Noble’s gross margin of 36%. While Amazon’s intrinsic opex advantages are significant (Barnes & Noble, on average, devotes 10% of revenue to rent and pre-store opening expense on an ongoing basis, and 19% of revenue to selling and administrative expenses), Barnes & Noble believes that its level of relative scale gives it an inherent 600–800 basis point gross margin benefit.

Clearly, based on current trends, Amazon appears to be at a significant operating-model disadvantage to Barnes & No-

Table 8-1
**Comparisons for Land-Based Bookselling Model
 Vs. Online Bookselling Model**

	Land-Based	Online
Superstore	430	1
Titles per Store	175,000	
	2,500,000	
Occupancy Cost (% of revs)	12%	< 4%
Revenue per Operating Employee	\$100,000	
	\$300,000	
Inventory Turns	2-3X	40-60X
Cash Flow	poor	great
Sales per square foot	\$250	\$2,000
Rent per square foot	\$20	\$8
Revenue per operating employee	\$100,000	
	\$300,000	

Source: Morgan Stanley Research

ble. But the key question, to us, is, *What's scale for Amazon and when can it lever its inherent opex advantages enough to offset its current gross margin disadvantages and become profitable?*

Table 8-1 demonstrates some of the inherent advantages that online business models (shown here for the bookselling business) appear to have compared with land-based business models. Clearly, the online model is not yet proven, so these estimates are hypothetical, though we think they are a reasonable pass.

Amazon's annualized revenue run rate for 1Q implies *revenue per employee* of \$250,000, while Barnes & Noble's C1997A revenue per employee is \$92,000 — clearly, the Web creates opex benefits for Amazon. While Barnes & Noble must ramp headcount for its store business at a steady rate with revenue growth, Amazon should be able to increase headcount at a slower rate than revenue growth. So, Barnes & Noble's revenue per employee should remain steady (excluding benefits associated with its Web ramp), while Amazon's revenue per employee should continue to rise.

In an interesting point on scale, Barnes & Noble's *opex per employee* is a very low \$27,000, while Amazon's is a should-go-lower \$110,000. However, a significant portion of Barnes & Noble employees/book sellers are temporary employees (owing to the seasonal nature of the book business), which gives its opex per employee a downward bias.

Finally, related to *marketing (including fulfillment) spending*, Amazon's 4Q96 sales and marketing spending run-rate equaled \$65 per quarter-end customer, and in 1Q97 was \$46, implying that Amazon has already hit a reasonably high marketing spending level per customer.

We think it is prudent for Web businesses to aggressively spend on marketing to nab customers early. In effect, most of the opex spending that would normally go to "bricks-and-mortar" for a book store, should go to marketing/customer-acquisition spending. With the entrance of Barnes & Noble and Borders into the online fray, Amazon.com will be faced with two established retailers with very large marketing budgets, and the ability to cross-promote heavily.

Table 8-2 compares the operating models for Amazon and Barnes & Noble. Our best estimate is that *Amazon will begin to hit scale when it reaches a \$200 million to \$300 million revenue run-rate* sometime in 1998/1999 and *can potentially turn profitable in 1999, after burning \$25–50 million in cash*. We include Barnes & Noble here as a proxy for the operating model of traditional booksellers to show the structural advantages inherent in Web retailing. It is not meant to be a comparison to BKS's Internet retailing business model, which would be significantly different. Amazon.com benefits from not needing the heavy operating expenses and large inventory related to a retail channel that Barnes & Noble's traditional operation requires, but Amazon's gross margin is penalized due to its reliance on wholesalers for inventory.

We make two sets of gross margin assumptions for AMZN:

- *Low Gross Margin With Scale* Gross margin declines by 30% to 16% (this is an aggressive assumption, but we assume price wars when Amazon ramps up its book volume, perhaps to a \$200–300 million revenue run-rate), which would be at less of a disadvantage to Barnes & Noble, and SG&A/R&D near 13%, yielding a 3% pretax margin.
- *OK Gross Margin With Scale* Gross margin declines by 9% to 20% (if Amazon's model works, the company's gross margin may dip below this level in the near term and then rise as scale kicks in), and SG&A/R&D is a higher 16%, yielding a 4% pretax margin.

Finally, we include a best-case long-term business model assumption for Amazon, assuming a 23–27% gross margin.

For comparison purposes, Barnes & Noble's F1997 (January) net income was \$51 million (with profits only coming in the seasonally strong January quarter) on \$2.5 billion in revenue, driving a 2.1% net margin.

Table 8-2

Amazon.com vs. Barnes & Noble Financial Data

	Low Gross Margin Scale AMZN Estimate	OK Gross Margin Scale AMZN Estimate	High Gross Margin Scale AMZN Estimate	AMZN C1Q97A	BKS F1997E (c)
Revenue (MM)	100%	100%	100%	\$16	\$2,819
Y/Y Revenue Growth	--	--	--	1,729%	--
Q/Q Revenue Growth	--	--	--	89%	--
Gross Margin	16%	20%	23-27%	22%	36%
Opex Percent	--	--	--	--	--
SG&A/R&D	13%	16%	16-21%	41%	19%
Rent/Store Expense	0%	0%	0%	0%	9%
Pretax Margin	3%	4%	5-10%	NM	4%
PP&E (\$MM)	--	--	--	\$2.5	\$472
Inventory (\$MM)	--	--	--	\$0.9	\$835
Inventory Turns (a)	--	--	--	42	2.1
No. of Stores	0	0	0	0	1,008
Employees	--	--	--	256	26,000
Ann. Rev/Emp. (b)	--	--	--	\$250K	\$92K

Sources: Company reports and Morgan Stanley Research Estimates.

(a) Inventory turns are for 1996.

(b) Annual revenue per employee is last three months' revenue annualized.

(c) BKS 1997 fiscal year ends in January 1998.

To compete effectively with Barnes & Noble, Borders, and CUC, we believe Amazon must grow quickly to develop economies of scale that are substantial enough to weather the competitive pricing and marketing pressures.

One area where Barnes & Noble and Borders should be able to effectively leverage their existing, retail distribution infrastructures is product fulfillment — we are talking a big apparent edge with shorter product delivery times, at least until Amazon scales. While it may be satisfactory to wait a few days or weeks for a book, consumers often require immediate delivery.

Barnes & Nobel has scale: \$2.5 billion in F1997 revenues, assisted by 439 superstores, a \$40 million distribution warehouse stocked with about 100,000 titles (expected to ramp to 400,000 by autumn 1997), and a mail-order business that Morgan Stanley Research estimates will generate about \$27 million in F1998 revenue.

Other Barnes & Noble advantages over Amazon that we see include:

- a lower cost per book (and subsequently the ability to offer lower prices profitably);
- a large number of books in stock, which can be shipped overnight to customers (better customer service);

- better/longer relationships with many publishers;
- better/longer relationships with many authors, which should make the interactive/chat feature more robust and help drive traffic through the online store;
- national advertising campaigns and storefront billboards that reinforce Barnes & Noble's image; and
- a lower cost of capital and a strong balance sheet should be more attractive to strategic partners.

It seems unlikely to us that Amazon will be more profitable than the barnesandnoble.com portion of BKS's business. Thanks to scale, barnesandnoble.com as a stand-alone entity will likely be more profitable than Amazon.com, because it has the same structural low opex costs and the gross margin advantage. Amazon needs to offset gross margin disadvantages just to become profitable.

In our opinion, the expected increased bookselling competition on the Internet will have several outcomes:

- 1) Book sales on the Web will rise rapidly for both Amazon and Barnes & Noble — revenue growth will not be an issue and competition will expand the market for both companies, and may in fact help boost retailing of all products on the Web;

2) Web market share for book sales will be consolidated among Amazon, Barnes & Noble, and CUC's Book Stacks and will be far less fragmented than in the bricks-and-mortar world. The All-Internet Shopping Directory (www.all-Internet.com) lists 47 retail book-related sites. Book Stacks (www.books.com) is one of the most substantial Web-grown booksellers. Similar to Amazon, it offers 465,000 titles in its database, discounts, and "bookmarks," which customers accrue like frequent-flier miles. Book Stacks also offers annual memberships with special discounts, a chat area, and a daily "Book of Days," featuring titles, authors, quotes, poems, and noteworthy events.

3) Heightened competition will lead to more rapid technological development.

Consolidation in the online market probably will follow the same trend that has occurred in the bricks-and-mortar world: The larger players effectively drive out smaller players, as opposed to purchasing them outright. However, we see a greater chance that smaller, niche online players will be bought in the online world, as these sites could retain their small, personal character while leveraging the scaled infrastructure of the acquirer, something which is not as common in the traditional marketplace.

The toughest thing to estimate is what the operating profit/loss model will look like with increased competition.

Amazon Is Not Yet a Money-Maker

Another risk for Amazon is that it is not yet making money, and while its increasing scale should help push it in the direction of the black, there is not likely to be any kind of profitability hockey stick similar to what many technology companies experience. Amazon has indicated that proceeds from its IPO will be used to fund operating losses going forward, and with substantial product price-cutting already going on, profitability probably will not be an easy achievement.

Amazon clearly needs to build a scaled franchise to compete profitably in the mainstream against Barnes & Noble. This would require a steady flow of capital investment in technology and infrastructure. This would be compounded with heavy marketing spending focused on brand-building, which could mean raising additional capital.

Hyper-Growth Always Leads To Operational Challenges, Risks

From an operational standpoint, Amazon's customer purchasing systems do not link with its accounting systems, which could create headaches for management in dealing with rapid growth in all areas of the business. Amazon is also heavily dependent on Ingram Books for its inventory. Ingram is the largest wholesale distributor of trade books in the world, shipping more than 115 million books, audio cassettes, and multimedia CD-ROMs annually. Ingram

Table 8-3

Online Bookstores Listed on the All-Internet Shopping Directory

A Sentimental Journey	Blackwell Science	Clarke & Stone	Mind's Eye Fiction
Adventurous Traveler Bookstore	Blue Moon Bookshop	Classic Gift Shoppe	Moon Travel
Albatross Specialty BookSellers	Book Look	Computer Manuals	New Badger Books
AlbionBooks	Book Stacks	Cook Inlet Book Company	Paper Ships Books & Crystals
Amazon.com	Books Now	The Cookbook Store	Planetary Publications
Annie's Book Stop of Kennewick	BookServe	C.W. Hay Bookseller	Plum Choices
Antiquarian Booksellers	BookSite	Eastgate on the Web	Sasuga Japanese Bookstore
Armenian Reference Books	BookWorld!	Future Fantasy Bookstore	Thaddeus Books
Astrology Et Al Bookstore	Bookstore at Houghton Mifflin	Internet Book Shop	TOR Science Fiction & Fantasy
AudioBook Source	Breakwater Books	JoyMe by Mail	Traders Press Inc
Audiobooks by Jimcin	Cascadilla Press	LMG Enterprises	Waite Group Press
Bear Mountain	Charlesbank Bookshop	Macmillan Digital	

Source: *The All-Internet Shopping Directory* (www.all-Internet.com/books.html).

serves more than 32,000 retail outlets, represents over 9,000 publishers, and carries greater than 310,000 titles in its inventory. Ingram has seven major distribution centers in the U.S., and provides customers with electronic ordering, real-time inventory availability information, and 24-hour order fulfillment.

Amazon purchased 59% of its inventory from Ingram in 1996, and carries very little inventory of its own, placing it at risk to the suppliers. This reliance on distributors for inventory, while helping create strong cash flow, does cut into margins. Barnes & Noble expects that its new distribution center will give it a 6–8% margin advantage over competitors like Amazon that rely on wholesalers.

Books and Retail Are Two Low-Margin Businesses

The relatively low barriers to entry in the online bookselling world have fostered a market where price-cutting may be *de rigueur* and operating margins will likely be razor-thin. CUC has indicated that its Book Stacks site will offer a membership-based model, where books are offered almost at cost, and profits are derived from the membership fees. Business models like this, if they are adopted, will likely contribute to margin pressure — but, hey, *Amazon can offer membership plans, too* — it's all about which site has the traffic.

Early Stage Valuation Likely a Technology/Retail Hybrid And Market-Capitalization-to-Revenue Metric, But, in Time, This Should Change

While we believe Amazon represents an extremely well-positioned company, it is important to remember exactly what type of company it is — a retail growth company, not a technology company. Amazon's business model may look far more streamlined than those of its traditional competition, but price wars have already started online and operating margin levels, when stabilized, will be slim. *In time, we expect, Amazon will likely be valued using valuation metrics for traditional retailing companies.*

A Look at Amazon's Financial and Operating Statistics and Dynamics

Through March 1997, Amazon had cumulative (five-quarter) sales of more than \$32 million, to approximately 340,000 customers in over 100 countries. Daily customer visits have gone from around 2,200 in December 1995 to

approximately 80,000 in March 1997, and average revenue per customer was an impressive \$47 in C1Q.

C1Q97 revenues were up 89% quarter-to-quarter to \$16 million, with opex of \$6.5 million. C4Q96 revenues of \$8.5 million were up 103% quarter-to-quarter, with opex of \$4.3 million. While the overall operating loss increased to \$3 million in C1Q97, from \$2.4 million in C4Q96, the operating loss as a percentage of revenue decreased to 18.9% from 28.3%. Gross margin came in at 22% in C1Q97, flat quarter-to-quarter and up slightly from 21% in C1Q96. Gross margins have held solidly in the 21–22% range for the past five quarters; however, according to the company's S-1, its March price cut (as well as further price cuts) could cause gross margins to fall below their current level. Amazon's heavy discounting policy and reliance on book wholesalers for inventory will keep its gross margin low; thus, achieving profitability will depend heavily on the rapid ramping of revenues.

Headcount at the end of C1Q97 was 256, up from 11 at the end of C4Q95. Amazon continues to spend heavily on sales and marketing (includes advertising, promotional, and fulfillment expenses), which totalled \$6 million in 1996 (39% of revenues) and \$3.9 million in C1Q97 (24% of revenues). R&D spending (which includes payroll for editorial, development, and network operations) totalled \$2.3 million in 1996 (15% of revenues) and \$1.6 million in C1Q97 (10% of revenues). General and administrative costs totalled \$1 million in 1996 (7% of revenues) and \$1.1 million in C1Q97 (7% of revenues).

Since the company's inception, it has financed its operations primarily through private sales of common stock and preferred stock, which through March 1997 totalled \$2.0 million and \$8.2 million, respectively. At the end of March 1997, the company had just over \$7 million in cash, and only \$79,000 in working capital. Based on the company's offering of 3 million shares at \$18 each, Amazon should receive over \$50 million in proceeds, which would give both cash and working capital a nice boost.

At the end of March 1997, Amazon had \$2.5 million in plant and equipment, net of amortization. Since inception, the company has incurred substantial losses and had run up an accumulated deficit of \$9 million as of the end of C1Q97.

Barnes & Noble: Extending Its Retail Franchise to the Web

Barnes & Noble has traveled a road to the Internet very different than the one used by Amazon.com. As the nation's leading bookseller — over 1,000 stores generated \$2.4 billion in revenues in 1996 — Barnes & Noble sees the Internet as an important new avenue for growth that leverages existing assets. These existing assets include an established distribution center and relationships with 20,000 publishers, state-of-the-art inventory tracking and replenishment systems, and a national advertising program that promotes and supports the Barnes & Nobles brand name.

Barnes & Noble's Internet effort is still very much in the beginning stages, making it difficult to project revenues and profitability. The company says that early demand indications are very strong, but believes that the Internet side of its business will have an immaterial impact on earnings in 1997.

Just Getting Started

Barnes & Noble is just getting started on the Web. It made its debut in February with the introduction of a book retailing site on America Online. As the exclusive bookseller on AOL's Marketplace, BKS offers more than 1 million titles to AOL's 8 million subscribers, at a 30% discount to hardcover prices and a 20% discount to paperback prices. To date, Barnes & Noble reports that sales are ramping nicely, **and it expects to be the largest retailer on AOL Marketplace very soon.**

Barnes & Noble extended its online presence with the May 13 launch of its Web site (www.barnesandnoble.com). The site allows shoppers to search by author, title or subject, or browse by subject. There is a best-sellers section, which lists the top titles in hardcover fiction, paperback fiction, hardcover nonfiction, and paperback nonfiction. Each subject area contains related articles from Barnes & Noble editors, interviews with authors, as well as a top 10 books list. Barnes & Noble has also built a large community area, which features live chats with authors (such as Tom Clancy, Dick Clark, and Earl Woods), a book review bulletin board, articles by Barnes & Noble editors, and a book forum that allows shoppers to chat about a host of subjects.

The company has also partnered with the Firefly Network to launch a personalized book recommendation area, which leverages Firefly's personal preference software and should help create a highly customized level of service. Barnes & Noble has also reached an agreement with *The New York Times* to be the exclusive provider of book fulfillment for both the Times' Web site and its AOL site. This gives Barnes & Noble prime access to the *New York Times Book Review* section, including the archives.

Competitive Advantages on the Web

Leverage Existing Assets — Small, Up-Front Investment

Barnes & Noble's biggest competitive advantage is its existing bricks-and-mortar business. BKS's new Internet business leverages a large base of existing assets and thus has significantly reduced up-front investments. This means that Barnes & Noble can offer its Internet customers better service, such as, but not limited to, faster delivery on more titles, with less up-front investment. To date, up-front capital investments have been limited to technology development, Web site creation, and start-up and advertising costs. Barnes & Noble expects to spend less than \$10 million of capital developing its Web site by the end of 1997. At present, BKS employs approximately 80 people full-time in its Internet division. Existing assets that we expect to be leveraged by barnesandnoble.com include:

- A 350,000 square foot **state-of-the-art distribution center** in New Jersey that will stock 400,000 titles by the fall. BKS has set aside a small section of this facility (called the "Internet Pod") for Internet order fulfillment.
- BKS's well-established mail-order business provides the **infrastructure for special order processing** that is required to fulfill orders from the Internet. Last year, BKS's mail-order division shipped more than 1.0 million packages to more than 50 different countries.
- **Established relationships with 20,000 publishers.** As the largest bookseller in the U.S., BKS has long-standing relationships with every major publisher. Thus barnesandnoble.com will get to buy like a big guy from day one. It also means that costly and time-consuming back-end ad-

ministration — order entry systems, SKU number linking, replenishment systems, EDI, etc. — is already in place.

- Established relationships with authors.** Over the last five years, Barnes & Noble has transformed the traditional sleepy bookstore into an important community center. Most Barnes & Noble superstores feature comfortable seating for browsers, a Starbucks cafe, and frequent literary events, such as author appearances and readings. These established author relationships will likely lead to more frequent and robust on-line chat sessions, which should in turn drive more on-line traffic to BKS' site. Barnesandnoble.com is already offering live on-line chat sessions with at least one different author each day.

Lowest Cost Distribution = Pricing Flexibility + Market Share + Profitability

We believe that Barnes & Noble's low-cost distribution systems will allow it to be the price leader in Internet book selling — and to do so profitably. We estimate that BKS's leverage with vendors and its ability to self-distribute (cutting out the wholesaler) will give it at least a 600-basis-point cost advantage over other Internet booksellers that do not self-distribute. We believe this cost advantage will allow Barnes & Noble to offer the lowest prices on a sustainable basis. Low prices should be particularly important on the Internet because shoppers can comparison-shop at the push of a button. Thus, we think profitable price leadership — the direction that BKS seems to be headed — will be the key to long-term success on the Internet.

Barnes & Noble launched its Web site offering a 30% discount off all hardcover books and a 20% discount off all paperback books. This pricing scheme makes it the lowest-cost provider of the majority of booksellers on the Internet. Amazon's pricing scheme offers 40% off the top-selling 500 books, a list called the "Amazon.500," and a 10% discount off others. Thus, it is cheaper at present to buy the top 500 books on Amazon and to buy all others on Barnes & Noble. Barnes & Noble believes that the majority of the sales over the Internet will be done outside of Amazon's top 500 list. To date, best-sellers have accounted for less than 3% of BKS' sales on AOL. BKS says it intends to be the lowest-cost bookseller on the Web, so we would not be surprised to see the company match Amazon's pricing some time soon.

Strong Brand Equity

BKS' strong brand equity will be an important asset on the Internet. Most Americans, and many international consumers, associate the Barnes & Noble name with book selling. We believe that Barnes & Noble will easily convert this consumer mind share to online mind share. Barnes & Noble will be aggressively advertising its Internet services both online and offline. Furthermore, its online marketing program is to be supported by a company-wide \$20 million national advertising campaign promoting the Barnes & Noble brand name. We believe that this strong brand equity will draw Internet shoppers to its site, but will also make it easier for BKS to find strategic partners.

Strategic Alliances Building

The Internet is all about connectivity; thus, strategic alliances and marketing partnerships will be an important driver of success on the Internet. We believe that BKS' strong brand awareness among consumers and its dominance in the bookselling world give it an edge in developing strategic alliances with Internet technology developers and other online service providers. On the technology side, BKS has already developed partnerships with Microsoft, Hewlett-Packard, Firefly Network, Reach Networks, Business Data Services, and Interactive Bureau. Firefly is one of the leading providers of advanced collaborative filtering technologies. The partnership with Firefly should allow BKS to provide its online customers with personalized services and tailored communities. To date, BKS is the only book retailer on the Web that has implemented Firefly's technology.

BKS is also developing important strategic alliances with online service providers, such as America Online and Excite. In February, BKS became the exclusive book retailer in AOL's Marketplace, the world's largest online service provider. The AOL partnership gives BKS rapid exposure to a large audience of Internet users, approximately 8 million at last count. BKS says it is close to announcing a new partnership with Excite (www.excite.com).

In late May, BKS announced a strategic alliance with the *New York Times* to make Barnes & Noble the exclusive book-fulfillment avenue on the Times' site.

Table 8-4

Amazon.com — Income Statement Comparisons

(\$ Thousands, Except EPS)

	1996				1997	C1994 (a)	C1995	C1996
	3/96	6/96	9/96	12/96	3/97			
Total Revenue	\$875	\$2,230	\$4,173	\$8,468	\$16,005	\$0	\$511	\$15,746
Cost of Services	695	1,753	3,262	6,577	12,484	0	409	12,287
Gross Profit	180	477	911	1,891	3,521	0	102	3,459
Operating Expenses	516	1,253	3,383	4,286	6,553	52	406	9,438
Sales & Marketing	205	696	2,251	2,938	3,874	0	200	6,090
Product Development	263	394	755	901	1,551	38	171	2,313
General & Administrative	48	163	377	447	1,128	14	35	1,035
Operating Income	(336)	(776)	(2,472)	(2,395)	(3,032)	(52)	(304)	(5,979)
Interest income (expense)	5	9	92	96	64	0	1	202
Pre-Tax Income	(331)	(767)	(2,380)	(2,299)	(2,968)	(52)	(303)	(5,777)
Provision for Income Tax	0	0	0	0	0	0	0	0
Net Income	(331)	(767)	(2,380)	(2,299)	(2,968)	(52)	(303)	(5,777)
Earnings Per Share	(\$0.01)	(\$0.03)	(\$0.10)	(\$0.10)	(\$0.13)	(\$0.00)	(\$0.02)	(\$0.26)
Shares used to calculate EPS (MM)	22,098	22,279	22,897	22,899	22,955	17,577	18,780	22,543
Growth Rate								
Total Revenue (yr-yr)	--	--	--	--	1,729%	--	NM	2,981%
Total Revenue (seq)	--	155	87	103	89	--	--	--
Expenses (yr-yr)	--	--	--	--	1,170	--	681	2,225
Expenses (seq)	--	1	170	27	53	--	--	--
Operating Income (yr-yr)	--	--	--	--	NM	--	NM	NM
Operating Income (seq)	--	NM	NM	NM	NM	--	--	--
Margin Analysis (% of Total Rev)								
Gross Margin	21%	21%	22%	22%	22%	--	20%	22%
Sales & Marketing	23	31	54	35	24	--	39	39
Product Development	30	18	18	11	10	--	33	15
General & Administrative	5	7	9	5	7	--	7	7
Operating Margin	NM	NM	NM	NM	NM	NM	NM	NM
Net Margin	NM	NM	NM	NM	NM	NM	NM	NM
Operating Expenses as a % of Revenue	59%	56%	81%	51%	41%	--	79%	60%
Headcount	21	45	115	151	256			151
L3M Annualized Rev.'(000)/Employee	\$167	\$198	\$145	\$224	\$250			
L3M Annualized Opex.'(000)/Employee	98	111	118	114	102			
L3M Ann. Opex per Emp/L3M Ann. Rev. per Emp.	59%	56%	81%	51%	41%			
Customer Accounts at Q-End	--	--	--	180,000	340,000			
Number of Visits per day at Q-End	--	--	--	50,000	80,000			
Revenue Per Account (at Q-end)	--	--	--	\$47	\$47			
Estimated # of Books Sold in Q (ASP=\$17)	--	--	--	498,118	941,471			
Revenue Per Visit				\$1.88	\$2.22			
L3M Ann. Marketing Spending per Q-End Customer				\$65.29	\$45.58			

(a) From period from July 5, 1994 (Inception) to December 31, 1994.

Fiscal year ends in December.

Table 8-5
Amazon.com — Balance Sheet

(\$ Thousands)

	1996 12/96	1997 3/97	Annual Data	
			1995	1996
Total Assets	\$8,271	\$11,722	\$1,084	\$8,271
Current Assets	7,140	9,038	1,027	7,140
Cash & cash equivalents	6,248	7,162	996	6,248
Inventories	571	939	17	571
Prepaid expenses and other current assets	321	937	14	321
Equipment, net	985	2,491	57	985
Deposits	146	193	--	146
Liabilities & Shareholders' Equity				
Current Liabilities	\$4,870	\$8,959	\$107	\$4,870
Accounts Payable	2,852	5,650	99	2,852
Accrued advertising	598	1,254	--	598
Accrued product development	500	--	--	500
Other accrued liabilities	920	2,055	8	920
Total Liabilities	\$4,870	\$8,959	\$107	\$4,870
Shareholders' Equity	3,401	2,763	977	3,401
Total Liabilities & Shareholders' Equity	\$8,271	\$11,722	\$1,084	\$8,271
Ratio Analysis				
Book Value Per Share	\$0.15	\$0.12	\$0.05	\$0.15
Cash Per Share	\$0.27	\$0.31	\$0.05	\$0.27
Debt/Equity	--	--	--	--
Net Debt Ratio	--	--	--	--
Inventory Turnover (a)	42	--	--	42

(a) Inventory turns based on L12M.

Fiscal year ends in December.

Table 8-6

Barnes & Noble — Income Statement

(\$ Millions, Except EPS)	F1995					F1996					F1997E					F1998E	
	4/95	7/95	10/95	1/96	Year	4/96	7/96	10/96	1/97	Year	4/97	7/97E	10/97E	1/98E	Year	Year	
Superstores	\$266.5	\$284.8	\$302.6	\$496.1	\$1,350.0	\$381.5	\$399.1	\$412.7	\$667.8	\$1,861.1	\$481.6	\$492.3	\$504.7	\$812.3	\$2,290.9	\$2,630.3	
% Increase	48.7%	39.4%	38.7%	41.3%	41.7%	43.1%	40.1%	36.4%	34.6%	37.9%	26.2%	23.4%	22.3%	21.6%	23.1%	14.8%	
% Superstore Comp	11.6%	8.0%	6.7%	3.8%	6.9%	5.9%	4.5%	4.5%	5.7%	5.2%	9.3%	7.5%	7.5%	7.0%	7.7%	6.0%	
Mall Bookstores	\$129.0	\$129.4	\$124.5	\$220.1	\$603.0	\$120.9	\$120.6	\$115.0	\$208.6	\$565.1	\$108.7	\$109.9	\$103.1	\$184.2	\$505.8	\$470.7	
% Increase	(5.0%)	(8.2%)	(8.0%)	(6.3%)	(6.8%)	(6.3%)	(6.8%)	(7.6%)	(5.2%)	(6.3%)	(10.1%)	(8.9%)	(10.4%)	(11.7%)	(10.5%)	(7.0%)	
% Mall store Comp	(2.9%)	(5.5%)	(5.8%)	(2.9%)	(4.1%)	(3.0%)	(1.4%)	(1.3%)	(3.3%)	(1.0%)	(4.8%)	(2.0%)	(1.0%)	(1.0%)	(2.0%)	(1.0%)	
Other Revenues	\$6.4	\$5.9	\$5.2	\$6.4	\$23.9	\$6.4	\$4.6	\$4.9	\$6.1	\$22.0	\$5.4	\$5.1	\$5.4	\$6.7	\$22.6	\$24.8	
Total Revenues	\$402.0	\$420.1	\$432.3	\$722.5	\$1,976.9	\$508.8	\$524.3	\$532.6	\$882.5	\$2,448.2	\$595.7	\$607.2	\$613.1	\$1,003.3	\$2,819.4	\$3,125.8	
COGS, buying & occupancy	262.0	273.2	279.8	454.0	1,269.0	333.5	340.2	341.2	551.9	1,566.7	388.6	392.7	391.5	622.8	1,795.6	1,984.1	
Gross Profit	140.0	146.9	152.5	268.5	707.9	175.3	184.1	191.4	330.6	881.5	207.1	214.5	221.6	380.5	1,023.7	1,142.9	
Selling and Administrative	87.1	86.4	90.0	113.2	376.8	104.2	105.2	110.0	136.7	456.2	120.2	121.4	126.9	154.5	523.1	573.2	
Rental Expenses	41.5	43.1	44.9	53.0	182.5	53.1	54.1	56.7	61.5	225.5	62.2	61.9	64.4	69.2	257.7	285.8	
Pre-opening expenses	2.8	2.8	3.0	3.7	12.2	4.5	4.9	4.6	3.6	17.6	3.8	4.9	3.6	1.8	14.1	14.1	
LIFO Charge (Credit)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	
EBITDA	8.6	14.6	14.5	98.7	136.5	13.5	19.9	20.1	126.1	179.6	20.9	26.3	26.7	154.9	228.8	269.8	
Depreciation & Amortization	10.6	11.1	12.0	14.2	47.9	13.6	14.3	15.5	16.5	59.8	17.7	17.8	19.2	19.8	74.5	85.7	
Interest Expense/(Income), net	6.1	7.1	7.7	7.3	28.1	8.3	10.2	9.6	10.2	38.3	9.6	12.4	11.3	11.7	45.1	46.9	
Pretax Income	(8.0)	(3.6)	(5.1)	77.2	60.5	(8.4)	(4.6)	(5.0)	99.4	81.5	(6.5)	(4.0)	(3.8)	123.4	109.2	137.2	
Income Taxes/(Credit)	(2.7)	(1.0)	(1.6)	31.5	26.1	(3.1)	(1.8)	(2.4)	37.5	30.2	(2.6)	(1.6)	(1.5)	49.4	43.7	54.9	
Net Income (b4 Extras)	(5.3)	(2.6)	(3.5)	45.7	34.3	(5.4)	(2.7)	(2.6)	62.0	51.3	(3.9)	(2.4)	(2.3)	74.1	65.5	82.3	
Extraordinary Items	0.0	0.0	0.0	87.3	87.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Net Income	(\$5.3)	(\$2.6)	(\$3.5)	(\$41.6)	(\$53.0)	(\$5.4)	(\$2.7)	(\$2.6)	\$62.0	\$51.3	(\$3.9)	(\$2.4)	(\$2.3)	\$74.1	\$65.5	\$82.3	
EPS (B4 Xtra & One-time chrgs)	(\$0.17)	(\$0.08)	(\$0.11)	\$1.39	\$1.05	(\$0.16)	(\$0.08)	(\$0.08)	\$1.80	\$1.48	(\$0.12)	(\$0.07)	(\$0.07)	\$2.09	\$1.85	\$2.30	
Reported EPS	(\$0.17)	(\$0.08)	(\$0.11)	(\$1.26)	(\$1.70)	(\$0.16)	(\$0.08)	(\$0.08)	\$1.80	\$1.48	(\$0.12)	(\$0.07)	(\$0.07)	\$2.09	\$1.85	\$2.30	
Average Shares Out. (MM)	30.3	30.4	31.2	33.0	31.2	33.0	33.0	33.0	34.4	34.6	33.2	33.3	33.4	35.5	35.5	35.8	
<i>As % of Sales</i>																	
Gross Margin	34.8%	35.0%	35.3%	37.2%	35.8%	34.5%	35.1%	35.9%	37.5%	36.0%	34.8%	35.3%	36.2%	37.9%	36.3%	36.6%	
Selling and Administrative	21.7%	20.6%	20.8%	15.7%	19.1%	20.5%	20.1%	20.7%	15.5%	18.6%	20.2%	20.0%	20.7%	15.4%	18.6%	18.3%	
Rental Expenses	10.3%	10.2%	10.4%	7.3%	9.2%	10.4%	10.3%	10.6%	7.0%	9.2%	10.4%	10.2%	10.5%	6.9%	9.1%	9.1%	
Pre-opening expenses	0.7%	0.7%	0.7%	0.5%	0.6%	0.9%	0.9%	0.9%	0.4%	0.7%	0.6%	0.8%	0.6%	0.2%	0.5%	0.5%	
EBITDA	2.1%	3.5%	3.4%	13.7%	6.9%	2.7%	3.8%	3.8%	14.3%	7.3%	3.5%	4.3%	4.4%	15.4%	8.1%	8.6%	
Depreciation & Amortization	2.6%	2.6%	2.8%	2.0%	2.4%	2.7%	2.7%	2.9%	1.9%	2.4%	3.0%	2.9%	3.1%	2.0%	2.6%	2.7%	
Interest Expense/(Income), net	1.5%	1.7%	1.8%	1.0%	1.4%	1.6%	1.9%	1.8%	1.2%	1.6%	1.6%	2.0%	1.8%	1.2%	1.6%	1.5%	
Pretax Income	(2.0%)	(0.9%)	(1.2%)	10.7%	3.1%	(1.7%)	(0.9%)	(0.9%)	11.3%	3.3%	(1.1%)	(0.7%)	(0.6%)	12.3%	3.9%	4.4%	
Tax Rate	33.8%	28.3%	31.1%	40.8%	43.2%	36.4%	40.0%	48.1%	37.7%	37.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	
Net Income (b4 Extras)	(1.3%)	(0.6%)	(0.8%)	6.3%	1.7%	(1.1%)	(0.5%)	(0.5%)	7.0%	2.1%	(0.7%)	(0.4%)	(0.4%)	7.4%	2.3%	2.6%	
% Change																	
Sales	25.5%	19.8%	20.4%	21.9%	21.8%	26.6%	24.8%	23.2%	22.1%	23.8%	17.1%	15.8%	15.1%	13.7%	15.2%	10.9%	
Gross Profit	29.8%	23.5%	22.1%	21.5%	23.6%	25.2%	25.3%	25.5%	23.1%	24.5%	18.1%	16.6%	15.8%	15.1%	16.1%	11.6%	
Selling and Administrative	26.6%	20.1%	19.5%	18.9%	21.0%	19.6%	21.7%	22.2%	20.8%	21.1%	15.4%	15.5%	15.3%	13.0%	14.7%	9.6%	
Rental Expenses	24.2%	22.2%	21.7%	27.2%	23.9%	28.0%	25.8%	26.1%	16.1%	23.6%	17.0%	14.4%	13.6%	12.5%	14.3%	10.9%	
Pre-opening expenses	11.4%	24.2%	47.5%	59.1%	34.8%	62.2%	76.8%	55.7%	(2.2%)	44.5%	(15.0%)	0.0%	(22.0%)	(50.0%)	(19.8%)	0.0%	
EBITDA	174.7%	54.6%	37.9%	20.4%	29.8%	56.3%	36.0%	38.3%	27.7%	31.5%	54.6%	32.3%	33.1%	22.8%	27.4%	17.9%	
Depreciation & Amortization	24.4%	25.4%	29.8%	41.8%	30.8%	28.7%	28.2%	29.1%	16.0%	24.9%	30.6%	25.0%	24.0%	20.0%	24.6%	15.0%	
Interest Expense/(Income), net	13.1%	23.3%	24.3%	29.0%	22.6%	N.M.	43.7%	24.8%	38.9%	36.0%	15.6%	22.0%	18.0%	15.0%	17.7%	4.0%	
Pretax Income	N.M.	N.M.	5.4%	16.4%	32.7%	N.M.	N.M.	N.M.	28.8%	34.7%	N.M.	N.M.	N.M.	24.1%	34.0%	25.7%	
Net Income (b4 Extras)	N.M.	N.M.	N.M.	16.8%	34.6%	N.M.	N.M.	N.M.	35.5%	49.4%	N.M.	N.M.	N.M.	19.5%	27.7%	25.7%	
EPS (B4 Extras)	N.M.	N.M.	N.M.	11.8%	29.1%	N.M.	N.M.	N.M.	29.8%	41.3%	N.M.	N.M.	N.M.	15.8%	24.4%	24.6%	

E = Morgan Stanley Research Estimates

Fiscal year ends in January of following year (i.e. F1997 ends in 1/98).

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Table 8-7

Barnes & Noble — Quarterly Revenue Buildup Model

	F1995					F1996					F1997E					F1998E
	4/95	7/95	10/95	1/96	Year	4/96	7/96	10/96	1/97	Year	4/97	7/97E	10/97E	1/98E	Year	Year
<i>Quarterly Superstore Roll-up Model</i>																
Beginning Stores	268	278	289	322	268	358	373	388	417	358	431	446	461	483	431	491
Stores Added	11	13	35	38	97	20	16	32	23	91	16	17	25	11	69	70
Stores Closed	(1)	(2)	(2)	(2)	(7)	(5)	(1)	(3)	(9)	(18)	(1)	(2)	(3)	(3)	(9)	(10)
Ending Stores	278	289	322	358	358	373	388	417	431	431	446	461	483	491	491	551
Average Quarterly Stores	273	284	306	340	301	366	381	403	424	393	439	454	472	487	463	520
Superstore Revenues	\$266.5	\$284.8	\$302.6	\$496.1	\$1,350.0	\$381.5	\$399.1	\$418.6	\$686.7	\$1,885.9	\$470.5	\$492.3	\$504.7	\$812.3	\$2,279.9	\$2,630.3
Sales per Avg. Store	\$0.976	\$1.005	\$0.991	\$1.459	\$4.493	\$1.044	\$1.049	\$1.040	\$1.619	\$4.797	\$1.073	\$1.086	\$1.069	\$1.668	\$4.927	\$5.061
% Change	13.0%	8.4%	8.7%	7.7%	9.2%	6.9%	4.4%	5.0%	11.0%	6.8%	2.8%	3.5%	2.8%	3.0%	2.7%	2.7%
	261.9	285.7	304.7	510.9	\$1,363.1	378.9	406.3	419.1	673.3	\$1,877.6	499.6	516.0	527.5	850.9	\$2,394.0	\$2,715.4
<i>Quarterly Mallstore Roll-up Model</i>																
Beginning Stores	698	688	676	671	698	639	631	617	604	639	577	567	553	540	577	514
Stores Added	3	3	2	2	10	2	1	3	4	8	0	1	3	3	7	9
Stores Closed	(13)	(15)	(7)	(34)	(69)	(10)	(15)	(16)	(29)	(70)	(10)	(15)	(16)	(29)	(70)	(40)
Ending Stores	688	676	671	639	639	631	617	604	579	577	567	553	540	514	514	483
Average Quarterly Stores	693	682	674	655	676	635	624	611	592	615	572	560	547	527	551	502
Mall Store Revenues	\$129.0	\$129.4	\$124.5	\$220.1	\$603.0	\$120.9	\$120.6	\$113.4	\$203.7	\$558.7	\$110.5	\$109.9	\$103.1	\$184.2	\$507.7	\$470.7
Sales per Avg. Store	\$0.186	\$0.190	\$0.185	\$0.336	\$0.892	\$0.190	\$0.193	\$0.186	\$0.344	\$0.908	\$0.193	\$0.196	\$0.189	\$0.350	\$0.921	\$0.938
% Change	0.2%	(2.7%)	(1.9%)	1.3%	(0.7%)	2.3%	1.9%	0.5%	2.5%	1.8%	1.5%	1.5%	1.5%	1.5%	1.4%	1.9%
% Change in Mall Revenue	(5.0%)	(8.2%)	(8.0%)	(6.3%)	(6.8%)	(6.3%)	(6.8%)	(8.9%)	(7.4%)	(7.4%)	(8.6%)	(8.9%)	(9.1%)	(9.6%)	(9.1%)	(7.3%)
<i>Revenues by Segment</i>																
Superstores	266.5	284.8	302.6	496.1	\$1,350.0	381.5	399.1	412.7	667.8	1,861.1	481.6	492.3	504.7	812.3	2,290.9	2,630.3
Mall Stores	129.0	129.4	124.5	220.1	603.0	120.9	120.6	115.0	208.6	565.1	108.7	109.9	103.1	184.2	505.8	470.7
Other	6.4	5.9	5.2	6.4	23.9	6.4	4.6	4.9	6.1	22.0	5.4	5.1	5.4	6.7	22.6	24.8
Total	\$402.0	\$420.1	\$432.3	\$722.5	\$1,976.9	\$508.8	\$524.3	\$532.6	\$882.5	\$2,448.2	\$595.7	\$607.2	\$613.1	\$1,003.3	\$2,819.4	\$3,125.8
<i>% of Total</i>																
Superstores	66.3%	67.8%	70.0%	68.7%	68.3%	75.0%	76.1%	77.5%	75.7%	76.0%	80.8%	81.1%	82.3%	81.0%	81.3%	84.1%
Mall Stores	32.1%	30.8%	28.8%	30.5%	30.5%	23.8%	23.0%	21.6%	23.6%	23.1%	18.2%	18.1%	16.8%	18.4%	17.9%	15.1%
Other	1.6%	1.4%	1.2%	0.9%	1.2%	1.3%	0.9%	0.9%	0.7%	0.9%	0.9%	0.8%	0.9%	0.7%	0.8%	0.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

E = Morgan Stanley Research Estimates

Fiscal year ends in January of following year (i.e. F1997 ends in 1/98).

Table 8-8

Barnes & Noble — Balance Sheet

(\$ Millions)	F1994	F1995	F1996	F1997E	F1998E	F1999E
ASSETS						
Cash and Cash Equivalents	55.4	9.3	12.4	19.4	73.3	114.5
Receivables	30.1	49.0	45.6	67.7	75.0	85.8
Inventories	504.0	740.4	732.2	835.0	922.6	1,061.8
Prepaid expenses and other	24.3	49.5	76.7	70.5	11.8	11.1
Total Current Assets	613.9	848.2	867.0	992.5	1,082.7	1,273.2
Property and Equipment, Net	243.6	319.9	434.8	472.4	498.9	512.5
Intangible Assets	134.2	96.8	93.5	89.4	85.3	81.2
Other Assets	34.7	50.5	51.4	65.0	50.0	50.0
Total Assets	1,026.4	1,315.3	1,446.6	1,619.4	1,716.9	1,916.9
<hr/>						
LIAB'S. AND OWNERS' EQUITY						
Revolving Credit facilities	0.0	0.0	(32.4)	7.6	(32.4)	(32.4)
Current Portion, LTD	0.0	0.0	0.0	0.0	0.0	0.0
Accounts payable, trade	318.8	415.7	373.3	434.2	479.7	552.1
Accrued expenses & other	139.1	206.0	240.9	225.5	250.2	285.9
Total Current Liabilities	457.9	621.7	581.9	667.3	697.5	805.6
Long-term debt, net of current	190.0	262.4	290.0	290.0	290.0	290.0
Other noncurrent liabilities	20.3	31.0	46.4	140.6	125.6	125.6
Preferred Stock - Series A	0.0	0.0	0.0	0.0	0.0	0.0
Preferred Stock - Series B	0.0	0.0	0.0	0.0	0.0	0.0
Preferred Stock - Convertible	0.0	0.0	0.0	0.0	0.0	0.0
Common Stock	0.0	0.0	0.0	0.0	0.0	0.0
Capital in excess of par	346.7	441.8	446.3	446.3	446.3	446.3
Retained Earnings	11.4	(41.6)	9.7	75.2	157.5	249.4
Total Shareholders' Equity	358.2	400.2	456.0	521.5	603.8	695.7
Total Liabilities and Shareholders' Equity	1,026.4	1,315.3	1,374.2	1,619.4	1,716.9	1,916.9
<hr/>						
Return on Avg Equity	7.4%	9.1%	12.0%	13.4%	14.6%	14.1%
Return on Avg Total Assets	2.7%	(4.5%)	3.8%	4.4%	4.9%	5.1%
Total Debt/Capital	34.7%	39.6%	34.5%	36.7%	28.8%	26.1%
Total Debt	190.0	262.4	257.6	297.6	257.6	257.6
Long-term Debt/Capital	34.7%	39.6%	38.9%	35.7%	32.4%	29.4%
Book Value/Share	\$11.43	\$12.82	\$13.19	\$14.69	\$16.87	\$19.43
Working Capital/Sales	9.6%	11.5%	11.6%	11.5%	12.3%	13.1%
Capital Spending/Assets	6.0%	7.9%	9.8%	8.8%	9.9%	10.0%
Inventory (% of COGS)	48.0%	58.3%	46.7%	46.5%	46.5%	46.5%
Inventory Turnover	2.4 x	2.0 x	2.1 x	2.3 x	2.3 x	2.3 x
Receivables (% of Sales)	1.9%	2.5%	1.9%	2.4%	2.4%	2.4%
Days Receivables Outstanding	5.7	7.3	7.1	7.3	8.3	8.2
Payables (% of Sales)	19.6%	21.0%	15.2%	15.4%	15.3%	15.5%
Payables (% of Inventory)	63.3%	56.1%	51.0%	52.0%	52.0%	52.0%
Days Payable Outstanding	64.1	67.8	58.8	52.3	53.3	52.7
Prepaid Expense (% of Sales)	1.5%	2.5%	3.1%	2.5%	2.5%	2.5%
Other Accured Liabilities (% of Sales)	8.6%	10.4%	9.8%	8.0%	8.0%	8.0%

E = Morgan Stanley Research Estimates

Fiscal year ends in January of following year (i.e. F1997 ends in 1/98).

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Chapter 9: General Considerations for Those Entering the Internet Retailing Business

Summary

- ◆ While it is certainly beyond the scope of this report to write a comprehensive business plan for an Internet retailing company, we do think it is relevant to discuss some of the **key strategies and ingredients that we believe entrepreneurs and investors should look for when evaluating online retail businesses.** Many of the traditional business requirements still hold true for the online space, but due to the rapidly changing economic dynamics of the medium and the scarcity of certain resources (like programmers and individuals who have a solid grasp of technology, retailing, and marketing), there are several basic requirements that we believe deserve more attention than usual.
 - ◆ A couple of general, big-picture thoughts follow: 1) **Brand strength, excellent infrastructure, and economies of scale** should be key. 2) In terms of **barriers to entry, the tech team thinks first-mover advantage may be important, and barriers to entry may rise in certain segments** as established Web merchants (and powerful, focused traditional retailers of the Barnes & Noble ilk) gain solid brand positions; **the retail group, by contrast, doesn't think being first matters much, since barriers to entry will likely remain low on the Web.** 3) Real market share — and profitability — will be dominated by a few; we expect **a handful of Internet retailing concerns to be big successes, and boatloads to be disasters.** 4) **Retailing is a low-margin business** (a 2.1% net margin average for Morgan Stanley's universe of 134 domestic public retailing companies). **It's a sobering fact that we have not yet seen a big, positive-cash-flow winner in Web retailing.** And 5), we expect **Internet retailing companies, in time, to be valued like retailing companies, not technology companies.**
 - ◆ We believe that the keys to success in the Internet retailing business include pursuing a large **market opportunity**, creating a leading **brand**, knowing how to **scale** the business, knowing how to **leverage technology** (including interactivity and databases) while **maintaining creativity**, creating a sense of **community or membership** among customers, and understanding how to **drive profits as well as revenue.** Finally, history shows that success in retailing results from **providing customers with excellent product selection, convenience and fast delivery, and low prices.**
 - ◆ A key element of online retailing that we believe facilitates closer communication is the **e-mail addresss — the fact that the customer and the retailer can contact one another at any time or day is very powerful.** Furthermore, the customer can, in effect, access the retailer's database 24x7, and the retailer has all of the customer's preference data at its fingertips — that's a huge asset.
 - ◆ For those especially interested in developing a Web business, we recommend *Net Gain* (Harvard Business School Press), by John Hagel and Arthur Armstrong, which is available from your favorite book vendor's Web site. The authors point out that the **key to Web retailing success is driving critical mass in the following areas: membership, usage profiles, advertisers/vendors, transaction profiles, and transactions. Once the customers are nabbed, if they are kept happy, they can be retained and cultivated — thus, to coin some cliches, the big Web retailers will get bigger, and customer knowledge will be power.** In our "Are You My Mother?" children's book anecdote, every six months or so we ask Steve Case of America Online, "What's critical mass for AOL?" Well, first it was 500,000 subscribers, then 1 million, then 5 million, now 10 million. Because of AOL's constant pursuit of new members, its profits haven't risen with subscriber growth, although the revenue and market capitalization certainly have.
-

Building the Business

Creating the Strategic Plan

When planning an online retailing business, it is crucial to gain an understanding of the market size and opportunity, the competition, the barriers to entry and the benefits a first-mover can gain, the resources required to build the necessary business scale, and the size and dynamics of the community that the business will be addressing. It is also necessary to determine the value that consumers will place on being a member of the community being built. If there is little value in being part of a community, then retaining customers (and hence market share) could be more difficult.

To better plan a strategy and understand the customer, it is important to understand what type of community is being addressed: topical, demographic, business to business, or geographic.

Building the Team

Building a high-quality team of people with a diverse skill set is crucial in such a highly competitive marketplace. For Internet retailing companies in particular, technology strength is only one piece of the puzzle — retailing, sales, marketing, advertising, design, and operational savvy are all crucial. With the tremendous growth in demand for managers and employees skilled and experienced in dealing with technology, a human capital crunch is occurring.

Leading membership retailer CUC took the boldest step seen in Internet retailing team-building when it purchased multimedia software developers Sierra On-Line and Davidson and Associates for approximately \$2 billion. With this purchase, CUC picked up (aside from two high-quality, high-growth companies) some serious intellectual and human capital — close to 1,000 software developers, with a background in developing for the consumer-oriented multimedia software market, and two top-notch management teams, who know how to manage these developer communities.

Choosing the Technology —

Merchant Server/Proprietary vs. Open Systems

One crucial decision that online retailers must make before embarking upon a strategy is whether or not their competitive advantage will rest upon proprietary technology devel-

oped in-house (or acquired), or whether they will rely on mainstream or open technologies. On the Web, the vast majority of firms will likely choose open standards, at least on the client side of their operation, and will allow the Microsofts, Netscapes, and Suns of the world to battle for technological supremacy. On the server side, there is greater opportunity for firms to use a more proprietary approach, while still making the shopping experience transparent and open to the customer. A firm like Peapod (the online grocery operator), however, has decided to utilize a proprietary software client (which can still run through a customer's browser) to leverage its proprietary back-end systems, which it believes provide a competitive advantage.

It is critical to decide whether proprietary technology will provide a competitive advantage, or whether it will eventually hamper efforts to participate — for example, looking at the online service providers, Microsoft did a 180-degree turn in regards to MSN, shifting from proprietary to open. Prodigy also went to an entirely TCP/IP-based network, and AOL is gradually migrating certain pieces of its service to a TCP/IP structure, but has still benefitted from proprietary technology that works well at low connection speeds.

Key technologies that businesses must make decisions about include: transaction and payment technologies; metering and data collection software; content and communication software; graphics and animation design and delivery software; and streaming content delivery. Note that the desire to get first-mover advantage has sometimes caused companies to adopt non-standard technologies, only to migrate later on.

A Brief Description of an Online Merchant System

A merchant server system is at the heart of any online retail operation. For this discussion, we will take a brief look at the Netscape Merchant System (in use by online retailers like Amazon.com, the Internet Shopping Network, and Travelocity). A typical installation gives online merchants the ability to load and display products, provide interactive shopping, deal with order and transaction processing (including shipping and taxes), and ensure that this all takes place in a secure environment.

The Netscape Merchant System uses open industry standards, like structured query language (SQL) relational databases, HTML, HTTP, and RSA data encryption. The system also supports browsers that comply with the secure

sockets layer (SSL) encryptions standards. The system consists of three main components: the Merchant Server, the Transaction Server, and the Staging Server, which can be distributed across multiple servers to provide quick access and ability to scale as volume increases (Figure 9-1). The system also includes a robust search engine and “shopping basket” services, which allow customers to carry selected products along with them as they shop online.

Figure 9-1

Netscape Merchant System Architecture

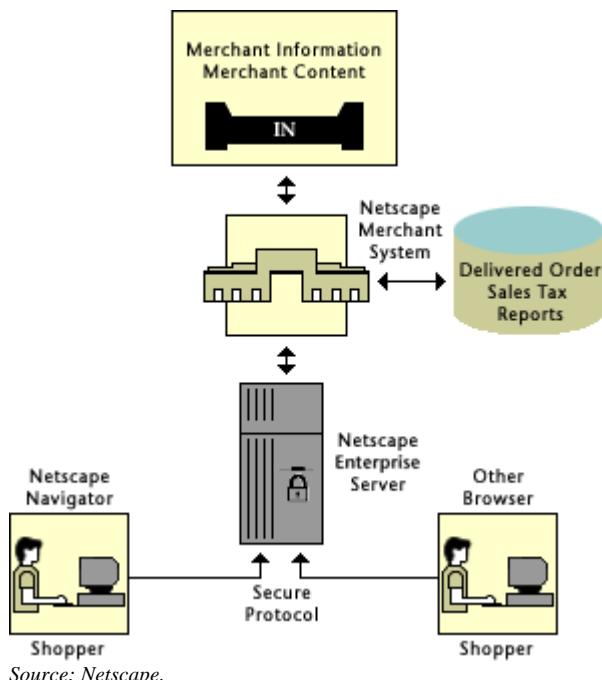
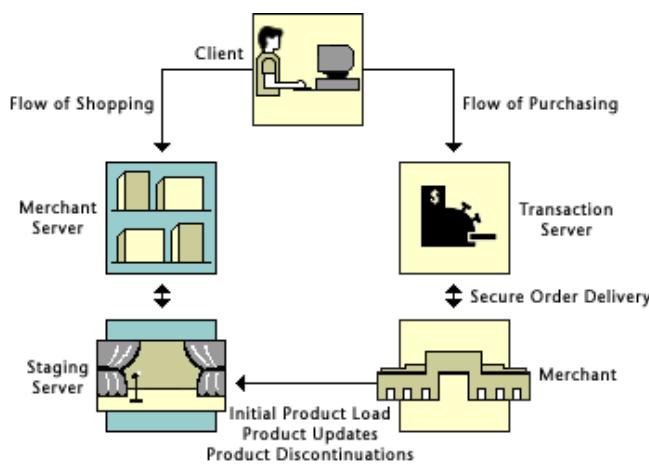


Figure 9-2

Netscape Merchant System Server Architecture



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The system also incorporates functionality that allows retailers to improve the shopping experience, using promotional support (sale prices or discounts), instant buy options (speeds purchases), and unlimited text, audio, and video.

The transaction server includes an Internet credit card processor, which encrypts the customer's credit card number using public key encryption (see our later chapter for a detailed discussion of Internet security technologies).

Requirements for a merchant system installation include a separate, dedicated machine for the merchant server, the transaction server, and the staging server (Figure 9-2). The system can run on Sun, Hewlett-Packard, Silicon Graphics, IBM, or Digital Equipment UNIX machines and requires at least 64MB of RAM per server and approximately 700MB of hard disk space for the merchant and staging server application software (hard-disk space requirements for product information, customer records, and transaction data would require substantially more storage space).

Executing the Plan

For companies intending to build a pure Internet retail business, early entry into the market is crucial, as early market share is taken at a much lower cost than after the market has matured and barriers to entry have risen, in the form of brands, customer loyalty, vendor knowledge of customer preferences (and customer knowledge of vendors), economies of scale, and operational experience. However, while we have seen many large, traditional players waiting on the sidelines to see if the online model will work, any new entrant must take into account that traditional retailers already have several of these assets and don't need to build them. Therefore, the competitive dynamics can change very quickly.

Perhaps one of the most subtle (but very important) barriers to entry that will form lies in a customer's ties to a certain community, as a result of his or her relationships with other members. AOL provides an excellent example, as its community areas and activities continue to retain customers who might be able to find a more reliable service elsewhere.

Another barrier that can form is a human one. As winners and losers in the online content arena get sorted out, those individuals with a talent for creating and managing online content and communities will become very valuable, highly sought after, but also tied to the communities which they

serve. This will prove to be an expensive challenge for new entrants.

Reaching Break-Even, not Breakdown

We believe profitability will be driven by several factors, including the expansion of Internet usage for purchases, more effective membership acquisition/personalization programs, and economies of scale on operating costs. However, for many online retailers, these gains may likely be offset (in part or possibly even outweighed) by increasing customer acquisition costs and, given what will likely be stiff competition for some time, the cost of creating online content or services to maintain parity with (or even improve on) the offerings of others.

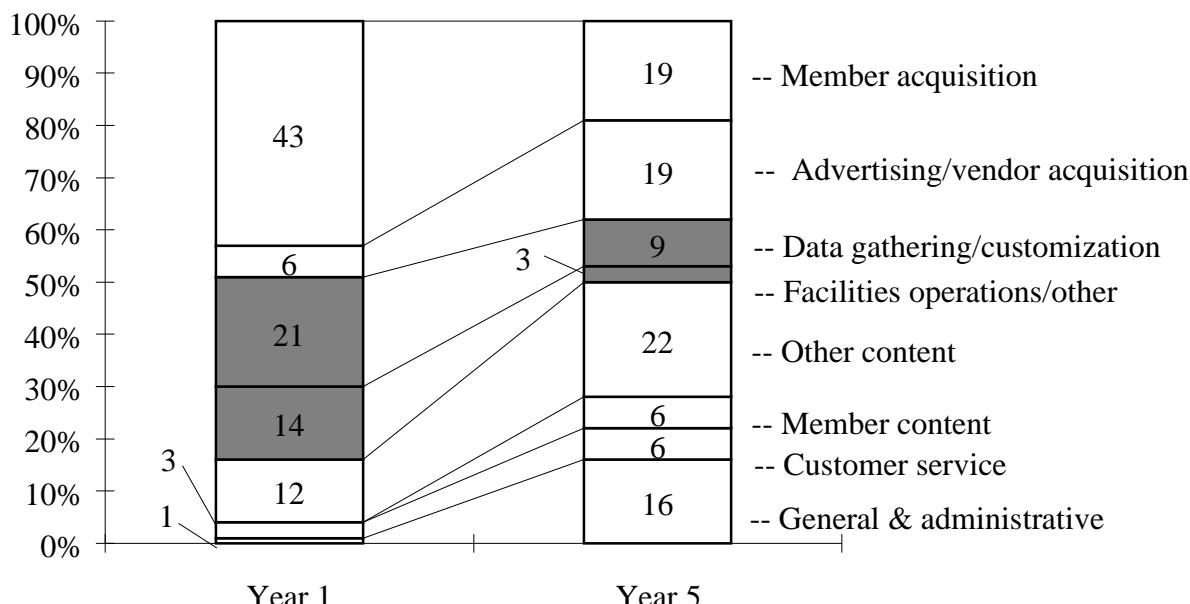
It's important to note when looking at the competitive landscape that, for established retailers, a significant percentage of the costs will be marginal ones. While traditional companies will have to invest in the technology and (some) in the distribution, they will be able to leverage existing assets, including brand-name recognition, current distribution capabilities, ongoing advertising, systems, and fixed-cost

overhead. Consider Office Max: The company already has 600 superstores in 44 states, delivers product direct to customers, has an extensive customer database, a sophisticated inventory tracking systems, and a nationally recognized brand name. This would also be true of both Staples and Office Depot (and the likes of Corporate Express and Viking Office Products).

The following chart (Figure 9-3, sourced from *Net Gain*, by John Hagel and Arthur Armstrong) shows the five-year transition of expenses in a hypothetical online travel community as the business matures. Note that the chart does not assume costs remaining constant as a percentage of revenue, but shows what percentage of total costs are allocated to which areas. Over time, member acquisition costs drop sharply as a percentage of expenses, and a larger percentage of operating expense is devoted to acquiring advertisers and vendors. Facilities operation and other technical costs decline as a percentage of opex as the business gains economies of scale. Content expenditures make up a larger piece of the expense pie, as do customer service and general and administrative costs.

Figure 9-3

Estimated Cost Structure of a Hypothetical Start-Up Online Consumer Travel Community



Note: These figures are percentages of total operating cost, and represent a change in structure from very early start-up stage to a more mature company. Though we do believe that some items may well be significantly larger or smaller than shown (member acquisition in particular may be much higher and will likely vary from market to market), we have reproduced the figure exactly as depicted by Hagel and Armstrong. Source: Net Gain, by John Hagel and Arthur Armstrong.

In our earlier chapter on online bookselling, we detail the capital level required so far for Amazon.com to hit its impressive revenue run rate. We also run through the financial dynamics of its business. Note that Amazon.com, as one of the first leading Web retailers, has had a two-year advantage over its competition; however, it's still not likely to become profitable for quite some time, and the competition is just starting, given Barnes & Noble's (www.barnesandnoble.com) recent market entry and Borders likely imminent entry. It's a sobering fact that we have not yet seen a big profit generator in Web retailing. In addition, even with a larger revenue base, the margin characteristics will remain retail-driven, unfortunately — just a faint echo of the margin structure that technology analysts are used to dealing with.

*Getting to Critical Mass:
Marketing, Content, Community, and Commerce*

When building a retail business on the Web, it is important to also build a community in which commerce can thrive. By cultivating consumer loyalty and increasing their understanding of consumer demands, tastes, preferences, and habits, retailers can more rapidly gain and solidify market share. A sense of community helps consumers feel that others are purchasing product from that community, enjoying it, and returning for more. This type of momentum can be very powerful for a retailer.

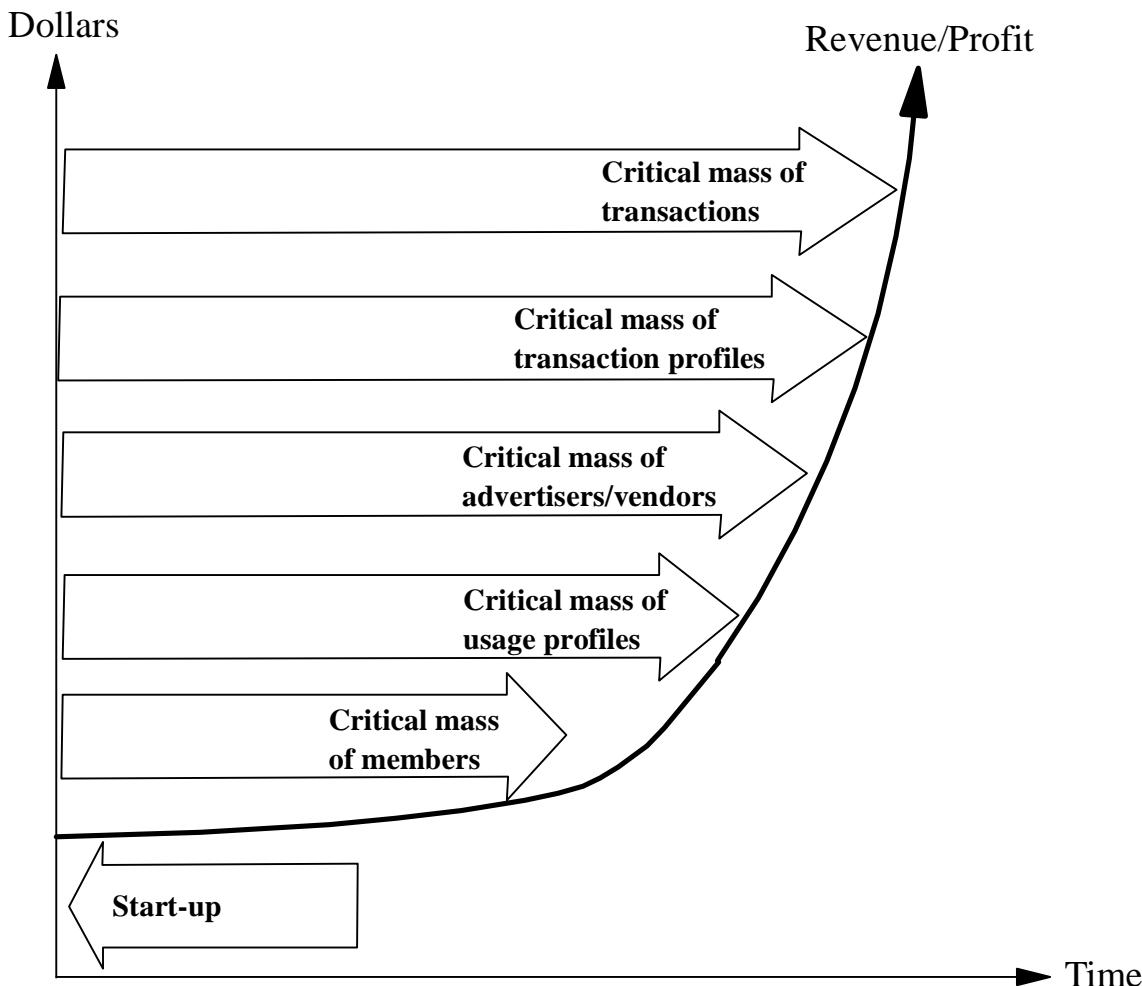
An essential element of online retailing is the e-mail address. The fact that the customer and the retailer can contact one another at any time or day is very powerful. In addition, the customer can, in effect, go into the retailer's database 24x7; at the same time, the retailer has a huge

asset in having all customer preference data at its fingertips.

A good example of how a traditional retailer has developed more of a sense of community is Barnes & Noble, which has incorporated coffee bars and a more library-like environment into its stores. These changes make consumers more comfortable — causing them to spend more time in the store and become more engaged in the product (books) — and, it is hoped, more likely to buy product. Likewise, at Home Depot, customers are treated to extensive how-to displays and hands-on salespeople, who walk customers through home-improvement projects.

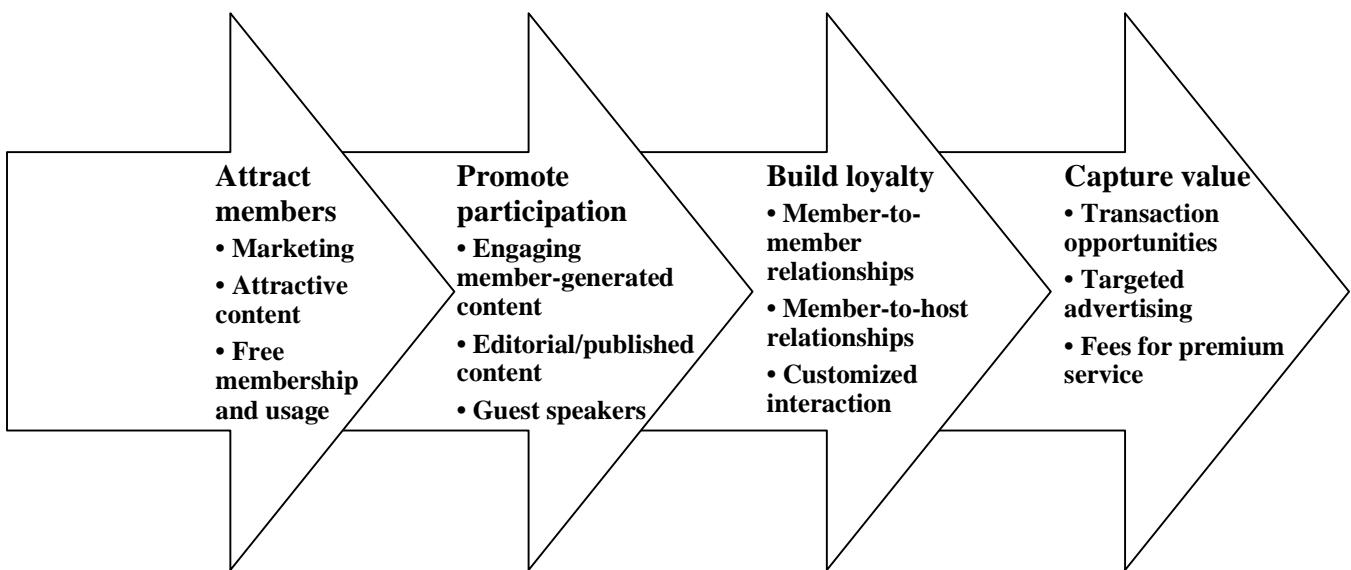
Customers are the most important asset for businesses on the Web (as they are for any business). While it is now easier than ever for customers to shop around among businesses and to switch from service to service, there are also many new ways that retailers will be able to better understand, serve, and retain their customers. But the simple fact remains: Driving a member/customer base to critical mass is of paramount concern on the Web. Figures 9-4 and 6-5 detail the necessary membership stages and milestones for online communities. Figure 9-4 demonstrates how revenue and profits are driven by a chain of critical events related to customer acquisition, customer knowledge, advertiser and vendor support, and, finally, transactions. Figure 9-5 outlines the member acquisition, development, and "harvesting" process, where members are pulled in with free access to good content, are engaged by the community and develop loyalty to it, and are then in a position to begin helping to financially support the community through transactions and fees in return for the value provided.

Figure 9-4

Development Milestones of Virtual Communities

Source: Net Gain, by John Hagel and Arthur Armstrong.

Figure 9-5

Four Stages of Member Development for Virtual Communities

Source: Net Gain, by John Hagel and Arthur Armstrong.

Stages of Growth

There are several stages of entry before the “long-term” business model is reached. The challenge for companies in the Internet retailing space is compressing the entry phase to reach the long-term phase sooner, and hence beat the competition.

Marketing is the first phase, and this is crucial for generating the traffic that will raise the visibility of the site among consumers, advertisers, and manufacturers. While we will not get into the gory details of Marketing 101 (and they are gory), suffice it to say that some old-school blocking and tackling goes a long way in this area.

Marketing should become an even more important competitive tool in the future. We believe that the barriers to entering a Web-based retailing business, while low, in time will continue to rise and that the costs to enter markets will also increase. However, large, established companies that have especially strong capabilities at cross-promoting their established products with their Web products will likely continue to be able to enter markets and establish a solid beachhead for some time (note the success of QVC’s cross-marketing efforts with QVC TV and iQVC shop). We think Barnes & Noble will be an important litmus test of the ability of a late market entrant with strong brand marketing and cross-promotion abilities to aggressively enter a

market. TV promotion and advertising can have a very positive impact on driving traffic to a Web site, and is far more effective than print-based media promotion.

Content creation is the next crucial step (it helps to have something to show people as they cruise your site). In the early stages it helps to be able to develop interesting content without huge investments, and this is where pulling in content from a membership base can be very effective. The Motley Fool is an excellent example of a site that effectively pulled in member content and made it a draw for others.

After creating content, it is important to concentrate traffic on high-quality, differentiated content that engages members, adds value for them, and causes them to eventually pay for that value.

Developing high-quality retail content — both merchandising and visual presentation — is important, and in this case it is crucial to place retail design first, and technology design second. This is not to say that technology is not important, nor a competitive advantage for the online medium, but technology must help the retail designer do what is necessary to drive sales.

Community is the stage where retailers lock in the traffic. This is done through the creation of engaging, dynamic

content that pulls shoppers back frequently, the fostering of personal relationships among members, the accumulation and organization of member-generated content (such as product reviews and suggestions), the expansion and enhancement of the community's functionality (fulfilling more services for people), and, finally, the tailoring of resources to fit the individual member's needs. Thus, every time members visit the store, they should find what they want and need quickly, easily, and, most important, enjoyably.

Consumer purchasing is both a rational and emotional process. When a customer enters a department store, he or she may have a specific item in mind but can very well end up purchasing something not necessarily on the shopping list. Retailers deliberately seek to heighten the impulse purchase and keep the visual impact of the store fun and exciting. Web retailers need to (and can) make their sites like that, by enriching the experience of how products are found and displayed through the use of graphics, music, and the like.

Presentation is crucial. A successful retailer, cataloger, or TV shopping channel recognizes the importance of strong presentation. An easily identifiable store or page design, clear visual presentation, and a strong product layout capture customers' attention, drive traffic, and reinforce brand-name awareness. Although shopping by an index list is functional, it's not entertaining. Therefore, we believe that Internet retailers need to give customers the ability to browse through a site while adding some showmanship, salesmanship, and personality. In other words, keeping it interesting should bring people back.

Merchandising, for commodity-driven retailers, revolves around dominant product assortment, good in-stock position, speed of shopping, and, most of all, low prices. For higher-margin, merchandising-driven retailers, it's about

unique, differentiated product, a clear point of view, selection, and, as always, price. In the translation of effective merchandising to the Net, there are many direct marketing rules regarding how to write and present text, what products and information to offer and how to offer it, what to ask for, and even what colors to use. As sound, music, and video become more ubiquitous on the Web, rules governing the use of these materials will be important as well.

One of the most fundamental ways retailers can improve and *maintain their relationships with customers is through communication and use of the transaction database*. For instance, in the paper-based world, retailers might find it very difficult (and expensive) to continuously send information about new products, specials, and so forth to customers through the mail. However, in the online world, it's much easier, due to the low cost of sending e-mail. The online world also has an advantage in that mailings are more easily customizable with the use of data from a transaction database. For instance, when a new fly fishing book goes on sale, Amazon.com has a service called Eyes that will automatically notify customers (via e-mail) who have expressed interest in fly fishing books in the past. This e-mail service is quick and cost-effective, and it's a model that we think could very easily be translated to other genres, like music, clothing, wine, food, or movies.

The guts of the business, as all mail-order businesses (and all retailers) have learned the hard way, are critical to long-term success and superior profitability. These are product procurement, strong inventory systems and controls, superior distribution capabilities, a powerful customer database, and, perhaps most important, disciplined risk/reward strategies. Achieving a consistent balance among (1) new customer acquisition and bottom-line profitability, (2) full in-stock position with markdown risk, and (3) accurate gauging of customer responsiveness have historically meant the difference between survival and bankruptcy.

Chapter 10: Econ 101 Meets the Web

Summary

- ◆ In this chapter, we offer a little food for thought, sit back in our economist armchairs, and lift a little of what we learned in Econ 101 and apply it to business on the Internet. In time, the growth of Internet commerce may offer a new **economic proposition for both consumer and vendor**. For the **consumer**, the potential opportunities are **convenience, increased access to information and the ability to aggressively source**, while the opportunity for those **vendors** who **understand the underlying dynamics of this new market**, who may be **well-positioned to capture the potential benefits**, and who **execute** is the chance to capture a greater share of potentially **larger, more efficient markets** (though it is unclear if the endgame here is more or less profitable businesses, and it may well vary from market to market).
 - ◆ We see the Web as a means by which **companies may expand the market into which they sell**, and the benefits derived could include **freedom from many current geographic limitations, more effective targeting for marketing and advertisement, an enhanced ability to deal with customers directly, and an increased propensity for customers to purchase**.
 - ◆ This **critical mass of consumers in each market is important** — without the threat of significant erosion of market share, many businesses have little reason to alter current market dynamics.
 - ◆ We believe these **economic shifts and lower prices may create a rise in incremental demand from consumers**, pushing up the volume of goods sold (but not necessarily increasing profits for vendors). Barnes & Noble has indicated that online book shoppers buy 5–10 times as many books as offline book buyers. While part of this phenomenon is due to the demographics of online shoppers, we think it is a directionally significant data point.
 - ◆ Finally, we think that as the online user community grows and a critical mass of consumers is created in each online market, **the dynamics of pricing may continue to shift in favor of a more empowered consumer**. Where this leaves vendors is another question, and we believe this will vary from market to market. The outcome for consumers is pretty simple: **less vendor overhead, increased competition, and a more efficient purchasing process** may well lead to **lower prices** in general.
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The Economic Dynamics of Internet Retailing (Or, How Econ 101 Gets Changed on the Web)

As we discussed in *The Internet Advertising Report*, the advent of a new medium like the Internet is generally marked by an early period of experimentation by participants, as the rules and methods applied to older media are overlaid on this new structure to “see what fits.” Such was the case with television, as early programs treated this new vehicle as “radio with pictures” — the earliest shows had people sitting reading books or simply acting out stage plays in front of a camera. Only later did producers, advertisers, and marketers learn to leverage the particular advantages that multimedia broadcasting could afford them.

We believe this is also the case with the Web today — it seems to us that we are only at the bottom of the curve in terms of how much leverage advertisers, marketers, and retailers can gain from it. Current efforts to market and sell products and services online may be looked on several years from now as the “baby steps” businesses had to take before they learned to walk (and run! and trample!) online.

Indeed, perhaps the early days of the telephone are an even better proxy. Alexander Graham Bell, father of the largest communications network on the planet, was convinced that the greatest value of his invention would be to allow people to receive news reports and listen to symphonies. Sound familiar? It now seems self-evident that the telephone network is unbelievably powerful as a communications and

marketing tool — according to the Direct Marketing Association, U.S. businesses spent over \$54 billion on telephone-based direct marketing in 1995, to generate \$386 billion in sales.

The Internet is indeed the next great communications network, in our view, and has capabilities that extend those provided by radio, TV, print magazines, and, yes, the telephone. Will it replace these? Hardly. TV did not replace the radio, and we still read those petroleum-based products called newspapers, and most people are not going to log on and chat over the Web with their mother any time soon. However, we do believe that the efficient facilitation of transactions that this medium provides, combined with the multimedia effects of television, and the greater interactivity and communications than the telephone (very soon you will be able to make AOL phone calls, and telephony will simply be one arrow in the quiver of Internet tools) will create a significant shift in the ability of many retailers to powerfully and simultaneously advertise, market, and sell to a very receptive online audience.

Potential Benefits of Electronic Commerce

As it grows, Internet commerce may well offer an improved economic proposition for consumers, and potentially those vendors that take the majority of share (though this is less clear). For the consumer, improvements in purchasing power will likely result from increased access to information and the ability to aggressively seek the best price or service; in other words, the buyer potentially has a high degree of pricing power. The opportunity for those vendors who understand the underlying dynamics of this new market, who may be well-positioned to capture the potential benefits, and who execute is the chance to capture a greater share of potentially larger, more efficient markets (though it is unclear if the endgame here is more or less profitable businesses, and it may well vary from market to market).

Opportunities for consumers — Networks like the Internet allow consumers to better leverage their purchasing power. Each consumer is but one click away from a competing store, and vendors will likely need to provide compelling values, or lose out. Before the rise of the Internet, without the ability to leverage their attractiveness to vendors, consumers were, to some degree, “at the mercy” of businesses who paid direct-mail companies heaps of cash for access to their personal information. In 1995, U.S. di-

rect marketing expenditures topped \$134 billion and generated in excess \$1 trillion in sales. Consumers have become increasingly aware of how valuable their demographic profiles are to particular types of vendors, but have not really had a “lever” to extract the economic value of this information. In many markets and for many types of products and services, the Internet has the potential to function as that lever.

Opportunities for vendors — There should be ample benefits to be derived for successful vendors in electronic commerce markets. The Web is a means for companies to expand the market into which they sell, and the benefits derived should include freedom from many current geographic limitations, more effective targeting for marketing and advertisement, and an enhanced ability to deal with customers directly rather than distribute through intermediaries (and thus capture the benefits of this more efficient market), and an increased propensity for customers to purchase (as the demand curve shifts to the right, which we will discuss in a moment). The caveat here is that, depending on the nature of the markets in question, the benefits garnered early on by a small number of players could lead to a more consolidated market, freezing out smaller players or late entrants. And increased product sales in more competitive, lower-margin markets don’t always mean greater profits.

Internet Continues the Shift in Power to the Consumer

Value-Conscious Consumers Have Turned The Tables In This Power Structure

In the past, the power center of the consumer-vendor relationship was very much tilted in favor of the vendor. The information at merchants’ disposal enabled them to target different groups and apply price discrimination to maximize profit. As a vendor, if I know a customer can only buy a certain widget in my store without having to drive 20 miles to the next town, I’ll charge that same customer more than in the town where people have access to a variety of choices of widgets. In this manner, I capture the “market surplus” at the expense of my customers.

The information provided to consumers over the Internet creates what, in their book *Net Gain*, authors John Hagel III and Arthur G. Armstrong term “reverse markets.” These are markets in which customers hold the upper hand as a result of their ability to gather information and select the

product or service with the most desirable price/quality mix, thus removing much of the price-setting leverage of vendors.

We think that, although the benefit derived from such pricing power is relatively small today, as the user community grows and a critical mass of consumers is created in each market, the dynamics of pricing should continue to shift in favor of this more empowered consumer. Today, users almost stumble upon this purchasing power — it is often a by-product of the other incentives that drove them to get online. But as consumers learn of the leverage they can create for themselves, the economic advantage of the virtual community will become an increasingly powerful incentive in its own right.

This critical mass of consumers in each market is important — without the threat of significant lost opportunity, businesses have little incentive to change the current dynamic. As the number of consumers reaches an appropriate threshold, they will begin to garner a greater share of this surplus economic value.

The Result of the Power Shift

So what is the real effect of these “reverse markets” on vendor-consumer economics? We are certainly not arguing that we should throw our textbooks out the window — we believe that the net effect of this new consumer purchasing power is actually a shift in supply and demand to a new equilibrium. Supply is expanded as marketing and distribution costs are lowered online, and the lower transaction cost for the consumer results in demand expansion. The result is an expanded market, with greater demand. However, the resulting landscape for vendors and consumers may vary greatly from market to market, as the new equilibrium price points may vary, and thus the resulting profit for vendors and benefit for consumers.

Of course, traditional vendors in the markets where this new consumer dynamic takes hold probably will not be happy with the potentially reduced profits. They may, for instance, choose not to play in the new market and try to maintain their more advantageous position in the status quo. If a critical mass of online demand is not reached, it does not make sense for vendors to change. However, if the shift does take place, and vendors are not well-positioned to meet demand, they could potentially suffer.

One might argue that the vendor community could resist undermining the current structure, but if there is sufficient demand, it will likely be met by supply from smaller vendors or new entrants in the market, and the apple cart is then upset, with potential market share losses for the non-participating vendors. The prospect of potentially smaller margins and less profit for these smaller vendors will not outweigh the potential upside to gaining market share, shifting consumer loyalties, and establishing brand.

Take AOL, for instance. The 8 million members of this service were an attractive enough market for a little company like Tel-Save to step up and say, “I am willing to pay \$100 million for access to this attractive market and the ability to simultaneously shut out my competition.”

Though Internet commerce will not function in the same manner (as consumers on the Web will still have a choice of vendors), we think this is a significant sign that businesses will begin to take drastic steps to secure market position for those products and services where online commerce has the potential to really take off.

Disintermediation and Intermediation

When we speak of aggregation in different markets, it is important to understand the drivers of supply and demand, and therefore how Internet-based distribution may affect this chain and whether there will be disintermediation or intermediation by new layers of the supply chain that (though another layer would seem to imply more inefficiency) facilitate a more efficient market. For example, Amazon.com would be classified as a disintermediary, as it removes the inventory chain to the bookstore (e.g., brick-and-mortar Barnes & Noble stores) and potentially creates better unit pricing (than the traditional stores), better service, and so forth, while reducing the capital tied up in inventory. Pretty simple — less overhead, more efficiency, better prices for consumers. However, we stress that, given the competition we have already seen in the online book market and are likely to see in others, where the margins end up for these types of companies is another story entirely.

In contrast to the disintermediation of Amazon, take Auto-By-Tel. The auto market is one example of where the Internet actually provides an intermediary (no part of the traditional supply chain is removed, all inventory still flows in the same channel). However, the traditional car sales

process is particularly irksome to the consumer and can be difficult to manage from the dealer end (and somewhat inefficient due to these commission-based sales). This intermediary streamlines the lead-generation process, and alters the pay structure for dealer employees, using fixed costs for people to turn around leads (which should become increasingly stable and predictable with scale) and follow up with a non-negotiable price, instead of having commissioned sales people waiting for customers to show up at the lot.

Thus, though the cars may be sold at a slightly lower price (lowering the dealers' gross margin), the operating costs

can be leveraged with scale and are fixed, and the net effect is an increase in operating margin (assuming, for the moment, no change in price or sales volume), with a little cut passed on to Auto-By-Tel. Consumers are more satisfied with the new process, which has been made much less onerous and may lead to better pricing through competition, as other local dealers who are not Auto-By-Tel subscribers try to compete. And the margin structure here may evolve over time. Dealers should also be more efficient (and possibly more profitable, again depending on where pricing and margins go over time).

Chapter 11: Business-to-Business Electronic Commerce

Summary

- ◆ The opportunity for businesses to take advantage of the Internet as a distribution channel is likely even larger than the consumer market in absolute size and impact. This chapter focuses on the size of the opportunity and the drivers of electronic commerce technology adoption over time, and discusses the technology and cost efficiencies that Internet-enabled products and services should bring, and how they may create a shift in the way that much business-to-business commerce is conducted.
- ◆ We did a reality check on how big this market could be and came up with some impressive numbers — Cisco believes that it will be on a \$2 billion run rate in sales transacted via the Internet by the end of its fiscal year (July 1997), and Dell Computer is doing more than \$1 million in online sales per day. These companies primarily sell to corporate customers, so it seems that business-to-business sales on the Internet are on a rapid ramp.
- ◆ The opportunity for businesses to move commerce online is fundamentally a cost savings story, as companies should be able to leverage their Web presences into huge sales, service, and support savings — Cisco says that without its Web site, it would need to double its engineering sales/support group to 2,000 engineers, which is real savings. In many markets there may well be consolidation of share, as smaller players feel price and service pressure from the big players, who now can be everywhere (the ubiquity of the Web makes price and service comparison as simple as it has ever been); new market share increases may mean increased revenue potential for the consolidators.
- ◆ However, in an increasingly competitive market, benefits and efficiencies achieved by businesses using the Web as a distribution channel will either be reinvested in future growth or passed along to customers in the form of lower prices and improved service for retail goods and services. There will likely be big benefits for those companies that provide the products and services to facilitate Web-based retail. Thus, it is still unclear if, for all but a few, the projected cost savings (stemming from reduced transaction and sales support/service costs) and volume increases (due to lower pricing stimulating more purchases) would result in more profitable businesses.
- ◆ Much like the Internet's growth to date, we believe that development of the online business-to-business commerce market will be divided into several distinct segments, each ramping at a certain point, and each involving a different group of companies. These should include: hardware/infrastructure companies (Cisco, Ascend, Worldcom/UUNet and the ISPs generally); providers of software and groupware/communications applications for e-mail, teleconferencing, and so forth (Netscape, Microsoft, and IBM/Lotus); companies offering business-to-business “merchant system” software (Microsoft, Netscape, Open Market, IBM, and iCat); and third-party providers of EDI and related products and services for these new business-to-business marketplaces (IBM, General Electric, Sterling Commerce, and the Netscape/GE Information Systems joint venture, Actra Business Systems).
- ◆ Regarding the evolution of the market for merchant software, we make the following points: 1) The demand for merchant system software is still in its infancy; 2) the market is not yet as large as many initially expected (many companies have built their own software in-house, and there is a great deal of downward price pressure and demand for increased functionality without incremental cost increases); 3) future growth should, over time, ramp nicely as online commerce grows, but we should see less of a “hockey stick” effect than in other Internet-based product and service markets; and 4) over the next couple of years, the majority of this merchant system software market growth should be in the business-to-business market.

- ◆ **The most common form of structured business-to-business commerce is EDI (electronic data interchange), generally defined as the application-to-application exchange of formatted transactional data between business entities. This exchange may take place over any type of data network, including company-run private networks, value-added networks (VANs) run by third-party providers, and the Internet (the share of VAN-based transmissions has been estimated, according to the Gartner Group, to fall from 63% of the total in 1993 to 35% in 1999, with the majority of share being taken by Internet-based transmissions). Common applications of EDI include the sending of purchase orders, invoices, shipping notices, and other frequently used, standardized business documents and forms.**
- ◆ **Benefits that companies can derive from the use of electronic commerce and EDI include: a shortening of business process cycles by reducing delays caused by postal paper chains; reduction of costs for the creation, recording, and storage of paper documents and records; shorter lead times and reduced inventory holdings; and improved customer service.**
- ◆ Though there are a number of estimates for the size of the business-to-business market, we think a reasonable example is IDC's prediction that business purchases will be on the order of \$80 billion in 2000. **Though we are not hanging our hats on exact numbers at this early stage** (the midpoint of our consumer retail estimate of \$35 billion in 2000, plus our rough estimate that business-to-business sales will be 2.0-2.5 times larger than consumer, yields a range of \$70-88 billion), **the point is that we believe this market, in time, will be big.** We would simply say that many of these market size predictions have real "directional significance."
- ◆ **While 95% of the Fortune 1,000 companies are using EDI, according to Forrester Research, there are 6 million businesses in the U.S., and only 2% of them are using EDI.** The low transaction costs and standardized communication protocols of Internet-based EDI should combine to create much-improved cost structures and larger markets for buying and selling, encouraging the adoption of business-to-business electronic commerce by even the smallest of businesses, and in turn raising the tide of value that electronic commerce creates for all of those who leverage it.
- ◆ The value created by **Internet-based commerce could result, if economic theory holds, in an increasing cycle of growth** as more businesses move online; as larger markets are created for vendors to sell into; as purchasers' enhanced ability to select and price product increases the potential for cost savings and for product and service-quality improvements; and as more efficient competition is created (and more demand along with it — see Chapter 10 for our discussion of Internet economics).

General Thoughts on Business-to-Business Commerce

We define electronic commerce as the use of technology to create the links and enable the functions required between participants in commerce. This report focuses on the growth of the Internet, the opportunity to use the Internet as a distribution vehicle for retailing, and, for the most part, the impact this will likely have on consumers. **The opportunity for businesses to take advantage of this new distribution channel is probably even larger than the consumer market in absolute size and impact.** Although various proprietary forms of electronic commerce, especially EDI (electronic data interchange), have been around for years, the growth of the Internet has provided the opportunity to make these technologies both feasible and affordable, not only for big corporations with extensive

technology infrastructure and business volume but also for small- and medium-size business.

We did a reality check on how big this could be and came up with some impressive numbers — **Cisco** (with Web-based sales estimated to soon be on a \$2 billion run rate — see our profile of Cisco's online initiative below) **and Dell Computer** (reportedly doing more than \$1 million in online sales per day) **are leading the charge**, with the likes of Gateway (which has indicated that in its first eight months on the Web, May-December 1996, it sold \$100 million in merchandise), and others in hot pursuit. Although most of Dell's current online sales are to consumers and small businesses, the company is rapidly putting a corporate sales infrastructure in place, and we expect the business-to-business portion of its online sales to overtake consumer

sales in short order. Another notable business-to-business company is Ingram Micro, one of the world's largest distributors of technology products, which has set up a purchasing Web site (profiled below) for its customers.

Market Size

Business-to-business commerce includes sales of merchandise or services to retailers, other wholesalers, or industrial, commercial, institutional, farm, construction contractors, or professional business users, as well as companies acting as agents or brokers in buying or selling merchandise to other companies. Though there are a number of estimates for the size of the business-to-business market, we think a reasonable example is the IDC's prediction that business pur-

chases will be on the order of \$80 billion in 2000. **Though we are not hanging our hats on exact numbers at this early stage** (the midpoint of our consumer retail estimate of \$35 billion in 2000, plus our rough estimate that business-to-business sales will be 2.0-2.5 time larger than consumer, yields a range of \$70-88 billion), **the point is that we believe this market, in time, will be big.** We would simply say that many of these market size predictions have real "directional significance."

U.S. retail sales (sales to consumers) totalled \$2.5 trillion in 1996, and wholesale trade (total business-to-business sales) totalled \$2.4 trillion. Using the high end of our rough estimate for business-to-business commerce of \$88 billion in 2000, this would, assuming average annual growth of 5%

Cisco Systems: Rapidly Moving Its Business to the Web

Cisco Systems <www.cisco.com>, the internetworking company, established a business-to-business commerce area on its Web site in June 1996. Recently, the company indicated it has been handling almost \$5 million worth of sales each day over the Web, for an annual run-rate of roughly \$1 billion (note that the company's products sell at prices ranging from hundreds of dollars to hundreds of thousands). The percentage of orders coming through the Web site has grown rapidly, from 4% of total orders in August 1996 to 7% in October, 13% in January, and about 22% currently. The company's long-term goal is to have 80% of its orders made online, and it is forcing many vendors to implement the systems required to do so over the next two years.

Cisco estimates that it has saved about \$535 million over the past 12 months by using the Internet for sales and customer service, and saved about half that much in the previous year (as an example of cost savings through process improvements, the company indicated that about one in every four faxed order forms contain enough errors to cause a customer to start the process again). The \$535 million is broken down as \$270 million from product manual printing savings, \$130 million from software distribution savings, \$125 million from customer support savings, and over \$10 million from recruitment savings.

The company's site, dubbed Cisco Connection Online, or CCO, was launched in 1994 and began taking orders via the

Internet in 1996, in an effort to reduce engineering and sales support costs. The site has 13,000 registered users, 400 of whom are contracted to order product (resale partners and direct customers, mostly U.S.-based). Users who don't order online still access the site for documentation, support, searching product catalogs, and more.

Online ordering speeds up order fulfillment times and lowers the costs of order-taking, order-checking, and order-correction. Cisco also gives customers secure access to its internal systems, which allows customers to check on order status, download new software, and search for answers to technical questions. Cisco estimates that its Web ordering and support system saves it from handling approximately 250,000 phone calls per month, and that the 1,000 engineers involved with documentation and support would have to be doubled to 2,000 without the sites (hence, the \$125 million in customer support savings).

Cisco believes its Web-related sales could reach a \$2 billion run-rate by July 1997, or about 22% of Morgan Stanley's fiscal 1998 (July) revenue estimate for the company of \$9.2 billion. The efficiencies and gross margins that Cisco can achieve through selling on the Web look pretty sweet — and, yes, the company is keeping customers happy and providing fast response time and around-the-clock service and support.

for wholesale trade, put online purchases at about 3% of all wholesale trade.

Given the size of this opportunity, we therefore have taken a moment, in the midst of our consumer-based analysis, to look at the drivers of electronic commerce adoption by businesses, focus on the actual benefits they might achieve through this adoption, look at the technologies they have and likely will use to do so, and touch on the industry groups, companies, and products that are propelling the growth of business-to-business commerce.

Evolution of Business-to-Business Electronic Commerce

In identifying the fundamental drivers of electronic commerce adoption by businesses, we first return to our definition of electronic commerce as the use of technology to create the links and enable the functions required by participants in commerce. **Business-to-business commerce typically doesn't transpire as a single event, but instead as a series of "commerce events" that have been termed the "long-running transaction."** In this light, the relationship between consumer and retailer is a relatively simple one in comparison with the complex relationships that businesses have with one another. There are many more levels of information sharing and interaction that businesses require, such as pricing, inventory levels, technical documents, and order processing, tracking, and fulfillment.

Similar to the way water seeks its own level, businesses processes and technologies will flow into the cheapest, most effective methods available. We believe that **the standardization and reduced transaction costs the Internet provides** is the “killer app” of the business-to-business world, lowering the overall cost of maintaining their long-running transactions with others.

The value created by Internet-based commerce results in an **increasing cycle of growth** as more businesses move online, larger markets are created for vendors to sell into, purchasers get an enhanced ability to select and price product (which increases the potential for cost savings and product and service quality improvements), and more efficient competition may be created (along with potentially greater demand). In the final analysis, consumers should benefit as businesses pass along efficiencies gained in the form of lower retail prices for goods and services.

We expect that growth in the Internet business-to-business market will continue to be fueled by the following factors: significant demand for services that make buying and selling easier; availability of Internet-based EDI products and services; the movement of increasingly smaller businesses into the trading community (made feasible by the economies of Internet-based EDI); expansion of the networks of existing large players; and the movement of businesses into new markets, both vertically and geographically.

Ingram Micro: Finding a Happy Medium

Ingram Micro distributes PCs, software, networking products, peripherals, and accessories from over 1,100 suppliers to more than 100,000 reseller customers worldwide. The company has a leading market share in North America, Canada, and Mexico and estimates that it is third overall in Europe. Ingram has set up an interactive Web site called "The Business Center," which allows customers to check inventories and prices, and to place orders online. The site, rolled out in June 1996, allows customers to perform a number of functions, such as real-time inventory checking. In the 9 months following the launch, Ingram Micro registered over 65,000 unique users from about 26,000 customer accounts. In March 1997 an ordering capability was incorporated, with ordering access granted to about 125 customers; in April 1997, ordering access was expanded to about 40,000 registered users. Of those users, Ingram estimates that about 10,000 access the site on a weekly basis from about 5,000 customer accounts.

The Web site serves several purposes, including: 1) expediting product research before order placement and (2) promoting non-negotiated ordering. For example, virtually all sales by the Ingram Alliance division, which distributes 14 PC product lines to resellers (1996 sales of IM's Alliance business were \$1.8–1.9 billion, up about 150% over 1995), are not negotiated. Recently, sales at Ingram Alliance have been trending higher than expectations, and IM is optimistic that the Web site will increase the Alliance division's ability to leverage IM's wholesale business. Accessing the site requires a password but gives customers access to a comprehensive list of Ingram's inventory of over 37,000 SKUs, and helps customers determine pricing and availability.

Ingram indicated that the majority of its Web-based purchases are coming from opposite ends of the customer spectrum — large customers making non-negotiated small orders and small customers who don't traditionally negotiate orders at all. While Ingram believes it can increase the volume of online purchases by tweaking its business model to create the right incentives for customers to purchase online, it does not believe that a huge percentage of its business will be done over the Web in the near future. Phone-based sales representatives provide value to both

Ingram and the customer, as they often act more as "sales consultants," helping Ingram cross-sell and up-sell products and helping customers better determine what they need, how it can be configured, and so on. Phone contact also allows customers to negotiate purchase prices based on order and account size (because of the volumes involved, many larger customers still negotiate orders to receive the deepest discounts possible).

One reseller, who buys most of its product from Ingram, recently explained that it negotiates "every single line item" purchased from Ingram. This is different from many smaller VARs, however, who do not have the time or resources to devote to price negotiation. In these cases, IM managers secure contract buying with purchasing agents, saving IM on telemarketing costs, and reducing or eliminating the lesser-scale resellers' negotiating time while improving prices. Though the Web site does not currently support price negotiation, in time it is possible that a portion of this process may be automated. As many of Ingram's large customers have invested in traditional private or VAN-based EDI systems, it also remains to be seen how quickly they will abandon their existing infrastructure for Web-based forms of EDI and electronic commerce. We think that, over time, they will, as the improvement in cost-per-transaction and the access to larger pools of suppliers and customers should provide the incentive to do so.

Interestingly, **Ingram views this new distribution channel primarily as an instrument of customer service, and as more evolutionary than revolutionary.** In other words, Ingram believes that customers will spend time researching price, product availability, and product issues (all part of the "long-running transaction"), but rely on it less for actually placing orders. Ingram indicates that currently, about 7 out of every 10 calls to a sales representative are non-order-placing calls. This presents a substantial opportunity to offload a percentage of calls to the Web, freeing up sales reps for more focused sales efforts. Ingram is also making strides to provide rich product support to customers on the Web, including product configuration tools, which assist customers in creating complicated or detailed assemblies much more quickly than could be done over the phone.

Current and Future Landscape

So who benefits from the transition to Internet-based business-to-business commerce? Much like Internet growth to date, we believe that development of the online business-to-business commerce market will be divided into several distinct segments, each segment ramping at a certain point, and involving a different group of companies, which should include the following: hardware/**infrastructure** companies, such as Cisco and other switch and remote access vendors; providers of business-quality Internet access and ancillary services, such as PSINet, Worldcom's UUNet, InternetMCI, and NetCom; providers of **software and groupware/communications applications** for e-mail, teleconferencing, and the like, which would include Microsoft, Netscape, and IBM/Lotus; companies offering business-to-business "**merchant system**" software, like Microsoft, Netscape, Open Market, IBM, and iCat; and **third-party providers of EDI and related products and services** for these new business-to-business marketplaces, including IBM's Global Network, General Electric Information Systems, Sterling Commerce, and the Netscape/GEIS joint venture Actra. For most of the rest of this chapter, we take a closer look at these last two "commerce-specific" categories.

A Pass at Current Major Business Site Software

First, to get an idea of which software vendors are serving some of the larger, business-oriented sites, Table 11-1 lists the Internet access providers and Web server software for the 40 sites that Keynote Systems deems "most important to business users" and includes in its Business 40 Internet Performance Index (although, admittedly, the majority are not pure commerce sites). The index, published on the company's site at www.keynote.com, as well as in *InfoWorld* and *The Wall Street Journal*, tracks average response time for these sites, but we highlight it here because we think it's interesting to see what these highly trafficked sites are using for Web server software.

Indeed, as some or all of these sites build out some form of transactional or commerce capability (and we, of course, believe that most will), it is entirely possible that the vendors they rely on for Web server software will have a leg up on integrating their commerce offerings. From the looks of it, at least for these sites, it would appear that Netscape has

a pretty clear advantage over the rest of the pack in this regard, though we are admittedly in the way-early stages.

Merchant System Software

Merchant system software allows companies to create a Web presence and handle the "nuts and bolts" of online shopping, including the dissemination of product information, display updates, order processing and tracking, transaction processing, and order fulfillment. We summarize our views on the evolution of the market as follows: 1) **The demand for merchant system software is still in its infancy**; 2) **it is not yet as large as many initially expected** (many companies have built their own software in-house, and there is a great deal of downward price pressure and demand for increased functionality without incremental cost increases); 3) **future growth should, over time, ramp nicely** as online commerce grows, **but will see less of a "hockey stick" effect** than in other Internet-based product and service markets; and 4) over the next couple of years, **the majority of this growth will be in the business-to-business market**.

Beyond simply putting up a Web site with product and service details (and maybe even some rudimentary order, fulfillment, and billing functionality), many companies have not solidified a complete online commerce strategy, and we have not seen enormous demand for robust, high-end online commerce functionality, especially from companies serving the consumer/retailing sector. **The disappointing stock performance of commerce-enabling software "pure plays" like Connect and BroadVision are clear indications to us that expectations about the potential size of the market were greater than what we have actually seen.**

Most online retailers don't have the cash of the Microsofts and CUCs of the world, leading to a somewhat price-sensitive market, where many have begun to outsource their commerce sites to operations like AT&T EasyCommerce Services, AOL's PrimeHost, IBM World Distributor Services (a.k.a. Commerce Point), or even smaller niche players like Viaweb, which, for as little as \$100 per month, provides ISPs with the software for hosting 100-item catalog sites.

Table 11-1

Keynote 40 Business Internet Performance Index Web Sites

Category	Web Site	Internet Access	Web Server Software
Publishing	New York Times	UUNET	Netscape Enterprise/2.01
	The Wall Street Journal	MCI	Netscape Commerce/1.1
	USA Today	UUNET, BBN	Netscape Enterprise/2.01
	TechWeb	Cerfnet	Apache/1.2b6
	InfoWorld Electric	BBN	Netscape Communications/1.1
	ZDNet	BBN	Open Market Secure WebServer/2.0.5.RC0
	CNET	TLGnet, UUNET, BBN	Netscape Communications/1.12
	Inquiry.com	Exodus	Netscape Enterprise/2.01
Search Engines	CNNfn	BBN, ANS	Netscape Enterprise/2.01
	Yahoo	Sprint, MCI	unknown
	InfoSeek	UUNET	unknown
	AltaVista	UUNET, Genuity	AV/1.0.1
	Excite	MCI, UUNET	Netscape Communications/1.1
	Lycos	MCI, UUNET	Netscape Communications/1.1
Business Services	Federal Express	ANS	Netscape Commerce/1.12
	United Parcel Service	ANS	Netscape Enterprise/2.01
	Dilbert (United Media)	BBN	Netscape Communications/1.1
	Dun & Bradstreet	MCI	Netscape Enterprise/2.0a
Financial Services	Fidelity	MCI	Netscape Enterprise/2.01
	Charles Schwab	BBN	Netscape Commerce/1.12
	Merrill Lynch	IBM net	Netscape Enterprise/2.01
High Technology	IBM	IBM net	IBM Planetwide Server/4.1
	Digital Equipment	BBN	Apache/1.1.3
	Hewlett-Packard	MCI, BBN	Open Market Secure WebServer/2.0.5.RC0
	Sun Microsystems	BBN	Netscape Enterprise/2.01
	Cisco Systems	BBN	CCO/1.0.5.3
	3Com	InterNex	Netscape Commerce/1.1
	Bay Networks	ANS	Netscape Commerce/1.12
	Microsoft	MCI, Sprint, UUNET	Microsoft IIS/3.0
	Oracle	MCI	Oracle Web listener2.1/1.20in2
	Novell	BBN	NCSA/1.4.2
	Netscape	MCI, Sprint	Netscape Enterprise/2.01
	Intel	UUNET	Netscape FastTrack/2.01
	Apple Computer	BBN	WebSTAR/2.0
	Lotus	BBN	Lotus Domino Release 1.5
Communications	Compaq	UUNET	Netscape FastTrack/2.0a
	AT&T	ATTeasylink	Netscape Commerce/1.12
	MCI	MCI	Netscape Enterprise/2.0a
	Sprint	Sprint	Netscape Enterprise/2.01
	UUNET	UUNET	Apache/1.1.3

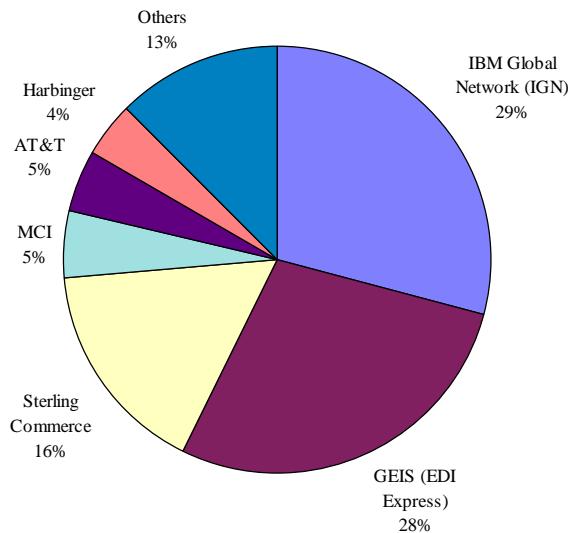
Note: Many of the sites above are "multi-homed," that is, connected to more than one Internet access provider. The lists of access providers and Web-server software for each site were derived from public sources. Source: Keynote Systems, May 1997.

It has become apparent, we think, that **much of the real near-term opportunity for merchant software sales lies in the business-to-business commerce market**. Many business-to-business commerce sites have much more robust needs and require advanced "catalog" functionality — hundreds of thousands of products need to be displayed and searched by various characteristics (size, price, part number, and so forth), while the order size and rapidly evolving nature of these offerings require instantaneous updates and tight back-office integration with databases, order entry, fulfillment, billing, and inventory management.

Software vendors have been quickly moving to meet this demand. Take, for example, iCat, a maker of software that aids in the creation of dynamic online catalogs and that currently runs on over 500 live sites — the company recently released its second significant product upgrade in the past 18 months, with new features that include improved database access, shopping cart functionality, and search tools. IBM's Net.commerce server has been revved to include more advanced catalog features, and Open Market recently acquired Waypoint (for \$12 million), a R&D shop developing advanced online catalog functionality, including replication (putting catalogs in multiple locations) and ag-

Figure 11-1

Worldwide EDI Services Revenues By U.S.-based Provider,



Note: Total Market Size = \$664 Million

Source: International Data Corporation, 1997

gregation (enabling buyers to select from multiple vendor catalogs). Saqqara Systems offers its Step Search catalog engine, which ties a relational database model of a company's product information into a site's search services, allowing companies like AMP, which offers on the order of 1.5 million different SKUs to its 75,000 registered users, to offer advanced search capabilities, significantly improving users' selection process.

Accompanying this shift in focus to the business-to-business market is the reality that **competition and customer expectations have caused a great deal of incremental online store functionality to be bundled into existing products at discounted prices**—a trend not unlike what we are seeing in other Internet/intranet software markets, where, for example, Netscape, Microsoft, and IBM/Lotus are quickly revving products with impressive new communication and collaboration features that are included *gratis*.

Many online vendors of Internet commerce software have been realigning their product offerings and pricing to meet the demands of this emerging market, though for even many of the leading companies in this space, things have been sluggish. Last fall, Microsoft released its Merchant

Server, offering complete consumer-focused retailing features and a \$20,000 price tag, which was recently revamped as a new product called Site Server; this is scheduled to include additional business-to-business functionality and sells at a deeply discounted \$5,000.

Despite these difficulties, we continue to believe that, in the long term, online commerce capabilities will be an essential element for many companies in many markets. Though the current competitive environment for these vendors has driven down pricing and improved functionality, this change will likely provide the impetus for many new companies to create online storefronts. The resulting growth in the number of sellers online should fuel interest from buyers, who increasingly will find compelling pricing, service, and selection on the Web. This increase in demand will move more sellers online, and the cycle will feed on itself, expanding the market for merchant software with it.

EDI Software and Services

The most structured means of business-to-business commerce to date has been through the use of EDI. **The EDI services market (estimated by IDC at \$664 billion for 1996) is dominated by three major players — IBM Global Network, General Electric Information Services (GEIS), and Sterling Commerce** (Figure 11-1). Other major EDI/electronic commerce software and service providers include AT&T, MCI, Harbinger, and Premenos, as well as the internal programming staffs of various businesses engaging in electronic commerce (a significant portion of EDI and related electronic commerce communications software and service are developed in-house by the IS departments of large companies).

According to IDC, **in 1996 the markets for business-to-business electronic commerce services alone** (including electronic mail, enhanced fax, EDI, groupware services, and transaction processing services) **generated \$2.2 billion in revenues. These markets are expected to grow at a 1996–2001 CAGR of 23% and reach more than \$6.1 billion in 2001.**

Despite the significant growth of these markets to date, we believe a huge opportunity remains to increase the value of today's existing EDI networks by offering increased services for trading partners while decreasing costs by using the standardized connectivity of the Internet as raw material —

The GE Trading Process Network: Taking Cost-Cutting to the Next Level

The GE Trading Process Network (GE/TPN) is General Electric's foray into Web-based electronic commerce, and connects GE with about 1,400 of its suppliers. The primary goal of GE/TPN is to cut the costs of product acquisition and distribution for both buyers and sellers by creating a more efficient marketplace. GE currently buys about \$1 billion worth of supplies through TPN, and with annual supply purchases of about \$30 billion, we think GE can clearly expand this channel significantly. In addition to its own purchases, GE is expanding TPN to allow other firms to solicit bids and make purchases, which should only accelerate TPN's growth.

This creation of a more efficient market for its own internal divisions as well as its external partners has already shown tangible benefits. For example, since joining the network as a pilot project in mid-1996, GE's multi-billion-dollar GE Lighting unit has cut the length of its average bidding process by more than half, from 21 to 10 days. In addition, the efficiency of TPN has allowed GE to include more suppliers (including international firms), which has yielded more competitive pricing and lowered the cost of goods by 5–20%. Bidders are notified of opportunities via e-mail, and are also told exactly when bids must be in, which reduces the number of late bids and provides a more level playing field for bidders. The procurement Web

site links directly to GE Lighting's manufacturing resource planning software, so GE purchasing agents can post up-to-date product blueprints directly from the factory floor, and suppliers can download them.

Suppliers, too, can realize substantial benefits from TPN, even though it increases competition and reduces supplier margins. The cost of getting online is much lower than using a VAN, suppliers are able to sell to more GE units than in the past, with less incremental effort, and they will also be exposed to global sales opportunities. Seven more GE units, including aircraft engines, medical systems, transportation, and power systems, are planning to move part of their purchasing processes onto the site in the next several months.

Given the size of its overall business, the purchasing power this implies, and the number of trading partners to which GE is already connected, we believe GE/TPN has a significant advantage over other traditional manufacturers and EDI service providers and start-up business-to-business marketplaces on the Web. In addition to having very deep pockets, as the largest diversified manufacturer in the world, this base of thousands of trading partners is an instant test-bed and target market for GE/TPN's electronic commerce software and services.

according to Forrester Research, while 95% of the Fortune 1,000 are using EDI, there are more than 6 million businesses in the U.S., and only 2% of them are using EDI. The Internet, however, introduces cost structures that can facilitate the adoption of various forms of business-to-business electronic commerce by even the smallest of businesses, in turn raising the tide of value that electronic commerce creates for all those who leverage it.

A Closer Look at Electronic Commerce Adoption by Businesses

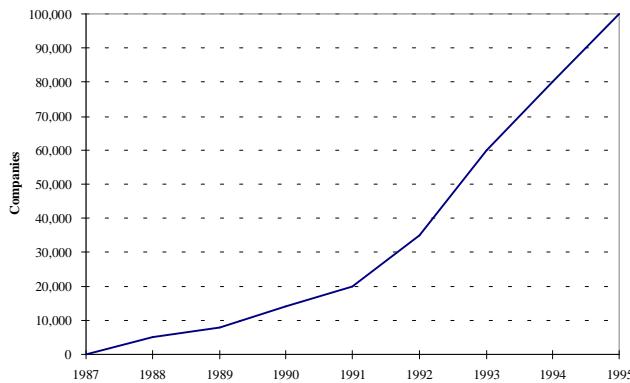
As government and industry strive to create more fluid operations (both internally and with external partners, suppliers, vendors, and customers), reduce the cost of materials acquisition and delivery, and push for just-in-time inventories delivered on demand with increasing speed, **the need to support these initiatives has spurred the establishment and growth of more efficient business processes and the underlying infrastructure to support their complexity.** An

important element of this improved infrastructure is the **creation of internal and external logistical networks.**

These logistical networks, at one time, formed most of the “paper trail” that many companies used to track operations and to communicate — invoices, purchase orders, payments, memos, and other paper-based forms (along with internal mail-room systems to support them). Also interwoven into these networks was phone communication, which can be a significant expense for many companies, especially for those that deal with overseas partners and customers.

As new technologies emerged (such as mainframes, mini-computers, network products, PCs, and the software to operate all of them) and the efficiencies achieved by implementing them began to justify their cost, these paper and voice networks began to give way to computer networks, as businesses began to link their mainframes and, eventually, their PCs. As these networks grew, much of the slower,

Figure 11-2
EDI Adoption, 1987–95



Sources: Premenos, Gartner Group, Dun & Bradstreet, BIS, EDI Group.

less-efficient processes conducted via paper and voice began to be replaced. It was not until the mid-1980s, however, that the rise of **EDI** (electronic data interchange) began to allow businesses to connect to, and exchange information with, distributed portions of their internal operations and their external partners, vendors, suppliers, and customers.

EDI is generally defined as the application-to-application exchange of formatted transactional data between business entities. Common applications of EDI include the sending of purchase orders, invoices, shipping notices, and other frequently used, standardized business documents and forms. These forms of exchange all fall under the larger banner of business-to-business electronic commerce, which encompasses all elements of an integrated marketplace that provides end-to-end, transparent business-to-business transactions. Other electronic commerce tools include e-mail, electronic business forms (or e-forms, which are “EDI-like”), electronic libraries and online catalogs of data, and electronic file transfers.

Since 1987, the rate of EDI adoption has steadily increased (Figure 11-2) as new forms of EDI have emerged to give an increasing number of businesses the ability to integrate communication and commerce activities. **Well past the turn of the century, we expect Internet-enabled com-**

merce to only fuel and increase this rate of adoption, and the number of businesses using EDI should only increase.

For organizations with the technology infrastructure, transaction volume, and business need to support this type of data exchange, EDI can be a fast, cost-efficient, and relatively secure way of interacting with suppliers, partners, and vendors. Many of the difficulties associated with business-to-business commerce can be avoided through its use. The globalization of trade, for example, is a major impetus for EDI’s growth, as costly and excessive document and information exchange can unduly impede international commerce. A survey done in 1989 showed one U.S. company, when exchanging goods internationally, exchanged 40 different documents a total of 26 times with 20 different parties. The use of EDI could drastically reduce the costs for such a system.

Thus, EDI can bring substantial savings and benefits to organizations that implement it in an appropriate framework. Using EDI:

- **speeds up business processes** caused by the delays of postal paper chains;
- **reduces the costs** of the creation, recording, and storage of paper documents and records;
- **facilitates shorter process lead times** and **reduced inventory holdings**, which allow reductions in working capital requirements (i.e., just-in-time policies); and
- provides the opportunity to **improve customer service.**

It is clear that companies are learning the benefits of EDI and other forms of electronic commerce, given the continued rate of adoption. E-mail certainly falls under our broad definition of electronic commerce, and the rate of corporate implementation and use of e-mail has been growing very rapidly. Figure 11-3 shows that the volume of e-mail messages sent will soon be greater than the number of messages sent via the U.S. Postal Service, and a recent Pitney Bowes study showed that the average worker at a Fortune 1000 company sends and receives an astounding 178 messages daily.

Table 11-2

Drivers of EDI Adoption

Reduced Costs	Faster Business Processes	Higher Quality
Personnel efficiency	Product/service throughput	Data integrity
Inventory reduction	Collections/cash flow	Reconciliations
Interest expense	Inventory turns	Error elimination
Postage/telephone costs	Deliverables (facilitates JIT)	Responsiveness
Office supplies	Automated processing	Customer service

Source: Premenos.

Other Electronic Commerce Services

In addition to “pure” EDI, **other electronic commerce segments include electronic mail, enhanced fax, transaction processing, and groupware**. As electronic business-to-business commerce continues to grow, be refined and mature, the integration of these segments seems inevitable. The desire for corporate (and even industry) standard and compatible products is evident with the success of Windows and the current trend toward Internet-standards-based e-mail systems. Lotus Notes is also a good example of how certain EDI, e-mail, fax, and groupware applications have been integrated. Lotus is now migrating Notes towards Internet standards, but with the primary concern being security and quality of service.

Electronic mail has traditionally been provided by proprietary, network-based messaging services, but with the rapid acceptance and growth of the Internet, more corporations are looking to utilize the low-cost solution that the Internet provides. Already, Internet e-mail is well ahead of its proprietary brethren: In 1996, IDC estimated that 3.5 billion e-mail messages were sent over the Internet, and it forecasts that this will increase to 56 billion in 2001. Internet-enabled e-mail applications and services have quickly become competitive with LAN-based proprietary systems on the basis of integrity, reliability, and security, and have already begun to cannibalize the market share of proprietary systems, due to substantial cost and flexibility advantages.

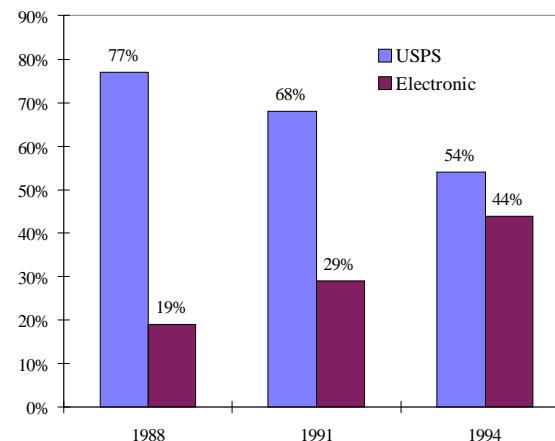
Enhanced fax services, provided by companies such as Xpedite Systems, AT&T, MCI, and Sprint, continue to provide broadcast fax, fax forms, and fax mailboxes to clients who are not electronically enabled. The services are making strides to incorporate more digital functionality, and it is now possible to broadcast a document to a fax address as well as an e-mail address. In our view, the Internet will become an increasing threat to the enhanced fax pro-

viders as e-mail addresses become ubiquitous (just as fax numbers once did), as e-mail systems become more robust, and as e-mail is able to incorporate rich text, HTML, and graphics at lower cost.

Transaction processing services, which have been mainly limited to credit and debit card processing, should migrate to the Internet along with retail, and will likely be increasingly tied to security and payment services. Competition should remain intense, as pressure to lower prices will result from smaller and smaller transactions taking place online.

Groupware features include e-mail, scheduling, conferencing, and workflow, all through the use of network-based applications. Recent advances in this area come from Microsoft (with Exchange, Outlook, and Office 97), Netscape (which has included many new collaborative features in its latest client and server products, Communicator and SuiteSpot 3.0), and the recent deployment of Lotus Domino

Figure 11-3

Growth of Messaging vs. U.S. Postal Mail As a Percentage of Total Messages Sent

Source: Premenos, BIS Strategies.

(which gives users the ability to utilize Notes capabilities over the Internet).

The Internet as Electronic Commerce Enabler

Figure 11-4 shows the shift in EDI-enabling technologies over time. Each wave was driven by the underlying costs savings for those businesses that had the need for such communication, and provided at least as much functionality and breadth of customer access as the previous wave.

Until recently, though, many companies typically were somewhat hesitant about forgoing VANs because of what VANs offer: security (through encryption), confidentiality (each transaction remains private), data integrity (the document remains unaltered during transmission), authentication (the recipient can be sure of the sender's identity), nonrepudiation (the sender cannot credibly deny sending the document), auditing (time-stamping), archiving, carbon copy, interconnectivity to other VANs, and visibility when things go wrong.

However, businesses can achieve significant savings by using the Internet for commerce and communication (Table 11-3), because it allows many small- and mid-size businesses, once shut out of the EDI game because of the prohibitive start-up and maintenance costs of VAN or private

network EDI, to participate in electronic commerce with their larger partners.

Furthermore, even larger companies with established VAN or private EDI networks understand the value of integrating with the increasingly large customer, partner, and supplier pool that is using the Internet — **Forrester Research estimates that more than half of the Fortune 1,000 are looking at Internet EDI as a way to reach their smaller suppliers.** These smaller players could never cost-justify or maintain a full EDI setup, but they can develop — or already have developed — a Web site. Subsequently, the share of VAN transmissions as a percentage of total EDI transmissions has fallen steadily and is predicted to continue to do so as more businesses use the Internet as their primary EDI channel (Figures 11-5 and 11-6).

The evidence suggests that the efficiencies and reach of Internet EDI are far too compelling for technological barriers to deter its widespread adoption for any significant length of time. There are already several products on the market that help companies easily and quickly integrate their existing EDI systems with the Internet, and the evolution of Internet protocols, services, and software should soon reduce or eliminate the technical, security, and proprietary network EDI advantages.

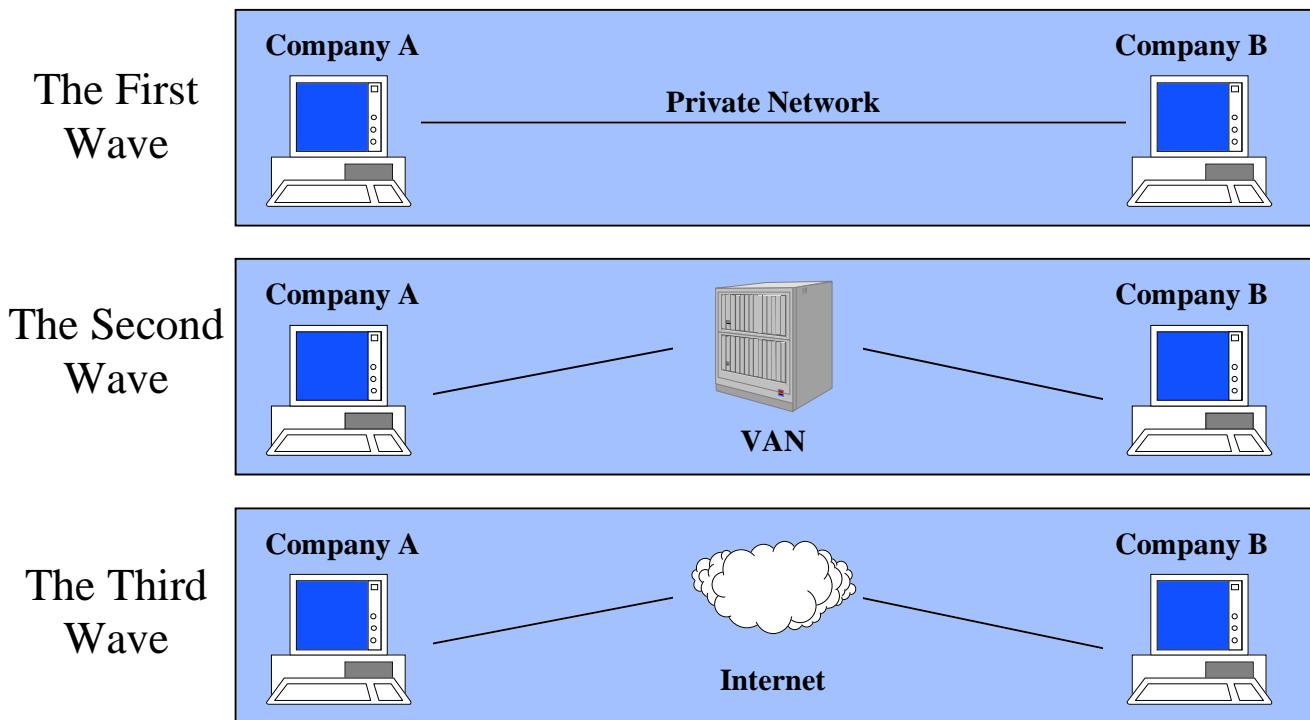
Table 11-3

Estimated Total Cost for the First Year of VAN and Internet EDI

Characters per Month	VAN	Internet	Savings
10,000 - 20,000	\$1,580	400	75%
150,000 - 200,000	\$1,880	\$400 - 746	60 - 79%
500,000 - 2 million	\$2,788 - 6,350	\$412 - 758	85 - 88%
10 million - 30 million	\$24,875 - 47,792	\$9,290	63 - 81%

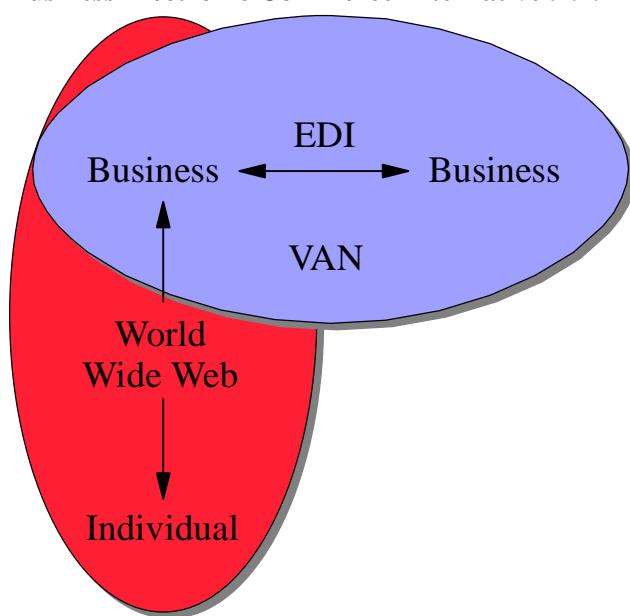
Source: Premenos, BIS Strategic Decisions.

Figure 11-4

The Three Waves of EDI Communications

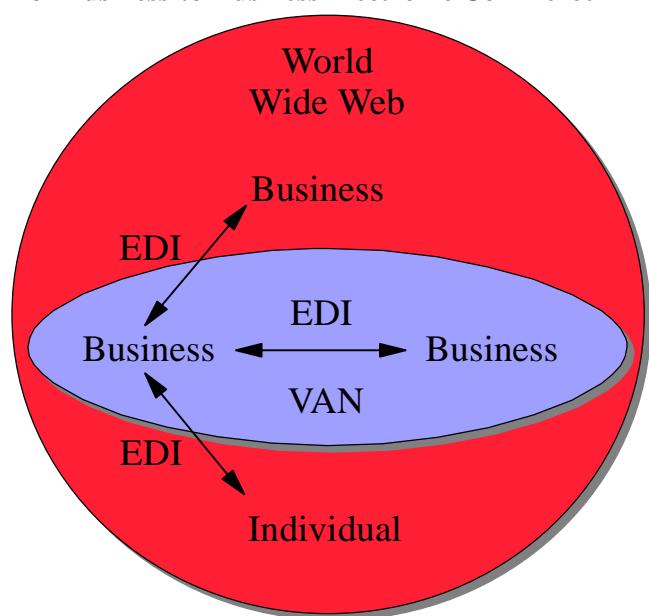
Sources: Premenos, Morgan Stanley Research

Figure 11-5
At Internet Infancy, VANs Were Business-to-Business Electronic Commerce Alternative . . .



Sources: Premenos, Morgan Stanley Technology Research

Figure 11-6
...Until the Internet Emerged as Ultimate Platform For Business-to-Business Electronic Commerce



Source: Morgan Stanley Technology Research

When the World Wide Web first emerged (in 1993), the electronic commerce standards, software, and services available to businesses were either unavailable or largely unsophisticated. The Internet's immediate use by business was prevented by such issues as, a lack of security, unreliability, the absence of high-quality software to facilitate EDI functionality, and a corresponding lack of labor to implement such technology. **So even though Netscape and a number of other companies quickly deployed millions of Web browsers to the burgeoning Internet user community, any commerce that did exist was largely consumer-based.**

This situation changed drastically as the Internet has grown. Recall that Metcalfe's Law of networks states that the value of a network rises with the square of the number of terminals attached to it; so, as the number of hosts continues to rise exponentially, the value of the Internet rises even more quickly. What does that exponentially increased "value" mean? To us, it translates as more opportunities to find and interact with customers, easier and cheaper access, increasing amounts of off-the-shelf and third-party software to enable a wide variety of communication and transactions, and a growing number of vendors that can implement these solutions.

Who's Involved in Business-to-Business Electronic Commerce?

Many companies offer business-to-business electronic commerce-related products and services. The notable ones include:

IBM Global Network EDI Services — In September 1996, IBM reorganized its managed data network services organization and separated its managed messaging services (IBM Mail Exchange) from EDI services (IBM EDI Services). The EDI services division includes EDI, Internet-enabled EDI, transaction routing, and file transfer services.

IBM's Internet-based access service is being rolled out in the first half of 1997 and will include SMTP/MIME-enabled gateways for e-mail, Web-EDI services, and FTP (file transfer) access, as well as authentication, data integrity, and digital signatures. IGN (IBM Global Network) is focused on providing three distinct types of service for its customers: commerce, collaboration, and content management, and is moving to support vertical markets with serv-

ices particular to each, including insurance, energy, and utilities.

General Electric Information Services (GEIS) — GEIS is one of the world's leading providers of business-to-business electronic commerce solutions and manages one of the world's largest electronic trading communities, with more than 40,000 trading partners. Its products and services include business productivity solutions (consisting of purchasing/supplier, logistics, and marketing and sales productivity solutions), electronic commerce services, network services, and professional services. See our profile of GE's Trading Process Network (TPN) earlier in this chapter for more details.

Sterling Commerce — Sterling Commerce, which was spun out of its parent, Sterling Software, in March 1996, is a major provider of EDI products and services. The company is divided into five groups: Commerce Service, Interchange, Communications Software, Banking Systems, and International. Each of the first four groups has its own sales and marketing arm, while the International group markets products and services for all but the Banking Systems group outside of the U.S. and Canada.

Along these group lines, the company offers four principal families of software products and services:

The *Commerce* family offers over a dozen service and software solutions to facilitate the electronic exchange of business transactions and documents, including an electronic messaging system with mailbox facilities to accommodate the exchange of EDI documents, electronic business forms, e-mail messages and attachments, and the posting of technical or reference data. Value-added network services include: programs that assist companies in implementing electronic commerce with their trading partners; strategic consulting to help define electronic commerce solutions that address a company's needs; and shared applications to help trading communities and companies leverage common applications.

The *GENTRAN* family of products offers software solutions for electronic commerce gateway messaging and EDI translation. GENTRAN translators and intelligent messaging servers are available for the major operating systems and platforms, such as UNIX, Windows, Windows NT, AS/400, and IBM mainframes, and are packaged into three

categories of electronic commerce business solutions; these are EDI Complete, for “plug-and-play” EDI; EC Messaging Gateway or EC Gateway for the Internet, for an electronic commerce solution that integrates with core enterprise applications; and EC Desktop Solutions, for push-button, EDI-enabled applications that facilitate business with trading partners.

Key products include GENTRAN:Server, an electronic commerce gateway that recognizes, manages, and routes all types of business messages; GENTRAN:Director for Windows-based EDI processing; GENTRAN:Mentor, which uses expert systems technology and graphical navigation to fully automate EDI mapping; and GENTRAN:Basic, the base EDI translation product for the mainframe, AS/400, and HP3000 platforms. GENTRAN products were installed at over 3,900 customer sites as of September 30, 1996.

The *CONNECT* family of software products is a suite of automated file transfer and communications management solutions that support a variety of protocols and support the addition of new applications, databases, hardware, and software. *CONNECT:Direct* is primarily used to move large volumes of data with a focus on high performance, security, reliability, and intelligent automation. *CONNECT* products were installed at over 2,500 customer sites as of September 30, 1996.

The *VECTOR* family of products enables banks to provide their corporate customers with integrated trade-payment processing services for both paper-based check payments and electronic payments. *VECTOR:Connexion* provides financial EDI payment services, and *VECTOR:Banker* provides PC-based cash management and electronic payment software for medium- and small-sized banks. The *VECTOR* products also automate several key functions in banks, including item-processing applications such as statement sorting, research and adjustments, check fraud control, electronic check presentment, return item processing, and signature verification. Approximately 2,000 *VECTOR* systems have been installed at about 830 customer sites worldwide, including 99 of the top 100 U.S. banks, as ranked by deposits in *American Banker*.

Premenos — Premenos develops, markets, and supports end-to-end business solutions designed to increase the

speed and decrease the cost of business transactions and communications through EDI. Its products include:

Templar, a suite of software, services, and network solutions that provides organizations with an integrated solution for secure, reliable EDI over TCP/IP networks, including the Internet. These solutions enable secure, standards-based transmissions (TCP/IP, S/MIME, SMTP, SSL, HTTP, RSA, DES, AUTACK, X.509, UN/EDIFACT, and ANSI X12). Its security services include both RSA public key and DES symmetric key encryption, authentication, and non-repudiation (*Templar* serves as an authentication agent to ensure data integrity, authentication, non-repudiation of origin, and non-repudiation of receipt). *Templar* also offers tracking and auditing functions, which provide a complete transmission record for each interchange. *Templar Network Solutions* provides network access and services for all types of local access options, from 9.6k bps dial-up to dedicated T-1 or T-3.

EDI/Open is a scalable EDI solution for UNIX and NT that integrates a commercial relational database with online document tracking, a GUI front-end, and advanced document translation capability.

EDI/400 is an EDI system for the AS/400 that handles large volumes of data with an emphasis on speed, flexibility, and security. *EDI/400* supports all domestic and international EDI standards, allowing the use of multiple standards and multiple standards versions simultaneously. *EDI/400* boasts more than 30 “plug-and-go” communications protocols. According to the company, Premenos’s EDI translation solutions are installed on more AS/400 and System/3X computers than any other translator in the world.

Premenos also provides customers with network services, which it purchases through IBM Global Network.

Harbinger — Harbinger is a provider of electronic commerce and EDI software and services, with a focus on streamlining the computer-to-computer exchange of business documents. Product and service lines include:

Communications Services, comprised of the Harbinger VAN (with over 30,000 active customers) and Internet Value-Added Server (IVAS), which offers support for end-user EC applications over the Internet, including a range of

VAN-like services such as data archiving, standards compliance monitoring, and authentication. IVAS may be contracted as a service or licensed as a product. Net Access provides a "business-quality" end-user connection to the Internet.

Desktop Electronic Commerce Software — TrustedLink Commerce is EDI management software that enables small to mid-sized businesses to exchange electronic documents from the desktop. It transmits data through the Harbinger VAN, third-party VANs, or, when used in concert with Harbinger's TrustedLink Guardian product, over the Internet.

Enterprise Electronic Commerce Software — TrustedLink Enterprise is a robust EDI translation and communications software suite that runs across several platforms, including all major flavors of UNIX and Windows NT.

Internet Electronic Commerce Solutions — This includes: TrustedLink Guardian, which enables secure EDI transactions over the Internet and VANs and interoperates with the rest of the TrustedLink product family, as well as other third-party translators; Harbinger Express, a service that allows users to send and receive EDI documents over the Web using any "industry-standard" browser (including Netscape Navigator and Microsoft Internet Explorer); and TrustedLink Catalog, an electronic catalog builder and database management tool.

Harbinger offers several additional products and services specific to particular industries or process needs, as well as a variety of consulting and product integration services.

Actra Business Systems — Actra, a joint venture between Netscape and GEIS, develops electronic commerce products for the Internet and intranets. Its initial product development is focused on two key areas: a business document gateway to facilitate the exchange of EDI and other data objects between a business and its trading partners, and a suite of server software products for purchasing and supplier management. Actra intends to leverage GEIS's market expertise as one of the leading providers of business-to-business electronic commerce services, and Netscape's leadership position in developing and marketing software for the Internet. Actra's products, all part of its full Cross-Commerce line, include the following:

ECXpert, which began shipping in mid-May and is priced at \$25,000, is designed to handle secure data communications over private and public networks, as well as EDI mapping and translation. Its functionality includes: ECXpert Communications (SMTP, S/MIME, SSL, legacy connections to EDI VANs, FTP, and SNA support); security (it employs certificates, encryption, data integrity, authentication, and digital signatures); scalability (all processes are multi-threaded and can be distributed across NT and Unix environments alike); data transformation (translates data to and from all major EDI standards); document management; services management; and a browser-based user interface

OrderExpert System, still in testing and scheduled to ship by the end of 1997, is expected to provide merchandising, transaction processing, and order-processing capabilities to build and access online commercial storefronts, and is targeted specifically for the business-to-business market. It supports complete, secure transaction and payment processing (credit card processing, purchasing card processing, shipping, and sales tax). Its merchandising capabilities allow buyers or suppliers to display thousands of products and easily change product displays. The back-end functionality handles transactions and order delivery.

By the end of this year, Actra expects to ship new versions of two Netscape products intended for consumer-based retailers: MerchantXpert software for selling goods (the renamed Merchant System to ship by year's end), and PublishingXpert for marketing information products (formerly Publishing System and scheduled to ship by October).

Nets Inc. — Nets Inc. was formed in July 1996 in the merger between Industry.net and AT&T's New Media Services unit. The company recently filed for Chapter 11, and while its future is uncertain, we include it as both a possible illustration of the new model for electronic commerce but also as an example of the risks involved with this market in such early stages.

Nets Inc.'s mission was to create high-value electronic relationships between buyers and sellers of business-to-business products and services that lower the costs and increase the effectiveness of the trading partners. While most of the current EDI services market is focused on the latter stages of the commerce process (the exchange of purchase orders, invoices, and funds clearance), Nets Inc. was focused on providing an electronic commerce system that can

extend the processing power of computers and the universal connectivity of the Internet to the cost-intensive searching, selecting, and transacting phases of the commerce process. The company, headed by Chairman Jim Manzi (former president of Lotus Development Corp.), planned to forge these relationships by aggregating a high-quality group of buyers and sellers and offering them a system that integrates the Internet with a full suite of electronic commerce services.

The primary service of Nets Inc. was Industry.net, founded in 1990 to provide business and industry professionals with a more productive way to buy products and services. While serving the broader industrial market, the Industry.net service focused primarily on meeting the needs of buyers and sellers of maintenance, repair, and operations (MRO) goods and services. Its first offerings were print publications and disk- and CD-ROM-based products, and its services on the Web were launched in September 1994.

Industry.net had provided about 4,500 manufacturers and distributors with marketing programs to present their products and services to the expanding base of 300,000 buying members representing more than 36,000 organizations. This includes free access to extensive product information, timely news, professional organizations, and interactive discussions in 17 different industry segments. Some notable companies that maintain Business Centers on Industry.net include Hewlett-Packard, Sun Microsystems, Reliance Electric, Allen-Bradley, Honeywell, GE, and Westinghouse.

Industry.net was organized into five major areas — Engineering Specialties (covering 17 specialized industry areas), I.Net News Center, Events & Discussions (featuring interactive discussions on topics such as Engineering Computing, Control Systems, News, Electrical & Mechanical Manufacturing & Consulting, and Measurement & Sensor Equipment), Tools & Resources, and Societies & Associations (which offers access to 24 online association communities), plus a “Buying Guide” search tool to help members find specific products or vendors.

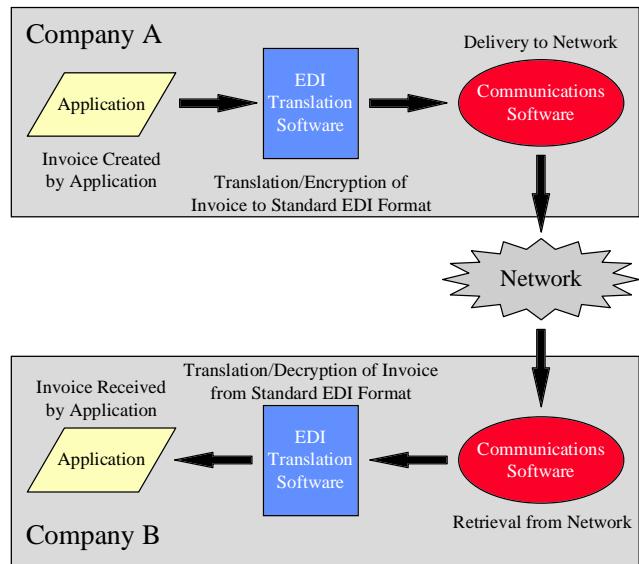
How Does EDI Work?

EDI really begins when between two businesses agree to form an information/transaction link. They jointly decide on the standard format to implement, the type of in-

formation to be exchanged, what kind of network will be used, and when this information will be sent and received. In a typical transmission (Figure 11-7), a standard document (here we use an invoice as a common example) is created by a company's business application and is formatted by translation software into a previously agreed-upon EDI format. The translation software then packages the document in an electronic “envelope,” complete with an ID for identification by the company's trading partner. Communications software (which may be part of the translation software or separate applications) then accesses the transport network and transmits the electronic envelope containing the document. The network reads the identification on the envelope and places it in the mailbox of the company's trading partner. The trading partner's system may then use its own communication application to call the network and retrieve the mailbox contents, which is then translated from the standard format to whatever format is required by the trading partner's applications.

The technical aspects of EDI can be divided into two major areas: content formatting and transmission. Content formatting refers to how the content of EDI documents is structured. Transport refers to the several different types of networks over which EDI transmissions are sent and received.

Figure 11-7
A Typical EDI Transmission



Source: Morgan Stanley Research.

Content Formatting — Although EDI has been around for over 20 years, its acceptance did not really take off until the mid-1980s. One reason was the lack of content formatting standards. To date, two major standards, different but parallel, have evolved. One, UN/EDIFACT, is primarily based in Europe, while the other, ANSI X12, is based largely in North America. There are several less prevalent standards, developed by companies large enough to impose these standards on their trading partners, though these are often found in defined market niches for specific industries.

In 1992, in response to government and industry pressure to create a single global EDI standard, the Accredited Standards Committee (ASC) X12 Group announced that migration from X12 to EDIFACT would occur by 1997. However, in a compromise worked out in October 1994, the ASC extended the deadline from 1997 to at least 1999. In the meantime, the incompatibility of X12 and EDIFACT has complicated exchanges of data between companies. To rectify the situation, the Internet Engineering Task Force (IETF) is working toward universal compatibility while requiring a minimum of effort from current EDI users. We believe that, over time, these “bumps” in the EDI highway will continue to flatten, given the more compelling economics of universally standard EDI content formatting.

Transmission — Though EDI documents can be transported through a wide range of network media, there are three major types of implementations: private networks,

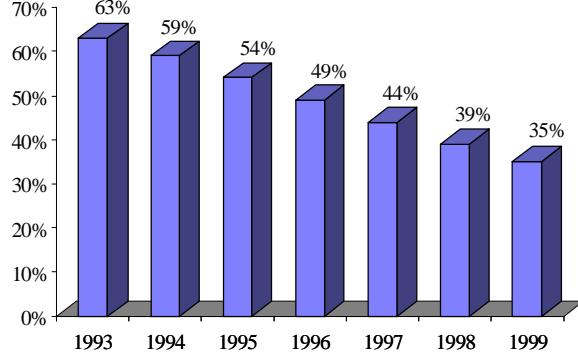
value-added networks (VANs), and the Internet. We now take a look at each type.

Private Networks are dedicated, leased-line telecommunications lines between a company and its partners. Often, a company’s partner accesses a private network by directly dialing over regular phone lines. There are two main advantages of private networks: *control* (the fact that private network lines are leased affords companies a certain degree of control over network usage and security) and *non-usage-based costs* (in the majority of instances, leased-line pricing is based on the length of the lease and not on the transmission volume, so the costs are fixed).

However, there are several drawbacks to private networks solutions: *high start-up costs* (hardware, software, and installation labor) associated with the creation of a private network are substantial, especially in comparison with VANs and the Internet; *high fixed costs*, as the leasing costs are a fixed cost to the company, which causes per unit transmission costs to rise when usage is low (also, a company implementing a private network would incur the fixed cost of IS labor for network maintenance); *limited connectivity*, since private networks are exactly that — private — and are limited in their geographical coverage, creating a barrier to expansion of a company’s customer base, especially overseas; and *limited services*, since many “value-added” services (e.g., translation) require in-house development, and are thus expensive (frequently, so expensive they are not implemented).

Value-added networks (VANs) are third-party service providers that manage the data communications networks for the businesses that use them to exchange electronic data with their partners. VANs allow companies to more easily perform EDI by accepting data in a variety of formats, converting it into a standard format (like X12 or EDIFACT), and translating it back into a variety of formats on the receiving end. VANs also manage transmission schedules and act as a private electronic “post office” of sorts.

The cost of VANs can be both fixed and variable. Fixed costs may be for the maintenance of an account on the VAN. Variable costs are often based on connect time, or the number of documents or characters transmitted.



Sources: Premenos, Gartner Group.

For several years, VANs held a near-monopoly position in providing these third-party network services. However, the emergence of the Internet and the more efficient cost structure and ubiquity it provides has challenged this position, and in response many VANs have either offered Internet access themselves (along with value-added services for the customers on their network) or expanded their existing customer base (Figure 11-8). Major VAN providers include IBM, MCI, AT&T and Novell, and General Electric Information Services (GEIS).

Internet-based EDI: The sprawling mass that is the Internet is based on a set of protocols called transmission control protocol/Internet protocol (TCP/IP). These standardized protocols provide companies a well-defined set of services, and the sheer size and reach of the Internet, combined with its relatively low costs for data transmission and system maintenance, make it an attractive channel for future EDI development.

Chapter 12: A Look at the Universe of Emerging and Traditional Retailers on the Internet

Summary

- ◆ This is the “**where’s the traffic?**” part of our report. In order to compile a list of the leading shopping sites on the Web, we have used PC Meter consumer data. The data aren’t perfect (but they’re some of the best stuff out there in Webland), yet they have directional significance. In this chapter, the **“Top 50” shopping sites on the Web are ranked based on February 1997 usage.** The **five most frequently used shopping areas** were: 1) **shareware.com** (CNET’s software site), 2) **download.com** (another CNET software site), 3) **columbiashouse.com** (the Columbia House music and video site), 4) **Amazon.com** (Amazon’s book site), and 5) **hotfiles.com** (Ziff-Davis’ software site).
 - ◆ It’s not a surprise that **software downloading is one of the most popular means of shopping on the Web** —as most of this software is available for free from the sites. But the good news, for money-hungry entrepreneurs, is that for-sale software sites are popping up in the ranks. Other areas experiencing lots of traffic on their shopping sites, in addition to Columbia House and Amazon, are Surplus Direct (PC hardware and software), Gateway 2000 (PCs), and QVC (you name it).
 - ◆ The traditional retailers that have shown the greatest interest in online commerce to date have largely been in hardlines, catalog/mail order, and industries where customers do not feel the need to touch merchandise prior to making a purchase.
 - ◆ In this chapter, we **list and describe the top shopping Web sites** in many shopping categories, including **software, hardware/electronics, online malls, clothing/apparel, flowers/gifts, music/entertainment, specialty retail, direct-mail/marketing, auction, financial services, travel, and package delivery.** We also list and describe the top 20 shopping areas on America Online. We conclude with a look at the online efforts of some of the more traditional retailers.
-

Ground Rules on How to Interpret Our Shopping Data

Data and information about the leading Web sites and companies are difficult to come by. In an effort to understand which retailing/commerce sites are the most widely trafficked by the current Internet audience, we have taken a pass using PC Meter’s reach data. **PC Meter maintains a user sample of over 9,000 U.S. households owning Windows-based PCs and tracks the Internet/Web activity of this consumer/home usage sample.** It then reports the reach of over 2,000 Web sites during the course of each month (reach is defined as the percentage of Web-active persons who visit at least one page within a domain during that month) and groups these sites into general categories where applicable. Again, this reflects only home use and not business use.

“Shopping” is one of the general classifications that PC Meter uses. We have taken the list of shopping sites from the December reach rankings and broken them into more

descriptive categories. Keep in mind that these data rank domain names (which are unique Internet names, like “www.microsoft.com” that point to a particular site), but that it is possible to have more than one domain name point to the same site (as in the case of imall.com and via-mall.com). This often occurs as sites rebrand themselves or maintain multiple brand or domain names because of particular relationships, the merging of former disparate sites, and so forth.

To be sure, these categories don’t tell the whole story for retail/commerce in each area. Simple reach data cannot capture important information like the frequency with which visitors make purchases, the average dollar amount or quantity purchased, how often these visitors return, and how loyal they are over time (churn), etc. Many domains at which retail/commerce activity takes place have multiple functions and are often classified by PC Meter in other areas. For example, there are substantial software sales made at the Netscape site (which is classified as “Marketing/

Corporate" by PC Meter) and significant hardware sales made via Dell Computer's site. It is not possible, however, to break out the traffic that is commerce/retail-related from each of these domain's reach data. We are therefore restricted to those sites that are primarily retail/commerce pure plays, which PC Meter includes in its Shopping classification.

In addition, many retail/commerce sites do not necessarily fall under the "Shopping" classification, such as the online trading conducted by E*Trade at www.etrade.com, the online banking done at Intuit's Quicken Financial Network

site at www.qfn.com, or the shipping orders placed with Federal Express at www.fedex.com.

So, disclaimers aside, we take a look at the February 1997 crop of shopping sites below. For each shopping category we have included a general category description, a list of the domains within that category (with each domain ordered by its February 1997 reach, and accompanied by the domain's reach, rank within PC Meter's entire "Shopping" classification, and within the category itself), followed by a short description of each domain in the category.

Table 12-1

Top Shopping Sites, Ranked by February 1997 Reach

Shopping Domain	Reach	Rank	Shopping Domain	Reach	Rank
shareware.com	4.1	1	galttech.com	0.4	40
download.com	4.0	2	32bit.com	0.4	41
columbiahouse.com	3.7	3	giftone.com	0.4	42
amazon.com	2.9	4	llbean.com	0.4	43
hotfiles.com	2.7	5	wal-mart.com	0.4	44
surplusdirect.com	2.4	6	cybersuperstores.com	0.3	45
freeride.com	1.7	7	internet.net (2)	0.3	46
jumbo.com	1.5	8	landsend.com	0.3	47
gw2k.com	1.4	9	shopsite.com	0.3	48
bluemountainarts.com	1.3	10	warehouse.com	0.3	49
qvc.com	1.3	11	cbooks.com	0.2	50
bmgmusicservice.com	1.2	12	cybershop.com	0.2	51
imall.com	1.2	13	<i>Yahoo! sites</i>	<i>38.4</i>	--
cataloglink.com	1.1	14	<i>msn.com</i>	<i>15.3</i>	--
tucows.com	1.1	15	<i>qfn.com</i>	<i>2.4</i>	--
onsale.com	1.1	16	<i>ticketmaster.com</i>	<i>1.7</i>	--
virtualflorist.com	1.1	17	<i>travelocity.com</i>	<i>1.7</i>	--
cdnow.com	1.1	18	<i>dbc.com</i>	<i>1.5</i>	--
cdw.com	1.1	19	<i>galt.com</i>	<i>1.4</i>	--
netbuyer.com	0.9	20	<i>quote.com</i>	<i>1.4</i>	--
compusa.com	0.8	21	<i>cnnfn.com</i>	<i>1.2</i>	--
cdrom.com	0.8	22	<i>wsj.com</i>	<i>1.1</i>	--
buydirect.com	0.8	23	<i>dell.com</i>	<i>0.9</i>	--
ebay.com	0.7	24	<i>etrade.com</i>	<i>0.7</i>	--
virtualflowers.com	0.7	25	<i>secapl.com</i>	<i>0.7</i>	--
insight.com	0.6	26	<i>fedex.com</i>	<i>0.5</i>	--
ishops.com (1)	0.6	27	<i>golfweb.com</i>	<i>0.3</i>	--
compass-ent.com	0.6	28	<i>netmarket.com</i>	<i>0.3</i>	--
musicblvd.com	0.6	29	<i>greetst.com</i>	<i>0.2</i>	--
autobytel.com	0.6	30	<i>all-internet.com</i>	--	--
freeshop.com	0.6	31	<i>AOL Marketplace</i>	--	--
viamall.com (1)	0.5	32	<i>Barnes & Noble on AOL</i>	--	--
egghead.com	0.6	33	<i>cisco.com</i>	--	--
cuc.com	0.5	34	<i>fashionmall.com</i>	--	--
zmall.com	0.5	35	<i>firefly.com</i>	--	--
register.com	0.5	36	<i>gardenescape.com</i>	--	--
pbfactoryoutlet.com	0.5	37	<i>ivillage.com</i>	--	--
pacificcoast.com	0.5	38	<i>peapod.com</i>	--	--
isn.com (2)	0.5	39	<i>virtualvin.com</i>	--	--

(1) Both ishops.com and viamall.com link to the Viamall Web site.

(2) Both isn.com and internet.net link to the Internet Shopping Network Web site.

(3) Yahoo! sites includes www.yahoo.com, www.yahoo.co.uk, www.yahoo.jp.co, www.yahooigans.com, www.yil.com, www.bguide.com, and www.unfurled.com.

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes.

Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

Table 12-2

Top Shopping Sites in Specific Categories, Ranked by February 1996 Reach

Software	Reach	Shopping Rank	Category Rank	Hardware/Electronics	Reach	Shopping Rank	Category Rank
shareware.com	4.1	1	1	surplusdirect.com	2.4	6	1
download.com	4.0	2	2	gw2k.com	1.4	9	2
hotfiles.com	2.7	5	3	cdw.com	1.1	19	3
jumbo.com	1.5	8	4	netbuyer.com	0.9	20	4
tucows.com	1.1	15	5	compusa.com	0.8	21	5
cdrom.com	0.8	22	6	insight.com	0.6	26	6
buydirect.com	0.8	23	7	pbfactoryoutlet.com	0.5	37	7
egghead.com	0.6	33	8	warehouse.com	0.3	49	8
galttech.com	0.4	40	9	dell.com	0.9	--	--
32bit.com	0.4	41	10	cisco.com	--	--	--
Online Mall	Reach	Shopping Rank	Category Rank	Clothing/Apparel	Reach	Shopping Rank	Category Rank
qvc.com	1.3	11	1	llbean.com	0.4	43	1
imall.com	1.2	13	2	landsend.com	0.3	47	2
ishops.com (1)	0.6	27	3	fashionmall.com	--	--	--
compass-ent.com	0.6	28	4	Flowers/Gifts	Reach	Shopping Rank	Category Rank
viamall.com (1)	0.5	32	5	bluemountainarts.com	1.3	10	1
cuc.com	0.5	34	6	virtualflorist.com	1.1	17	2
zmall.com	0.5	35	7	virtualflowers.com	0.7	25	3
isn.com (2)	0.5	39	8	giftone.com	0.4	42	4
wal-mart.com	0.4	44	9	greetst.com	0.2	--	--
cybersuperstores.com	0.3	45	10	Music/Entertainment	Reach	Shopping Rank	Category Rank
internet.net (2)	0.3	46	11	columbiahouse.com	3.7	3	1
shopsite.com	0.3	48	12	bmgmusicservice.com	1.2	12	2
cybershop.com	0.2	51	13	cdnow.com	1.1	18	3
<i>Yahoo! sites</i>	38.4	--	--	musicblvd.com	0.6	29	4
msn.com	21.9	--	--	ticketmaster.com	1.7	--	--
netmarket.com	0.3	--	--	Financial Services	Reach	Shopping Rank	Category Rank
Other Specialty Retail	Reach	Shopping Rank	Category Rank	qfn.com	2.4	--	--
amazon.com	2.9	4	1	dbc.com	1.5	--	--
autobytel.com	0.6	30	2	galt.com	1.4	--	--
pacificcoast.com	0.5	38	3	quote.com	1.4	--	--
cbooks.com	0.2	50	4	cnnfn.com	1.2	--	--
golfweb.com	0.3	--	--	wsj.com	1.1	--	--
barnesandnoble.com	--	--	--	etrade.com	0.7	--	--
gardenescape.com	--	--	--	secapl.com	0.7	--	--
peapod.com	--	--	--	Auction	Reach	Shopping Rank	Category Rank
virtualvin.com	--	--	--	onsale.com	1.1	16	1
Direct Mail/Marketing	Reach	Shopping Rank	Category Rank	ebay.com	0.7	24	2
cataloglink.com	1.1	14	1	Supersite	Reach	Shopping Rank	Category Rank
freeshop.com	0.6	31	2	<i>AOL Marketplace</i>	--	--	--
firefly.com	--	--	--	Directory	Reach	Shopping Rank	Category Rank
Travel	Reach	Shopping Rank	Category Rank	all-internet.com	--	--	--
travelocity.com	1.7	--	--				
Package Delivery	Reach	Shopping Rank	Category Rank				
fedex.com	0.5	--	--				
Miscellaneous	Reach	Shopping Rank	Category Rank				
freeride.com	1.7	7	1				
register.com	0.5	36	2				

For footnotes, see Table 12-1.

This memorandum is based on information available to the public. No representation is made that it is accurate or complete. This memorandum is not an offer to buy or sell or a solicitation of an offer to buy or sell the securities mentioned. Morgan Stanley & Co. Inc. and others associated with it may have positions in and effect transactions in securities of companies mentioned and may also perform or seek to perform investment banking services for those companies.

Software

These are sites primarily dedicated to the downloading or distribution of software titles, which includes freeware, shareware, and "for-sale" software.

Domain	Reach	Shopping Rank	Category Rank
shareware.com	4.1	1	1
download.com	4.0	2	2
hotfiles.com	2.7	5	3
jumbo.com	1.5	8	4
tucows.com	1.1	15	5
cdrom.com	0.8	22	6
buydirect.com	0.8	23	7
egghead.com	0.6	33	8
galttech.com	0.4	40	9
32bit.com	0.4	41	10

Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

SHAREWARE.COM — One of CNET's several sites, Shareware.com is a service that features the Virtual Software Library (VSL) search engine, which allows users to search for, browse, and download freeware, shareware, demos, fixes, patches, and upgrades. The VSL contains over 160,000 software files drawn from shareware and vendor archives on the Internet. Archive managers can also register FTP archives to make their files searchable by Shareware.com users. There is no fee for membership in the site or charge for downloading any of its titles.

DOWNLOAD.COM — Another CNET site, Download.com is a more streamlined version of its sister site, Shareware.com. CNET selects titles for this site using an "80/20" approach — since 20% of Shareware.com titles are downloaded 80% of the time, Download.com focuses on presenting and organizing these most popular titles in a more convenient fashion. The site's categories include business, development tools, education, games, home and personal, Internet, kids, multimedia and design, and utilities.

HOTFILES.COM — This site is ZDNet's equivalent of CNET's sites, Shareware.com and Download.com. HotFiles.com allows the user to search a database of over 10,000 shareware programs. Each title is reviewed, rated, and virus-checked by ZDNet.

JUMBO.COM — Run by Jumbo Co., this site offers access to over 93,000 shareware and freeware programs.

There are 18 categories of software from which to choose, including business, chat, multimedia, and music. Users can download from or upload files to the Jumbo database.

TUCOWS.COM — The Tucows site provides access to software available over the Internet for the Windows 95, Windows 3.1, and Macintosh platforms. These software applications are performance-rated and checked for viruses. Available applications include utilities, e-mail, and games.

CDROM.COM — The Walnut Creek CD-ROM server is both a technical service and a product provider. Users can access technical support, ordering information, and product registration. It is also possible to download shareware, operating systems, and other software from Walnut Creek. Orders can be placed by e-mail, via the Internet, fax, phone, and postal mail.

BUYDIRECT.COM — Another of CNET's sites, BuyDirect.com allows the download of software over the Internet directly from the manufacturer. BuyDirect.com has partnered with leading software developers to provide a selection of software focused on enhancing the use of the Worldwide Web, including Web browsers, Internet utilities, HTML editors, plug-ins, and applets.

EGGHEAD.COM — This is the online extension of Egghead Software, where users can browse the catalog and search links to Ziff-Davis sites to find reviews of hardware and software products. Users can open an account and make purchase online or call the company directly. There are links to technical support, employment opportunities, and company information.

GALTTECH.COM — Galttech.com is a service of Galt Technology that provides access to a large library of software titles for almost 2 million users. Users can read newsletters about new titles, access product reviews, and download titles, which they may purchase via the Internet or over the phone using a credit card.

32BIT.COM — This site provides links to the latest 32-bit shareware on the Internet. 32bit.com operates a virtual store, where visitors can buy the latest titles from software vendors such as Microsoft and Starfish for electronic or physical delivery. This site also operates discussion forums for help and advice, tips and tricks, and questions and an-

swers, and presents news on 32-bit software, rumors, and tips, and sells software training videos and CD-ROMs.

Hardware/Electronics

These are sites primarily dedicated to the sale of computer hardware, peripherals, and other electronic products.

Hardware/ Electronics	Reach	Shopping Rank	Category Rank
surplusdirect.com	2.4	6	1
gw2k.com	1.4	9	2
cdw.com	1.1	19	3
netbuyer.com	0.9	20	4
compusa.com	0.8	21	5
insight.com	0.6	26	6
pbfactoryoutlet.com	0.5	37	7
warehouse.com	0.3	49	8
<i>dell.com</i>	0.9	--	--
<i>cisco.com</i>	--	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes.

Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

SURPLUSDIRECT.COM — This site, run by Surplus Software, acts as a clearinghouse for publishers, distributors, and retailers of overstocked, over-produced, factory refurbished, or distressed inventories of low-cost software and hardware products. They also offer current version, previous version, and promotional software and hardware packages. Users can browse the catalog of merchandise, choose from the selection of hundreds of products, and make purchases over the Internet with a credit card or through conventional mail.

GW2K.COM — The Web site for Gateway 2000, this site offers a variety of services from the Midwestern computer company, functioning as a virtual store for Gateway's products (PCs, monitors, and so on). Users can make purchases via the Internet with a credit card or through conventional mail. The site also allows Gateway to provide access to technical support and detailed product information. The site includes chat rooms to encourage dialogue and a sense of community for the company's customers.

CDW.COM — This site for Computer Discount Warehouse offers online listings and information on more than

10,000 brand-name computer products, including detailed technical specifications, stock status, and current pricing. Users can search for products by name, description, manufacturer, or CDW part number. There is secure online, fax, or phone ordering available. Order status reporting is done by an e-mail link to the account executive. Special sections are featured with access to current product specials. There are also links to investor relations and employment opportunities.

NETBUYER.COM — This is ZDNet's site that allows users to shop for computer hardware and software from over 100 vendors. The staff of editors provides explanations and technical tips to help users make more informed buying decisions. Functions include the ability to create side-by-side product comparison charts with detailed specs and price. Each product contains links from a particular product listing to a product review from *PC Magazine*, *PC Week*, *PC Computing*, *MacUser*, *MacWeek*, *Windows Sources*, and *Computer Shopper*. Purchases can be made over a secure e-mail system or over the telephone.

COMPUSA.COM — This is the online shopping site of the CompUSA retail chain. It offers access to the company's entire inventory of computer hardware and software for purchase. The site also functions as the corporation's home page for press releases and quarterly reports. Users are encouraged to join the site as a member to benefit from special membership privileges. The site offers descriptions of products and links to manufacturer's web sites. Orders can be placed online, through an 800 number, or by faxing an order form.

INSIGHT.COM — Insight is an online merchant of electronic and computer products, from processors to video cards. There is technical information available for all products, and purchases can be made online or by calling the service line. Information is also available about the company and employment opportunities.

PBFACORYOUTLET.COM — This site is Packard Bell's online factory outlet store, which allows customers to order computer products direct from the company's factory. Users may also choose from re-manufactured and discontinued products. Sales representatives are available by phone to help users answer customer questions. Orders can be made only through the sales representatives, not via the Internet.

WAREHOUSE.COM — MicroWarehouse runs this online catalog of computer hardware and software. Users can browse the catalog for items to be purchased, link to the sales department or customer service, send for a free catalog, and set up individual or corporate accounts. Orders can be placed over the Internet, by phone, or by fax.

DELL.COM — Dell.com is the Web site for Dell Computer, where the company offers product information, sales, customer support, order tracking, company information, employment opportunities, and more. Dell has indicated that it is generating Web-based sales of about \$1 million per day — up from zero a year ago. (See our note at the bottom of the Hardware/Electronics domain data table.)

CISCO.COM — Cisco.com is Cisco's Web site, where product and technical information or help can be found. The company indicated that in the five months prior to December 1996, it had done more than \$75 million in sales via the Internet. (See our note at the bottom of the Hardware/Electronics domain data table.)

QVC.COM — This is an online service of QVC, Inc., owner of the QVC television shopping network. The site lets users browse its product catalog and make purchases either online or over the telephone. Departments include arts and leisure, beauty, books, and computer and software. Other features include a showcase of the network's specialty items and fan chat rooms. For the more avid QVC customer, the site offers backstage tours of the television network and chat rooms with on-air talent. The site also functions as the corporate home page, with links to press releases, employment information, and annual reports.

IMALL.COM — iMall.com is a retail Web site aggregating both internal and external site links to over 1,000 merchants. The site is a virtual mall, where merchants sell clothes, electronics, and many other goods and services. Some of the merchandise and services are targeted toward the lower end of the market. Purchase arrangements vary by site.

Online Malls

In this category we include sites that primarily aggregate several types of merchandise, similar to traditional shopping malls. These sites are not, however, limited to those

domains or sites to which the "mall" moniker has been affixed — for example, qvc.com and wal-mart.com.

Online Malls	Reach	Shopping Rank	Category Rank
qvc.com	1.3	11	1
imall.com	1.2	13	2
ishops.com (1)	0.6	27	3
compass-ent.com	0.6	28	4
viamall.com (1)	0.5	32	5
cuc.com	0.5	34	6
zmall.com	0.5	35	7
isn.com (2)	0.5	39	8
wal-mart.com	0.4	44	9
cybersuperstores.com	0.3	45	10
internet.net (2)	0.3	46	11
shopsite.com	0.3	48	12
cybershop.com	0.2	51	13
<i>Yahoo! sites</i>	38.4	--	--
<i>msn.com</i>	15.3	--	--
<i>netmarket.com</i>	0.3	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes.

Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

ISHOPS.COM — Now renamed Viamall, which includes both the iShops.com and Viamall.com domains, this site is an online shopping service with approximately 40,000 products for sale. Users are provided with links to a wide variety of stores, selling anything from golf clubs to cigars. All online transactions at iShops.com are handled by Netscape's Commerce Server. Purchases are made by credit card.

COMPASS-ENT.COM — The Compass Mall site is an online shopping service with mostly low-end merchandise provided by AE Cyberstores PI. Shoppers can make purchases over Netscape's Secure Server. There are a number of different merchants linked to sites, and payment methods vary.

VIAMALL.COM — See ISHOPS.COM

CUC.COM — With a direct link to its NetMarket site (at www.netmarket.com), CUC is aspiring to create something like a membership-based interactive version of QVC for the Web. And with its current base of about 64 million phone-based members, we believe the company is in a unique

position to (1) leverage/convert a portion of its user base to lower cost Web-based services and (2) capitalize on its nearly unparalleled experience with consumer databases and product distribution. For more on CUC's Web-based retail business, see our detailed description in Chapter 2.

ZMALL.COM — The Mall of Cyberspace site is a virtual mall with "storefronts" selling a variety of products through links to other Web sites. Categories include gifts, sports, computers and electronics, home improvement, travel, and information.

ISN.COM — ISN (Internet Shopping Network), which includes both the isn.com and Internet.net domains, is a division of the Home Shopping Network. ISN carries a selection of 35,000 computer hardware and software products. Software products are available from the Downloadable Software Store, which has over 1,100 titles. Comprehensive product descriptions, specifications, and performance benefits are provided. Users must first open an account, and orders can be placed online. Payments can be made online or through conventional mail.

WAL-MART.COM — This site is Wal-Mart's online presence, offering users access to the Wal-Mart catalog of merchandise, with the same prices and customer service offered by the retail store. The site contains a search engine that allows users to search for a specific product or product type. Orders can be placed online or by phone. The site also provides links to Sam's Club Online and access to corporate information, such as employment opportunities, quarter income statements, and more.

CYBERSUPERSTORES.COM — This site aggregates links to a number of online merchants and offers a number of products, many of which are video titles.

INTERNET.NET — See ISN.COM

SHOPSITE.COM — ShopSite Marketplace is a showcase of over 150 stores that use the ShopSite Manager software, resulting in uniformity, with links to stores including Aardvark Cycles, Planet Earth Music, Eco=Logic (Clothing), and Helens Health Stores.

CYBERSHOP.COM — An online department store boasting an assortment of over 12,000 upscale products from more than 300 brand-name manufacturers, and featuring price points ranging from \$20 to \$10,000. The site

features gift suggestions and a bridal registry. Purchases can be made with a credit card or by phone or fax.

YAHOO! — Yahoo!'s collective sites include international sites like Yahoo! Japan and Yahoo! UK and Ireland, local sites like Yahoo! New York and Yahoo! Boston, and specialized sites like Yahoo! Unfurled, offering a variety of merchandise and links to many commerce sites.

MSN.COM — Microsoft is placing large bets in several major Internet commerce areas, including: travel (Expedia), automotive (CarPoint), music (Music Central), and finance (Investor). All are part of the publicly accessible MSN (www.msn.com) and boast slick graphics, quick software, and deep content. For details on Microsoft's Web-based retail business, see Chapter 2.

NETMARKET.COM — NetMarket.com is the Web site for CUC International's Shoppers Advantage program. With NetMarket, CUC is aspiring to create something like a membership-based, truly interactive version of QVC for the Web.

Clothing/Apparel

This category includes sites whose product offerings are primarily clothing and apparel.

Clothing/ Apparel	Reach	Shopping Rank	Category Rank
llbean.com	0.4	43	1
landsend.com	0.3	47	2
<i>fashionmall.com</i>	--	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes. Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

LLBEAN.COM — Users can search this company's well-known clothing and apparel catalog, read features about the company, and sign up to receive the catalog through the mail. Users may also place orders online after opening an account, through postal mail, by fax, or by phone.

LANDSEND.COM — This site is the online catalog of Lands' End, the direct merchandise clothing company. Users can browse the catalog and read features about the

company and its products. Orders can then be placed through the Web site, by phone, by fax, or by e-mail. Payment can be made by check or credit card through the online service, the phone, or postal mail.

FASHIONMALL.COM — Fashionmall has staked out the high-end of the online retail market, providing customers with a choice selection of products from famous designers and shops, online runway shows, product and shopping guides, online fashion magazines, as well as profiles of the designers.

Flowers/Gifts

These are sites that primarily provide “gift” merchandise (most notably flowers) or the services to deliver those gifts.

Flowers/ Gifts		Shopping Rank	Category Rank
	Reach		
bluemountainarts.com	1.3	10	1
virtualflorist.com	1.1	17	2
virtualflowers.com	0.7	25	3
giftone.com	0.4	42	4
greetst.com	0.2	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely “shopping” sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site’s activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes. Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

BLUEMOUNTAINARTS.COM — This site allows users to send personalized animated electronic cards to someone’s electronic mailbox through the Blue Mountain Arts site. Blue Mountain Arts blends poetry and art to create notecards, books, and related products. Blue Mountain Arts created its greeting card page as a public service.

VIRTUALFLORIST.COM — The Virtual Florist is a site from the Internet Florist Association that allows users to browse a catalog of bouquets and send real flowers to anywhere in the US. The site has other features, most notably a free service that allows users to send “Virtual Flower Bouquets” to any e-mail address. Orders for real flowers can be placed online or over the phone.

VIRTUALFLOWERS.COM — Another virtual flower shop, run by Florists Transworld Delivery, which allows users to order real flowers online. Orders can also be placed over the phone.

GIFTONE.COM — GiftOne’s site helps users track and remember important dates for which they need to buy gifts. Site members fill out an order form with the names and events (such as a birthday) of all the people to which they may want to send gifts. GiftOne will then send the user an e-mail weeks before the holiday, which includes a number of ideas for gifts that may be purchased through the Web site.

GREETST.COM — Greet Street has taken the dash out of the dash to the card shop, and allowed customers to browse through a large selection of paper greeting cards online, which can then be ordered and mailed, either immediately, or on a specified date (like right before your mother’s birthday).

Music/Entertainment

This category is for sites that primarily offer music or other types of entertainment products.

Music/ Entertainment		Shopping Rank	Category Rank
	Reach		
columbiahouse.com	3.7	3	1
bmgmusicservice.com	1.2	12	2
cdnow.com	1.1	18	3
musicblvd.com	0.6	29	4
ticketmaster.com	1.7	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely “shopping” sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site’s activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes. Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

COLUMBIAHOUSE.COM — This site is an online service of the Columbia House Co. and is essentially an online catalog that allows users to purchase music, movies, CD-ROMs, and videocassettes. The catalog contains over 10,000 items, which users can purchase over the Internet with a credit card or by printing an order form and mailing payment through conventional mail.

BMGMUSICSERVICE.COM — An extension of its regular catalog, BMGMusicService.com is an online music club and catalog from BMG Music, offering members discounts on music and movies. The site contains features on different selections of music and has a vast catalog for the user to browse. The user can order online, but payment can only be made through postal mail, by check or money order.

CDNOW.COM — CDNow is an online music and movie store. The video store contains over 35,000 titles. Users may download and listen to any one of hundreds of song titles before ordering. The site contains several features, such as articles on bands and tours and links between bands with similar influences. Purchases can be made by credit card or check through postal mail, over the phone, or via the Internet.

MUSICBLVD.COM — A virtual music store with a Frequent Buyers Club that rewards the buyer with one free CD for every 10 that he or she buys. Also available are news on music and listings of top selections. Customers have the option of providing a credit card number to pay for purchases online or paying by check or money order offline. The site also offers a gift shipping option.

TICKETMASTER.COM — Ticketmaster's Web site allows customers to directly access information and purchase tickets for concerts, sporting events, shows, the theater, family activities, and other events all over the U.S. Ticket shoppers can search by city, venue, date, or artist, and can conduct more advanced searches with those variables. We think Ticketmaster Online is a very compelling service because it significantly improves a customer's ability to find an event that best suits his or her interests and schedule and to quickly gather all of the relevant information about that event. Ticketmaster Online is a clear example, in our opinion, of how consumers can be empowered with an online tool, allowing them to purchase a product more quickly, more efficiently, and more accurately than before. Note that online ordering capability is dependent on whether the local Ticketmaster service is enabled for it, as online orders are actually channelled through a local office.

Other Specialty Retail

This category is for those retail sites that do not fit into one of the above vertical categories, but do specialize in a particular type of product offering.

Other Specialty Retail	Reach	Shopping Rank	Category Rank
amazon.com	2.9	4	1
autobytel.com	0.6	30	2
pacificcoast.com	0.5	38	3
cbooks.com	0.2	50	4
<i>golfweb.com</i>	0.3	--	--
<i>barnesandnoble.com</i>	--	--	--
<i>gardenescape.com</i>	--	--	--
<i>peapod.com</i>	--	--	--
<i>virtualvin.com</i>	--	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes.
Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

AMAZON.COM — One of the best-known retailers on the Web, Amazon.com is an online bookstore with over 2.5 million titles listed. The bookstore can be searched by title, author, and category. Users also have access to features on books, authors, and literary awards and can subscribe to an e-mail service that will notify them when certain books (by favorite authors, specific subjects, and so forth) become available. Users can make purchases over the Internet with a credit card or by printing an order form and mailing payment through conventional mail.

AUTOBYTEL.COM — Auto-By-Tel provides auto shoppers with an online service where customers request a price quote on a new or used car and the request is forwarded to a participating, accredited dealer, who offers the shopper a low rate on the vehicle. Auto-By-Tel also provides consumers with links to informational sites, such as Microsoft's CarPoint, as well as auto-financing and auto-insurance sites, where car buyers can get discounted rates and quotes.

PACIFICCOAST.COM — The Pacific Coast Feather Co. operates an online catalog of its bedding products. Users can browse the catalog and read features about the company, its products, and information about store locations and other brand names under which its products are sold. Payment for products ordered can be made online by credit card, by fax, by phone, or by e-mail.

CBOOKS.COM — CBooks Express is an online computer bookstore stocking thousands of the hottest books in various categories of computing. The site attempts to provide useful information and reviews about each title to make buying decisions easier. Books are normally shipped within hours of purchase.

GOLFWEB.COM — GolfWeb's motto of "Everything Golf" seems to hold true, as the site provides breaking news, tips on the game, suggestions on where to play, online travel reservations through American Express, and a complete online pro shop with discounted prices. Visitors can buy golf clubs, bags, shoes, apparel, sunglasses, software, and a number of accessories.

BARNESANDNOBLE.COM — Barnes & Noble recently unveiled its Web site with much fanfare, and is making an aggressive push to outcompete Amazon.com, the early online bookselling leader. Barnes & Noble offers over 1 million titles, and discounts its hardcovers by 30% and its paperbacks by 20%. Overnight delivery is available on over 100,000 titles, and the company believes that this will grow to include 400,000 titles before the end of 1997. Barnes & Noble also has an agreement to be the exclusive bookseller on AOL, and that site is structured much the same way its Web site is set up. Barnes & Noble can be found on AOL at keyword BARNES AND NOBLE.

PEAPOD.COM — Peapod is a leading online grocery shopping and delivery service, available to consumers in six major metropolitan markets (Chicago, Boston, San Francisco/San Jose, Houston, Atlanta, and Columbus), and is accessed using Peapod's proprietary software via the Internet or through a direct dial-up connection.

VIRTUALVIN.COM — Virtual Vineyards provides customers with online access to a wide variety of California wines from small (and some big) vineyards, as well as a

growing list of international vintages. The site also offers an international gourmet food shop to go along with the wine, and has recently added a cookware site.

Direct Mail/Marketing

These sites offer users the ability to access products or services related to the marketing of other third-party merchandise.

Direct Mail/ Marketing	Reach	Shopping Rank	Category Rank
cataloglink.com	1.1	14	1
freeshop.com	0.6	31	2
<i>firefly.com</i>	--	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes.
Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

CATALOGLINK.COM — CatalogLink is a catalog request and linking service from Direct Media, Inc., of Greenwich, Conn. Users can browse the selection of hundreds of catalogs and, if so desired, have the catalog delivered through conventional mail.

FREESHOP.COM — This site allows users to "try before they buy" by browsing free samples, free catalogs, free products, service information, trial issues of publications, products with free trial periods, free gifts with purchase, coupons, and demos of software. Users simply indicate what they want, enter an address, and their order will be sent to them. The site has had more than 300,000 unique visits and over 100,000 actual orders.

FIREFLY.COM/FIREFLY.NET — Firefly has taken a unique approach to commerce on the Web, by using its intelligent agenting technology to help its 1.4 million individual members find more of what they are interested in online. Firefly uses "advanced collaborative filtering technology," which was developed at the MIT Media Lab, to take peoples tastes, preferences, and opinions and show them information suited to those preferences.

Auction

These sites facilitate the auctioning of merchandise.

Auction	Reach	Shopping Rank	Category Rank
onsale.com	1.1	16	1
ebay.com	0.7	24	2

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes.
Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

ONSALE.COM — This is a live online auction house for products like computers, cameras, video, and audio equipment. The site recreates in electronic form the bidding at an auction, where prices and availability change in response to customers' actions. Most items are refurbished or close-out goods. Bids can only be placed over the Web after establishing an account with Onsale.

EBAY.COM — This site is eBay's online auction house called AuctionWeb, with over \$10 million in successful auctions since January 1996. More than 540,000 items have been listed for sale since its inception, and there is a variety of merchandise categories from which to choose.

Financial Services

These sites offer customers the ability to access many types of financial services online.

Financial Services	Reach	Shopping Rank	Category Rank
<i>qfn.com</i>	2.4	--	--
<i>dbc.com</i>	1.5	--	--
<i>galt.com</i>	1.4	--	--
<i>quote.com</i>	1.4	--	--
<i>cnnfn.com</i>	1.2	--	--
<i>wsj.com</i>	1.1	--	--
<i>etrade.com</i>	0.7	--	--
<i>secapl.com</i>	0.7	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes.

Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

QFN.COM — Intuit's Quicken Financial Network (QFN) has two objectives: 1) provide a customer service and support area for the 10-million-plus users of its personal finance software (Quicken and TurboTax), and 2) create a leading financial-services aggregation site (or hub) on the Web.

DBC.COM — Data Broadcasting Corp.'s DBC Online site is a provider of real-time market data to the individual investor. Users can get quotes, charts, news, foreign exchange rates, and trade through an online broker such as Charles Schwab, Wall Street Access, or E*Trade.

GALT.COM — NETworth is the Investment section of the Quicken Financial Network, providing individual investors with information on mutual funds or equities, including Morningstar profiles, stock quotes, and graphs. Although use of NETworth is free, the user must register to access certain tools and information. The user can also purchase documents and reports from NETworth. CyberCash is the currency used for shopping on NETworth. NETworth offers book reviews (on retirement planning, for example), with the ability to purchase them from Amazon.com through Amazon's Associates program.

QUOTE.COM — Quote.com provides financial market data to Internet users, including current quotes on stocks, options, commodity futures, mutual funds, and indices, for U.S. and Canadian markets. Quote.com also provides real-time business news, earnings forecasts and reports, market analysis and commentary, fundamental data, annual reports, intra-day and historical charts, weather information, and company profiles. Sources include Reuters, S&P, Zacks, PR Newswire, Business Wire, Nelson's Publications, and Trendvest. In addition to numerous free services, Quote.com offers subscriptions and bundled packages for as little as \$9.95 per month.

CNNFN.COM — This is the Web site of CNNfn, Cable News Network's financial network, with stories on the financial markets and business. The content is free.

WSJ.COM — The interactive edition of the Wall Street Journal, featuring breaking news stories throughout the day, access to Dow Jones News archives, and detailed company information, costs \$49 per year, or \$29 for print subscribers. The Interactive Journal has been one of the most successful subscription-based Web sites to date. Minimal content is available to nonsubscribers.

E*TRADE.COM — E*Trade is a leader in the new wave of online retail brokerage firms, which are leveraging the low transaction costs and high value-added services that the Internet provides in an attempt to grab market share from established players like Merrill Lynch and Charles Schwab. E*Trade offers customers a fast and reliable trading interface through their browser, personalized Web pages, and instantaneous access to market and account information.

SECAPL.COM — This is the informational site of CheckFree Investment Services, which offers portfolio management systems and services to the investment advisory, brokerage, and banking industries. CheckFree Investment Services designs custom solutions with clients, providing investment managers with functionality that is designed to increase productivity.

Travel

These are sites from which users may get travel and flight information and book travel plans.

Travel	Reach	Shopping Rank	Category Rank
travelocity.com	1.7	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes. Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

TRAVELOCITY.COM — A one-stop travel site, Travelocity offers AMR's SABRE schedules for more than 700 airlines, reservations and tickets for more than 370 airlines, and reservations and purchase capability for more than 28,000 hotels and more than 50 car-rental companies. Other features include maps, photos, video, and sound clips of destinations, aircraft configurations, details on restaurants, museums, bed & breakfasts, theater, dance, and music performances, condos, golf courses, hotels, exhibits, shows, and festivals. Users can swap ideas, ask questions, and touch base with fellow travelers on a broad range of travel topics. The site also sells travel merchandise.

Package Delivery

These are sites that provide shipping and logistics information.

Package Delivery	Reach	Shopping Rank	Category Rank
fedex.com	0.5	--	--

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes. Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

FEDEX.COM — Federal Express gained early recognition on the Web for giving customers the ability to track their packages online. FedEx has now expanded upon this with InterNetShip, which allows FedEx customers to arrange shipments online. InterNetShip helps customers create airbills, schedule pickups, and links directly into FedEx's online tracking capability. This online functionality should allow FedEx to more closely integrate with its corporate customers' growing usage of the Web.

Miscellaneous

Miscellaneous	Reach	Shopping Rank	Category Rank
freeride.com	1.7	7	1
register.com	0.5	36	2

Note: Sites in italics are not classified by PC Meter in its Shopping category (as they are not purely "shopping" sites). We have included them in our discussion because, in addition to other purposes these sites may serve, online shopping/commerce is a significant element of the site's activity. Many sites are tracked by PC Meter in other categories, and we have included their measured reach where possible for comparative purposes. Source: PC Meter. PC Meter uses a consumer-based sample and therefore does not directly measure corporate or academic use.

FREERIDE.COM — FreeRide is a service through which users may open an account and, by visiting certain sites, purchasing sponsor products, or answering trivia questions, earn credit toward free Internet access. The amount of credit depends on how many "points" a user generates

through these activities. FreeRide reimburses the user based on the credit in his or her account. Sponsors of the service include national brands, online advertisers, and retailers.

REGISTER.COM — Register operates an online mall that aggregates Web sites from a wide range of vendors. Register also provides web hosting services.

America Online Usage Provides a Good Proxy For Web Shopping— The Top 20 AOL Marketplace Areas Ranked by March 1997 Usage

With its 8-million-plus members, AOL is a clear leader in Internet/online commerce. Of the 364 million hours of usage in calendar 1Q97, AOL users spent 4.9 million hours (1.3%) in the Marketplace area, an increase of 35% from C4Q96. This trend is skewed somewhat, though, since C1Q97 was the first quarter with the full effect of the unlimited usage pricing plan; however, C4Q is seasonally a much stronger quarter for shopping than C1Q, so we think that, all in, this is a fairly positive trend. Interestingly, in terms of March 1997 usage, classifieds was the most popular area, and the top 20 areas (listed below) accounted for 87% of total Marketplace usage.

- 1) Classifieds** — Members can post or search classified listings by product category or geographic location.
- 2) Tower Records** — This online record store features next-day delivery on 1,000 titles, a search engine, *Pulse* magazine, and a gift section.
- 3) @Once Software** — Over 1,000 software titles are available for download or mail-order delivery. Shoppers can join Club atOnce and receive free offers, demos, and discounts.
- 4) AutoVantage** — Members can use CUC's AutoVantage to get free dealer invoice information and car reviews, and can also request a quote on a new car. There is also a used-car classifieds section.
- 5) Gift Valet** — Allows members to shop for birthday, romantic, humorous, new baby, wedding, and corporate gifts. Provides help and tips, as well as a gift reminder.
- 6) Card-O-Matic** — Offers the ability to send electronic cards for all occasions via e-mail attachments.
- 7) AOL Credit Card** — The AOL VISA card offers members a low introductory rate, no annual fee, and the ability to earn free AOL service.
- 8) 1-800-FLOWERS** — You guessed it! Members can also order balloons, sweets, cards, and fruit.

- 9) Magazine Outlet** — Offers substantial savings on subscriptions for hundreds of popular magazines.
- 10) Prime Host** — Provides businesses with a Web hosting service.
- 11) CH Products** — Offers a complete line of PC-compatible joysticks for simulations, games, and education.
- 12) AOL Rewards** — Members can earn discounts on monthly service charges or products by taking member surveys or by purchasing products and services.
- 13) Shoppers Advantage** — CUC's Shoppers Advantage offers members access to over 250,000 brand-name products at significant discounts and guaranteed low prices.
- 14) Sign on a Friend** — Allows members to earn \$20 for signing up a friend as an AOL subscriber.
- 15) Eddie Bauer** — Offers most of the items found in the company's print catalog, including weekly specials.
- 16) JC Penny** — Offers catalog items, specials, and includes a gift registry.
- 17) Starbucks** — No hot beverages, but offers coffee beans, brewing techniques, gifts, and even music.
- 18) Dinner On Us Club** — Another CUC-run membership service, which offers savings at over 19,000 restaurants and discounts on movie tickets.
- 19) Marketplace Web** — An AOL service that provides a tour of 20 different online stores, complete with text to guide the user.
- 20) FreeShop Online** — This is the AOL version of the Web site that allows users to "try before they buy" by scanning free product samples, products with free trial periods, free gifts with purchase, coupons, software demos, and more.

AOL Usage — Another Pass At Where Users Spend Their Time

To provide some depth on the relative importance of shopping for users, AOL subscribers once again provide the best measurable proxy. Table 12-3 shows the breakdown for C1Q97's 364 million usage hours. The data reveal that AOL's content areas occupy about 28% of users' time, which (using AOL's rough estimate of 30 seconds of usage per equivalent Web page view) translates into about 137 million pages server per day. Note that this 30 second per page view estimate is a broad generalization, and varies widely depending on the nature of the area — for some AOL areas (e.g., chat rooms) it can be a little bit of a stretch, but we include it for the sake of comparison and warn the reader not to take our math here too seriously.

The content area is followed by AOL's People Connection (i.e., chat rooms, with 25% of C1Q usage hours), e-mail (21%), and miscellaneous areas (like customer service, for example), with 14%. AOL users spent about 12% of their online time actually on the Web.

In the content areas, C1Q97 usage was broken down as follows: Games saw the most usage (about 19 million hours), with 5.1% of total hours spent in this area alone, which (using our 30 seconds per page view assumption) translates to over 25 million pages per day. The Games area is followed by AOL Programming (with over 11 million hours, 3.1% of usage, and an estimated 15 million pages per day), Personal Finance (10 million hours, 2.9% of usage, for 14 million pages per day), Life, Styles & Interests (9 million hours, 2.4% of usage, and 12 million pages per day), and Today's News (8 million hours, 2.2% of usage, and 10 million pages per day).

Traditional Retailers On the Internet: Where Extant, Largely in a Test Phase

Currently, the presence of traditional retailers on the Internet is minimal. Since most view the five-year growth opportunity presented by Internet retailing, as it pertains to their company, as dwarfed by store-front opportunities, the majority of those with a presence are simply dabbling for now. Many of those that have set up sites use them predominantly as marketing, or investor relations, or help-wanted vehicles. Of the few whose sites have the capability of executing transactions online, the companies are using the sites to test product acceptance via this medium, and

Table 12-3
America Online — C1Q97 Usage by Area

	Usage Hours (MM)	Share of Total Usage	Estimated Page Views Day (MM)*
Total Hours	364	100%	485
Category Breakout			
Content	103	28%	137
People Connection	92	25	123
Mail	76	21	101
Miscellaneous	50	14	66
Internet	43	12	58
Content Breakout			
Games	19	5.1%	25
AOL Programming	11	3.1	15
Personal Finance	10	2.9	14
Life, Styles & Interests	9	2.4	12
Today's News	8	2.2	10
Computers & Software	7	2.0	9
Entertainment	6	1.5	7
Sports	5	1.5	7
Marketplace	5	1.4	7
Kids Only	4	1.0	5
Digital City	3	0.9	4
Reference	3	0.8	4
Travel	3	0.7	4
MusicSpace	3	0.7	3
Health & Fitness	2	0.6	3
International	2	0.5	2
Learning & Culture	2	0.4	2
The Hub	1	0.4	2
Newsstand	1	0.2	1
Style Channel	< 1	0.1	< 1

* Estimated page views per day computed by assuming 30 seconds of usage per page view.
Source: America Online

revenues represent less than 1% of the companies' sales. The aggressiveness with which these retailers have advertised their sites varies from company to company.

Traditional retailers that have moved most quickly in their online efforts tend to be either hardlines retailers or mail-order companies. These companies share in common a customer base that does not feel the need to "pet" the merchandise prior to making a purchase. Among the office products retailers, OfficeMax, BT Office Products, and Boise Office Products currently have sites in the testing phase; of these, OfficeMax is furthest along.

The benefits of developing a franchise on the Internet are most readily apparent in the case of mail-order companies. These companies already have in place the order processing, inventory management, and fulfillment facilities, and have developed "sight unseen" (or rather, un-tried-on) trust for their merchandise. Companies such as J. Crew, Land's

End, L.L. Bean, and Spiegel currently have a presence on the Internet, and are exploring ways of expanding their business through it.

Another group of retailers that we believe will likely ramp their Internet endeavors more aggressively are the gifts merchants. Companies such as Godiva and Zale already have Web sites with full transaction capability and are marketing these sites (in the case of Zale, through its triannual television advertisements).

Finally, retailers focusing on a Generation X or Y customer base, such as American Eagle Outfitters, Abercrombie and Fitch, and The Gap, have also started to develop a presence on the Internet. Each of these companies has a site complete with jazzy graphics. Currently, these sites are used as marketing vehicles, and the companies remain in the early stages of exploring the potential of the Internet. We believe that the demographics of their young customer bases will be more amenable to online commerce.

The following is a list of some traditional retailers who either have initiated a Web retailing strategy and operation or may do so in the future. We have categorized companies according to the degree to which they have pursued Internet retailing to date.

Traditional Retailers With an Active Web Presence

OfficeMax

1996 Revenues: \$3 Billion
No. of Stores: 560

- Most vocal retailer in our coverage universe about opportunities for Internet retailing. Topic was featured prominently in its 1995 annual report and is to be discussed further in the coming 1996 annual.
- Established "OfficeMax Online" in March 1995; currently offers 1,000 items, including office supplies, business machines and supplies, and computers and related peripheral items. To date, sales have been concentrated in the computer accessories and electronic area. Offers next day, second day, and standard ground shipping.
- Customer base is concentrated in major metropolitan areas on the East and West coasts of the U.S. Seeing sig-

nificant number of repeat orders; will not quantify number of customers. Average size of order is significantly greater than the average ticket size in their superstores (low \$40s), but it varies depending on what's selling at any particular time.

- Expects to generate revenues equal to one or two superstores. The average superstore generates \$6–7 million in annual revenues. Expects to see bottom-line benefit in the 1998–99 period.
- Future strategy: OfficeMax Online will be one leg of a four-leg approach to interactive retailing. These are: (1) OfficeMax Online; (2) Corporate Direct, which is OfficeMax's version of contract stationary; (3) off-site kiosks system in bank lobbies, office building lobbies, and so on, which is being done in conjunction with Sun Microsystems; and (4) a CD-ROM catalog, which will provide automatic price refreshment when a customer dials in.

Barnes & Noble

1996 Revenues: \$2.5 Billion
No. of Stores: 441 Superstores, 578 Mall Stores

- The company has a \$23 million per year mail-order book business, and a distribution infrastructure already in place.
- Its Web site and strategy were recently launched, with heavy discounts on all types of books, agenting technology to tailor user recommendations, next-day shipping for over 100,000 titles (potentially growing to 400,000 by year-end), and complete online transaction-processing capabilities.

J.C. Penney

1996 Revenues: \$22 Billion
No. of Stores:

- Online Web site provides various types of information (store locations, investor information, etc.), online catalogs, gift registry information, and special events info.
- Recently introduced "cyber-shopping" service, which allows viewer to order from online catalog (several hundred items) using a credit card. No revenue information available yet.

Saks Holdings

1996 Revenues: \$2 Billion
No. of Stores: 85

- Web site provides informational and marketing and special event data.
- Introduced Saks' "Dream Shop" for 1996 holiday shopping season, which allowed for online purchases. Volume data may be available soon.

Spiegel

1996 Revenues: \$3 Billion

- Spiegel Catalog: \$1 Billion in sales
- 443 Eddie Bauer stores plus EB catalog: \$1.6 billion
- Newport News Catalog: \$291 million

- The most experimental and furthest along in the Internet retailing development path among retailers covered in our universe. Desire to serve online customers mentioned in annual report. Currently operating four sites: 1) Spiegel.com (a color catalog with more than 2,000 items); 2) Spiegeltronics, an electronics merchandise offering (including computers, TVs, etc.); 3) Ultimate Outlet; and 4) Eddie Bauer. Fifth site launch planned for February 1997
- Intimate Apparel. In addition, SPGLA participates in other sites, including Time Warner's "Dream Shop." Fulfillment is identical to a catalog order for the company, which predominantly uses UPS.
- Spiegel will not give details regarding current sales volumes over the Internet other than to say that current levels are not significant. However, the company did indicate that sales did start to build significantly in 4Q96, aided by secured online ordering implemented in mid-1995.
- Management currently views Internet sites as a free research arm, where customers can quickly and easily submit catalog requests and other comments via e-mail.

Zale Corporation

1996 Revenues: \$ 1.1 Billion
No. of Stores: 1,195

- One of the few companies that has the capability to execute transactions online. The company started putting product on its site just after Valentine's Day, and started taking orders on it in late April 1997. Zale is advertising 20-30 key items, and testing price range/product acceptance.
- Company sees a natural fit with Internet retailing.

Lands' End

1996 Revenues: \$ 1.2 Billion
No. of Stores: 0

- Views the Internet as a natural fit with its core business from both a fulfillment and a creative perspective. Sees attracting customers to the site as one of the most significant challenges. The company has advertised its site both in magazines like *Wired* and in "flyers" on Internet search engines.
- The majority of "hits" to date have resulted in inquiries and catalog requests, although actual sales have been made as well.

Armani Exchange (www.armaniexchange.com): Previews the summer collection, contains listing of store locations. Also enables purchase of T-shirt for \$25, by fax or cybercash (under construction). Has quiz show with prizes. News Exchange section contains everything from job opportunities and future store locations to celebrity sightings, and a profile of the GenArt film festival. Biography of Giorgio, including a recipe from his mother and his musical tastes.

Godiva (www.godiva.com): Targeted marketing for Mother's Day. Includes recipes, and a sweepstakes with chocolates and coffee as prizes. There is a purchase mechanism.

Table 12-4

Current State of Internet Presence for Selected Traditional Retailers

Retail Category	Transactional Capability	Information/Recruiting/ Investor Relations	No Presence
Mall-Based Specialty Apparel		<ul style="list-style-type: none"> • Abercrombie & Fitch • American Eagle Outfitters (includes coupons) • Claire's Stores • Gadzooks • The Gap • Paul Harris Stores • Talbots (can order catalog) 	<ul style="list-style-type: none"> • AnnTaylor (has re-served page) • Gymboree (under construction) • Intimate Brands • The Limited
Strip Center/Off- Price Specialty Apparel		<ul style="list-style-type: none"> • Ross Stores 	<ul style="list-style-type: none"> • SteinMart • TJX Companies
Department Store/Mass Merchants	<ul style="list-style-type: none"> • J.C. Penney • Saks Holdings (seasonal) 	<ul style="list-style-type: none"> • Dillard Dept. Stores (can order gift certificates, but they telephone you to get credit card information) • Federated Dept. Stores • May Dept. Stores • Mercantile Stores • Neiman Marcus • Nordstrom • Sears, Roebuck & Co. 	<ul style="list-style-type: none"> • Kohl's
Footwear Retailers		<ul style="list-style-type: none"> • Finish Line • Just For Feet • Nine West (recruiting ad, no home page) • Payless ShoeSource (includes coupon) 	<ul style="list-style-type: none"> • Footstar • Woolworth Corp.
Discount Stores	<ul style="list-style-type: none"> • Price/Costco • Wal-Mart 	<ul style="list-style-type: none"> • Consolidated Stores • Dayton Hudson (able to order Frango chocolates on line) • Family Dollar (includes coupons) • Fred Meyer • Kmart 	<ul style="list-style-type: none"> • Dollar General • Dollar Tree Stores • ShopKo
Direct Marketers	<ul style="list-style-type: none"> • CUC International • Damark • Insight Enterprises • Lands' End • Lillian Vernon • Spiegel • Viking Office Products 	<ul style="list-style-type: none"> • Fingerhut 	<ul style="list-style-type: none"> • Global Directmail
Hardlines	<ul style="list-style-type: none"> • Boise Cascade Office Products • BT Office Products • Corporate Express • Egghead • The Good Guys! (although must order by phone) • OfficeMax 	<ul style="list-style-type: none"> • Autozone • Circuit City • Ethan Allen • Heilig-Meyers • Home Depot • Lowe's Companies • Pep Boys • Tandy Corp (but plans to expand to online ordering) 	<ul style="list-style-type: none"> • Eagle Hardware • Office Depot • US Office Products
Niche Retailers	<ul style="list-style-type: none"> • Barnes & Noble • Books-a-Million • Godiva Chocolates • Zale Corporation 	<ul style="list-style-type: none"> • Bombay Company (can order catalog on-line) • Borders Group (developing online ordering) • Duty Free International • Pier 1 Imports • The Sports Authority (subscription to mailing list) • Toys 'R' Us 	<ul style="list-style-type: none"> • Cost Plus • General Nutrition • Hot Topic • Tiffany

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Chapter 13: Internet Commerce Security

Summary

- ◆ To date, **the success of electronic commerce conducted over the Internet has been limited by several factors, including:** 1) **few compelling consumer products;** 2) **a lack of consumer bandwidth** required to advertise and market products and services in the most effective manner possible; 3) **a limited audience;** 4) **insufficient benefit for existing transaction service companies** (such as Visa, Mastercard, or American Express), resulting in their reluctance to market and endorse the concept; 5) **a dearth of time-proven, brand-name security technologies** available to enable secure transactions, and 6) the fact that routing sensitive data over a public network, such as the Internet, has raised **privacy and piracy** issues that did not exist before.
 - ◆ We expect that **over the next several years, security technologies will come to market and profoundly affect the business models of retailers, wholesalers, and existing transaction service providers.** One such security technology is the **SET** (secure electronic transaction) protocol.
 - ◆ We believe that **the business need for reliable security technologies will**, despite some likely bumps and bruises on the way, **drive the adoption of security standards and protocols.** According to the Yankee Group, the market for integrated network security, secure electronic commerce, and remote access and firewall markets will grow from \$1 billion in 1996 to \$5 billion in 2000. Secure electronic commerce alone is expected to grow from about \$270 million in 1996 to \$1 billion in 2000.
 - ◆ In this chapter, we assert that **electronic Internet commerce is not as risky as one would be led to believe from reading much of the industry press**—we believe that **Internet commerce security's "bark" is much worse than its bite.** Like automatic teller machines (ATMs), which initially were deemed unacceptable by some users, we believe that the Internet, over time, will become very broadly used.
 - ◆ We think that **overcoming the psychological barriers toward Internet security could be more difficult than overcoming the technical challenges.** For all of the concerns that have been expressed about potential security breaches and online fraud, it is striking to us that, to date, there has been no real barrage of front-page stories detailing the horrors of little old ladies from Pasadena losing their savings to some type of online hoax or group of hackers. Still, it clearly will take time to ease the collective public consciousness about Internet security and for people to feel comfortable about making payments and purchasing items online.
 - ◆ We divide the Internet commerce security industry into several distinct pieces: **software vendors** (Security Dynamics/RSA, Netscape, Microsoft, Open Market, Connect, Broadvision); **transaction service companies** (Cybercash, First Virtual, DigiCash, Hewlett-Packard/Verifone, Mondex); **traditional financial services organizations** (MasterCard, Visa, American Express); **companies developing smart card and related technology** (Gemplus, Security Dynamics/RSA, Motorola, Certicom); and **certificate authorization services** (VeriSign, CertCo, GTE/Cybertrust, U.S. Postal Service).
-

Internet Security Is Coming

To date, **the success of electronic commerce conducted over the Internet has been limited by several factors, including:** 1) **few compelling consumer products;** 2) **a lack of consumer bandwidth**, required to advertise and

market products and services in the most effective manner possible; 3) **a limited audience;** 4) **an insufficient benefit for existing transaction service companies**, resulting in their reluctance to market and endorse the concept; 5) **a dearth of time-proven, brand-name security technolo-**

gies available to enable secure transactions, and 6) the fact that routing sensitive data over a public network, such as the Internet, has raised **privacy and piracy** issues that did not exist before.

Over the next several years, we expect security technologies to come to market that should profoundly affect the business models of retailers, wholesalers, and existing transaction service providers. Security protocols such as SET (the secure electronic transaction protocol) should effect a change in the balance of power between Web-based vendors and purchasers (giving more power to the consumer), and create more equality between all parties involved in an electronic transaction (plus adding one more, a certificate authority, or CA). Smart cards (which are credit cards with the ability to store cash value or information about the cardholder's identify, and may perhaps be enabled with cryptographic processing capabilities) and related technologies could also redefine the manner in which consumers collect, carry, and spend cash, both on and off the Web. We expect banks to be strong advocates of the adoption of protocols, such as SET and other electronic commerce systems, as a means of reducing their cost of service.

Market Sizes

The market potential for electronic Internet commerce security products and services is significant.

According to the Yankee Group, the market for integrated network security, secure electronic commerce, and remote access and firewall markets will grow from \$1 billion in 1996 to \$5 billion in 2000. Secure electronic commerce alone is estimated to grow from about \$270 million in 1996 to \$1 billion in 2000.

Certificate management server sales, Dataquest projects, will grow from about \$18 million in 1996 to \$288 million in 2000, based on 1996 unit sales of 13,750 and a projected 49,320 servers in 2000. Many of these servers would be sold to certificate authorities (discussed later in this report) or to organizations that interact with them.

Value-added commerce services are seen growing from \$0.01 billion in 1996 to \$1.52 billion in 2000, according to Forrester Research.

The Building Blocks Are in Place

Our simple observation is that **the underlying technology for enabling secure electronic transactions exists, but has not been developed, exploited, and marketed to the extent required to reach the “critical mass” needed for widespread adoption.** However, we firmly believe that it will take place in the next year or year-and-a-half — the benefit for both the companies that can bring this change about and the consumers who will be able to access a wider range of goods and services at improved prices and with better service is too great, in our view. Frankly, the market for creating these new products and services looks explosive, to us, as long as the right players line up with the right marketing strategy and really sell it into the right audience. The result, we believe, could be a multi-billion market early in the next century for Internet commerce security-related technology. Unfortunately, from an investment perspective, quality pure-play investments in the Internet commerce space are currently far and few between.

In short, we expect electronic Internet commerce to work better than it does today, since all of the building blocks are already in place. We expect a diverse list of companies to enable electronic Internet commerce, although it will first take some time for the following to occur:

- *Vendors need to develop mature software.* These vendors could include Security Dynamics/RSA, IBM, Certicom, Netscape, Microsoft, Open Market, Connect, and Broadvision.
- *Transaction service companies must develop an infrastructure.* These include Cybercash, First Virtual, DigiCash, Hewlett-Packard/Verifone, and Mondex.
- *Organizations need to market the concept.* These would include MasterCard, Visa, American Express, Citibank, Wells Fargo, and other large banks.
- *Companies must develop sophisticated smart card and related technology* — companies like Gemplus, Motorola, Certicom, and Security Dynamics/RSA.
- *Finally, certificate authorization services will need to act as third parties in future transactions* — these include VeriSign, CertCo, GTE/Cybertrust, and the U.S. Postal Service. *And certificate authorization products must mature.* This includes Entrust, IBM, Security Dynamics/RSA.

Demand for Internet Transaction, Commerce Security

The demand for secure Internet transactions, besides those beyond the simple transmission of currency, is increased by the requirements for the following:

- Banks and financial institution transaction security, besides currency transfer;
- Electronic billing and records;
- Home healthcare, with the Internet as the communications network; and
- EDI over the Internet (TRW and General Electric are good examples).

Psychology May Prove More of a Barrier Than Technology

An impediment to the use of state-of-the-art security technology may turn out to be government laws. Two types are particularly relevant to Internet commerce. First, Federal export laws regarding the exportation of encryption technology seem to typify a case where old-time government laws could diminish U.S.-based companies' competitiveness. Second, credit card number theft liability laws, governed mainly on a statewide basis, currently limit users whose cards have been compromised and used without their permission to \$50. Some states, including California, Massachusetts, and Utah, have adopted modified versions of this law for Internet use, but the Internet is much bigger than these states. Given the complexity of these issues and the various laws being proposed, we can only scratch the surface of this subject in a report of this size. :-)

Educating the Consumer:

Perception versus Reality and Market Evolution

The media often report that it is unsafe to conduct electronic Internet commerce, suggesting that unscrambled credit card information may be obtained by hackers while being transmitted across the public Internet. In mid-May, for example, a hacker was found to have obtained thousands of credit card numbers via the Internet. Some journalists have countered that with a discussion of how encrypted credit card data solves the problem. We agree that encryption does reduce the risk of transmitting credit card data, although that electronic Internet commerce is some-

what riskier than person-to-person transactions, due to several factors:

- the more *anonymous* nature of the transaction — the merchant and consumer are not in the same place;
- the capability of enabling *asynchronous purchasing*, where both parties transact at different times, as opposed to being involved in the transaction simultaneously;
- the possibility of a merchant's *site being hacked*;
- the possibility of *fictitious merchant sites* being established; and
- the threat of someone stealing credit card numbers from a merchant's site and *manufacturing bogus credit cards*.

While transmitting credit card information remains an issue, generally, the same risks exist as when conducting credit card transactions using regular person-to-person methods. Analogies between today's ways of stealing and using credit card numbers, and the methods employed to steal and use credit card numbers via the electronic Internet commerce, can be found in many instances, posing what we believe are far greater risks than those discussed in the popular press.

Currently, vendors on the Internet have adapted the existing credit card processing systems, such as Verifone's, to work with their commerce servers (as well as some proprietary online transaction systems like Cybercash). With the

Amazon.com: Why It Is Safe to Order With a Credit Card

(Reprinted with permission from Amazon.com.)

"We use Netscape's Secure Commerce Server Technology, which encrypts your order information, keeping it private and protected. You can enter your credit card number directly onto our order form and feel secure."

"We also give you the option of phoning or faxing us with your credit card number. If you choose to give us your card number by phone or fax, you can do so after you complete the online form."

(Note: Refer to discussion below on SSL technology, which Amazon uses.)

same underlying transaction infrastructure, making these transactions over the same system results in a similar risk profile, and there's the added factor of anonymity. Adapting the "old method" of transaction processing, that is, the credit-card-swipe infrastructure, to allow "immature electronic Internet commerce" or "credit card over Net" transactions, would also expose the Internet to the same types of attacks that the old method was susceptible to.

For instance, under the "old method," a waitress could use a holder's credit card to conduct a personal transaction while she is in possession of the card when the holder pays for dinner. In the credit card over Net approach, an analogous type of abuse would be so-called "social engineering," where, for example, someone poses as a technical support person working for an online service. The social engineer, using a chat dialogue box (such as AOL's "Instant Message" or iCHAT), could contact a consumer while online, identify himself as a technical support person, claim that there are problems in completing a transaction, and ask the consumer for his or her credit card number so that information can be verified. The social engineer would then make a personal transaction using the information. To defend against this type of attack, a Web site could use one of the several proprietary Internet-based commerce transaction services, like Cybercash or First Virtual.

With proprietary Internet commerce transaction services, which use one-factor authentication (a password only), the good news is that no credit card information is passed; the bad news is that the use of one of these services requires that the transaction-service provider gets paid. We expect that over time, as the technology becomes available, SET-protocol-based (or similar) technologies or smart-card-based approaches will capture market share from the proprietary networks. Fundamentally, the existing transaction processing and credit card authorization companies are backing the SET protocol and other non-proprietary approaches. In fact, our expectation is that, with their support, and with the advantages of these newer, more secure approaches to conducting transactions, there will be significant market share gains by SET-based and smart-card-based systems.

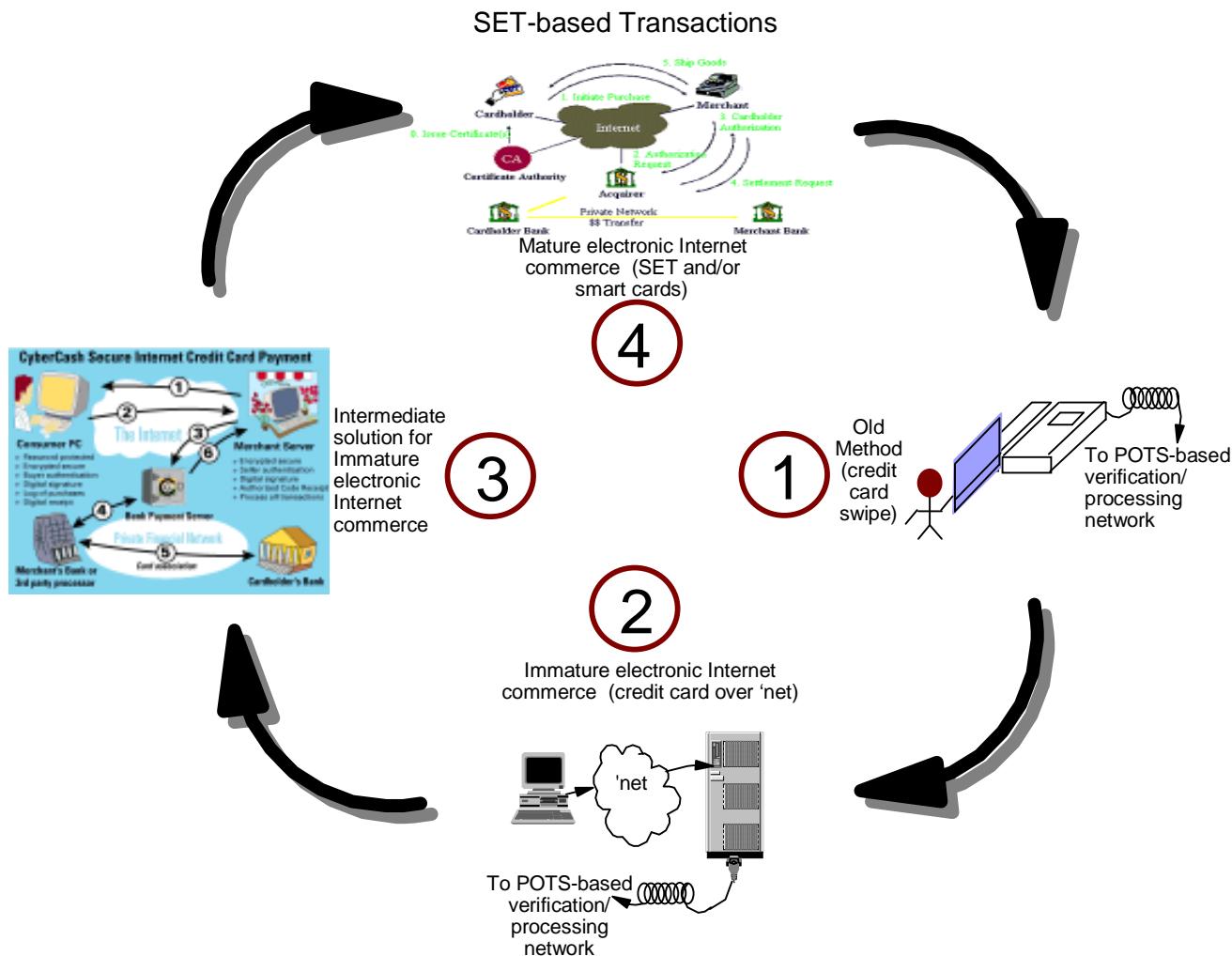
Table 13-1 offers several other analogies between the old method and the mature electronic Internet commerce method, the intermediate solutions (technical fixes) for immature electronic Internet commerce methods, and how we expect the market to evolve. Figure 13-1 depicts the four phases in which we estimate the old methods will evolve into the newer methods of conducting electronic Internet commerce.

Table 13-1
Security Risks and Solutions for Internet Commerce Systems

(1) Old Method (credit card swipe)	(2) Immature Internet commerce (credit card over Net)	(3) Intermediate solution for immature Internet commerce	(4) Mature Internet commerce (SET or smart cards)
Card info could get intercepted by wiretapping the Verifone or equivalent cardswipe	Message could get intercepted while traveling over the Net	SSL: encrypt data being sent	SSL or similar session encryption
Stealing credit card carbons from garbage or waitress using card while customer is paying for dinner	"Social engineering" (posing as tech support) or trickery	Cybercash or other proprietary Internet-based commerce transaction service	SET protocol: no one party has enough information to conduct an entire transaction
Stealing records from a file room.	Server storage	Firewalling, filtering, encrypting stored data, guarding servers	SET protocol: no one party has enough information to conduct an entire transaction
Stealing multiple file sets, matching SSNs, mothers maiden names, and posing as actual user	Acquiring all digital information necessary to pose as actual user	Cybercash or other proprietary Internet-based commerce transaction service	SET protocol: no one party has enough information to conduct an entire transaction

Source: Morgan Stanley research. Note: It is fair to point out that biometric security (retinal scanning, fingerprint ID, voice ID) could represent an even more mature means of authentication than the "Mature Electronic Commerce" solutions we have identified above.

Figure 13-1

The Evolution of Internet Commerce

Sources: Morgan Stanley Research (1 and 2), CyberCash (3), and RSA Data Security (4).

A Quick Primer on Internet Payment Methods

OK, so you want to buy something online. How do you pay for it? Here are a few ways.

Credit Cards

Credit cards currently lead the pack in Internet payment methods. Jupiter data indicate that about 90% of 1996 online purchases were made with a credit card (both in terms of dollar amount and number of transactions). While there does appear to be substantial public concern about the security of using credit cards online, consumers seem prone to use a payment method they are familiar with. The AT&T Universal Card even provides its cardholders with a program called "Internet Fraud Protection," which promises that cardholders will not be held liable for unauthorized transactions made if their account number is compromised on the Net. The AT&T program is an innovative way to raise customer awareness and go after some market share, since we suspect that few issuers hold cardholders liable for unacknowledged transactions, whether online or offline.

Looking ahead, competition should heat up between credit cards and other online payment methods. While credit cards should continue to hold a good share for larger size transactions, the lower transaction costs of alternative methods will probably give them an edge for lower priced transactions. We think a key issue for credit card companies going forward will be whether they can sustain their transaction premiums in a more competitive electronic payment environment.

Smart Cards

While smart cards have been slow to gain momentum in the U.S., they hold a substantial incremental advantage over existing payment methods — the two-way nature of the card. Users can electronically increase or decrease (i.e., credit or debit) the value of their smart card. While this is a definite benefit, there are a number of competitive disadvantages,

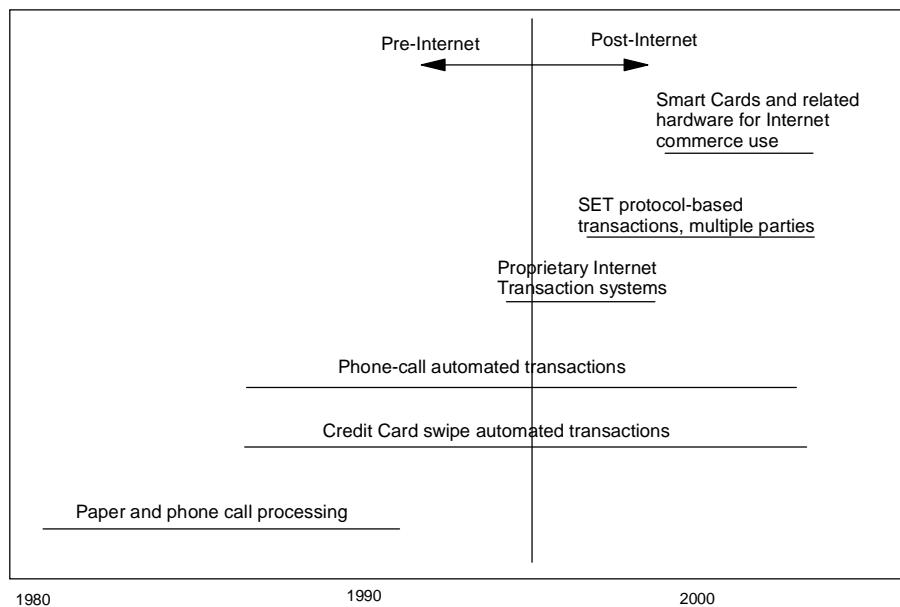
starting with the need for hardware devices that can read and imprint information on such cards. The proliferation of these devices will not happen overnight, though they are already included in all models of WebTV (recently acquired by Microsoft); Hewlett-Packard's recent acquisition of Verifone should also facilitate this seeding of the marketplace. The two-way nature of the card, coupled with the hardware, effectively brings an ATM machine right into the home. Credit cards should remain competitive, however, as they have the advantage of effectively providing consumers with a free month-long loan (every month), and the transaction cost is currently transparent to consumers (except at a few gas stations, maybe).

Electronic Cash

While electronic cash, or "e-cash," has quickly captured the interest of banks, merchants, and consumers, it remains elusive. E-cash is still in the development phase, and the differing standards, low merchant penetration, and slow consumer education are still holding it back. However, the basic design of e-cash should provide much lower transaction costs, enabling it to handle "micropayments" of under \$10 or so, a range where credit card costs to merchants impede their use.

Here's a summary of how e-cash works: currency is downloaded (or withdrawn) from a user's bank account and stored on the user's hard drive as encrypted digital information, with each unit getting a unique serial number to prevent duplication of currency or counterfeiting. When the user goes to pay for something, the digital currency is sent to the merchant, which passes it on to the bank for validation. Because the currency is encrypted, the bank can ensure that the currency is the same money that it issued earlier, and that the currency has not been duplicated. E-cash can also be structured so that payments can be made anonymously, solving a major privacy concern on the Internet.

Figure 13-2

Evolution of Security Technology and Protocols Usage for Electronic Internet Commerce

Source: Morgan Stanley Research

Overview of Security Technology Used in Electronic Internet Commerce

Public key cryptography, which enables the scrambling and descrambling of information on demand between intended parties without explicitly pre-defining that relationship, has been in existence since the mid-1970s. Basically, cryptography is the application of complex mathematics, expressed in the form of algorithms, in the coding of information. Currently, one fairly well-known company, Security Dynamics, the developer of the RSA algorithm, licenses a software toolkit that incorporates a public key cryptographic software development toolkit. Government-sanctioned and publicly available algorithms are also available, such as DES (data encryption standard), FIPS 46-2, and ANSI X3.92.

In public key cryptography, a pair of “keys” are required to encrypt or decrypt information. A key is a binary number generated by a computer in a step called key generation. Typically, individuals hold a private key and store a public key in a public place. To encrypt information using public key cryptography, the recipient must be known. The sender encrypts the data during the encryption process, which requires a key pair consisting of the recipient’s public key and the sender’s private key.

Once the recipient gets the encrypted data, he or she uses the sender’s public key and his or her own private key to decrypt the data. If the data are intercepted while encrypted, attempts can be made to compromise the encryption (break the code). To make encrypted data more secure in the event it is intercepted during transmission, longer key lengths may be used. Greater key sizes equate to a higher degree of security but require more processing time on fixed computing resources to encrypt and decrypt.

Looked at another way, factoring in that multiple computing resources of various capabilities may be used simultaneously to crack encrypted code, a common way to evaluate bit sizes is in the “cost to crack” encrypted data. Some vendors are attempting to influence legislators that bit key regulations should be written to account for Moore’s Law, adjusting the allowable bit key use to reflect a constant “cost to crack” effort.

As we discuss later in this report, certain key lengths are not allowed to be exported from the U.S. Key lengths of 40 bits and, with special permission, 56 bits can be exported when used with symmetric (session key) encryption, while 512 bit and 768 bit keys are allowed for export when used with asymmetric (public key) encryption.

As noted, keys are issued in pairs. With asymmetric encryption, one of the keys is stored electronically in a public place, such as a public Web server intended for key distribution. Public keys are unique to each user, but each is stored publicly so that others may retrieve the key for later use. Public key encryption technology generally enables two critical functions in Internet commerce: encryption and digital signatures (used for authentication). For encryption, the sender of information retrieves the public key and scrambles, or encrypts, the information to be sent through the use of an encryption program, which combines the recipient's public key, the sender's private key, and the information. The recipient, who holds his own electronically stored private key, then decrypts the information.

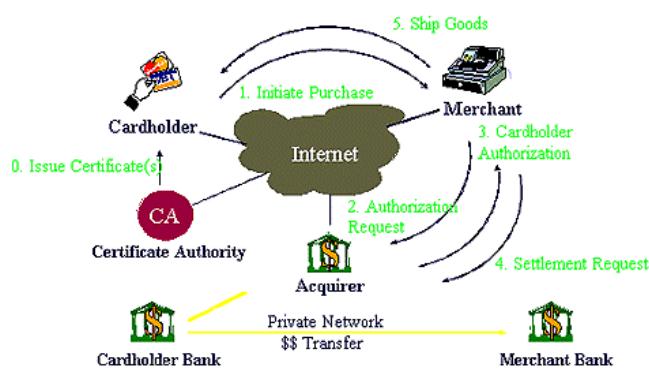
When used for digital signatures, or for authentication purposes, the sender's private key is sent using a symmetrical session. Symmetric key encryption is used for sending data in which both keys are private. Generally, the encryption/decryption process is faster, but it is difficult to transmit the private key to the other party without it being compromised. Therefore, asymmetric encryption is frequently used to send the symmetric key to the other party. The recipient would then use the public key to decrypt and verify that the sender is for real.

To summarize, public key and symmetric key cryptography enable the following:

- Multiple parties on the Internet can verify the identity of a user's key, then issue a certificate that verifies the

Figure 13-3

Typical Flow of SET Protocol Messages Through a SET Transaction



Source: RSA Data Security

authenticity of the user (using a CA).

- A secure (indecipherable) channel can be established from one Internet location to another (via SSL, SHTTP, PPTP, or others).
- Cash value can be passed or stored in a non-tamperable manner (via Cybercash transaction or smart debit cards).
- Multiple parties can share in the completion of a transaction, without any one having enough information to conduct the transaction separately (using the SET protocol).

Public key (or asymmetric) encryption technology is the underpinning for many online security products and services. These include SET (secure electronic transaction), SSL (secure-sockets layer, which is a security protocol that's also used in symmetric encryption), smart cards for positive identification, and certification authority services.

Public key cryptography, using multiple public keys and multiple private keys, can be used to create a "circle of trust" transaction, wherein more than one party's keys are required for a transaction. It is this type of required relationship that the SET (secure electronic transactions) protocol depends upon, as any commerce transaction would include the consumer, the merchant, the bank, and a certificate authority. Except for the cardholder, under SET none of the other three parties has all the information necessary to complete a transaction.

SDI and others are making software development toolkits that incorporate many of these complex cryptographic algorithms into usable software libraries, which are then used by "higher level" software developers, such as Microsoft and Netscape, to make server applications. One of the most useful toolkits, one used for electronic Internet commerce, is SDI's S/PAY toolkit, which enables the SET protocol. It began shipping on May 6, 1997.

We believe the most important standards for rapid deployment of electronic Internet commerce are SET, public key infrastructure products and services, and effective encryption. We expect that SET, which was publicly demonstrated for the first time in December 1996 by IBM (see the new MasterCard Web site at mastercard.com) and again in January 1997 at the RSA Data Security Conference in San Francisco, may be in relatively wide use by the end of 1997, as it appears that the standards will be completed in June 1997.

An interim step in enabling Internet commerce is the use of SSL (secure sockets layer) to transmit credit card information. This is an intermediate solution, a technical fix, which is somewhat less sophisticated than the use of SET. Although SET enables more secure communications, SSL is being used today to send credit card information across the Internet securely.

The SSL protocol, found in most Internet browsers, such as Netscape's and Microsoft's, enables server authentication (thwarting impostors), privacy using encryption (thwarting eavesdroppers), and data integrity (thwarting vandals). When the SSL protocol is in use, browsers usually indicate this by beginning the Web address (the URL) with "https://", rather than the usual "http://". This indicates a secure channel has been established between the server and the browser, in which case credit card information may be entered into a Web-based form and be transmitted securely over the Internet using symmetric key encryption.

Other secure channel protocols, such as Microsoft's PPTP (point-to-point tunneling protocol), Cisco's L2F (Layer 2 Forwarding), or the proposed combination of PPTP and L2F called L2TP, have the capability of transmitting encrypted data across a network that is encrypted. The protocols involve the setup of the encrypted transmission, called a tunnel.

Commerce-Enabling Software

Web servers that enable cataloguing and transaction processing are available from several vendors, and each, to varying degrees, incorporates security technology intended for conducting electronic Internet commerce. Some are high-end, some are low-end, and some are intended for installation at different end-user locations; fundamentally, all are similar in that once a request is made of the server, it acts as an agent/broker programmed to gather information about the transaction. It then conducts the transaction, and passes on back-office-related details (which product was bought, how much money was transferred, and so forth) to a legacy or new system that deals with these details. Some servers are tailored to work as storefronts, such as Netscape's Merchant Server, while some are designed to work as money transfer systems for banks and large corporate entities (such as Open Market's).

As mentioned, we expect the underlying technologies used in commerce servers to eventually include the SET protocol. Our observation is that the relative immaturity in

security technology and lack of standards could be slowing software development for these commerce servers, and, we believe, have led to limited integration of security features into servers, browsers, and other necessary systems. For example, it is not clear what bit key length the U.S. government will allow for export outside the U.S. We expect that 1997 will go down as the year of security experimentation, and that in 1998, the prior year's experimentation will result in standards that will enable significant growth in consumer commerce on the Internet. A SET standard has to be established (we expect one by mid-1997) and demonstrated to ANSI (we expect that during 1997) for monitoring of compliance. Currently, the SET standard is being called X9A10.

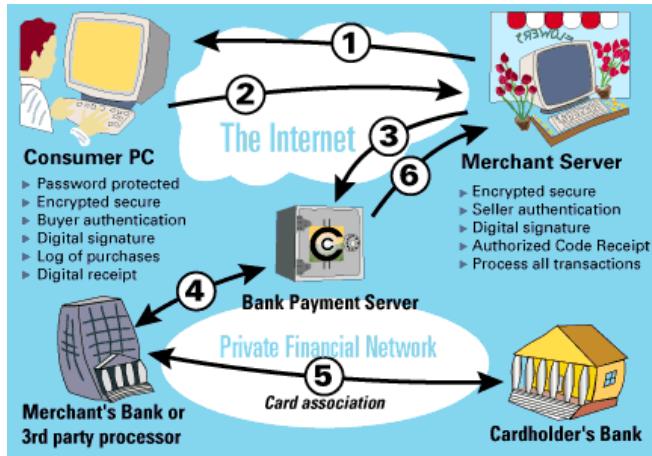
Certificate Authorities (CAs) As a necessary precedent to completion of a SET protocol transaction, an Internet-based third party must authenticate or verify the existence of each of the parties involved in the transaction. This system injects some "real life" checks and balances. That is, when conducting a transaction in person, a cashier would ask for an ID, perform some other tasks, such as checking a booklet for stolen card numbers, and then phone in the transaction details or swipe the card through a credit card transaction box connected to a service such as Verifone's.

It is the "checking for ID" part that CAs perform, although in real life that is not an essential part of the transaction (actually, with SET, it is the account number of a user that is bound to a public key). Using the SET transaction, once the infrastructure is in place, the existence of a CA is a necessary step in the transaction. It couldn't be done without one.

Although SET standards are not quite complete, we believe it is very important to ensure that no single party has a complete set of all information necessary to complete a transaction. And that's why CAs will be necessary. In addition, multiple secure channels are likely to be necessary, which SET cannot accomplish but which CAs may have to address. For instance, secure, verifiable e-mail confirmations from the merchant to the buyer are one potential necessity.

Eight publicly available certificate authorities are in the early stages of availability on the Internet: Verisign, GTE/Cybertrust, Certco, IBM, AT&T, the U.S. Postal Service, Northern Telecom, and BBN.

Figure 13-4

Cybercash: Secure Internet Credit Card Payment

1. The consumer has shopped the merchant's site and decided on a purchase, where it will be shipped, etc. The merchant server returns a summary of the item, the price, the transaction ID, etc., to the consumer.
2. The consumer clicks on the "pay" button (launching the CyberCash, Checkfree, or Compuserve wallet), chooses which credit card in the wallet to pay with, and clicks OK, which forwards the order and encrypted payment information to the merchant.
3. The merchant receives the packet, strips off the order, and forwards the encrypted payment information digitally signed and encrypted with his private key to the CyberCash server. The merchant cannot see the consumer's credit card information.
4. CyberCash server receives the packet, takes the transaction behind its firewall and off the Internet, unwraps the data, reformats the transaction, and forwards it to the merchant's bank over dedicated lines.
5. The merchant's bank then forwards the authorization request to the issuing bank via the card associations or directly to American Express or Discover in those cases. The approval or denial code is sent back to CyberCash.
6. CyberCash returns the approval or denial code to the merchant, who passes it on to the consumer. Going from Step 1 to Step 6 takes approximately 15–20 seconds.

Source: *Cybercash*

Smart Cards and Related Accessories The use of smart cards in Internet commerce may be a ways off, but recent transactions such as Hewlett-Packard's acquisition of Verifone indicate that the market for hardware-based electronic commerce could accelerate.

Hardware-based storage of cash value, and of private keys, is superior in many ways to software-based storage on a computer disk. Proponents of hardware-based commerce products argue that software-based products may be more

flexible in their use but are vulnerable to outside attacks from viruses. Smart cards, popularized in Europe, with hundreds of millions of cards manufactured to date, are a reality today. However, they are not currently used for Internet transactions, where, we would argue, they are most needed.

We expect new generations of hardware-based smart cards to be popularized in 1998 — coinciding roughly with when we expect more smart card readers to become available on consumer's PCs. These could add perhaps \$100 to the cost of a PC. Currently, external readers are available from Fischer International for about \$60, PCMCIA readers are available from Schlumberger, Motorola, and Gemplus for \$100, and serial stand-alone readers are available from American Magnetics and Gemplus for about \$80. Smart cards already are used regularly for many non-Internet commerce applications, such as phone cards.

Transaction Services While existing transaction services and marketing organizations are attempting to branch out into the Internet, new companies have been formed to meet that challenge head on. Cybercash, First Virtual, and DigiCash are examples of new, proprietary networks that enable Internet-based transactions (Figure 13-4 shows the Cybercash system). In addition, Verifone's EIT division has the ability to conduct Internet commerce transaction processing as well.

Still, existing methods of processing transactions can be modified to enable Internet-based transactions. For example, merchants can make telephone call backs to consumers in response to e-mail or Web form requests, which is a simple modification to an existing system. Another example is using credit cards on the Net, where payments for goods purchased via the Internet require sending credit card information from a browser to a server. Most such systems send this information over a secure sockets layer (SSL) session.

Regulatory Issues

Currently, a lack of security technology standards and a lack of government consensus on the use of encryption technology are creating significant roadblocks to the cultivation of consumer and business confidence in using the public Internet for conducting commerce.

Regulatory constraints over the use and export of so-called strong encryption are likely to create a dampening of the

market. We believe that 40- and 56-bit encryption exportation limits imposed by the U.S. Government have, in effect, limited browser-to-server privacy. The story is complex, and it is not over, with multiple bills being debated in Congress, presidential mandates in the works, recent changes in U.S. federal departmental authority (a shift from

the State Department to the Commerce Department), and concerns being voiced in cross-governmental organizations and outside of the U.S. In any case, the outlook for less restrictive encryption standards is unclear, and just too difficult to forecast at this point.

Internex's New Secure Commerce System: Transparently Trading a Digital Key for an Online Payment

Given the early stage of Internet commerce, we find it strange how simple and intuitive some products and services seem once implemented. These are the type of products where people say to themselves, "Gee, I could have thought of that."

One such service is from Internex, a high-end ISP in Santa Clara, Calif., which recently began providing a credit-card transaction service that trades a digital key for an online payment, while remaining transparent to the end-user. While it might sound complex, this transaction processing service can enable hundreds of practical electronic commerce transactions by leveraging many existing security technologies. Very briefly, the system is used to unlock encrypted digital information, such as photographic images, software, text, music, or video in exchange for an on-line payment: Internex acts as broker or clearinghouse for the buyer, seller, and credit card processor.

Internex has several commercial customers using the service, including a well-established software company that distributes its programs on CDs, a photographic company which distributes low-resolution versions of images, and a software distributor. This service has a great deal of practical application, in our view, and we are impressed with how well thought-out it is. Most of the complexity of this commerce system is hidden in two places: the application software that enables the content creator to encrypt digital information, and the server system built by Internex. The ISP generates revenue for each transaction, and we understand that the software is free for the user of the service. We spent time with the people at Internex responsible for developing, operating, and architecting the system. The following is a description of how it works:

The End-User Experience The end-user sees none of the complexity of the underlying system. For example, when a consumer purchases a software game through the service, he or she simply has to push a "Buy It" button, enter a credit card number, and, seconds later, the game is automatically enabled.

Behind the Scenes To be more specific, the user would first download the desired game from a Web site or insert a CD from a vendor. Next, the game would be installed. Importantly, the game would initially have limited capabilities (in geek-speak, this is known as cripple-ware), meaning it wouldn't have all the levels or features activated, or the application wouldn't be able to print. Third, if users want to enable the rest of the program, they would click on the "Buy It" button in the software, activating the payment procedure.

Fourth, a new application would begin that would ask for credit card information, mailing address if necessary, and other information. Fifth, after the software checks to see if an Internet connection is active (it would prompt the user to initiate a connection otherwise), it would contact the server located at Internex. After credit card information is securely transmitted from the software to the server, the server, using the Cybershield system, would contact the credit card company to see whether the end-user is capable of paying the bill. Sixth, after getting verification from the credit card system that the user is capable of paying, the server would transmit the key to the game, initiate the decryption process, and enable the full version of the game.

Seventh, the software would detect that the full version of the game had been properly installed, and would transmit a digital certificate to the server to serve as proof that the game had been received by the customer and properly installed. The transmission of the digital certificate would initiate a final server request to the credit card company, via Cybershield, that would record the product sale. Eighth, and finally, the user could use the full-version of the game.

A similar process could be used for a consumer who wants to purchase music or video over the Internet. Sample music or video clips could be sent, with the remaining available only after payment.

How the Digital Information Is Packaged Internex customized its software based on an application made by Portland Software, which in effect creates an encrypted wrapper

around the digital content. The wrapping process is pretty straight-forward, and is written for use by the original digital content maker. This saves Internex from doling out the resources to encrypt the content, and allows the developer to have autonomy over how the information would be stored. First, after setting up an account with Internex, using the software developer example again, the merchant would create a cripple-ware version of the software and a full-version. Second, the wrapper application would ask whether the full version would be included with the cripple-ware, or whether the end-user would have to download it separately over the Internet should he or she decide he wants it.

Third, the wrapper software would then ask for the file locations of both versions of the software, or, alternatively, just the cripple-ware. Fourth, various information would be entered that is specific to the vendor, and includes options to ask the end-user to fill out a questionnaire. Fifth, the wrapper software, after walking the user through these steps, would automatically create a distributable version of the encrypted software, which would then be posted on the vendor's Web site or distributed by CD.

Internex's Involvement Internex has built a server complex based on Oracle databases, Sun workstations, Cisco routers and switches, and its own in-house-developed transaction system. This system resides on the Internet, and acts as a clearinghouse for multiple vendors. It keeps a real-time log of items sold, questionnaire results, and such. The ISP gets paid a small fee for each transaction.

Internex is developing an extranet concept, where it would allow the digital content vendors — its customers — to syn-

chronize their Oracle databases with its own, thereby allowing each to exchange real-time sales data, and, again, other information. Currently, the way this information is accessible by the content vendor is by going to a secure Web server run by Internex, which displays the information in HTML format.

Types of Security Used There are many uses of security technology in this practical application. First, asymmetric key technology is used to encrypt and decrypt the high-quality or full-version digital content (i.e., the product). This technology was enabled using the RSA toolkit in the Portland Software application. Second, an SSL channel, or symmetric encryption, is made between the browser and the server to allow safe transit of credit card technology between each. Third, Cybercash's transaction service is used. Fourth, by having Internex's server store a digital certificate initiated by successful installation of the full-version content, a so-called non-repudiation system is used (so the consumer cannot say the product was never purchased or delivered). Fifth, and not-quite-yet-implemented, Internex is considering using the SET protocol in addition to, or instead of, Cybercash.

In these examples, the value in Internex's service is that it acts as a transaction processor that provides a digital key to the consumer in return for a payment using a credit card. These systems heavily leverage many of the security-related technologies available in the marketplace today, which are seamlessly integrated into a service that appears transparent to the customer. For more information, visit
<http://www.internex.com/>.

Chapter 14: A Trip Down Mail-Order Memory Lane, And Some Lessons Learned Along the Way

Summary

- ◆ We believe that the **growth trends seen in mail-order retail are a reasonable proxy for the potential growth trends in Internet retail**. Like mail order, **Internet shopping offers customers convenience, broad product assortments, competitive prices, sales tax benefits on a case-by-case basis, good customer service, overnight delivery (at a cost) to your door, and the comfort of shopping with a brand-name vendor**.
 - ◆ However, we believe Internet shopping, in time, has the potential to provide an experience that does all of these things a little or a lot better than mail order (thanks to the interactive nature of the Web). **Near term, Internet issues related to slow access speeds, limited availability of many products, and still-low Web-retailer brand-name recognition are gating issues to Web shopping growth versus mail-order growth, but this should change rapidly as bandwidth expands and retailers increase their Web-based offerings.** In addition, cross-promotion of Web-based retailing offerings from established brands, such as Barnes & Noble, should help drive sales.
 - ◆ In this chapter, **we explore the history and trends of mail order**, to demonstrate trends that may show up during the development of Internet retailing. Historically, the highest revenue categories in mail order include: 1) insurance/financial services; 2) apparel; 3) general merchandise/housewares/gifts; 4) magazines; 5) electronic goods; 6) sporting goods; 7) auto clubs; 8) collectibles; and 9) books. These trends will likely be similar in Web retailing, we think, although the dollars initially may be skewed less toward apparel, sporting goods, and collectibles, given the Web's current limits on presentation. It is worth noting that, **after lots of initial enthusiasm about mail-order retailing, that industry was inundated with new competitors, profitability declined, a recession kicked in, industry consolidation ensued, and profits declined further, although a few standout companies gained meaningful market share (to name a few: Dell, Gateway, Fingerhut, Lands' End, J.C. Penney, Eddie Bauer, L.L. Bean, and J. Crew)**. As with mail-order retailing, we expect a few outstanding Internet retailing companies to emerge as the winners over time.
 - ◆ We also look at **direct marketing as another analog** for Internet retailing.
-

Mail-Order Retailing as an Internet Analog

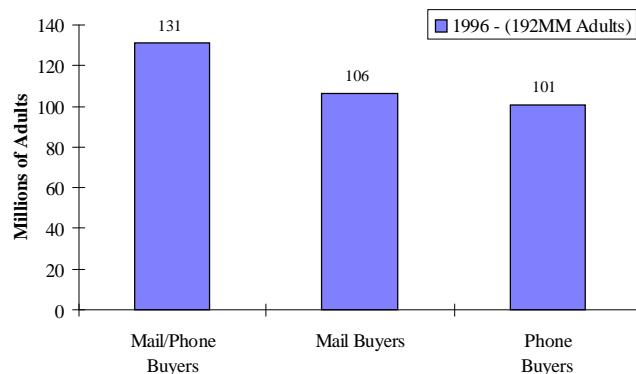
The focus of this report is the Internet's growth as a retail channel, and the opportunities/threats it creates for "up-and-coming" and traditional retail market leaders, and the impact these changes will likely have on consumers.

The Internet is a new distribution channel for goods and services. Other new retail "distribution channels" that have evolved over the last 20 years include category killers, specialty stores, mail order, and TV/home shopping. In our view, **astute retailers that properly leverage the Internet can create a TV-like home or business mail-order super-store**.

In this chapter we examine the history of mail order, in order to determine the growth and size of the industry, what products sell best or worst, and what impact mail-order growth has had on other retail sectors/companies. We also touch on the growth in TV/home shopping.

About 131 million (or 68%) of U.S. adults have purchased an item by phone or mail in the last 12 months (Figure 14-1), according to Simmons Market Research. According to the Direct Marketing Association (DMA), more than 13 billion catalogs are mailed each year — an average of two per week per household.

Figure 14-1

U.S. Population Ordering via Mail or Phone, 1996

Source: Simmons Market Research Bureau

Most of What you Ever Cared to Know (and More) About Mail-Order Retailing — or, ‘Data to the Max’*Traditional Catalogers Crank Up Web Efforts*

The emergence of the Internet as a new distribution channel is quickly gaining the attention of catalogers — in *Catalog Age*'s 1995 operations survey, less than 10% of catalogers had some form of online ordering option (only 18% were considering it; see Figure 14-3), but the same survey in 1996 indicated that nearly 60% of catalogers had, or were developing, a Web site (Figure 14-4). When catalogers hear that Amazon.com's revenue run-rate in 1Q97 is two times higher than the 1997 revenue estimate for Barnes & Noble's entire, well-established mail-order business, it's easy to understand the urgency.

Most Catalogers Don't Have a Lot of Brick and Mortar

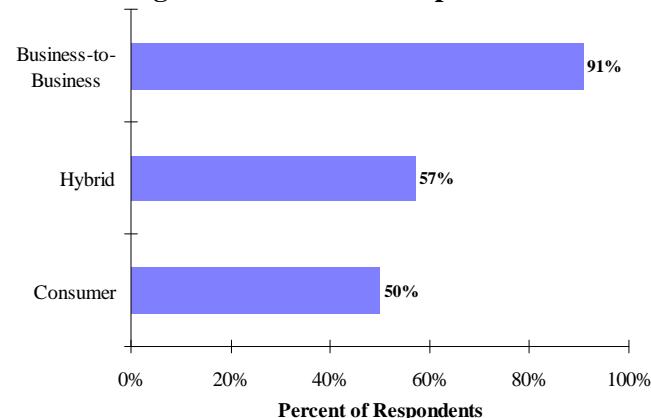
According to a *Catalog Age* survey (Figure 14-2), in December 1996 90% of business-to-business catalogers had retail operations, 57% of hybrid catalogers had them, and 50% of consumer catalogers did not have any kind of retail operation. According to *Catalog Age* survey conducted in 1994, less than 5% of all catalogers had more than three retail locations.

Yes, the Major Catalogers are Household Names Now, But Most Weren't a Decade Ago

A quick look at the *Catalog Age* Top 100 U.S. Catalogers (Table 14-1) reminds one of how familiar and commonplace major catalogers have become — Lands' End, L.L. Bean, and J. Crew in apparel; J.C. Penney, Spiegel, and Lillian Vernon in general merchandise; Dell, Gateway, and Digital in computer hardware; and MicroWarehouse and Computer Discount Warehouse in office supplies.

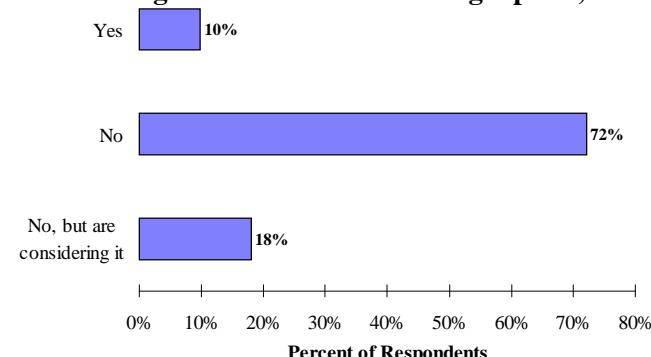
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Figure 14-2

U.S. Catalogers: % With Retail Operations

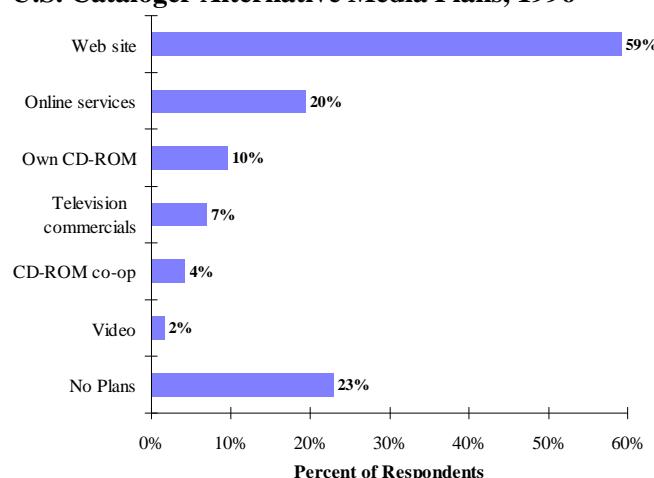
Source: Catalog Age, December 1996

Figure 14-3

U.S. Catalogers with Online Ordering Option, 1995

Source: Catalog Age, Operations Benchmark Report, 1995

Figure 14-4

U.S. Cataloger Alternative Media Plans, 1996

Source: Catalog Age, Operations Benchmark Report, 1996

Table 14-1

The Catalog Age 100—Annual Ranking of the Top 100 U.S. Catalogers

(\$ Millions)			1995	1994	Company Name	1995	1994	Category
	Company Name	Sales	Sales	Category	Company Name	Sales	Sales	Category
1	Dell Computer	\$5,296	\$3,420	Computer Hardware	51	Reliable Office Pdts.	\$201	Office Supplies
2	J.C. Penny	3,738	3,817	General Merchandise	52	Black Box	185	Computer Supplies
3	Gateway 2000	3,676	2,600	Computer Hardware	53	Talbots	181	Women's Apparel
4	Digital	3,000	2,550	Computer Hardware	54	Gander Mountain	180	Outdoor Sport. Goods
5	Fingerhut	1,826	1,719	General Merchandise	55	Day-Timers	175	Business Planners
6	Spiegel	1,751	1,742	General Merchandise	56	Beckley-Cardy	170	Educational Supplies
7	MicroWarehouse	1,308	776	Computer Supplies	57	PCs Compleat	160	Computer Hardware
8	IBM Direct	1,070	950	Computer Hardware	58	Pleasant Co.	160	Children's Products
9	Land's End	1,030	990	Apparel	59	Digi-Key Corp. Thief	157	Industrial Supplies
10	L.L. Bean	945	848	Apparel	60	USA Flex	145	Computer Hardware
11	Viking	921	674	Office Supplies	61	Rivertown Trading	142	Gifts
12	Hanover Direct	750	769	General Merchandise	62	Warshasky	137	Auto Supplies
13	Deluxe Direct	679	665	Business Supplies & Consumer	63	American Express	135	General Merchandise
14	Victoria's Secret	661	569	Apparel	64	Ross-Simons	130	Gifts, Jewelry
15	J. Crew Group	640	575	Apparel	65	Ed. Distributors of America	125	Educational Supplies
16	Global DirectMail	635	484	Computer, Office & Industrial Supplies	66	Harriet Carter	122	General Merchandise
17	Computer Discount	635	629	Computer Supplies	67	ABC Distributing	122	General Merchandise
18	Henry Schein	616	487	Dental, Medical Supplies	68	Kaiser & Kraft	120	Industrial Supplies
19	Brylane	601	579	Apparel	69	Swiss Colony	120	Food, Gifts
20	Newark Electronics	600	495	Industrial Electronics	70	Barnett	118	Plumbing Supplies
21	Blair Corp.	561	536	General Merchandise	71	MidWest Micro	115	Computers
22	Damark International	500	477	General Merchandise	72	Miles Kimball	115	General Merchandise
23	Quill	500	417	Office Supplies	73	Central Purchasing	114	Hardware
24	Chadwick's of Boston	472	434	Women's Apparel	74	Nasco International	113	Educational & Farm Supplies
25	Darby Group Cos.	430	392	Dental, Medical Supplies	75	Bloomingdale's By Mail	112	General Merchandise
26	Creative Computers	421	164	Computer Supplies	76	Eastbay Running	111	Sporting Goods
27	Inmac	367	354	Computer Hardware	77	Seton Nameplate	111	Industrial Supplies
28	Foster & Gallagher	350	275	Gardening Products, Food, Gifts, Children's Products	78	Bedford Fair	110	Women's Apparel
29	Sara Lee Direct	340	325	Hosiery, Luggage and Food	79	Maintenance Warehouse	109	Building Supplies
30	McMaster-Carr	340	325	Industrial Electronics	80	Suarez Corp.	106	General Merchandise
31	PC Connection	300	250	Computer Supplies	81	Franklin Quest	103	Business Planners
32	NM Direct	294	285	Apparel and Gifts	82	Montgomery Ward	100	General Merchandise
33	Moore Medical	289	272	Medical Supplies	83	Sport Supply group	100	Sporting Goods
34	Cabela's	285	235	Outdoor Sporting goods	84	Golfsmith	100	Sporting Goods
35	Oriental Trading	275	220	General Merchandise	85	Sportman's Guide	100	Outdoor Sport. Goods
36	Insight Enterprises	272	217	Computer Supplies	86	Norm Thompson	100	Apparel
37	Williams-Sonoma	265	218	Tabletop and Home Furnishing	87	Orvis	98	Apparel/Sport. Goods
38	New England Business	263	257	Business Supplies/Forms	88	Tiffany	93	Gifts, Jewelry
39	Weareguard	255	185	Business Apparel	89	Executive Greetings	92	Business Supplies & Greeting Cards
40	SunExpress	250	85	Computer Hardware	90	Crutchfield	92	Consumer Electronics
41	MSC Industrial Supply	249	170	Industrial Supplies	91	Omaha Steaks	90	Food
42	Multiple Zones Intern.	243	114	Computer Supplies	92	DM Management	89	Women's Apparel
43	Bear Creek	234	228	Food, Gardening & Gifts	93	Knight's Ltd.	87	Women's Apparel, Home Furnishings
44	Lillian Vernon	243	215	General Merchandise	94	Rapidforms	86	Business Forms
45	Bass Pro Shops	230	220	Outdoor Sporting Goods	95	U.S. Sales Corp.	85	General Merchandise
46	Northern Hydraulics	230	193	Hardware	96	Saks Fifth Avenue	85	Apparel
47	Haband	222	210	General	97	Mosher Companies	84	Business Furniture
48	Lab Safety Supply	220	205	Industrial Supplies	98	Brownstone Studio	84	Women's Apparel
49	Carol Wright Sales	218	210	General Merchandise	99	Tessco	83	Telecom Equipment
50	Starcrest of California	215	180	General Merchandise	100	Nordstrom's	83	Women's Apparel
						Total	\$45,465	\$38,552

Catalog Age estimates in italics.

Source: Catalog Age magazine, August 1996

Table 14-2

U.S. Consumer Mail-Order/Direct-Marketing Sales — Largest Industries by Sales Volume

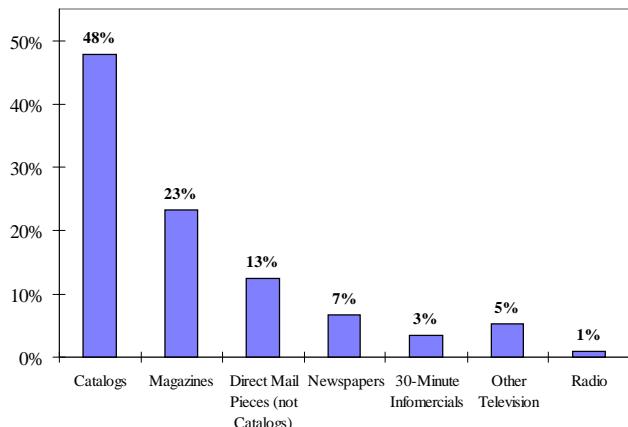
<i>(\$ Billions)</i> Category	1980	1981	1982	1983	1984	1985	1986	1987	1988
Insurance/Financial	\$4,412	\$4,853	\$5,435	\$6,142	\$6,940	\$7,773	\$8,628	\$9,836	\$11,016
Apparel	1,478	1,729	1,937	2,150	2,473	2,844	3,356	3,926	5,025
Gen Merchandise/Housewares/Gift	2,978	3,276	3,505	3,856	4,318	4,750	5,320	6,171	7,221
Magazines	2,096	2,285	2,536	2,815	3,125	3,406	3,713	4,121	4,616
Electronic Goods	364	510	592	681	783	900	1,054	1,264	1,593
Sporting Goods	860	989	1,157	1,296	1,490	1,669	1,902	2,130	2,513
Auto Clubs	900	1,035	1,066	1,130	1,220	1,317	1,410	1,537	1,675
Collectibles	1,015	1,167	1,272	1,348	1,428	1,514	1,589	1,653	1,785
Books	1,531	1,699	1,665	1,675	1,691	1,708	1,725	1,759	1,830
Tools/Home Repair	331	391	431	478	526	584	654	732	820
Educational Services	430	469	539	604	682	743	803	867	962
Records & Tapes	459	519	571	588	623	673	747	814	912
Crafts	577	646	730	788	843	894	929	1,003	1,064
Health/Nutrition	469	502	562	590	602	614	639	684	746
Food	550	594	623	654	674	694	708	735	775
Prescriptions	165	180	203	238	268	306	345	400	481
Photofinishing	400	449	530	609	670	724	774	828	878
Automotive	198	242	286	312	340	367	393	416	462
Cosmetics	176	204	224	237	258	276	290	319	354
Jewelry	121	145	164	184	206	231	254	287	330
Gardening /Horticultural	414	455	428	437	445	432	458	476	495
Department Stores	2,688	3,145	3,428	3,942	4,533	5,077	5,788	6,598	9,248
Major Catalog Retailers	5,026	4,772	4,734	5,039	5,433	5,705	5,933	5,052	5,475
Unclassified Merchandise	1,108	1,307	1,451	1,640	1,853	2,075	2,304	2,580	3,225
Total Consumer Sales	\$28,746	\$31,563	\$34,069	\$37,433	\$41,424	\$45,276	\$49,716	\$54,188	\$63,501
Category	1989	1990	1991	1992	1993	1994	1995	1996	
Insurance/Financial	\$12,008	\$13,329	\$14,928	\$16,412	\$18,382	\$20,589	\$22,645	\$25,366	
Apparel	6,533	8,624	9,910	11,400	12,800	14,550	16,010	18,400	
Gen Merchandise /Housewares/Gift	8,808	9,515	10,656	11,716	13,122	14,698	16,165	18,108	
Magazines	5,196	5,790	6,485	7,129	7,985	8,944	9,837	11,019	
Electronic Goods	2,070	2,650	3,140	3,800	4,560	5,470	6,840	8,890	
Sporting Goods	2,991	3,559	4,080	4,690	5,350	5,990	6,650	7,590	
Auto Clubs	1,809	1,954	2,188	2,406	2,695	3,018	3,320	3,719	
Collectibles	1,946	2,063	2,160	2,300	2,500	2,630	2,800	3,080	
Books	1,921	2,017	2,200	2,330	2,450	2,520	2,620	2,750	
Tools/Home Repair	943	1,085	1,220	1,440	1,660	1,870	2,100	2,490	
Educational Services	1,106	1,239	1,388	1,526	1,709	1,914	2,105	2,358	
Records & Tapes	1,012	1,143	1,270	1,460	1,640	1,800	1,990	2,220	
Crafts	1,149	1,240	1,340	1,450	1,570	1,680	1,790	1,950	
Health/Nutrition	828	902	1,000	1,100	1,200	1,310	1,420	1,580	
Food	826	892	963	1,040	1,110	1,180	1,240	1,340	
Prescriptions	567	658	737	810	907	1,016	1,118	1,252	
Photofinishing	931	987	1,040	1,080	1,120	1,150	1,180	1,240	
Automotive	518	575	640	710	770	840	910	1,020	
Cosmetics	386	432	484	532	596	667	734	822	
Jewelry	386	436	488	561	620	678	732	821	
Gardening /Horticultural	525	561	590	632	675	716	752	804	
Department Stores	10,511	11,667	13,066	14,366	16,090	18,022	19,821	22,203	
Major Catalog Retailers	5,804	6,146	6,883	7,568	8,476	9,494	10,441	11,696	
Unclassified Merchandise	4,226	4,236	4,744	5,216	5,842	6,543	7,197	8,061	
Total Consumer Sales	\$73,000	\$81,700	\$91,500	\$100,600	\$112,670	\$126,200	\$138,800	\$155,480	

Note: Figures in italics were unavailable for 1991–96 and were extrapolated from share of consumer sales in 1990. We believe Sroge estimates of total mail-order/direct-marketing sales are a bit aggressive (see Table 4-1 for market sizing data), but included Sroge's breakout along industries here, as it is helpful in understanding which industries have been successful in generating these types of sales. Source: Maxwell Sroge Company.

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Figure 14-5

Medium Most Frequently Ordered From, As a Percentage of U.S. Purchasers by Phone/Mail



Source: Simmons Market Research Bureau, 1996

Consumers Consistently Buy the Same Products Via Mail-Order Year-to-Year

According to Maxwell Sroge, U.S. mail-order/direct-marketing sales, broken down by category from 1980 through 1996 (Table 14-2), show that the mail-order “sweet spots,” which have shown the highest volume over time, include: 1) insurance/financial services; 2) apparel; 3) general merchandise/housewares/gifts; 4) magazines; 5) electronic goods; 6) sporting goods; 7) auto clubs; 8) collectibles; and 9) books.

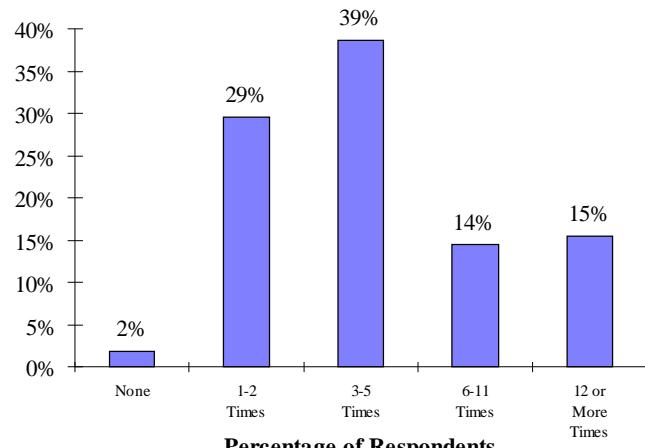
As we discussed in our chapter on sizing the Internet retailing market, we believe that Sroge’s estimates of total mail-order/direct-marketing sales are a bit aggressive (see Table 4-1 and accompanying discussion of market sizing data). But we have included Sroge’s breakout along industries because it is helpful in understanding which industries have been successful in generating mail-order/direct-marketing sales.

Catalogs Are the Most Frequently Used Mail/Phone Order Source

In a survey conducted by Simmons in the fall of 1996, 48% of respondents indicated that catalogs are the source from which they most commonly ordered by phone or mail, followed by 35% who most commonly ordered from magazines, direct mail (13%), newspapers, (7%), non-infomercial TV (5%), 30-minute TV infomercials (3%), and radio (1%).

Figure 14-7

Number of Times U.S. Adults Have Bought Merchandise From a Catalog in the Last 12 Months



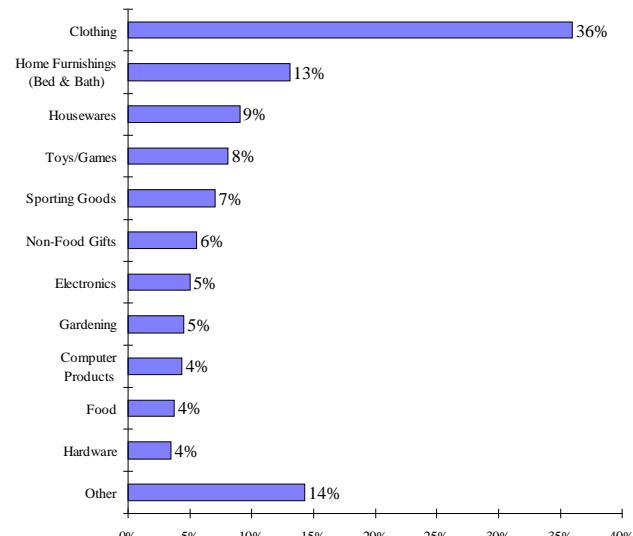
Source: Simmons Market Research Bureau

Clothing Is Most Popular Item Purchased from Catalogs

According to Simmons Market Research, in 1996, clothing was the most popular type of purchase (Figure 14-6), comprising 36% of purchases from catalogs, followed by home furnishings, housewares, toys and games, sporting goods, non-food gifts, electronics, gardening, computer products, food, and hardware. These categories are strictly for mer-

Figure 14-6

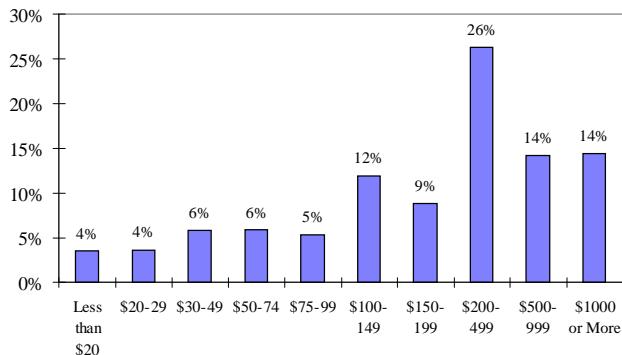
Types of Merchandise Bought from Catalogs in U.S. In the Last 12 Months (By Number of Purchases)



Source: Simmons Market Research Bureau, 1996

Figure 14-9

Total Amount Spent on Merchandise and Services Ordered by Mail or Phone in U.S., Last 12 Months



Source: Simmons Market Research Bureau, 1996.

chandise, are based on the number of purchases, and thus are not ordered in the same manner as the mail-order/direct marketing categories in Table 14-2.

Catalog Buyers Shop Often

Catalog buyers generally make purchases once every few months (Figure 14-7). Simmons Market Research states that 39% of catalog buyers purchase products three to five times per year, and almost 30% buy more frequently.

Shopping Clubs Are a Big Deal

An estimated 6% of Americans belonged to Columbia House's membership program for CDs in 1994, according

to Simmons Market Research. This was followed in popularity by Columbia's records and tapes club, BMG's compact disc club, and BMG's records and tapes club. Clearly, membership in a community that offers discounts on is a popular way to make purchases of certain types of merchandise.

Mail-Order Shoppers Spend Big Bucks

According to Simmons Market Research, 75% of survey respondents spent in excess of \$100 on items ordered by mail or phone in the last 12 months, with a sweet spot between \$200 and \$499, where 26% of respondents fell.

Bureau of Labor Statistics data can be sobering, as they show how much or how little money is spent in key spending categories by the average American (Table 14-3).

Mail-Order Shoppers Still Prefer

Paying by Cash, Check, or Money Order

According to Simmons Market Research, 38% of mail-order purchases are paid for via cash, check, or money order, while only 37% are paid for via credit cards. In our view, it's surprising how many people still pay for mail-order products via the postal service. This may indeed point to general concerns about security (a key hurdle for Internet commerce; see our chapter on this topic for more detail).

While we don't have precise data on the trend for credit card purchasing via mail order, we assume it has grown sharply over the last ten years, especially since the launch of 800 numbers by catalogers.

We think that data showing U.S. deployment of credit cards and ATM cards over the last 10–15 years demonstrate the rapid acceptance over time by consumers of new technologies for making purchases (Figures 14-11 and 14-12).

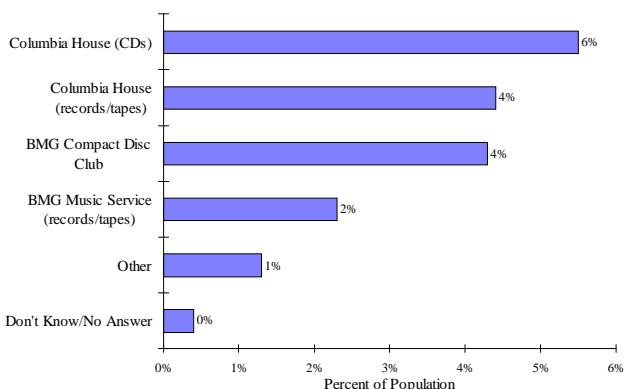
Business-to-Business Direct Marketing

Has Grown More Rapidly Than Consumer Mail Order

According to Maxwell Sroge, business-to-business direct marketing has supported 18% average annual growth from 1980 to 1996, moving from \$18 billion to \$258 billion in total revenue. Recent drivers of this growth have been in part related to strong sales of products in the computer, telecom, and office supplies sectors. And in general, partly due to lower costs for marketing, postage, and catalogs, business-to-business catalogers tend to support higher margins than their consumer brethren.

Figure 14-8

Record, Disc, or Tape Clubs To Which Consumers Belonged in 1994, Based on Percentage of Adult U.S. Population



Source: Simmons Market Research Bureau.

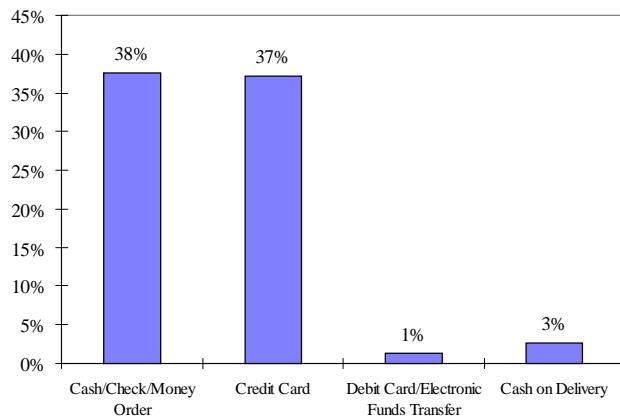
Table 14-3

Annual Average Expenditures of U.S. Population by Age, 1994

Expense	Total Population	% of Total Annual Non-Tax Expenses	BY AGE					
			Under 25 yrs.	25-34 yrs.	35-44 yrs.	45-54 yrs.	55-64 yrs.	65 yrs. and over
Housing	\$10,106	32%	\$5,594	\$10,065	\$12,274	\$12,457	\$10,222	\$7,445
Shelter	5,686	18%	3,481	5,972	7,173	7,024	5,253	3,733
Utilities, Fuels, and Public Services	2,189	7%	1,210	1,948	2,428	2,603	2,417	2,033
Household Operations	490	2%	188	568	673	416	404	435
Housekeeping Supplies	393	1%	171	340	435	464	453	396
Household Furnishings and Equipment	1,348	4%	544	1,237	1,565	1,950	1,696	847
Transportation	6,044	19%	4,409	6,523	6,796	7,893	6,504	3,572
Vehicle Purchases (net outlay)	2,725	9%	2,330	3,347	2,984	3,387	2,909	1,338
Gasoline and Motor Oil	986	3%	670	982	1,193	1,295	1,005	614
Other Vehicle Expenses	1,953	6%	1,201	1,931	2,248	2,720	2,113	1,202
Public Transportation	381	1%	208	264	372	492	477	418
Food	4,411	14%	2,793	4,159	5,367	5,614	4,549	3,251
Personal Insurance and Pensions	2,957	9%	1,067	2,847	4,022	4,539	3,440	1,007
Health Care	1,755	6%	505	1,086	1,616	1,855	2,144	2,678
Apparel and Services	1,644	5%	1,107	1,748	2,054	2,262	1,586	873
Entertainment	1,567	5%	1,018	1,519	2,025	2,104	1,565	879
Other Expenditures	3,268	10%	1,926	2,518	3,435	4,719	3,692	2,851
Cash Contributions	960	3%	96	381	788	1,436	1,292	1,419
Education	460	1%	812	368	483	882	351	114
Personal Care Products and Services	397	1%	234	396	457	507	393	311
Alcoholic Beverages	278	1%	247	347	296	292	338	164
Tobacco Products and Smoking Supplies	259	1%	217	270	319	327	302	117
Reading	165	1%	65	136	184	204	202	153
Miscellaneous	749	2%	255	620	908	1,071	814	573
Personal Taxes	3,083	10%	956	2,873	4,090	4,972	3,399	1,294
Total Non-Tax Expenses	\$31,751	100%		\$18,418	\$30,466	\$37,588	\$41,444	\$33,702
								\$22,557

Source: U.S. Bureau of the Labor Statistics, 1996.

Figure 14-10

**Most Frequent Method of Payment
For U.S. Catalog Merchandise in Last 12 Months**

Source: Simmons Market Research Bureau, 1996

Figure 14-11

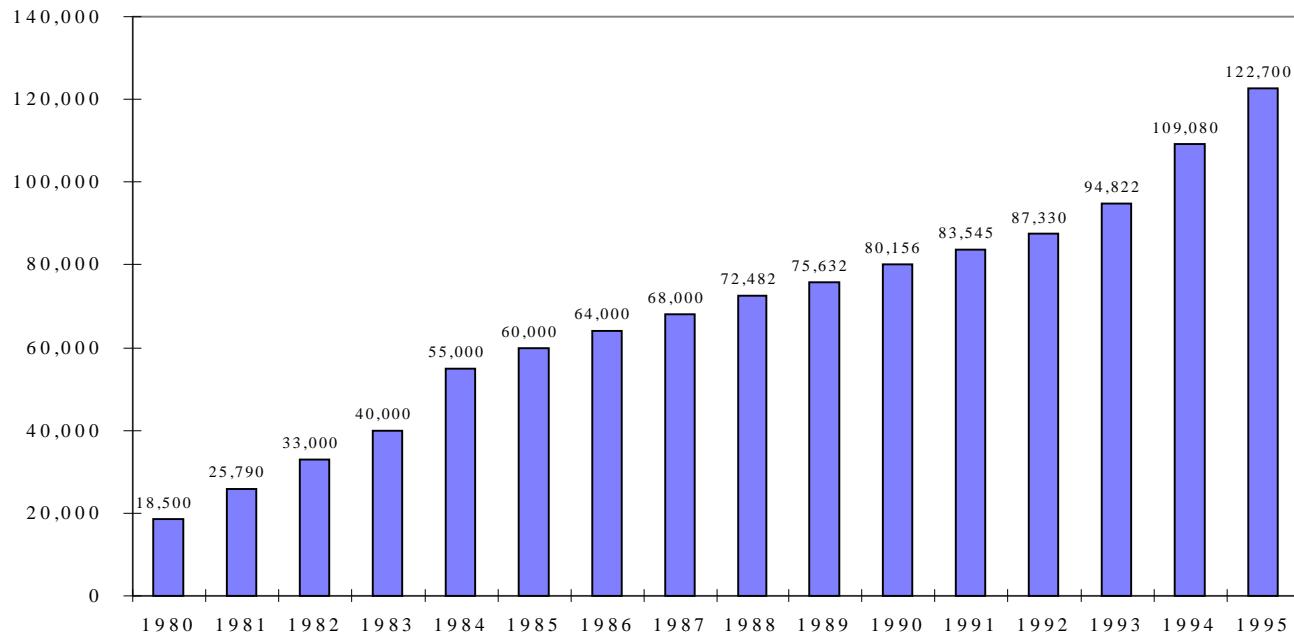
U.S. Charge Volume, 1986–95

(\$ Billion)



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Figure 14-12

U.S. Automatic Teller Machine (ATM) Deployment

In total number of machines deployed. Source: Bank Network News

Table 14-4

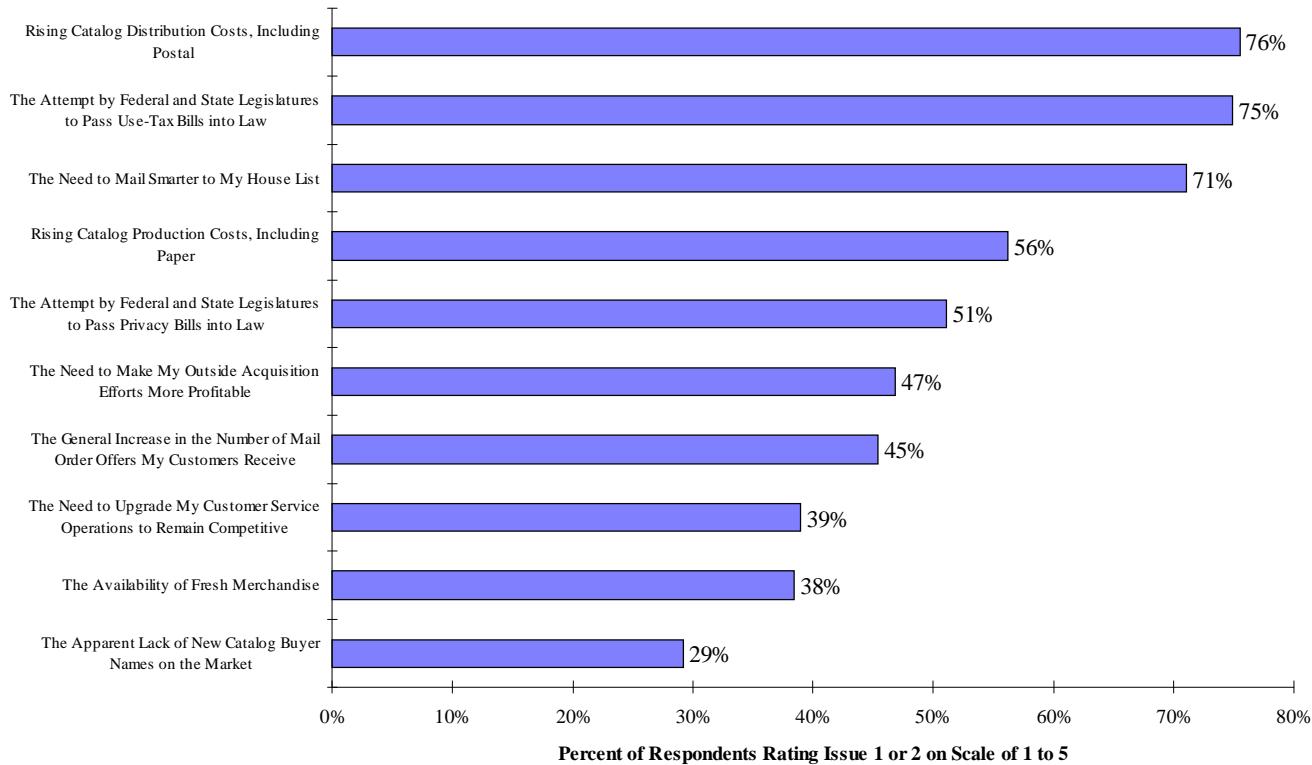
U.S. Business-to-Business Mail-Order/Direct-Marketing Sales**Largest Industries by Sales Volume, 1980–96**

(\$ Millions)	1980	1981	1982	1983	1984	1985	1986	1987	1988
General Business-to-Business	\$15,880	\$16,674	\$17,340	\$20,114	\$23,735	\$26,437	\$29,324	\$35,471	\$43,198
Computer Supplies and Accessories	185	278	473	710	993	1,365	1,815	2,801	3,830
General Office Supply Equipment	397	516	619	774	1,006	1,241	1,536	2,069	2,766
Industrial	410	451	487	580	701	776	837	991	1,163
Subscription Product	353	385	443	478	521	621	733	905	1,170
Specialty Office: Medical, Dental	166	179	195	236	293	310	349	431	532
Educational Services	193	193	212	229	252	297	314	426	565
TOTAL	\$17,584	\$18,676	\$19,769	\$23,121	\$27,501	\$31,047	\$34,908	\$43,094	\$53,224
	1989	1990	1991	1992	1993	1994	1995	1996	
General Business-to-Business	\$51,823	\$58,592	\$70,310	\$87,890	\$114,250	\$142,820	\$171,380	\$214,230	
Computer Supplies and Accessories	5,320	7,014	8,770	10,520	12,630	5,780	18,940	24,620	
General Office Supply Equipment	3,633	4,371	5,030	5,780	6,650	7,640	8,800	10,550	
Industrial	1,413	1,584	1,770	2,020	2,320	2,550	2,830	3,260	
Subscription Product	1,427	1,650	1,730	1,820	1,950	2,060	2,170	2,340	
Specialty Office: Medical, Dental	649	743	832	940	1,080	1,270	1,480	1,760	
Educational Services	635	676	723	774	820	861	913	977	
TOTAL	\$64,900	\$74,630	\$89,165	\$109,744	\$139,700	\$162,981	\$206,513	\$257,737	

Source: Maxwell Srogé Company.

Figure 14-13

Top Five Concerns of U.S. Consumer, Business-to-Business, and Hybrid Catalogers (Percentage Ranked as ‘Critical’—1 or 2 on a Scale of 1–5)



Source: Catalog Age, December 1994

Many of the Top Concerns of Catalogers Shouldn't be Major Issues for Internet Retailers

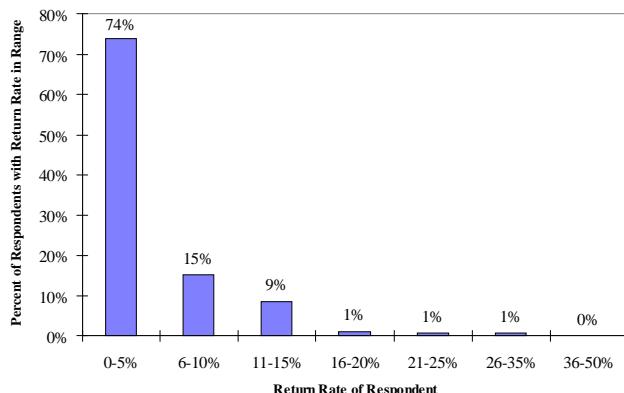
In a survey conducted by *Catalog Age* (1994), six of the top ten concerns for catalogers probably don't apply directly to Internet retailers. These issues include: 1) rising catalog distribution costs, including postal; 2) a need to mail “smarter” to the house list; 3) rising paper costs; 4) a need to make outside acquisition efforts more profitable; 5) the availability of fresh merchandise; and 6) an apparent lack of new catalog buyer names on the market. Note that, as Internet retail grows, the issue of new names may become a key concern.

Cataloger issues that also will be key to Internet retailers include, in our view: 1) potential use-tax bills; 2) an increase in solicitation offers that customers receive; 3) a need to upgrade customer service operations to remain competitive; and 4) attempts to pass privacy bills into law.

Of course, catalogers don't have to worry about a lot of issues that Internet retailers must worry about, like: 1) the available market — the number of people using the Web is still small, and those users worry about security issues; 2) changing technology; 3) CPM advertising rates and instability in this business; 4) building the right Web links; 5) competing with Microsoft; and 6) finding ways to reach the end-consumer more effectively.

On the flip side, the Internet has little or no incremental distribution cost (negating the rising catalog distribution costs concern), the cost of production is much more stable and efficient (countering production costs issues), and user targeting can potentially be much more directed and efficient than with direct mail, with greater geographic reach, more cost-efficient data warehousing, and better data integrity.

Figure 14-14

Return Rates for U.S. Catalogers

Source: Catalog Age, *Operations Benchmark Report, 1995*

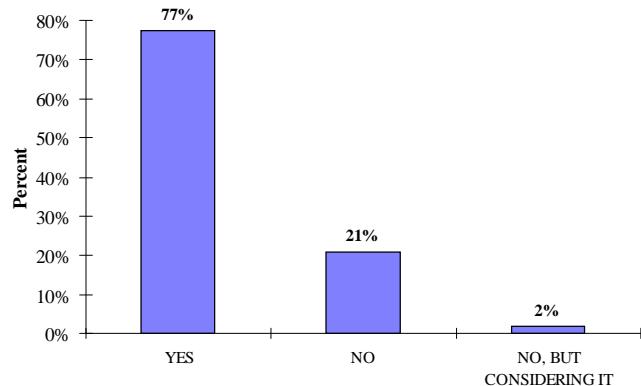
Improved return costs may be another benefit of Internet retail. One of the critical issues noted above is package delivery cost, which we expect will be similar in many respects for both catalogers and Internet retailers. However, one problem not touched on is the number of packages returned to catalogers (Figure 14-4), which can cost dearly if returns are too high. It is unclear how much of these return costs online purchasers will bear in each product market, though it is possible that more of the shipping cost will be borne by the user than with catalogers. Lower return costs may even result from improved rates of return due to the more effective customer/vendor interaction that the Web should be able to provide (there is literally nothing that a Web retailer cannot provide in the way of customer service/support that is currently provided by catalogers, and there are many ways Internet retail can improve on the current dynamic, thus potentially improving product return rates).

Overnight Shipping Is a Key Element Of Mail-Order Convenience

The vast majority of catalogers offer overnight shipping as an option. This type of nearly immediate fulfillment of purchase requests is a key element to mail-order shopping. Keep in mind that “overnight” is not quite as literal as it sounds. Following the phone order is the time required to fulfill the order. Therefore, an order placed early in the morning could be received the next day, but one placed later would likely take the equivalent of two days. According to *Catalog Age's “Operations Benchmark Report, 1995,”* 34% of consumer catalogers surveyed ship products within 24 hours, with an additional 29% shipping within two days. Comparable figures for business-to-business catalogers are 52% and 14%, respectively.

Figure 14-15

Percentage of U.S. Catalogers Offering Overnight Shipping, 1994

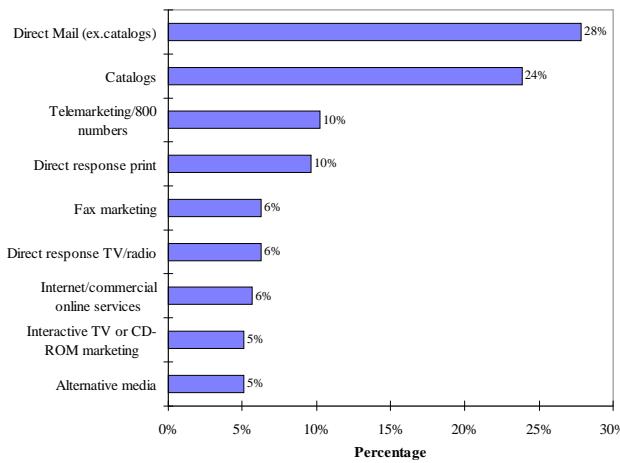


Source: Catalog Age, *Operations Benchmark Report, 1994*

Addendum: A Look at Direct Marketing

Figure 14-16

Share of 1996 U.S. Direct-Marketer Budgets Allocated to Various Direct-Marketing Methods



Source: *Direct Magazine*, December 1996.

Direct-Reponse Marketing/Advertising As Another Internet Retail Analog

The next logical step in looking for Internet retailing analogs is to take a look at the entire direct marketing industry. Direct marketing is widely integrated throughout all advertising media, and includes direct mail, telephone marketing, television, radio, newspaper, magazines, and, of course, the Internet. We believe the form of direct marketing most comparable to the Internet is direct mail.

According to the Direct Marketing Association (DMA), U.S. direct marketing expenditures in 1995 totaled \$134 billion (expenditures are the amount of total ad revenue spent to achieve one of the three major direct marketing objectives, as discussed below). Note that in Table 14-7, the DMA accounts for any order taken over the phone as "telemarketing."

In their entirety, the DMA's data encompass much more than then the mail-order/direct-marketing figures we have discussed earlier in this chapter — gauging direct marketing is challenging because it blurs the distinction between advertising and retail and comes in many different forms. For the purposes of this appendix, we define direct marketing from a broad media perspective — as any direct communication to a consumer or business recipient that is designed to generate a response, whether in the form of an order (*direct order*), a

request for further information (*lead generation*), or a visit to a store or other place of business (even a Web site) for purchase of specific products or services (*traffic generation*). Direct-response advertising thus is intended to achieve at least one of these three objectives.

Direct Marketers Largely Use Direct Mail for Promotion

Figure 14-16 shows the mix of direct-marketer budgets across various media. The majority of their promotional budgets (52%) are used for catalogs and other forms of direct mail, followed by: telemarketing and 800 numbers; direct-response print advertising; fax marketing; direct-response TV/radio; Internet and commercial online services; interactive TV or CD-ROM marketing; and other alternative media.

The Internet as Direct-Mail/Response Advertising

On a grand scale, there are two main purposes for an advertisement: building brand or direct marketing. Brand advertising associates positive qualities or emotions with a company's product or service, while direct marketing attempts to stimulate a direct sale. All advertising falls somewhere on the spectrum between these two points. And in thinking about the Internet as an advertising medium, we think it is important to clarify how it fits in, what type of advertising works well, and what the specific strengths and weaknesses of the medium are in achieving each of these two goals of

Table 14-5
Cost per Response for a Direct-Mail Advertiser

Direct Mail CPM						
	\$200	\$400	\$600	\$800	\$1,000	
Response	30%	\$0.67	\$1.33	\$2.00	\$2.67	\$3.33
Rate	25%	0.80	1.60	2.40	3.20	4.00
	20%	1.00	2.00	3.00	4.00	5.00
	15%	1.33	2.67	4.00	5.33	6.67
	10%	2.00	4.00	6.00	8.00	10.00

Source: *Computer Advertisers' Media Advisor*, Morgan Stanley Technology Research.

Table 14-6
Cost per Transfer for a Web Advertiser

Web CPM						
	\$20	\$40	\$60	\$80	\$100	
Click	5%	\$0.40	\$0.80	\$1.20	\$1.60	\$2.00
	4%	0.50	1.00	1.50	2.00	2.50
Rate	3%	0.67	1.33	2.00	2.67	3.33
	2%	1.00	2.00	3.00	4.00	5.00
	1%	2.00	4.00	6.00	8.00	10.00

Source: *Computer Advertisers' Media Advisor*, Morgan Stanley Technology Research.

brand-building and direct marketing.

However, for direct marketing, we believe the Internet offers the ability to target and deliver messages to an audience with specific demographics and interests (like mailing to specific lists), and, moreover, allows the user to interact instantly with that message. In essence, direct-response advertisers sell goods and services to customers individually, and no other medium affords users such immediate access at the point of sale.

In comparing the relative effectiveness of media buys, some similarities can be drawn between a successful response in direct mail and delivering a user directly to an advertiser's Web site when he or she clicks on an advertisement (we will refer to these as "transfers").

While costs for direct-mail marketing campaigns can vary widely, CPMs can range up to \$1,000 or more, depending on the cost of production, printing, postage, and so on. Using a reasonably wide range for total CPM (cost-per-thousand impressions delivered) for the direct-mail medium (\$200–1,000), we derive Table 14-5, which shows the cost per re-

sponse for direct mail. The Direct Marketing Association reports that the average response rate for direct mail is 17%.

Table 14-6 uses what we believe is a reasonable range of CPMs for the Web (\$10–90) and calculates the cost per transfer based on the rate at which users click on the ad (the "click rate"). The most recent average click-through rate released by I/PRO (a Web measurement company) and DoubleClick (a Web rep firm) was 2.1%, although, depending on a number of factors, this rate can vary widely.

For direct mail, at a 17% response rate (the industry average) and a \$600 CPM (the midpoint of our range), the cost per response is \$3.53. If we take the average online ad click-through rate of 2.1%, and solve for the same cost per response, we arrive at a reasonable CPM of \$74. Thus, one can see that online advertising can compare favorably with direct mail on a cost-per-lead basis, especially if the click rate can be nudged higher. If the direct-mail market is indeed that large, there is thus a sizable opportunity through the use of similar techniques on the Internet.

Table 14-7

U.S. Direct-Marketing Advertising Expenditure and Sales Growth

	U.S. Direct Marketing Advertising Expenditures (\$ MM)			U.S. Direct Marketing-Driven Sales (\$ MM)			DM Advertising Expenditures as a Percentage of DM Sales	
	1990-95			1990-95			1990	1995
	1990	1995	CAGR	1990	1995	CAGR		
Direct Mail	\$23,400	\$31,200	6%	\$250,000	\$356,100	7%	9%	9%
Direct Order	9,600	12,500	5	95,900	131,200	7	10	10
Lead Generation	10,400	14,200	6	115,900	173,200	8	9	8
Traffic Generation	3,400	4,500	6	38,200	51,700	6	9	9
Telephone Marketing	40,500	54,100	6	272,800	385,600	7	15	14
Direct Order	13,600	17,500	5	83,800	114,300	6	16	15
Lead Generation	21,700	21,300	6	164,300	239,500	8	14	14
Traffic Generation	3,200	4,400	7	24,700	31,800	5	13	14
Newspaper	11,100	13,600	4	105,600	137,000	5	11	10
Direct Order	3,200	3,900	4	27,500	35,700	5	12	11
Lead Generation	5,400	6,600	4	53,600	70,500	6	10	9
Traffic Generation	2,400	3,000	5	24,600	30,800	5	10	10
Magazine	5,200	6,800	6	43,700	60,700	7	12	11
Direct Order	1,400	1,800	5	12,400	17,000	7	11	10
Lead Generation	3,300	4,300	5	26,000	36,700	7	13	12
Traffic Generation	600	700	3	5,300	7,100	6	11	10
Television	10,100	14,100	7	49,600	72,700	8	20	19
Direct Order	1,900	2,700	7	10,600	15,400	8	18	18
Lead Generation	7,100	9,800	7	29,500	44,200	8	24	22
Traffic Generation	1,100	1,500	6	9,500	13,100	7	12	12
Radio	3,100	4,100	6	18,000	25,500	7	17	16
Direct Order	600	800	6	3,900	5,500	7	16	15
Lead Generation	2,100	2,800	6	10,100	14,600	8	21	19
Traffic Generation	400	500	5	4,000	5,300	6	9	9
Other	7,900	10,200	5	40,400	55,000	6	20	19
Direct Order	2,800	3,600	5	14,400	19,300	6	20	19
Lead Generation	3,800	4,900	5	16,800	23,800	7	23	21
Traffic Generation	1,300	1,700	6	9,300	11,900	5	14	14
Total	\$101,300	\$134,000	6%	\$780,100	\$1,092,600	7%	13%	12%
Direct Order	33,100	42,800	5	248,400	338,400	6	13	13
Lead Generation	55,800	74,600	6	416,100	602,500	8	13	12
Traffic Generation	12,400	16,200	6	115,600	151,700	6	11	11

Source: The WEFA Group, Direct Marketing Association.

Chapter 15: Glossary of Internet Terminology

affinity group A group of people with a common interest. On the Internet, that's typically a subject-oriented mailing list, a newsgroup, or a conference on a Web site.

backbone A high-speed line, or series of connections, that forms a major pathway within a network. The term is relative, though, as a backbone in a small network will likely be much smaller than many non-backbone lines in a large network.

bandwidth Terminology used to indicate the transmission or processing capacity of a system or of a specific location in a system (usually a network system). Bandwidth is usually defined in bits per second but also is often described as either large or small. Recently, the term bandwidth has evolved into something describing human capacity.

barter The exchange of goods and services without the use of cash. On the Internet, usually the acquisition of media time or space by a media company in exchange for similar time/space in return.

baud (bits at unit density) A unit of transmission speed equal to the number of times the state (or condition) of a line changes per second. Equal to the bit-per-second (BPS) rate only if each signal element represents one bit of information. The baud rate usually refers to the number of bits transmitted each second.

bits A binary digit, either a 0 or 1. The smallest element of a computer program. In the U.S., 8 bits make up one byte. Typically, transmission capacity is measured in bits (kilobits or megabits).

BPS (bits per second) A measurement of how fast data are moved from one place to another. A 28.8 modem can move data at 28,800 bits per second.

browser Software used on PCs, workstations, and terminals to access information on the Worldwide Web. Such products include Netscape Navigator and Microsoft Explorer.

caching Storing or buffering data in a temporary location, so that the information can be retrieved quickly by an ap-

plication. On the Internet, ISPs cache Web page data on their networks for use by their subscribers to speed up access to commonly accessed Web content.

click-throughs The number of times a user "clicks" on an online ad, often measured as a function of time ("ad clicks per day").

client A software program used to contact and obtain data from a server software program on another computer, often across a great distance. Each client program is designed to work with one or more specific kinds of server programs, and each server requires a specific kind of client.

checkout The process of entering billing, shipping, and credit card information into the a merchant system after completing an online shopping excursion.

cookie A persistent piece of information, stored on the user's local hard drive, that is keyed to a specific server (and even a file pathway or directory location at the server) and is passed back to the server as part of the transaction that takes place when the user's browser again crosses the specific server/path combination.

cost per thousand (CPM) The cost to deliver 1,000 impressions; associated with delivery of ad views on the Internet, and delivery to people or homes in traditional media.

credit card authorization The process of sending credit card purchase information to a product or service provider for authorization.

cyberspace Term originated by author William Gibson in his novel "Neuromancer" and currently used to describe the whole range of information resources available through computer networks.

demography The study of the characteristics of population groups in terms of size, distribution, and vital statistics.

digital certificates Digital documents that verify a user's identity and prevent impersonations. Digital certificates are issued by a certificate authority whose identity is known and recognized. This verification process is similar to that provided by a driver's license, which verifies the connec-

tion between the photograph and the personal identification. Cryptographic checks, including a digital signature, ensure that the information within the certificate can be trusted.

domain name The unique name that identifies an Internet site, such as “microsoft.com”. A domain name always has two or more parts, separated by periods. The part to the left of the period is the most specific, and the part on the right is the most general. A given machine on a network may have more than one domain name, but a given domain name points to only one machine. Usually, all of the machines on a particular network will use the same phrase as the right-hand portion of their domain names: e.g., gateway.microsoft.com, mail.microsoft.com, or www.microsoft.com. It is also possible for a domain name to exist but not be connected to an individual machine. This is often done so that a group or business can have an Internet e-mail address without having to establish a real Internet site. In these cases, some real Internet machine must handle the mail on behalf of the listed domain name.

download The transfer of a file from a server computer to a client computer. Alternatively, sending a file from one's own computer to any other computer (peer-to-peer transfer, not involving a server). An upload is the transfer of a file in the opposite direction.

duration time The length of time between two events, such as successive requests to one or more Web pages (page duration) or visits to a given Web site (inter-visit duration).

EC/EDI System Business system built around standard EDI formats and re-engineered processes to achieve all-electronic capabilities.

electronic commerce (EC) Defined as the use of technology to create the links and enable the functions required between participants in commerce

Electronic Data Interchange (EDI) EDI is generally defined as the application-to-application exchange of formatted transactional data between business entities. This exchange may take place over any type of data network, including company-run private networks, value-added networks (VANs) run by third-party providers, and the Internet. Common applications of EDI include the sending of

purchase orders, invoices, shipping notices, and other frequently used, standardized business documents and forms.

e-mail (electronic mail) Messages, usually text, sent from one person to another via computer. E-mail can also be sent automatically to a large number of addresses.

encryption Making a file unreadable by everyone not in possession of a special software “key,” with which an encrypted file can be appropriately deciphered.

FAQ (frequently asked questions) FAQs are documents that list and answer the most common questions on a particular subject. There are hundreds of FAQs available on the Internet on subjects as diverse as pet grooming and cryptography. FAQs are usually written by knowledgeable people who grew tired of answering the same questions repeatedly.

file transfer protocol (FTP) An Internet utility program used to obtain files from another system or to move files between systems. These files could be information, images or software programs.

forms The capability in many browser/navigator software packages to accept input in text-entry fields displayed on the user's screen. Customized forms can be developed easily to request information for company data, including time cards, expense reports, personnel records, and other such corporate information.

frequency The number of times people (or homes) are exposed to an advertising message, an advertising campaign, or a specific media vehicle. Also, the period of issuance of a publication, e.g., daily or monthly.

gateway The technical meaning is a hardware or software set-up that translates between two dissimilar protocols; for example, Prodigy has a gateway that translates between its internal, proprietary e-mail format and the Internet's e-mail format. Another, sloppier meaning of gateway is to describe any mechanism for providing access to another system; e.g., AOL could be called a gateway to the Internet.

HTML (hypertext markup language) A simple coding system used to format documents for viewing by Worldwide Web clients. HTML can be compared to early word-processing software, in which all special characters, like bold or underline, need to be marked, or “tagged,” to let a

printer know that the character requires special consideration during output. Web pages are written in this standard specification, which is a data type definition (DTD), or subset of SGML (standardized graphics markup language).

HTTP (hypertext transfer protocol) An Internet computer communication encoding standard for the exchange of multimedia documents on the Web.

helper application A program launched by a browser to view a particular type of data, such as a sound file.

hit (Web site) Web-speak for a successful access to a file on a Web page. Often used to attempt to compare popularity in the context of getting so many “hits” during a given period. A “newbie” mistake is equating hits with “visits” (see definitions below). A single visit usually is recorded as several hits, because each file included in a Web page that is accessed is recorded as a hit.

home page The first HTML (hypertext markup language) page that users generally see on a World Wide Web site. The home page represents the image that a company or individual chooses to project to users on the Internet. Most home pages are structured to also provide links to relevant documents or information at other locations on the Internet.

host Any computer on a network that is a repository for services available to other computers on the network. It is common to have one host machine that provides several services, such as the Web and Usenet (see definition below).

hyperlink An electronic path that connects two places in a network, often represented as underlined text, buttons, or pointers on Web pages.

hypertext Generally, any text that contains “links” to other documents — words or phrases in the document that can be chosen by a reader and which cause another document to be retrieved and displayed.

image map A clickable picture that directs the browser to different links, depending on which part of the image is clicked.

impressions The gross sum of all media exposures (number of people or homes) without regard to duplication.

ISP (Internet service provider) A business that allows companies and individuals to connect to the Internet by providing the interface to the Internet backbone.

Internet The global network of networks that grew out of a Department of Defense-funded research project (DARPA).

Intranet An in-house “Internet.” Usually a company’s internal Web site, using browsers and HTML (or other software) on a LAN, which communicates general information to employees and may let them communicate with one another. An Intranet may or may not be connected to the Internet.

inventory Normally defined as the quantity of goods or materials on hand. On the Internet, a site’s inventory is the number of page views it will deliver in a given period of time, and is thus the amount of product that can be sold to advertisers.

Java A new, object-oriented programming language developed by Sun Microsystems that allows Web pages viewed with Java-enabled Web browsers to display applets, which are small programs that can create sound and graphical animations, among other uses.

KBPS (kilobits per second) Approximately 1,000 bits per second. An abbreviation for a unit of measure used for gauging the transmission of digital data from one point to another, typically but not necessarily across telephonic networks. Local-area networks (LANs) usually are measured in megabits per second (approximately one million bits per second).

LAN (local-area network) A computer network limited to an immediate area, usually one building or one floor of a single building.

leased lines A permanent physical connection between two locations that forms a private wide-area network (WAN) or links a single computer or a network of computers to packet-switching networks like the Internet. They are called leased lines because they are rented from a telephone company.

link The path between two documents, which associates an object, such as a button or hypertext, on a Web page with another Web address. The hyperlink allows a user to

point and click on an object and thereby “move” to the location associated with that object by loading the Web page at that address.

mail list (or mailing list) A (usually automated) system that allows people to send e-mail to one address, whereupon their message is copied and sent to all other subscribers to the mailing list. In this way, people who have many different kinds of e-mail access can participate in discussions together.

megabyte A million bytes. A thousand kilobytes.

merchant system The hardware and software required to present product information that can be loaded and updated by merchants, browsed and purchased by customers, and delivered as orders to fulfillment houses. Includes: an administrative interface, separate servers for managing product content and transaction services, and integrated relational databases.

MIME (multipurpose Internet mail extensions) The public domain multimedia standard for Internet SMTP e-mail systems. Graphics, audio clips, or video can be sent along with an e-mail message by using MIME attachments.

modem A contraction for modulation/demodulation. A modem is a device that converts a digital bit stream into an analog signal (modulation) and converts analog signals back into digital signals (demodulation). A modem typically uses telephone lines, and the analog signals are typically sounds. Fax machines have built-in modems.

Mosaic User interface software for navigating, browsing, and accessing files on the Internet, particularly the World Wide Web. The Mosaic browser was developed at NCSA, the National Center for Supercomputing Applications at the University of Illinois.

netiquette Short for “Net etiquette,” or the traditional way of doing things on the Internet. For example, sending an e-mail message in all caps is considered rude, as it’s the textual equivalent of shouting.

network (1) Any time a computer is connected to two or more other computers, so that they can share resources, creates a network. Connecting two or more networks creates an internet. (2) A broadcast entity that provides programming and sells commercial time in programs aired

nationally via affiliated or licensed local stations — e.g., ABC television network, ESPN cable network. On the Internet, an aggregator/broker of advertising inventory from many sites.

newbie A newcomer to the Internet, particularly someone who, through ignorance or indifference, violates the traditional rules of Internet etiquette, or “netiquette.”

newsgroup Newsgroups are like publicly accessible mailing lists, which anyone can read or post a message to, although some are moderated, some are private, and some are read-only. Continuing discussions on a particular subject within a newsgroup are called “threads.” There are hundreds of newsgroups and newsgroups hierarchies (such as news.answers, for newbies, or comp.sys.palmtops, for those interested in handheld PCs), which can be accessed with newsreader applications or clients (similar to how e-mail clients are used for e-mail and browsers are used to view the Web). The main “network” of newsgroups is called Usenet.

node Any single computer connected to a network.

operating system A computer-system-specific set of programs that interoperate with the computer system to control resources and to process those resources. Examples of operating systems are DOS, Windows 3.1, Windows 95, Windows NT, UNIX, Mac OS (System 7.6), and OS/2.

page¹ An HTML document that may contain text, images, and other in-line elements, such as Java applets and multimedia files. It may be static or dynamically generated. It may be a stand-alone HTML document, or one which is contained within a frame.

page view The number of times a page was downloaded by users, often measured as a function of time (“page views per day”). The actual number of times the page was seen by users may be higher because of “caching.”

pagemaster A designation for the person responsible for the contents of a Web site. While the Webmaster is responsible for the technical aspects of a Web site, the pagemaster has content responsibility (see “sitemaster”).

penetration The percentage of people (or homes) within a defined universe that are physically able to be exposed to a medium.

POP (Internet access) Points of presence is a term used by Internet service providers to indicate the number or geographical locations of their access to the Internet.

port (1) The physical place where information goes into, or out of, a computer — e.g., the serial port on a personal computer is where a modem would be connected. (2) On the Internet, port often refers to a number that is part of a URL, appearing after a colon at the end of the domain name (e.g., <http://www.apple.com:80/>). Every service on an Internet server “listens” on a particular port number on that server. Most services have standard port numbers; for example, Web servers normally listen on port 80. Services can also listen on non-standard ports, in which case the port number must be specified in a URL when accessing the server. Thus, <gopher://peg.cwis.uci.edu:7000/> shows a gopher server running on a nonstandard port (the standard gopher port is 70). (3) Port also refers to the act of translating a piece of software from one type of computer system to another, such as translating a Windows program so that it will also run on a Macintosh.

protocol A common language between computers over a network, such as hypertext transfer protocol (HTTP), used by the Web, or file transfer protocol (FTP), a quick software method of sending or receiving files over the Internet.

Another example is Internet public key cryptography, a security scheme in which a different key is used for encryption and decryption. Key-1 is the public key; that is, everyone knows it. Key-2 is private, so that only the recipient knows it. In this scheme, it is computationally impossible to derive key-2 from key-1.

public key cryptography The system of using digital codes called “keys” to authenticate senders of messages and securely encrypt message content.

qualified hits¹ Hits to a Web server that deliver information to a user. Qualified hits exclude error messages (i.e., “URL Not Found” or “Permission Denied”), redirects, and requests by computer programs (as opposed to end-users).

RAM (random access memory) A specific type of memory in which each element can be individually addressed and accessed with the same speed as any other element. RAM is the predominate type of memory in the main memory of a computer. One of the earliest forms of RAM was called “core,” because it consisted of directly addressed

cores of ferromagnetic material, each of which represented one bit. A faster, more recent form of RAM is dynamic RAM (or DRAM).

rating The percentage of a given population group consuming a medium at a particular moment. Generally used for broadcast media but can be applied to any medium. One rating point equals one percent of the potential viewing population.

reach The number of homes or people exposed at least once to an impression (ad view, program, commercial, print page, etc.) across a stated period of time. Also called the cumulative or unduplicated audience.

router A special-purpose computer (or software package) that handles the connection between two or more networks. Routers spend all of their time looking at the destination addresses of the packets passing through them and deciding which route to send them on.

SET Secure electronic transaction protocol.

secure sockets layer (SSL) An open protocol for encrypting data communications across computer networks. SSL provides encryption, user verification, and message integrity capabilities. (Also, see SSL entry.)

server Any computer that allows other computers to connect to it. Most commonly, servers are dedicated machines. Most machines using UNIX are servers. Technically, peer-to-peer network nodes are also examples of servers (such as Microsoft’s Windows for Workgroups and Windows 95 or Apple’s System 7.x file sharing).

session A series of consecutive visits made by a visitor to a series of Web sites.

share “Share of audience” is the percentage of homes using television at a particular time that are tuned to a particular program or station. “Share of market” is the percentage of total category volume (dollars, unit, etc.) accounted for by a brand. “Share of voice” is the percentage of advertising impressions generated by all brands in a category accounted for by a particular brand, but often also refers to share of media spending.

shopping basket Repository that resides on the client for storing, reviewing, and updating items purchased through the merchant system.

SHTTP (secure hypertext transfer protocol) Terisa Systems' implementation of secure information transmission through the Internet.

sitemaster (See Webmaster.)

SMTP (simple mail transfer protocol) The Internet standard protocol for the exchange of e-mail messages.

sponsorship The purchase of more than one commercial within a program, allowing advertisers to receive bonus time via billboards, or exclusivity of advertising within the brand's product category, or both.

SSL (secure sockets layer) Netscape Communications' implementation of secure information transmission through the Internet. (Also see entry for secure sockets layer.)

T-1 A high-speed leased line often used by companies for access to the Internet.

T-3 A leased-line connection capable of carrying data at 45,000,000 BPS — more than enough to do full-screen, full-motion video (see also: bandwidth, bit, T-1).

TCP/IP (transmission control protocol/Internet protocol) This is the suite of protocols that defines the Internet. Originally designed for the UNIX operating system, TCP/IP software is now available for every major kind of computer operating system. To be truly on the Internet, a computer must have TCP/IP software (see also: Internet, UNIX).

terminal A device that allows you to send commands to a computer somewhere else. At a minimum, this usually means a keyboard and a display screen and some simple circuitry. Typically, terminal software is used in a personal computer — the software pretends to be (that is, “emulates”) a physical terminal and allows the user to type in commands to a computer that is somewhere else.

terminal server A special-purpose computer that has places to plug in many modems on one side and a connection to a LAN or host machine on the other side. Thus, the terminal server does the work of answering the calls and

passes the connections on to the appropriate node. Most terminal servers can provide PPP or SLIP services if connected to the Internet.

unique users¹ The number of unique individuals who visit a site within a specific period of time. With today's technology, this number can only be calculated with some form of user registration or identification.

universe The total population within a defined demographic, psychographic, or product consumption segment, against which media audiences are calculated to determine ratings, coverage, reach, etc.

UNIX An operating system developed by AT&T that is widely used by universities. UNIX uses TCP/IP as its standard communications protocol, making UNIX a natural access operating system for the Internet.

upload The transfer of a file from a client computer to a server computer. Alternatively, receiving a file from another computer where neither is a server.

URL (uniform, or universal, resource locator) The URL provides information on the protocol, the system, and the file name, so that the user's system can find a particular document on the Internet. An example of a URL is <http://www.sholink.com/>, which indicates that “hypertext transfer protocol” is the protocol and that the information is located on a system named “www.sholink.com,” which is the Sholink Corporation's Web server. This example does not need a particular file name, since this Web server, like most, is set up to point to the company's home page if no file name is used.

usage A program available on the Net that many Webmasters use to track Web site usage by visitors. Usage measures the number of accesses to each Web page at a site and cumulatively reports it for a given period, usually one week.

VANs (value-added networks) Privately owned and maintained computer networks, in which network bandwidth is leased for use between geographical disparate sites or between autonomous organizations.

visit A sequence of hits made by one user at a site. It is important to understand that Internet technology does not maintain a continuous “connection” (like a radio signal) to

a site. The data is sent in packets. If a user makes no request for data from the site during a predetermined (and discretionary) period of time, the user's next hit would constitute a new visit. This length of time is known as the "time-out" period. While this interval is different for each site, I/PRO currently uses 30 minutes for all sites for purposes of comparability.

volume discount The price discount offered to advertisers who purchase a certain amount of volume from the medium — e.g., the number of pages or dollar amount in magazines.

WAN (wide-area network) Any internet or network that covers an area larger than a single building or campus (see also: Internet, LAN, network).

wearout A level of frequency, or a point in time, when an advertising message loses its ability to effectively communicate.

Web page An HTML (hypertext markup language) document on the Web, usually one of many that together make up a Web site.

Web server A system capable of continuous access to the Internet (or an internal network) through retrieving and

displaying documents via hypertext transfer protocol (http). Files can be audio clips, video, graphics, or text.

Web site The virtual location for an organization's presence on the Worldwide Web, usually made up of several Web pages and a single home page designated by a unique URL.

Webmaster Generally accepted term for the person responsible for a Web site. However, due to increasing requirements in the development and maintenance of a Web site, Sholink Corp. has suggested segmenting the responsibilities and focusing the responsibilities of a Webmaster to just the technical aspects of a Web site (see also: page-master and sitemaster).

Worldwide Web The mechanism developed by Tim Berners-Lee for CERN physicists to be able to share documents via the Internet, using HTML and Web browsers. The Web allows computer users on any platform to access information across systems around the world using URLs (uniform resource locators) to identify files and systems, and hypertext links to move between files on the same or different systems.

WWW Generally accepted shorthand for the World Wide Web. Also called the Web, or W3.

Notes:

(1) Source: Internet Profiles Corporation, "An Attempt at Common Vocabulary for Web Measurement, Draft 1.0."

Chapter 16: History of Retailing, a Time Line

Back to the Future A century of selling.

1896

Siegel-Cooper opens at Sixth Avenue and 18th Street, as large uptown "department" stores eclipse small dry goods stores in lower Manhattan. Known



CULVER PICTURES

as "the big store," Siegel-Cooper has a post office, a dental parlor and a nursery.

Wanamaker's, which pioneered the department store in Philadelphia, establishes a beachhead in New York in the former A.T. Stewart dry goods location, a five-story cast-iron building at Astor Place.

1902

Macy's moves from Manhattan's Ladies Mile shopping strip to 34th Street and Broadway, a burgeoning retail district. The store runs a steam wagonette between 14th and 34th Streets for customers reluctant to make the trip.

Marshall Field's opens a 12-story store in Chicago, complete with six string orchestras.

J.C. Penney opens its first store — called the Golden Rule — in Kemmerer, Wyo.

1903

Erich Brothers in Manhattan stages the first **Paris fashion show** for customers.

1905

The **Spiegel** Company publishes its first catalogue in Chicago and mails it to customers within a 100-mile radius.

1907

Herbert Marcus Sr., his sister, Carrie Marcus Neiman, and her husband, A.L. Neiman, open the first **Neiman Marcus** store in Dallas.



NEIMAN MARCUS

1908

Edward A. Filene begins selling excess merchandise in the **basement** of his father's store on Washington Street in Boston.

1912

Department stores increase customer traffic by installing **escalators**.

F.W. Woolworth incorporates, with 596 stores across America and into Canada, 33 years after Frank Woolworth opened his "Great 5¢ Store" in Lancaster, Pa.

1914

B. Altman follows Macy's north, to a 12-story Italian Renaissance building at Fifth Avenue and 34th Street, where its **mechanized Christmas window displays** draw huge holiday crowds; Arnold Constable joins the new hub.

1917

Barnes & Noble opens its first bookstore in New York at 31 West 15th Street.

1920

Frieda Loehmann, a former department-store buyer, starts selling overstocks out of her Brooklyn home.



THE WASHINGTON POST



BARNEY'S NEW YORK

1923

Barney Pressman opens a men's discount clothing store at Seventh Avenue and 17th Street.



THE NEW YORK TIMES

1924

Macy's holds its first **Thanksgiving Day Parade**.

1925

Sears, Roebuck & Company, which put out its first catalogue (for watches and jewelry) in 1888, opens its first store in Chicago.

1928

Lord & Taylor organizes an in-store French decorative art show, filled with Picassos, Braques and Utrillos.

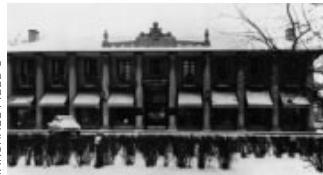
Bergdorf Goodman establishes the northernmost outpost of Fifth Avenue retailing by moving to 58th Street.

1929

Federated Department Stores becomes the first to form a holding company of family-owned department store chains — including Abraham & Straus and F & R Lazarus & Company — to increase market share and operating efficiency.

1930

Department stores branch out, with Marshall Field's in the **suburbs** of Evanston, Lake Forest and Oak Park, Ill.; Saks Fifth Avenue in Chicago, and B. Altman in White Plains.



MARSHALL FIELDS

1931

Bloomingdale's \$3 million building opens, occupying the block bounded by 60th and 59th Streets from Lexington to Third Avenues.

1947

Best, the store where the carriage trade outfitted its children, moves to a 12-story building at Fifth Avenue and 51st Street.

1950

Northgate Shopping Center, the first **open-air pedestrian mall**, opens in Seattle.

1956



NORTON & PEEL
Southdale, the first **enclosed, climate-controlled mall**, opens in Edina, a suburb of Minneapolis.

1957

Baby Furniture and Toy Supermart, the original **Toys "R" Us**, opens in Washington.

1959

Henri Bendel's main floor is rebuilt into nine shops on an "avenue" reminiscent of the Faubourg St. Honoré in Paris.

1960

Bloomingdale's begins its annual **fall salutes to countries**, starting with an extravaganza of Italian home furnishings.

1962

Sam Walton opens his first discount store in Rogers, Ark.

1965

Paraphernalia opens in Manhattan, ushering in a national wave of boutiques inspired by London's hip Carnaby Street.

1968

Yves Saint Laurent opens Rive Gauche in Manhattan, taking over a Gristede's supermarket to become the first designer boutique on Madison Avenue.

1969

The Gap opens its first store on Ocean Avenue in San Francisco.

THE LIMITED, opened in 1963 by Leslie Wexner in Columbus, Ohio, expands to five stores and issues a public stock offering.

1970

Vanity Fair opens its employee store in Reading, Pa., to the public, kicking off the **factory outlet** craze.

1976

Sol Price opens his members-only **Price Club** on Morena Boulevard in San Diego.



James Rouse opens his first downtown marketplace, **Faneuil Hall** (above) in Boston.

1977

Giorgio DeLuca and Joel Dean open **Dean & DeLuca** at 121 Prince Street in New York as SoHo begins to gentrify.

1978

The first **Home Depot** opens in Decatur, Ga.

1980

Castle Road **Outlet Center**, the first of its kind in the New York area, opens in Secaucus, N.J.

1985

L.L. Bean, the granddaddy of the mail-order business, starts an **800 number**, riding the crest of the catalogue craze.

Home Shopping Network starts, followed within a year by QVC.

**1986**

Polo/Ralph Lauren opens the first "life style" store on Madison Avenue at 72d Street in the old Rhinelander Mansion.

The first "power center" mall featuring discount department stores, off-price retailers and warehouse clubs, 280 Metro Center, opens in Colma, Calif.

1988

Robert Campeau, a Canadian developer, acquires **Federated**, the owner of Bloomingdale's and other stores. In 1990, Federated enters Chapter 11 protection; in 1992, Macy's follows suit. In 1994, Macy's is taken over by a rehabilitated Federated.

1992

America's largest mall, **Mall of America**, opens in Bloomington, Minn.

Bed Bath and Beyond, a superstore sweeping the country, opens in the old Siegel-Cooper building at Sixth Avenue between 18th and 19th Streets, as part of a revival of Ladies Mile.

1993

Barneys New York opens its uptown store at Madison Avenue and 61st Street. A rush of designer flagship stores follows.

The **Warner Brothers Studio Store** opens at 57th Street and Fifth Avenue.

1995

Calvin Klein opens his minimalist store in the old Morgan Guaranty Bank building at Madison Avenue and 60th Street.

1996

Giorgio Armani and Valentino open new and grander stores on **Madison Avenue**, joined by Moschino, Prada and Etro; Gianni Versace opens on Fifth Avenue.

Virgin Megastore opens at 45th and Broadway.

The first **Disney Store** in Manhattan opens at 711 Fifth Avenue.

Loehmann's takes over part of Barneys at 17th Street.

Niketown opens on East 57th Street, on the site once occupied by Bonwit Teller and then by Galeries Lafayette.

Kmart moves into three floors of one of Wanamaker's old buildings near Astor Place.

Barneys files for Chapter 11 protection.

1997

Playing catch-up with Amazon.com, the 2.5 million-title bookstore, which opened on the **Internet** in 1995, Barnes & Noble starts selling books on line with an offering of 1 million titles. They join retail sites like fashionmall.com, which features Donna Karan, Joseph Abboud and Gianfranco Ferré, and internetmall.com, representing more than 25,000 merchants from brand names to artisans.

— LINDA F. MAGYAR

Chapter 17: Appendix

This chapter includes the following sections:

- “General Thoughts on Internet Tax Issues”
- “A Framework for Global Electronic Commerce — Clinton Administration Draft”
- *Table 17-1: Morgan Stanley Domestic Retail Company Universe*
- *Table 17-2: Morgan Stanley Domestic Technology Company Universe*
- *Table 17-3: Public Internet Companies*
- *Table 17-4: Internet IPO Market Environment*

General Thoughts on Internet Tax Issues

A growing concern for companies doing business on the Internet is the increasing focus on the taxation of electronic commerce by state and local governments. Some tax officials may view electronic commerce as a potential source of new revenues, or, alternatively, may be concerned that traditional tax “toll booths” may be bypassed in cyberspace.

A wide range of online activities potentially is subject to tax. Some states have assessed telecommunications taxes on Internet access services. Others have imposed sales and use taxes on the creation and maintenance of Web sites, among other Internet services. It is also possible that states will look to expand their sales tax base to include “content,” such as the provision of information services over the Internet.

There is a general consensus that existing “nexus” principles, which generally govern a state’s ability to assert jurisdiction to tax, need to be rethought in light of the Internet. Based in part on concepts of physical presence within a state, these principles may not be as clear in the Internet environment, where geographic borders are less and less relevant.

For example, consider a company that sells into a state through a computer server located in that state but otherwise has no offices, employees, or operations in the state. The Supreme Court’s 1992 decision in *Quill v. North Da-*

kota sets forth guidelines that some view as a precedent for applying nexus concepts to the Internet. In *Quill*, the Court held that an out-of-state mail-order house with no physical presence in North Dakota could not be compelled by that state to collect and remit the state’s sales or use tax on goods purchased for use in the state. Some states, however, may take the view that the *Quill* holding is limited to mail-order sales of tangible personal property, and may seek a different standard for determining nexus for various forms of doing businesses on the Internet.

At present, policies for taxing the Internet vary from state to state. An overarching goal for businesses is to avoid double taxation of activities by competing jurisdictions. Businesses also seek uniform guidelines for determining which transactions and activities are subject to tax and how the tax is to be collected. Another goal is economic neutrality, meaning that states would tax those who provide goods and services via the Internet no differently than those who provide goods and services through other channels. Attempts are being made to translate these principles into legislation that could be adopted by the states. In the meantime, some are seeking a moratorium on new taxes.

Federal legislation introduced by Rep. Christopher Cox (R-Calif.) and Sen. Ron Wyden (D-Ore.) would place an indefinite moratorium on the imposition of state and local taxes on the Internet, and only allow existing taxes on

goods and services purchased online to be the same as those for comparable mail order transactions. The legislation also would require that the Administration, within two years, send policy recommendations to Congress on the taxation of sales and other transactions made on the Internet or through interactive computer services. Some are pushing for Congress to consider the legislation this year, including the Clinton administration, which threw its support behind the bill on May 22.

The White House last year established an interagency task force, led by Ira Magaziner, to develop a set of principles to guide Administration thinking on a wide range of regulatory issues relating to electronic commerce. The task force generally has taken the position — applauded by businesses — that governments should refrain from imposing new or unnecessary regulations, bureaucratic procedures, or taxes or tariffs on electronic commerce.

Another potential concern for businesses is the possibility of double taxation of Internet activities by the United States

and its trading partners. The U.S. Treasury Department in November issued a report on international tax issues arising from electronic commerce, taking the general position that a “residence-based” approach should govern the taxation of income from electronic commerce. This approach would give the United States the primary right to tax income earned by U.S. providers of Internet goods and services, who have taken the lead in the worldwide electronic commerce marketplace. European Community countries, meanwhile, have moved to impose their value-added taxes (VATs) on various Internet activities.

At the state, local, and international levels, debate over the cross-border taxation of electronic commerce is unlikely to be resolved anytime soon. Businesses are joining that debate, explaining to lawmakers and regulators the intricacies of electronic commerce and the importance of a tax framework that does not discourage innovation and investment on the information superhighway.

Framework for Global Electronic Commerce

The United States government is preparing a strategy to help accelerate the growth of global commerce across the Internet. An interagency task force has worked over the past eight months to prepare draft policy. The Administration is now seeking comments from interested parties prior to redrafting and formally approving the strategy.

The proposed strategy establishes a set of principles to guide policy development, outlines Administration positions on a number of key issues related to electronic commerce, and provides a road map for international negotiations, where appropriate. It also identifies which government agencies will take the lead in implementing this work.

Below we provide excerpts from the executive summary of the draft.

Executive Summary

The Clinton Administration has developed a draft policy for Global Electronic Commerce. An interagency working group on Electronic Commerce¹, chaired by Ira C. Magaziner, Senior Advisor to the President for Policy Development, has been meeting for eight months, analyzing the issues and consulting with academics, business representatives, consumer groups, and members of the Internet community in order to prepare the paper.

The Framework for Global Electronic Commerce is an important element of the Administration's agenda on trade and technology as it discusses the commercial implications of the Global Information Infrastructure (GII). It lays out the principles which should support policy development, articulates a number of policies, and outlines a road map for discussions with our international trading partners to ensure the development of a free and open global electronic marketplace.

In recent years, the Internet has blossomed into an appliance of every day life, an informational medium accessible from

almost every point on the planet. Over the next decade, it will produce profound changes in the prevailing economic order, with the potential to benefit the citizens of all nations.

Nowhere is this potential more evident than in the global trade in services, including software, entertainment and information products, and professional services, which now accounts for well over \$40 billion of U.S. exports alone. Electronic commerce has the potential to revolutionize trade in this area and others by lowering transaction costs dramatically and facilitating new types of commercial transactions.

Many businesses and consumers are still wary of conducting extensive business in cyberspace because of the lack of a predictable legal environment governing transactions and resulting concerns about contract enforcement, intellectual property protection, liability, privacy, security, and other matters.

Another concern of Internet users is the possibility that governments will impose disparate and extensive regulations on the Internet in areas such as taxes and duties, content restrictions, and standards.

The Clinton Administration firmly believes that all parties can gain from a non-regulatory, market-oriented approach to electronic commerce. By acknowledging the unique characteristics of the Internet and avoiding undue restrictions, governments can take advantage of a historic opportunity and contribute to the growth of electronic commerce worldwide.

The Administration believes that widespread competition and increased consumer participation in marketplace choices, not government regulation, should be the defining features of the new digital age.

Major policy recommendations include:

Fostering the Internet as a non-regulatory, market-driven medium.

- Establishing cyberspace as a duty-free zone.
- Advocating for no new taxes on the Internet.
- Allowing electronic payment systems to evolve without premature government involvement.
- Encouraging industry self-regulation where appropriate.

¹The interagency working group consists of high-level representatives of several cabinet agencies, including the Departments of Treasury, State, Justice, and Commerce, as well as the Executive Office of the President, including the Council of Economic Advisors, the National Economic Council, the National Security Council, the Office of Management and Budget, the Office of Science and Technology Policy, the Office of the Vice-President, and the U.S. Trade Representative. Independent commissions including the Federal Communications Commission and the Federal Trade Commission also have been involved.

- Enabling market forces to drive the development of technical standards.

Ensuring a transparent and harmonized global legal environment.

- Creating a “Uniform Commercial Code” for cyberspace.
- Protecting intellectual property online.
- Partnering with industry to safeguard security in the electronic marketplace.

Allowing competition and consumer choice to shape the marketplace.

- Maintaining privacy and the integrity of personal information.
- Fostering fair competition and striving for interoperability among national telecommunications systems.
- Empowering consumers to manage questions of content.
- Opposing non-tariff barriers which limit free trade across the Internet, such as content restrictions, discriminatory telecommunications regulations, standards requirements, or anti-competitive compulsory licensing requirements.

Table 17-1

Morgan Stanley Domestic Retail Stock Universe: Performance, Valuation, and Financial Statistics

Company	Ticker	Price 5/16/97	52-Wk Change %				1997 YTD	Price Range	Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		Rev Chg C4Q96/ C4Q95	IBES Mean% Growth	1997 P/E to Growth	Mkt Cap to LTM Sales	LTM Financial Data (b)				Fiscal Year Ends			
			5-day	1995	1996	High				C96A	C97E	C96A	C97E					Sales (\$MM)	Gross Margin	Oper. Margin	Net Margin				
Mall-Based Apparel - Sharon Pearson																									
Abercrombie & Fitch	ANF	18	11	--	(29)	9	27	13	920	--	0.66	--	27	31%	30	0.9	2.7	335	--	--	--	--	Jan		
American Eagle Outfitters	AEOS	12	6	(56)	34	57	30	7	123	0.60	0.84	21	15	--	19	0.8	0.4	326	--	--	--	--	Jan		
Ann Taylor	ANN	23	(3)	(70)	69	33	25	11	592	0.52	1.01	45	23	--	18	1.3	0.8	786	44%	6.7%	0.6%	0.6%	Jan		
The Buckle	BKE	17	5	65	41	39	21	11	243	0.94	1.12	19	16	10%	15	1.0	1.2	206	47%	7.7%	5.1%	Jan			
Claire's Stores	CLE	18	(4)	47	68	38	27	11	871	0.96	1.14	19	16	21%	19	0.8	1.9	456	--	--	--	--	Jan		
Designs Inc	DESI	4	(3)	0	(20)	(22)	7	4	68	0.41	0.37	11	12	-10%	20	0.6	0.2	290	30%	3.4%	2.2%	Jan			
Gadzooks	GADZ	32	0	46	8	75	41	18	275	0.88	1.17	36	27	52%	34	0.8	2.1	128	32%	9.2%	3.2%	Jan			
The Gap	GPS	33	1	38	43	9	37	26	8,990	1.61	1.87	20	17	10%	16	1.1	1.7	5,284	38%	13.8%	8.6%	Jan			
Intimate Brands	IBI	21	4	(15)	14	20	25	16	5,176	1.05	1.23	20	17	19%	17	1.0	1.7	2,997	--	--	--	--	Jan		
Limited	LTD	19	3	(6)	7	5	23	17	5,218	1.14	1.26	17	15	7%	14	1.1	0.6	8,645	29%	7.5%	5.0%	Jan			
Pacific Sunwear	PSUN	35	10	(42)	329	35	36	9	293	0.89	1.33	39	26	37%	28	0.9	1.8	167	32%	7.7%	4.8%	Jan			
Paul Harris Stores	PAUH	16	8	(50)	1083	(9)	23	5	163	0.81	1.09	20	15	15%	29	0.5	0.9	190	38%	8.2%	4.6%	Jan			
Talbots	TLB	26	3	(8)	0	(10)	36	24	849	1.92	2.05	13	13	1%	15	0.8	0.8	1,019	36%	10.7%	6.2%	Jan			
Urban Outfitters	URBN	14	(3)	(15)	12	8	27	11	245	0.75	0.88	19	16	15%	21	0.8	1.6	156	50%	13.7%	8.5%	Jan			
Wet Seal	WTSLA	29	(0)	54	217	35	41	13	396	1.12	1.49	26	19	1%	25	0.8	1.1	375	27%	6.3%	1.6%	Jan			
<i>Other</i>																									
Gymboree	GYMB	24	2	(28)	11	7	36	20	619	1.25	1.45	20	17	3%	22	0.8	2.0	303	46%	15.7%	10.5%	Jan			
		Mean:				3	(3)	118	20					23	18	15%	0.9	1.3	37%				9.2%	5.1%	
		Median:				3	(8)	24	14					20	16	0.8				21,664					
		Sum:				25,042																			
Strip Center/Off-Price-Apparel - Sharon Pearson																									
Catherine's	CATH	4	(6)	(6)	(33)	(27)	10	4	29	0.15	0.33	--	12	-7%	15	0.8	0.1	268	30%	1.3%	0.5%	Jan			
Cato	CACOA	5	6	7	(35)	(9)	9	4	130	0.37	0.39	12	12	-3%	15	0.8	0.3	492	30%	3.4%	1.4%	Jan			
Charming Shoppes	CHRS	6	(2)	(57)	76	14	8	4	610	(0.07)	0.18	--	--	-16%	12	--	0.6	1,016	23%	-0.8%	-0.7%	Jan			
Dress Barn	DBRN	16	3	(8)	52	8	19	9	371	1.08	1.30	15	13	10%	12	1.0	0.7	542	34%	5.2%	3.7%	Jul			
Filene's Basement	BSMT	7	4	(50)	78	76	9	4	149	0.32	0.41	23	18	-10%	19	0.9	0.3	545	24%	2.6%	1.2%	Jan			
Loehmann's	LOEH	6	(3)	--	(3)	(73)	31	6	60	0.91	0.78	7	8	99%	24	0.3	0.1	418	32%	6.0%	-0.3%	Jan			
Ross Stores	ROST	27	(4)	70	161	8	30	14	1,332	1.58	2.05	17	13	14%	14	0.9	0.8	1,690	29%	8.0%	4.8%	Jan			
Stein Mart	SMRT	31	2	(14)	84	54	32	16	718	1.10	1.41	28	22	24%	19	1.1	1.1	659	27%	7.2%	4.2%	Dec			
TJX Companies	TJX	48	2	21	151	1	50	26	4,311	2.44	2.99	20	16	19%	16	1.0	0.6	6,645	22%	6.0%	5.3%	Jan			
The Men's Wearhouse	SUIT	29	11	72	(5)	20	37	16	615	1.01	1.25	29	24	17%	25	0.9	1.3	484	39%	7.9%	4.4%	Jan			
Value City Dept. Stores	VCD	9	0	(23)	56	(18)	14	8	274	0.68	0.62	13	14	99%	14	1.0	0.3	1,049	37%	3.8%	2.3%	Jul			
		Mean:				1	1	53	5					18	15	6%	0.9	0.6	30%				4.6%	2.4%	
		Median:				2	(7)	56	8					17	14	0.9				13,807					
		Sum:				8,599																			
Department Stores/Mass Merchants - Bruce Missett																									
Bon-Ton Stores	BONT	7	6	(53)	23	10	7	5	77	0.60	--	11	--	2%	15	--	0.1	629	37%	4.2%	1.1%	Jan			
Dillard Department Stores	DDS	32	3	7	8	4	40	28	3,644	2.11	2.44	15	13	1%	12	1.1	0.6	6,426	36%	7.8%	2.2%	Jan			
Federated Dept. Stores	FD	38	6	42	25	10	39	29	7,826	2.18	2.59	17	15	-4%	16	0.9	0.5	15,229	39%	7.9%	3.0%	Jan			
Gottschalks	GOT	5	(7)	(29)	0	2	7	5	56	0.17	0.40	--	13	0%	10	1.3	0.1	440	34%	3.4%	0.4%	Jan			
J.C. Penney	JCP	50	3	7	2	3	57	45	11,590	3.17	3.49	16	14	22%	10	1.5	0.4	26,135	--	--	--	Jan			
Kohl's	KSS	51	0	32	50	29	52	27	3,733	1.39	1.67	36	30	20%	21	1.4	1.5	2,520	33%	7.9%	4.3%	Jan			
May Department Stores	MAY	48	3	25	11	2	50	41	12,047	2.82	3.17	17	15	7%	11	1.4	1.0	12,164	32%	12.9%	6.2%	Jan			
Mercantile Stores	MST	51	1	17	7	4	67	46	1,884	3.43	3.76	15	14	-2%	9	1.5	0.6	3,059	30%	6.4%	4.0%	Jan			
Neiman Marcus	NMG	26	(1)	74	9	1	36	19	1,291	1.43	1.84	18	14	6%	15	0.9	0.6	2,166	32%	7.7%	3.7%	Jul			
Nordstrom	NOBE	47	11	(4)	(12)	32	53	34	3,674	1.84	2.25	25	21	6%	13	1.6	0.8	4,596	31%	3.4%	3.3%	Jan			
Proffits	PRFT	38	1	18	40	4	43	31	1,088	2.10	2.82	18	14	63%	21	0.6	0.6	1,698	--	--	--	Jan			
Saks Holdings	SKS	23	10	--	(22)	(17)	41	19	1,423	0.75	1.49	30	15	11%	30	0.5	0.7	1,945	31%	5.6%	1.2%	Jan			
Sears, Roebuck & Co.	S	50	2	(15)	18	9	57	40	19,697	3.15	3.61	16	14	12%	15	0.9	0.5	39,003	35%	9.1%	3.3%	Dec			
		Mean:				3	10	12	7					20	16	13%	1.1	0.6	33%				6.9%	3.0%	
		Median:				3	12	9	4					17	14	1.2				116,008					
		Sum:				68,030																			

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Table 17-1 (continued)

Morgan Stanley Domestic Retail Stock Universe: Performance, Valuation, and Financial Statistics

Company	Ticker	52-Wk				Mkt Val (\$MM)	FirstCall		FirstCall		Rev Chg	IBES Mean% Growth	1997 P/E to Growth	Mkt Cap to LTM Sales	LTM Financial Data (b)			Fiscal Year Ends		
		Price 5/16/97	Change % 5-day	1995	1996		Mean EPS (a) C96A	C97E	Mean P/E C96A	C97E					Sales (\$MM)	Gross Margin	Oper. Margin	Net Margin		
Discount Stores - Bruce Missett																				
Consolidated Stores	CNS	41	4	16	86	27	44	24	2,745	1.50	2.00	27	21	122%	21	1.0	2,887	--	7.4% 3.2%	
Dayton Hudson	DH	47	(1)	6	57	20	49	27	10,236	2.34	2.87	20	16	3%	14	1.2	0.4	25,371	27% 7.1% 1.9%	
Dollar General	DG	30	(0)	(14)	93	19	35	19	3,360	1.05	1.27	29	24	21%	23	1.1	1.5	2,199	28% 8.9% 5.4%	
Dollar Tree Stores	DLTR	39	(9)	39	132	3	46	23	1,129	1.18	1.50	33	26	61%	24	1.1	2.1	526	37% 12.2% 6.9%	
Family Dollar	FDO	26	(3)	10	48	28	27	15	1,485	1.12	--	23	--	15%	16	--	0.8	1,855	33% 5.8% 3.5%	
Fred's	FRED	12	20	(17)	15	36	12	8	110	0.66	0.83	18	14	-5%	10	1.4	0.3	418	27% 2.4% 1.4%	
Fred Meyer	FMY	45	7	(27)	58	26	47	26	1,169	2.12	2.67	21	17	3%	15	1.1	0.3	3,725	30% 3.6% 1.6%	
Venture Stores	VEN	2	12	(71)	(11)	(21)	9	2	43	(1.67)	--	--	--	-19%	21	--	0.0	1,449	-- -- --	
MacFrugal's	MFI	30	1	(30)	87	14	32	16	734	1.52	1.82	20	16	12%	16	1.0	1.0	773	43% 9.8% 5.6%	
Price/Costco Inc.	COST	32	0	18	65	28	33	19	6,772	1.33	1.63	24	20	11%	14	1.4	0.3	20,616	11% 2.5% 1.3%	
Shopko	SKO	21	4	18	33	38	21	14	666	1.30	1.50	16	14	20%	10	1.4	0.3	2,333	-- -- --	
K Mart	KM	14	8	(45)	46	35	15	9	6,786	0.46	0.70	30	20	-9%	12	1.6	0.2	31,060	22% 2.5% 0.7%	
Waban	WBN	29	3	5	40	10	30	18	949	2.16	2.51	13	11	10%	13	0.9	0.2	4,440	14% 3.3% 1.8%	
Wal-Mart	WMT	30	3	5	2	31	31	22	67,996	1.34	1.52	22	20	12%	13	1.5	0.6	107,496	21% 5.4% 2.9%	
		Mean:	3	(6)	54	21									23	18	18%	1.2	0.6	27% 5.9% 3.0%
		Median:	3	5	53	26									22	18		1.1		
		Sum:													104,180				205,149	
Direct Marketers - Sharon Pearson																				
<i>Office Products Direct Marketers</i>																				
Damark	DMRK	10	(5)	(9)	27	8	18	8	83	0.70	0.87	15	12	8%	17	0.7	0.2	525	28% 1.8% 1.2%	
Global Directmail	GML	21	3	38	59	(51)	53	13	816	1.16	1.35	18	16	48%	27	0.6	0.8	967	27% 7.6% 4.8%	
Insight Enterprises	NSIT	28	(5)	20	124	(1)	40	19	196	1.27	1.60	22	17	48%	30	0.6	0.4	447	14% 2.6% 1.7%	
Micro Warehouse	MWHS	18	5	24	(73)	56	42	10	631	1.26	0.84	15	22	5%	23	0.9	0.3	1,931	-- -- --	
Viking Office Products	VKNG	17	0	52	15	(38)	34	14	1,446	0.78	0.92	21	18	26%	24	0.7	1.2	1,229	28% 1.8% 1.2%	
		Mean:	4	5	17	3									21	17	14%	0.8	0.8	19.0% 7.0%
		Median:	3	(5)	7	6									18	16		0.7		
		Sum:													15,437				15,558	
<i>Other Direct Marketers</i>																				
CUC International (c)	CU	24	1	54	7	(2)	28	19	9,619	0.74	0.89	32	27	23%	27	1.0	4.1	2,348	-- 19.0% 7.0%	
Fingerhut	FHT	16	5	(10)	(12)	28	17	11	760	1.12	1.29	14	12	0%	15	0.8	0.4	2,019	56% 3.1% 1.1%	
Hanover Direct	HNV	1	18	(57)	(52)	8	2	1	118	(0.44)	--	--	--	-11%	15	--	0.2	700	32% -13.5% -15.0%	
Home Shopping Network	HSN	--	(10)	--	--	16	10	0	--	--	--	--	--	--	--	0.0	1,019	38% 4.1% 2.0%		
Lands' End	LE	28	9	(1)	94	6	30	19	907	1.59	1.77	18	16	6%	14	1.1	0.8	1,152	46% 7.5% 4.6%	
Lillian Vernon Corp	LVC	16	5	(12)	(8)	30	16	10	153	0.44	1.52	36	10	3%	15	0.7	0.6	240	-- -- --	
Spiegel	SPGLA	6	3	(32)	3	(9)	13	6	710	(0.16)	0.02	--	--	-3%	14	--	0.2	2,982	38% 1.8% -0.6%	
		Mean:	4	5	17	3									21	17	14%	0.8	0.8	34% 3.6% 0.8%
		Median:	3	(5)	7	6									18	16		0.7		
		Sum:													15,437				15,558	

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Table 17-1 (continued)

Morgan Stanley Domestic Retail Stock Universe: Performance, Valuation, and Financial Statistics

Company	Ticker	Price				Change %		1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		Rev Chg C4Q96/ C4Q95	IBES Mean% Growth	1997 P/E to Growth	Mkt Cap to LTM Sales	LTM Financial Data (b)			Fiscal Year Ends							
		5/16/97	5-day	1995	1996	High	Low		C96A	C97E		C96A	C97E	C96A	C97E					Sales (\$MM)	Gross Margin	Oper. Margin	Net Margin							
Hardlines - Susan Quilty																														
<i>Computers/Electronics</i>																														
Best Buy	BBY	14	(1)	(48)	(35)	29	26	8	595	0.31	0.24	44	57	4%	16	3.5	0.1	7,771	--	--	--	--	Feb							
Circuit City	CC	39	0	24	9	28	40	29	3,832	1.52	1.49	25	26	5%	18	1.5	0.5	7,664	--	--	--	--	Feb							
Comp USA	CPU	22	2	108	167	4	31	13	1,973	0.82	1.08	26	20	22%	27	0.7	0.4	4,461	13%	2.8%	1.6%	Jun								
Egghead	EGGS	5	9	(45)	(18)	(4)	14	4	89	(0.83)	--	--	--	--	-7%	10	--	0.2	369	12%	-5.1%	-2.7%	Mar							
The Good Guys	GGUY	6	2	(24)	(28)	(10)	10	6	80	(0.63)	(0.55)	--	--	--	-7%	11	--	0.1	900	23%	-1.0%	-0.7%	Sep							
Rex Stores	RSC	11	5	9	(54)	31	17	8	87	0.82	0.95	13	11	-12%	15	0.7	0.2	427	26%	4.1%	1.7%	Jan								
Tandy Corp	TAN	53	2	(17)	6	21	59	37	2,991	2.23	3.58	24	15	-2%	16	0.9	0.5	6,130	32%	-1.9%	-1.6%	Dec								
<i>Home Improvement/Furnishings</i>																														
Eagle Hardware	EAGL	21	11	(5)	177	2	30	10	614	0.80	0.93	27	23	22%	22	1.1	0.8	761	28%	4.9%	2.9%	Jan								
Ethan Allen	ETH	51	2	(16)	89	33	52	21	750	2.52	3.39	20	15	9%	14	1.0	1.4	546	--	--	--	--	Jun							
Haverty's	HAVT	12	(3)	18	(18)	1	14	9	134	1.05	1.19	11	10	13%	14	0.7	0.3	475	47%	5.3%	2.7%	Dec								
Heilig-Meyers	HMY	16	1	(26)	(12)	(1)	24	13	836	0.66	1.01	24	16	10%	17	0.9	0.5	1,593	45%	12.0%	2.5%	Feb								
Hechinger	HECHA	2	(4)	(62)	(53)	(27)	5	1	63	(0.61)	(0.24)	--	--	-13%	5	--	0.0	2,199	21%	0.7%	-1.1%	Jan								
Home Depot	HD	60	3	4	5	19	61	48	28,651	1.95	2.39	31	25	32%	24	1.1	1.5	19,536	28%	7.9%	4.8%	Jan								
Levitz Furniture	LFI	2	(5)	(59)	(7)	(28)	5	2	68	(0.77)	(0.27)	--	--	1%	15	--	0.1	975	46%	1.7%	-2.4%	Mar								
Lowe's Companies	LOW	39	1	(4)	6	9	44	29	6,763	1.70	2.06	23	19	20%	21	0.9	0.8	8,600	26%	5.3%	3.4%	Jan								
<i>Office Products</i>																														
BT Office Products	BTF	8	0	42	(45)	(13)	24	7	259	0.44	0.55	18	14	21%	20	0.7	0.2	1,471	29%	2.7%	1.0%	Dec								
Boise Cascade	BOP	19	6	61	(3)	(10)	50	16	1,170	0.89	1.03	21	18	48%	21	0.9	0.6	2,122	26%	5.1%	2.8%	Dec								
Corporate Express	CEXP	13	36	132	(2)	(32)	31	8	1,754	0.44	0.50	30	27	90%	42	0.6	0.6	3,007	--	--	--	Feb								
Office Depot	ODP	16	8	(17)	(9)	(9)	26	13	2,559	0.81	0.98	20	17	8%	22	0.7	0.4	6,208	23%	3.9%	2.1%	Dec								
Office Max	OMX	14	12	27	(28)	30	18	10	1,747	0.55	0.71	25	20	17%	27	0.7	0.5	3,337	22%	3.3%	2.2%	Jan								
Staples	SPLS	22	10	48	11	23	26	14	3,610	0.64	0.84	35	27	19%	30	0.9	0.9	3,968	24%	5.1%	2.7%	Jan								
US Office Products	OFIS	24	(3)	117	50	(30)	46	20	1,220	1.06	1.43	22	17	79%	39	0.4	0.6	2,050	25%	3.7%	1.2%	Apr								
<i>Other Hardlines</i>																														
Auto Zone	AZO	23	0	19	(5)	(16)	37	20	3,469	1.12	1.32	21	17	23%	22	0.8	1.4	2,461	42%	12.0%	7.5%	Aug								
Pep Boys	PBY	31	(8)	(17)	20	(1)	38	28	1,857	1.62	1.89	19	16	8%	19	0.9	1.0	1,829	--	--	--	Jan								
Mean:													24	20	17%	1.0	0.6	28%			3.8%	1.6%								
Median:													23	18	0.9	88,860														
Sum:													65,172																	

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		5/16/97	5-day	1995	1996	High	Low		High	Low		C96A	C97E	C96A	C97E					Sales (\$MM)	Gross Margin	Oper. Margin	Net Margin
Niche Retailers - Bruce Missett/Sharon Pearson Books																							
Barnes & Noble	BKS	40	7	(7)	(7)	48	41	26	1,377	1.48	1.78	27	23	22%	25	0.9	0.6	2,448	37%	4.8%	2.1%	Jan	
Books-A-Million	BAMM	5	6	(24)	(47)	(31)	13	4	83	0.34	0.39	14	12	14%	17	0.7	0.3	279	--	4.4%	2.1%	Jan	
Borders Group	BGP	20	6	21	94	14	23	14	1,668	0.72	0.91	28	22	9%	27	0.8	0.8	2,018	27%	5.3%	3.0%	Jan	
Crown Books	CRWN	13	5	(21)	(4)	7	15	9	67	--	--	--	--	--3%	--	--	0.2	288	--	--	--	Jan	
Home-Related																							
Bed, Bath & Beyond	BBBY	27	(2)	29	25	10	32	18	1,880	0.71	0.91	38	29	33%	27	1.1	2.3	823	52%	-0.2%	-0.6%	Feb	
Bombay Company	BBA	4	6	(36)	(27)	(5)	11	3	166	0.02	0.17	--	--	-2%	18	--	0.5	336	37%	7.0%	3.5%	Jan	
Cost Plus	CPWM	21	(2)	--	5	7	31	15	173	0.87	1.12	24	18	11%	25	0.7	0.8	215	36%	5.0%	3.6%	Jan	
Garden Ridge	GRDG	11	16	123	(55)	23	30	6	195	0.45	0.56	24	19	50%	29	0.7	0.9	225	27%	1.8%	0.8%	Jan	
Lechters	LECH	4	5	(62)	(21)	(31)	7	3	60	0.19	0.14	--	--	-2%	10	--	0.1	441	27%	-1.5%	-2.3%	Jan	
Michael's Stores	MIKE	19	(1)	(60)	(13)	55	20	8	439	(1.32)	0.89	--	21	8%	19	1.1	0.3	1,388	--	--	--	Feb	
Pier 1 Imports	PIR	21	(3)	29	55	19	23	13	956	0.99	1.20	21	17	19%	17	1.0	1.0	947	--	--	--	Jan	
Williams-Sonoma	WSGC	36	11	(38)	97	(2)	38	18	952	0.82	1.18	44	30	26%	25	1.2	1.2	812	39%	5.4%	2.8%	Jan	
Jewelry																							
Friedman's	FRDM	17	(3)	12	(23)	14	30	13	242	1.42	--	12	--	27%	25	--	1.1	223	55%	14.2%	7.2%	Sep	
Tiffany & Co	TIF	45	11	29	45	23	46	30	1,558	1.58	1.93	29	23	17%	18	1.3	1.7	922	54%	12.3%	6.3%	Jan	
Zale Corp.	ZLC	20	0	34	19	2	22	16	686	1.31	1.55	15	13	12%	18	0.7	0.6	1,207	49%	8.8%	3.9%	Jul	
Other Niche																							
CML Group	CML	2	13	(51)	(33)	(33)	6	2	112	(1.09)	(0.41)	--	--	-48%	22	--	0.3	396	53%	-17.9%	-18.4%	Jul	
Duty Free International	DFI	15	(2)	44	(9)	6	18	12	420	0.79	0.95	19	16	18%	17	1.0	0.7	575	44%	6.9%	3.8%	Jan	
Garden Botanika	GBOT	6	12	--	(66)	(51)	35	4	42	(0.61)	0.05	--	--	65%	35	--	0.4	92	43%	-6.4%	-5.3%	Jan	
General Nutrition	GNCI	23	5	59	(27)	36	24	13	1,898	0.94	1.20	24	19	19%	23	0.8	1.8	1,034	38%	6.1%	0.4%	Jan	
Hot Topic	HOTT	29	(3)	--	(24)	44	31	15	131	--	0.85	--	34	65%	38	0.9	3.0	44	38%	8.5%	5.9%	Jan	
Musicland	MLG	2	8	(53)	(65)	8	5	1	56	(2.94)	(0.53)	--	--	2%	--	--	0.0	1,814	34%	-9.9%	-10.6%	Dec	
PetCo	PETC	21	(5)	102	6	0	30	19	386	0.77	1.12	27	19	19%	28	0.7	0.8	500	--	--	--	Jan	
PetsMart	PETM	12	3	35	41	(46)	30	9	1,412	0.43	0.51	28	23	57%	43	0.5	1.0	1,429	28%	2.8%	1.4%	Jan	
JumboSports	JSI	5	(3)	(72)	9	(40)	11	4	95	0.19	0.37	--	13	1%	17	0.7	0.2	624	25%	4.2%	1.3%	Jan	
The Sports Authority	TSA	18	(5)	(3)	60	(20)	29	17	557	0.92	1.10	19	16	17%	25	0.6	0.4	1,323	29%	3.9%	2.4%	Jan	
Starbucks	SBUX	29	3	53	36	1	40	23	2,564	0.52	0.79	56	37	41%	38	1.0	3.1	827	--	--	--	Sep	
Sunglass Hut	RAYS	7	7	107	(69)	0	30	6	394	0.02	0.41	--	18	12%	19	0.9	0.7	527	41%	7.9%	3.8%	Jan	
Toys R Us	TOY	30	3	(29)	37	(1)	38	24	8,526	1.67	1.97	18	15	1%	13	1.2	0.9	9,932	31%	7.6%	4.3%	Jan	
Mean:												26	21	18%	0.9	0.9		38%	3.5%	0.9%			
Median:												24	19		0.9			31,691					
Sum:												27,095											

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Table 17-1 (continued)

Morgan Stanley Domestic Retail Stock Universe: Performance, Valuation, and Financial Statistics

Company	Ticker	Price				52-Wk Change %		1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		Rev Chg C4Q96/ C4Q95	IBES Mean% Growth	1997 P/E to Growth	Mkt Cap to LTM Sales	LTM Financial Data (b)			Fiscal Year Ends	
		5/16/97	5-day	1995	1996	High	Low		High	Low		C96A	C97E	C96A	C97E					Sales (\$MM)	Gross Margin	Oper. Margin	Net Margin	
Food & Drug Retailers - Debra Levin																								
Ahold	AHO	77	1	34	50	24	78	50	9,566	--	--	--	--	--	--	15	--	0.5	18,673	37%	4.8%	2.1%	Dec	
Albertsons	ABS	33	2	13	8	(6)	44	31	8,367	1.96	2.11	17	16	9%	12	1.3	0.6	13,777	--	4.4%	2.1%	Jan		
American Stores	ASC	47	1	(0)	53	14	49	34	6,803	2.38	2.80	20	17	-4%	11	1.5	0.4	18,678	27%	5.3%	3.0%	Jan		
Buttrey	BTRY	9	8	(6)	22	4	10	7	76	0.42	0.49	21	18	-2%	11	1.6	0.2	371	27%	5.3%	3.0%	Jan		
Dominick's	DFF	24	6	--	12	11	25	18	518	--	0.92	--	26	3%	30	0.9	0.2	2,512	--	--	--	Oct		
Food Lion	FDLNA	7	4	12	71	(30)	10	6	3,225	0.45	0.51	15	14	9%	15	0.9	0.3	9,258	52%	-0.2%	-0.6%	Dec		
Giant Food	GFS.A	33	2	45	10	(4)	36	31	1,978	1.90	1.41	17	23	3%	10	2.3	0.5	3,881	37%	7.0%	3.5%	Feb		
Great A&P	GAP	26	3	27	39	(17)	37	23	1,010	1.81	2.14	15	12	1%	9	1.4	0.1	10,089	36%	5.0%	3.6%	Feb		
Hannaford Bros.	HRD	35	2	(3)	38	2	36	30	1,470	1.78	2.07	20	17	12%	14	1.2	0.5	3,027	27%	1.8%	0.8%	Dec		
Kroger	KR	27	(5)	55	24	14	29	19	6,722	1.35	1.64	20	16	6%	14	1.2	0.3	25,526	27%	-1.5%	-2.3%	Dec		
Penn Traffic	PNF	6	0	(61)	(76)	72	14	2	68	(3.80)	0.05	--	--	-14%	20	--	0.0	3,296	--	--	--	Jan		
Safeway	SWY	46	2	62	66	8	52	32	10,221	1.91	2.38	24	19	6%	18	1.1	0.6	17,464	39%	5.4%	2.8%	Dec		
Smith Food & Drug	SFD	46	15	0	21	51	49	22	745	1.64	1.94	28	24	-4%	12	2.0	0.2	3,029	27%	5.3%	3.0%	Dec		
Winn-Dixie	WIN	37	(1)	44	(14)	15	37	30	5,439	1.54	1.63	24	22	2%	10	2.2	0.4	13,170	55%	14.2%	7.2%	Jun		
<i>Drug Retailers</i>																								
CVS	CVS	47	(2)	(0)	35	12	50	36	4,989	1.19	1.98	39	23	14%	18	1.3	0.9	5,785	49%	8.8%	3.9%	Dec		
Rite Aid	RAD	49	3	47	16	23	49	27	5,712	2.06	2.30	24	21	11%	13	1.6	0.8	6,970	27%	5.3%	3.0%	Feb		
Revco	RXR	41	(2)	20	31	10	44	22	2,806	1.39	1.59	29	26	8%	16	1.6	0.5	5,575	53%	-17.9%	-18.4%	May		
Walgreens	WAG	46	0	37	35	14	48	30	11,322	1.54	1.77	30	26	13%	14	1.8	0.9	12,563	44%	6.9%	3.8%	Aug		
													23	20	4%	1.5	0.4	38%		3.7%	1.3%			
													21	20	1.4		173,645							
													81,039											
													Universe Totals (million)		\$394,594		\$666,383							
													Universe Mean:		3 7 32 8		23 19 14%		1.0 0.7		34% 4.9%		2.1%	
													Universe Median:		2 5 12 8		21 17		0.9					

Footnotes:

(a) P/Es based on First Call EPS estimates.

(b) LTM sales based on latest available data. Other LTM figures based on latest fully reported twelve month period.

(c) CUC International research coverage by Mary Meeker / 212-761-8042

++ = Estimates for this company have been removed from consideration in this report because under applicable law Morgan Stanley & Co. Incorporated may be precluded from issuing such information with respect to this company at this time.

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Table 17-2

Morgan Stanley Domestic Technology Company Universe

Company	Ticker	Price 5/16/97	Change %			1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		IBES Mean% Growth (b)	1997 P/E to Growth	LTM Financial Data (c)		Fiscal Year Ends
			5-day	1995	1996		High	Low		C96A	C97E	C96A	C97E			Sales (\$MM)	Op. Mgn.	
Computer Services - David Togut																		
Administaff	ASF	19	(1)	--	--	(16)	27	14	463	--	0.52	--	35	30	1.2	967	1	Dec
Analysts International	ANLY	33	(7)	46	88	17	37	18	497	0.98	1.22	34	27	24	1.1	405	--	Jun
Automatic Data Processing	AUD	49	3	27	15	14	49	36	14,265	1.67	1.92	29	25	15	1.7	4,001	18	Jun
Bisys Group	BSYS	38	6	39	21	2	43	28	994	1.43	1.68	26	23	20	1.1	304	21	Jun
Cambridge Technology Partner	CATP	28	2	158	75	(17)	37	19	1,523	0.33	0.62	85	45	45	1.0	260	--	Dec
Ceridian	CEN	35	0	53	(2)	(14)	55	30	2,813	2.25	2.72	16	13	19	0.7	1,541	--	Dec
Cerner	CERN	19	2	(7)	(24)	21	26	11	628	0.25	0.37	75	51	23	2.3	188	6	Dec
Cincinnati Bell	CSN	55	1	104	77	(11)	68	45	3,783	2.44	2.88	23	19	19	1.0	1,641	18	Dec
Computer Horizons	CHRZ	50	(0)	322	52	30	52	15	854	0.68	1.11	74	45	28	1.6	247	--	Dec
Computer Sciences	CSC	71	(0)	38	17	(13)	87	58	5,599	2.12	3.25	34	22	18	1.2	5,616	7	Mar
DST Systems	DST	31	4	12	10	(2)	37	24	1,517	0.99	1.11	31	28	19	1.4	595	12	Dec
Electronic Data Systems	EDS	39	6	36	(17)	(10)	63	32	18,977	2.07	2.24	19	17	15	1.2	14,666	--	Dec
Equifax	EFX	31	4	62	43	1	35	24	4,482	1.21	1.47	26	21	16	1.3	1,866	17	Dec
Fair Isaac & Company	FIC	37	3	(8)	51	(6)	50	29	478	1.40	1.69	26	22	23	0.9	169	19	Sep
First Data	FDC	38	6	41	9	5	44	31	17,204	1.35	1.60	28	24	20	1.2	5,048	23	Dec
Flserv	FISV	38	(2)	40	23	3	42	28	1,757	1.34	1.65	28	23	19	1.2	810	16	Dec
Gartner Group	GART	29	3	146	63	(26)	43	20	2,915	0.57	0.78	50	37	35	1.0	452	22	Sep
HBO & Company	HBOC	61	7	123	55	2	73	43	5,714	1.16	1.68	52	36	34	1.1	871	--	Dec
HNC Software	HNCS	28	(11)	120	31	(9)	51	18	547	0.26	0.52	109	55	44	1.2	65	--	Dec
International Network Services	INSS	22	(8)	--	(2)	(26)	52	16	750	--	0.32	--	70	55	1.3	84	10	Jun
Keane	KEA	54	5	(7)	187	69	55	16	1,805	0.77	1.16	70	46	24	1.9	502	8	Dec
Manpower	MAN	41	(0)	0	16	26	43	28	3,398	1.83	2.16	22	19	17	1.1	6,621	4	Dec
Medaphis	MEDA	7	3	59	(70)	(41)	45	4	474	0.08	0.12	--	--	24	--	592	--	Dec
MoneyGram	MNE	13	12	--	(3)	(5)	15	7	210	--	0.84	--	15	16	1.0	135	--	Dec
Paychex	PAYX	50	(2)	85	55	(3)	64	38	3,625	0.83	1.16	61	43	28	1.5	617	15	May
Policy Management	PMS	47	1	13	(3)	3	56	33	861	2.39	2.71	20	18	17	1.1	604	12	Dec
Reynolds & Reynolds	REY	21	0	56	34	(18)	31	19	1,809	1.15	1.36	19	16	19	0.8	1,279	--	Sep
Sapient	SAPE	45	7	--	32	7	57	30	568	0.55	0.85	82	53	51	1.0	52	21	Dec
Shared Medical Systems	SMED	46	4	66	(9)	(7)	71	37	1,161	1.95	2.33	23	20	17	1.1	807	10	Dec
SPS Transaction Services	PAY	20	3	13	(49)	28	26	14	530	0.86	1.12	23	17	16	1.1	489	7	Dec
Sungard Data Systems	SNDT	46	(2)	48	39	16	51	35	2,019	1.60	1.89	29	24	18	1.3	708	17	Dec
Total System Services	TSS	23	(6)	78	76	(14)	35	21	2,990	0.29	0.37	80	63	19	3.3	324	17	Dec
Transaction Systems Architect	TSAI	37	23	89	97	11	46	23	999	0.60	0.82	62	45	28	1.6	185	--	Sep
VeriFone	VFI	51	(3)	29	3	73	58	29	1,195	1.53	1.82	33	28	21	1.3	486	11	Dec
										43	32	1.3				14		
										30	25	1.2				15		
										107,400						53,197		

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Table 17-2 (continued)

Morgan Stanley Domestic Technology Company Universe

Company	Ticker	Price 5/16/97	Change %		1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		IBES Mean% Growth (b)	1997 P/E to Growth	LTM Financial Data (c)		Fiscal Year Ends		
			5-day	1995		High	Low		C96A	C97E	C96A	C97E			Sales (\$MM)	Op. Mgn.			
Technical Software (CAD/CAM) - Alkesh Shah																			
Autodesk	ADSK	39	(1)	(14)	(18)	39	42	19	1,754	0.95	1.35	41	29	18	1.6	510	13	Jan	
Avant	AVNT	20	3	(27)	65	(37)	41	10	506	0.76	1.11	26	18	37	0.5	124	--	Dec	
Cadence Design Sys	CDN	35	1	205	41	(11)	45	21	3,488	1.39	1.77	25	20	17	1.2	766	26	Dec	
Computervision	CVN	6	45	294	(39)	(39)	13	3	358	0.58	(0.25)	10	--	10	--	401	17	Dec	
Dassault Systemes	DASTY	67	3	--	49	45	71	29	3,470	--	1.55	--	43	27	1.6	278	--	Dec	
Evans & Sutherland	ESCC	25	1	68	12	(2)	28	20	231	1.11	1.35	22	18	15	1.2	138	--	Dec	
Intergraph	INGR	7	(2)	94	(35)	(32)	15	6	335	(1.25)	(0.81)	--	--	10	--	1,091	--	Dec	
Integrated Measurmnt Sys	IMSC	14	(11)	9	18	(18)	27	11	107	0.87	1.07	16	13	27	0.5	52	19	Dec	
Mapinfo	MAPS	11	7	(22)	(44)	(1)	18	8	65	(0.05)	0.18	--	--	20	--	44	--	Sep	
Mentor Graphics	MENT	8	3	20	(47)	(23)	19	7	487	0.53	0.12	14	--	16	--	441	--	Dec	
Parametric Technology	PMTC	47	5	93	55	(9)	64	35	5,995	1.31	1.76	36	27	34	0.8	716	40	Sep	
Quickturn Design Systems	QKTN	12	5	(27)	105	(41)	23	7	199	0.80	0.19	15	--	18	--	103	--	Dec	
Structural Dynamics Research	SDRC	23	(6)	447	(32)	13	32	15	751	1.02	1.26	22	18	24	0.8	301	--	Dec	
Synopsys	SNPS	33	(5)	74	22	(28)	51	22	1,779	1.29	1.65	26	20	30	0.7	430	--	Sep	
Softdesk	SDSK	--	2	(23)	--	16	5	0	(0.14)	0.64	--	0	--	--	35	8	Dec		
Viewlogic Systems	VIEW	16	6	(46)	14	38	18	8	275	0.53	0.81	30	19	20	1.0	137	9	Dec	
Wind River Systems	WIND	31	2	238	144	(2)	36	17	782	0.43	0.56	73	55	37	1.5	64	22	Jan	
		Mean:	4	88	17	(7)							27	23	1.0		19		
		Median:	2	44	14	(10)							25	20	1.0		18		
		Sum:							20,580						5,629				
Wireless Telecom Equipment - Alkesh Shah																			
Allen	ALN	20	(2)	(6)	(1)	(10)	29	14	541	0.83	1.12	24	18	21	0.9	382	--	Dec	
Andrew	ANDW	27	(7)	10	108	(24)	43	22	2,481	1.07	--	25	--	21	--	872	18	Sep	
California Microwave	CMIC	13	(2)	(54)	(11)	(16)	20	12	203	0.12	0.29	--	43	18	2.4	442	1	Jun	
Digital Microwave	DMIC	29	5	(52)	179	4	39	11	512	0.45	1.14	64	26	28	0.9	178	5	Mar	
Ericsson	ERICY	35	2	41	55	16	36	18	34,623	1.08	1.27	33	28	22	1.2	19,052	8	Dec	
Glenayre	GEMS	13	5	143	(48)	(41)	54	8	789	1.12	0.93	11	14	22	0.6	407	22	Dec	
Motorola	MOT	63	1	(2)	7	2	70	44	37,291	1.90	2.61	33	24	18	1.4	27,660	7	Dec	
Nokia - ADR	NOK.A	66	4	4	48	14	68	32	16,306	--	3.45	--	19	19	1.0	8,470	14	Dec	
Qualcomm	QCOM	50	(3)	79	(7)	24	64	35	3,614	0.28	1.54	177	32	41	0.8	1,493	0	Sep	
		Mean:	0	18	37	(3)							53	25	1.1		10		
		Median:	1	4	7	2							33	25	1.0		8		
		Sum:							96,359						58,956				

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Table 17-2 (continued)

Morgan Stanley Domestic Technology Company Universe

Company	Ticker	Price 5/16/97	Change %			1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		IBES Mean% Growth (b)	1997 P/E to Growth	LTM Financial Data (c)		Fiscal Year Ends
			5-day	1995	1996		High	Low		C96A	C97E	C96A	C97E			Sales (\$MM)	Op. Mgn.	
Server Software - Chuck Phillips/William Farrell																		
Advent Software	ADVS	30	7	(16)	71	(3)	37	19	236	0.58	0.81	51	37	30	1.2	39	17	Dec
American Software - Class A	AMSWA	7	4	117	(2)	9	8	4	155	(0.42)	--	--	--	20	--	77	--	Apr
Arbor Software	ARSW	27	1	20	(49)	10	68	17	313	0.47	0.64	57	42	51	0.8	47	--	Mar
BMC Software	BMCS	49	(3)	50	94	18	52	25	5,258	1.29	1.89	38	26	24	1.1	563	39	Mar
Baan Company	BAANF	58	(2)	77	54	66	63	25	5,698	0.39	0.74	150	78	45	1.7	434	13	Dec
Banyan Systems	BNYN	2	8	(43)	(56)	(55)	11	1	35	(0.79)	(0.58)	--	--	18	--	96	--	Dec
Boole & Babbage	BOOL	21	(2)	40	53	(18)	28	14	415	1.09	1.28	19	16	28	0.6	183	--	Sep
Business Objects	BOBJY	10	(3)	32	(44)	(23)	55	7	174	0.35	0.49	30	21	39	0.5	90	15	Dec
Clarify	CLFY	13	(6)	35	220	(74)	59	7	279	0.26	0.40	49	31	49	0.6	67	--	Dec
Cognos	COGNF	30	(1)	150	89	8	40	18	1,404	0.67	0.99	45	31	40	0.8	198	20	Feb
Computer Associates	CA	54	2	76	31	9	68	37	19,654	2.36	2.85	23	19	20	0.9	3,945	38	Mar
Compuware	CPWR	41	0	(49)	171	65	44	15	3,763	1.14	1.50	36	28	26	1.1	813	19	Mar
Comshare	CSRE	11	(2)	174	(33)	(35)	32	11	111	(0.65)	(0.39)	--	--	30	--	97	--	Jun
Documentum	DCTM	18	(11)	--	13	(47)	46	14	266	0.31	0.46	58	39	47	0.8	52	10	Dec
FileNet	FILE	13	3	74	(32)	(59)	54	10	197	0.82	(0.56)	16	--	27	--	250	6	Dec
Forte	FRTE	14	6	--	(14)	(56)	82	7	303	0.20	0.15	--	--	55	--	63	8	Mar
Hyperion Software	HYSW	18	(5)	8	0	(15)	26	10	333	0.57	0.87	32	21	29	0.7	208	--	Jun
Informix	IFMX	10	18	87	(32)	(51)	31	7	1,520	0.63	(0.97)	16	--	26	--	869	15	Dec
Intersolv	ISLI	10	6	(29)	(28)	3	12	6	195	0.38	0.57	25	17	22	0.8	153	7	Apr
Logic Works	LGWX	6	22	(9)	(55)	11	18	4	79	0.05	0.25	--	25	35	0.7	44	1	Dec
MacNeal-Schwendler	MNS	10	5	54	(51)	24	13	6	132	0.71	0.88	14	11	23	0.5	133	--	Jan
Marcam	MCAM	12	25	51	(15)	(8)	18	9	138	(1.06)	--	--	--	23	--	194	--	Sep
Mercury Interactive	MERQ	14	(1)	38	(29)	4	19	10	225	0.42	0.67	32	20	38	0.5	59	9	Dec
Micro Focus	MIFGY	24	3	(33)	82	57	24	10	362	--	--	--	--	--	--	117	--	Jan
Novell	NOVL	8	(3)	(17)	(34)	(12)	16	7	2,882	0.30	0.44	28	19	15	1.2	1,312	7	Oct
Oracle	ORCL	44	1	44	48	6	51	32	28,995	1.06	1.41	42	32	31	1.0	5,200	22	May
PeopleSoft	PSFT	49	4	128	123	1	57	28	6,007	0.49	0.75	99	65	46	1.4	521	--	Dec
Platinum Software	PSQL	9	1	(57)	111	(21)	14	6	238	--	--	--	--	23	--	47	--	Jun
Platinum Technology	PLAT	14	(1)	(19)	(26)	(1)	19	9	823	(0.27)	0.46	--	30	34	0.9	472	--	Dec
Progress Software	PRGS	18	3	99	(47)	(9)	23	12	226	0.40	0.66	46	28	17	1.6	174	0	Nov
Project Software	PSDI	19	10	267	22	(56)	50	11	189	1.13	1.04	16	18	34	0.5	86	22	Sep
Pure Atria	PASW	15	24	8	(23)	(39)	41	6	635	0.46	0.36	33	42	15	2.8	134	--	Dec
Red Brick	REDB	10	38	--	(24)	(56)	51	5	116	0.26	(0.77)	39	--	46	--	36	6	Dec
Remedy Corp.	RMDY	37	0	74	172	(31)	56	22	1,131	0.54	0.93	70	40	47	0.9	91	29	Dec
Scopus	SCOP	32	(3)	20	84	4	36	9	697	0.33	0.59	98	54	45	1.2	63	17	Mar
SPSS Inc.	SPSS	30	2	51	43	6	34	17	255	1.22	1.50	24	20	21	1.0	86	--	Dec
Santa Cruz Operation	SCOC	4	(8)	(33)	12	(38)	9	4	160	0.39	--	11	--	16	--	220	8	Sep
Sterling Software	SSW	32	2	70	(49)	0	81	27	1,220	2.11	1.82	15	17	19	0.9	440	14	Sep
System Software Associates	SSAX	7	24	107	(51)	(30)	21	4	317	(0.66)	0.41	--	18	24	0.8	356	--	Oct
Sybase	SYBS	16	(7)	(31)	(54)	(7)	27	12	1,216	(0.34)	0.39	--	39	21	1.8	1,010	--	Dec
Systems & Computer Tech.	SCTC	25	9	(5)	(19)	55	26	12	368	0.73	--	34	--	24	--	242	9	Sep
Teletech Holdings	TTEC	25	(1)	--	54	(6)	40	16	1,457	--	0.48	--	52	45	1.1	203	14	Dec
Vantive	VNTV	25	(1)	45	178	(21)	43	10	644	0.41	0.52	61	47	48	1.0	76	--	Dec
Walker Interactive	WALK	15	8	10	82	8	16	9	206	0.19	0.29	--	50	30	1.7	66	1	Dec
Mean:		4	42	24	(9)							42	32		1.0		14	
Median:		1	39	(1)	(6)							34	29		0.9		13	
Sum:									89,029						19,625			

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Table 17-2 (continued)

Morgan Stanley Domestic Technology Company Universe

Company	Ticker	Price 5/16/97	Change %			1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		IBES Mean% Growth (b)	1997 P/E to Growth	LTM Financial Data (c)		Fiscal Year Ends
			5-day	1995	1996		High	Low		C96A	C97E	C96A	C97E			Sales (\$MM)	Op. Mgn.	
<i>PC Software & Internet/New Media - Mary Meeker</i>																		
3DO	THDO	5	13	0	(52)	(1)	12	2	133	0.42	0.66	11	7	30	0.2	78	12	Mar
Acclaim Entertainment	AKLM	4	(6)	(14)	(74)	21	14	3	196	(4.85)	(0.82)	--	--	20	--	177	--	Aug
Activision	ATVI	11	(23)	120	17	(17)	16	9	148	0.51	0.61	21	18	28	0.6	79	--	Mar
Adobe Systems	ADBE	45	3	108	(40)	20	47	29	3,203	1.73	2.34	26	19	21	0.9	819	24	Nov
America Online	AOL	49	(3)	168	(11)	48	58	22	5,604	(0.10)	0.39	--	125	45	2.8	1,550	--	Jun
Avid Technology	AVID	21	(1)	(41)	(45)	105	26	9	462	(0.69)	0.60	--	35	26	1.4	445	--	Dec
Borland	BORL	7	2	169	(67)	26	17	5	254	(1.09)	(1.27)	--	--	15	--	151	--	Mar
Broderbund	BROD	22	4	30	(51)	(26)	47	18	456	1.36	0.84	16	26	20	1.3	173	23	Aug
CNET	CNWK	22	11	--	53	(24)	36	12	293	--	(0.78)	--	--	63	--	19	--	Dec
Compuserve	CSRV	10	1	--	(70)	5	29	9	961	(0.62)	(0.16)	--	--	33	--	848	--	Apr
Corel	COSFF	6	5	(6)	(43)	(25)	14	5	334	(0.17)	0.19	--	--	23	--	392	--	Nov
CUC International	CU	24	1	54	7	(2)	28	19	9,619	0.74	0.89	32	27	27	1.0	2,348	--	Jan
Electronic Arts	ERTS	28	(6)	36	15	(6)	40	19	1,570	0.91	1.19	31	24	25	1.0	625	11	Mar
Electronics For Imaging	EFII	43	(4)	218	88	5	49	23	2,411	1.14	1.65	38	26	23	1.2	325	30	Dec
Excite	XCIT	9	(1)	--	(49)	(11)	22	5	111	(2.63)	(1.75)	--	--	38	--	21	--	Dec
Intuit	INTU	28	17	134	(60)	(12)	55	21	1,290	0.78	0.90	36	31	27	1.1	586	1	Jul
Macromedia	MACR	9	19	310	(66)	(50)	47	7	339	0.44	(0.36)	20	--	29	--	107	16	Mar
Maxis	MXIS	10	20	90	(68)	(20)	28	6	110	(0.07)	0.28	--	35	26	1.3	48	--	Mar
McAfee Associates	MCAF	61	1	225	126	38	66	24	3,243	0.92	1.62	66	37	42	0.9	221	--	Dec
Mecklermedia	MECK	18	(1)	365	23	(8)	30	14	159	(0.14)	--	--	--	45	--	56	--	Sep
Microsoft	MSFT	115	(1)	44	88	40	124	54	152,609	1.92	3.02	60	38	23	1.6	10,438	38	Jun
Netcom On-line	NETC	13	2	27	(64)	1	45	8	153	(3.74)	(3.12)	--	--	93	--	135	--	Dec
Netscape	NSCP	29	(9)	139	(18)	(49)	75	24	2,655	0.32	0.52	91	56	52	1.1	410	7	Dec
PSINet	PSIX	8	0	50	(52)	(26)	19	6	321	(1.40)	(0.90)	--	--	52	--	93	--	Dec
Symantec	SYMC	17	0	33	(38)	15	18	9	941	0.64	1.22	26	14	15	0.9	472	--	Mar
Yahoo!	YHOO	32	(6)	--	(48)	88	37	16	1,009	(0.09)	0.05	--	--	64	--	27	--	Dec
Mean:		1	103	(19)	5							37	35		1.2		18	
Median:		0	72	(44)	(1)							31	27		1.1		16	
Sum:									188,585							20,645		

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Table 17-2 (continued)

Morgan Stanley Domestic Technology Company Universe

Company	Ticker	Price 5/16/97	Change %			1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		IBES Mean% Growth (b)	1997 P/E to Growth	LTM Financial Data (c)		Fiscal Year Ends																																																								
			5-day	1995	1996		High	Low		C96A	C97E	C96A	C97E			Sales (\$MM)	Op. Mgn.																																																									
Data Networking - George Kelly/Chris DePuy																																																																										
3Com	COMS	37	(3)	81	57	(49)	81	24	6,635	1.98	2.07	19	18	28	0.6	2,977	19	May																																																								
Amati Communications	AMTX	13	1	1117	57	(3)	37	7	241	--	(0.34)	--	--	50	--	14	--	Jul																																																								
Asante Technologies	ASNT	4	(11)	91	(42)	(11)	10	4	39	(0.08)	--	--	--	10	--	74	--	Sep																																																								
Aspect Telecommunications	ASPT	24	3	100	90	(24)	34	15	1,272	0.74	0.95	33	26	33	0.8	334	--	Dec																																																								
Aware	AWRE	13	(1)	--	(31)	28	19	9	249	--	(0.07)	--	--	50	--	6	--	Dec																																																								
Bay Networks	BAY	21	6	109	(49)	0	34	15	4,176	0.93	0.56	23	38	23	1.6	2,086	8	Jun																																																								
Cabletron Systems	CS	38	3	74	(18)	14	44	27	5,887	1.69	2.06	22	18	24	0.8	1,407	--	Feb																																																								
Check Point Software	CHKPF	30	8	--	(9)	38	36	13	1,117	0.43	0.61	70	49	47	1.1	41	--	Dec																																																								
Cisco Systems	CSCO	62	(0)	112	71	(3)	76	45	42,340	1.77	2.29	35	27	34	0.8	5,967	--	Jul																																																								
CrossComm	XCOM	8	0	(1)	(54)	60	12	5	83	(0.70)	0.14	--	--	20	--	46	--	Dec																																																								
Digi International	DGII	8	2	1	(50)	(13)	31	5	110	0.35	0.05	24	--	20	--	186	6	Sep																																																								
Digital Link	DLNK	19	(7)	(47)	72	(23)	25	12	180	0.50	0.68	38	28	23	1.2	58	--	Dec																																																								
Farallon Communications	FRLN	5	(5)	--	(62)	(24)	19	4	55	--	--	--	--	25	--	58	1	Sep																																																								
FORE Systems	FORE	15	(5)	76	11	(54)	45	10	1,488	0.53	0.42	29	37	38	1.0	395	18	Mar																																																								
General Signal	GSX	42	2	2	32	(3)	47	36	2,117	2.61	2.93	16	14	11	1.3	2,089	11	Dec																																																								
Harris	HRS	87	(3)	29	26	26	90	50	3,445	4.84	5.55	18	16	12	1.3	3,763	8	Jun																																																								
Information Resource Engineering	IREG	11	(1)	308	(64)	19	30	6	59	(1.29)	(0.27)	--	--	50	--	14	--	Dec																																																								
LanOptics	LNOPF	7	4	140	(62)	(12)	11	4	40	(0.33)	--	--	--	--	--	22	--	Dec																																																								
Larscom - Class A	LARS	11	43	--	(4)	(4)	15	6	196	--	0.47	--	23	30	0.8	71	--	Dec																																																								
Madge Systems	MADGF	6	(17)	279	(78)	(40)	34	5	265	0.05	(0.14)	--	--	16	--	457	--	Dec																																																								
MRV Communications	MRVC	23	(3)	109	157	7	40	12	529	--	0.85	--	27	50	0.5	109	16	Dec																																																								
Network Equipment Tech.	NWK	16	0	14	(40)	(5)	30	11	339	1.19	1.23	13	13	20	0.6	324	11	Mar																																																								
Network General	NETG	19	10	30	81	(38)	30	13	806	0.92	1.07	20	17	29	0.6	241	24	Mar																																																								
Network Peripherals	NPIX	9	(3)	(57)	51	(47)	21	7	113	0.13	0.07	--	--	13	--	55	1	Dec																																																								
Octel Communications	OCTL	18	1	55	9	2	32	14	968	0.99	1.09	18	16	24	0.7	622	13	Jun																																																								
Oicom	OLCMF	15	0	49	24	(22)	20	10	220	0.50	1.30	30	11	10	1.1	168	--	Dec																																																								
Optical Data	ODSI	16	8	73	(52)	30	26	10	256	0.67	0.52	23	30	29	1.1	109	14	Dec																																																								
Orckit Communications	ORCTF	11	3	--	(51)	13	21	9	156	--	(0.07)	--	--	38	--	14	--	Dec																																																								
Osicom Technologies	FIBR	8	(6)	263	55	7	21	7	99	--	--	--	--	--	--	116	--	Jan																																																								
Pairgain Technologies	PAIR	17	(29)	284	122	(43)	43	17	1,303	0.49	0.79	35	22	41	0.5	236	26	Dec																																																								
Plaintree Systems	LANPF	4	(3)	(59)	(47)	27	8	3	61	(0.44)	(0.15)	--	--	--	--	21	--	Mar																																																								
Proteon	PTON	2	(6)	26	(62)	(15)	6	1	33	--	--	--	--	--	--	40	--	Dec																																																								
Retix	RETX	5	(17)	(47)	218	(31)	11	3	105	--	--	--	--	--	--	31	--	Dec																																																								
Security Dynamics	SDTI	36	10	485	16	14	55	21	1,316	0.38	0.61	95	59	47	1.3	88	--	Dec																																																								
Shiva	SHVA	12	(5)	82	(4)	(66)	87	8	344	0.61	(0.02)	19	--	24	--	188	--	Dec																																																								
Standard Microsystems	SMSC	9	2	(45)	(42)	(6)	18	8	124	1.99	--	4	--	20	--	354	--	Feb																																																								
US Robotics	USRX	65	(1)	306	64	(10)	106	41	6,238	2.64	3.58	25	18	36	0.5	2,494	--	Sep																																																								
Verilink	VRLK	7	(14)	--	45	(80)	38	5	97	--	0.22	--	31	60	0.5	58	--	Jun																																																								
Westell Technologies	WSTL	19	3	8	82	(16)	56	9	699	(0.21)	(0.35)	--	--	37	--	78	--	Mar																																																								
Xircom	XIRC	13	2	(30)	76	(40)	31	8	283	0.61	0.80	21	16	31	0.5	224	--	Sep																																																								
Xylan	XYLN	19	1	--	(52)	(34)	76	12	868	0.33	0.71	56	26	56	0.5	153	14	Dec																																																								
Yurie Systems	YURI	14	18	--	--	(7)	17	9	349	--	0.21	--	69	45	1.5	26	--	Dec																																																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Mean:</td> <td style="padding: 2px;">(0)</td> <td style="padding: 2px;">118</td> <td style="padding: 2px;">13</td> <td style="padding: 2px;">(10)</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">30</td> <td style="padding: 2px;">27</td> <td style="padding: 2px;">0.9</td> <td style="padding: 2px;">13</td> </tr> <tr> <td style="padding: 2px;">Median:</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">74</td> <td style="padding: 2px;">9</td> <td style="padding: 2px;">(8)</td> <td style="padding: 2px;"></td> <td style="padding: 2px;">23</td> <td style="padding: 2px;">24</td> <td style="padding: 2px;">0.8</td> <td style="padding: 2px;">13</td> </tr> <tr> <td style="text-align: center; padding: 2px;">Sum:</td><td style="text-align: center; padding: 2px;">85,299</td><td style="text-align: center; padding: 2px;">85,299</td><td style="text-align: center; padding: 2px;">25,812</td><td style="text-align: center; padding: 2px;"></td><td style="text-align: center; padding: 2px;"></td></tr> </table>																			Mean:	(0)	118	13	(10)											30	27	0.9	13	Median:	0	74	9	(8)											23	24	0.8	13	Sum:	85,299	85,299	25,812														
Mean:	(0)	118	13	(10)											30	27	0.9	13																																																								
Median:	0	74	9	(8)											23	24	0.8	13																																																								
Sum:	85,299	85,299	25,812																																																																							

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Table 17-2 (continued)

Morgan Stanley Domestic Technology Company Universe

Company	Ticker	Price 5/16/97	Change %		1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		IBES Mean% Growth (b)	1997 P/E to Growth	LTM Financial Data (c)		Fiscal Year Ends	
			5-day	1995		High	Low		C96A	C97E	C96A	C97E			Sales (\$MM)	Op. Mgn.		
Telecom Equipment - Neil Danzger																		
ADC Telecommunications	ADCT	31	4	46	71	1	40	20	4,098	0.75	0.98	42	32	29	1.1	922	16	Oct
ADTRAN	ADTN	29	(14)	137	(24)	(31)	75	21	1,127	1.01	1.21	28	24	28	0.8	257	24	Dec
Advanced Fibre Communications	AFCI	45	4	--	23	(19)	62	27	1,767	--	0.80	--	57	54	1.1	150	16	Dec
Ascend Communications	ASND	48	(4)	696	53	(24)	80	36	5,736	1.02	1.59	47	30	47	0.6	660	--	Dec
Cascade Communications	CSCC	32	(7)	176	94	(42)	91	24	2,974	0.74	0.86	43	37	47	0.8	375	--	Dec
DSC Communications	DIGI	23	3	3	(52)	27	35	13	2,694	0.44	0.91	51	25	21	1.2	1,419	6	Dec
General Instrument	GIC	25	3	(22)	(7)	13	33	18	3,366	1.09	1.29	22	19	20	1.0	2,715	11	Dec
Lucent Technologies	LU	61	(4)	--	51	32	64	31	38,978	--	2.32	--	26	19	1.4	24,369	--	Sep
Newbridge Networks	NN	34	0	8	36	22	37	20	5,866	1.03	1.30	33	26	28	0.9	898	30	Apr
Northern Telecom	NT	78	1	29	44	26	79	45	20,423	2.40	3.07	33	25	19	1.4	13,604	8	Dec
Objective Systems Integrators	OSII	8	16	33	(56)	(66)	52	3	261	0.22	(0.14)	37	--	30	--	63	13	Jun
Ortel	ORTL	13	2	(57)	113	(44)	27	11	154	0.63	0.62	21	22	31	0.7	76	13	Apr
Polycom	PLCM	4	15	--	(45)	(21)	11	3	73	--	(0.01)	--	--	33	--	39	1	Dec
Premisys	PRMS	12	18	220	(40)	(64)	65	7	319	0.83	0.15	15	--	28	--	85	35	Jun
Scientific-Atlanta	SFA	17	(1)	(29)	0	15	20	12	1,335	0.66	0.90	26	19	18	1.0	1,118	--	Jun
Summa Four	SUMA	7	(5)	(50)	(37)	(12)	21	7	44	0.38	0.26	19	28	22	1.3	44	6	Dec
Tellabs	TLAB	45	(0)	33	103	20	49	25	8,165	0.94	1.26	48	36	27	1.4	944	29	Dec
Mean:				2	87	19	(10)					33	29		1.0		16	
Median:				1	31	23	(12)					33	26		1.0		13	
Sum:								97,381							47,741			
Connectors/Distributors/Contract Manufacturers - Shelby Fleck																		
AMP	AMP	39	0	5	0	1	43	33	8,495	1.89	2.11	20	18	13	1.4	5,498	12	Dec
Amphenol	APH	26	1	1	(8)	17	28	19	1,163	1.46	1.71	18	15	--	--	793	18	Dec
Arrow Electronics	ARW	55	(2)	20	24	2	60	38	2,766	3.95	4.38	14	13	14	0.9	6,687	6	Dec
Avnet	AVT	61	(2)	21	30	5	65	39	2,646	4.24	4.59	14	13	14	1.0	5,322	6	Jun
Berg Electronics	BEI	32	(0)	--	15	7	33	20	654	1.45	1.79	22	18	16	1.1	713	11	Dec
CompuCom	CMPC	7	4	204	13	(33)	14	4	342	0.51	0.63	14	11	23	0.5	2,014	3	Dec
Flextronics	FLEXF	23	(1)	97	(8)	(17)	37	16	312	1.34	1.53	17	15	28	0.5	488	5	Mar
Inacom	INAC	25	(4)	102	183	(37)	41	15	284	1.73	2.12	15	12	20	0.6	3,302	2	Dec
Ingram Micro	IM	24	(4)	--	12	3	28	19	3,144	--	1.22	--	19	21	0.9	12,023	--	Dec
Intelligent Electronics	INEL	3	10	(25)	33	(65)	12	2	101	(2.92)	0.04	--	--	15	--	3,353	--	Jan
Jabil	JBIL	52	(2)	181	256	29	55	9	989	1.49	2.50	35	21	26	0.8	819	6	Aug
Kent Electronics	KNT	28	0	121	(12)	9	40	15	783	1.23	1.23	23	23	22	1.0	456	11	Mar
Marshall Industries	MI	35	1	20	(5)	14	36	26	580	2.44	2.47	14	14	14	1.0	1,165	6	May
Merisel	MSEL	2	22	(45)	(62)	(8)	5	1	46	(1.01)	0.11	--	--	8	--	5,099	--	Dec
MicroAge	MICA	17	24	(31)	146	(17)	25	11	258	1.07	1.52	16	11	20	0.6	3,596	1	Oct
MicroWarehouse	MWHS	18	5	24	(73)	56	42	10	631	1.26	0.84	15	22	23	0.9	1,931	--	Dec
Molex	MOLX	35	0	15	23	11	36	22	4,361	1.21	1.43	29	24	16	1.5	1,477	16	Jun
Pioneer Standard Electronics	PIOS	12	1	26	(1)	(10)	16	10	283	1.04	1.19	11	10	15	0.7	1,509	4	Mar
Sanmina	SANM	56	(5)	90	118	(2)	64	21	1,013	1.67	2.14	33	26	27	1.0	335	17	Sep
SCI Systems	SCI	57	(8)	72	44	28	64	30	1,707	3.02	3.62	19	16	23	0.7	5,573	4	Jun
Solectron	SLR	59	(3)	60	21	11	62	29	3,210	2.27	2.93	26	20	26	0.8	3,136	6	Aug
Tech Data	TECD	24	(5)	(12)	83	(11)	36	18	1,050	1.35	1.63	18	15	21	0.7	4,599	3	Jan
Vanstar	VST	9	(1)	--	145	(64)	30	7	380	1.10	0.81	8	11	20	0.5	2,116	--	Apr
Wyle Electronics	WYL	36	0	80	12	(9)	45	28	463	3.13	2.96	12	12	14	0.8	1,240	6	Dec
Mean:				1	49	41	(3)					19	16		0.9		7	
Median:				(0)	24	18	1					17	15		0.8		6	
Sum:								35,661							73,244			

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Table 17-2 (continued)

Morgan Stanley Domestic Technology Company Universe

Company	Ticker	Price 5/16/97	Change %			1997 YTD	52-Wk Price Range		Mkt Val (\$MM)	FirstCall Mean EPS (a)		FirstCall Mean P/E		IBES Mean% Growth (b)	1997 P/E to Growth	LTM Financial Data (c)		Fiscal Year Ends
			5-day	1995	1996		High	Low		C96A	C97E	C96A	C97E			Sales (\$MM)	Op. Mgn.	
Server Hardware - Steve Milunovich																		
Amdahl	AMH	8	(4)	(23)	43	(31)	14	8	1,015	(1.13)	0.26	--	32	13	2.5	1,707	--	Dec
Auspex Systems	ASPX	10	5	170	(36)	(17)	25	7	249	0.81	0.82	12	12	25	0.5	195	--	Jun
Comdisco	CDO	36	2	47	40	13	39	23	1,917	2.08	2.43	17	15	12	1.2	2,607	--	Sep
Data General	DGN	20	(9)	36	6	38	25	9	812	0.81	1.26	25	16	12	1.3	1,397	4	Sep
Digital Equipment	DEC	33	0	93	(43)	(10)	57	25	4,967	0.74	1.77	44	18	10	1.8	13,303	1	Jun
Hewlett-Packard	HWP	53	(3)	68	20	5	60	38	53,604	2.58	3.15	20	17	16	1.0	39,427	10	Oct
IBM	IBM	170	1	24	66	12	177	89	84,418	11.10	12.27	15	14	12	1.2	76,696	12	Dec
Imation	IMN	24	1	--	(13)	(15)	33	19	977	--	1.62	--	15	13	1.1	2,250	4	Dec
Lexmark	LXK	23	(7)	(16)	51	(19)	30	13	1,730	1.68	2.00	13	11	18	0.6	2,373	10	Dec
NCR	NCR	31	0	--	(7)	(9)	41	28	3,121	--	0.58	--	53	11	4.9	6,766	3	Jan
Sequent Computer	SQNT	16	(5)	(27)	22	(13)	20	11	550	0.23	1.07	67	14	17	0.9	632	2	Dec
Silicon Graphics	SGI	17	8	(11)	(8)	(34)	30	13	3,114	0.85	0.95	20	18	23	0.8	3,478	3	Jun
Stratus Computer	SRA	44	6	(9)	(21)	61	45	17	1,050	1.98	2.95	22	15	12	1.2	622	9	Dec
Sun Microsystems	SUNW	32	4	157	13	25	35	22	11,850	1.57	2.04	21	16	20	0.8	8,073	--	Jun
Tandem Computer	TDM	14	1	(38)	29	1	15	9	1,699	0.61	1.15	23	12	10	1.2	1,912	--	Sep
Unisys	UIS	7	4	(36)	23	(2)	9	5	1,158	(0.33)	0.41	--	16	5	3.1	6,478	5	Dec
Xerox	XRX	63	(2)	38	15	19	65	45	20,802	3.31	3.86	19	16	12	1.4	17,472	15	Dec
Mean:		0	32	12	1							25	18		1.5		6	
Median:		1	24	15	(2)							20	16		1.2		4	
Sum:									193,033							185,389		
PC Hardware/Peripherals - Mary Meeker/Gillian Munson																		
Adaptec	ADPT	36	(5)	74	95	(11)	47	18	4,192	1.43	2.06	25	17	22	0.8	934	27	Mar
Apple Computer	AAPL	17	1	(18)	(35)	(17)	29	15	2,181	(3.25)	(1.72)	--	--	10	--	8,230	--	Sep
Applied Magnetics	APM	27	(15)	432	61	(10)	61	8	635	2.08	4.90	13	5	25	0.2	411	16	Sep
AST Research	ASTA	5	1	(42)	(51)	28	9	4	309	(8.39)	(1.93)	--	--	10	--	1,921	--	Dec
Compaq Computer	CPQ	94	(1)	22	55	26	97	41	25,803	4.70	6.18	20	15	19	0.8	18,709	11	Dec
Creative Technology	CREAF	18	(8)	(39)	36	54	20	4	1,604	--	2.19	--	8	10	0.8	1,245	--	Jun
Dell Computer	DELL	94	2	69	207	77	97	20	16,310	2.79	4.30	34	22	23	0.9	7,759	9	Jan
EMC	EMC	39	0	(30)	115	19	42	17	9,905	1.58	2.01	25	20	22	0.9	2,371	22	Dec
Exabyte	EXBT	15	(6)	(32)	(9)	12	22	10	335	0.39	0.54	38	28	18	1.6	354	--	Dec
Gateway 2000	GATE	70	12	13	119	30	70	28	5,485	3.21	4.13	22	17	20	0.9	5,312	7	Dec
HMT Technology	HMTT	13	(2)	--	48	(15)	29	10	565	1.25	1.27	10	10	32	0.3	263	36	Mar
Hutchinson Technology	HTCH	30	(2)	71	80	19	39	10	588	1.31	--	23	--	20	--	414	8	Sep
Komag	KMAG	35	5	77	18	28	37	18	1,873	2.07	2.09	17	17	25	0.7	592	19	Dec
Network Appliance	NTAP	40	5	96	27	(22)	60	20	644	0.65	1.02	61	39	38	1.0	93	18	Apr
Quantum	QNTM	45	(2)	7	78	58	50	11	3,093	1.21	4.92	37	9	20	0.5	5,319	4	Mar
ReadRite	RDRT	25	(8)	25	9	(0)	36	10	1,230	(0.60)	2.80	--	9	21	0.4	967	1	Sep
SeaChange	SEAC	18	(3)	--	36	(31)	40	12	236	--	0.56	--	31	36	0.9	57	13	Dec
Seagate	SEG	49	(6)	98	66	23	56	18	11,894	2.25	4.52	22	11	23	0.5	8,977	--	Jun
Storage Tek	STK	40	8	(18)	101	(16)	54	30	2,488	2.89	3.56	14	11	19	0.6	2,025	11	Dec
StorMedia	STMD	15	(6)	95	(34)	(8)	29	10	268	0.44	0.02	34	--	23	--	184	6	Dec
Western Digital	WDC	66	(6)	7	218	16	77	20	2,862	3.18	7.45	21	9	21	0.4	3,919	6	Jun
Zenith	ZE	11	(2)	(41)	56	2	18	8	732	--	--	--	--	--	--	1,310	--	
Mean:		(2)	43	59	12							26	16		0.7		13	
Median:		(2)	17	56	14							22	15		0.8		11	
Sum:									93,231							71,368		

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			5-day	1995	1996		High	Low		C96A	C97E	C96A	C97E			Sales (\$MM)	Op. Mgn.	
Semiconductor Capital Equipment - Jay Deahna																		
Applied Materials	AMAT	66	4	86	(9)	83	68	22	12,354	2.90	2.80	23	24	22	1.1	3,713	20	Oct
ASM Lithography	ASMLF	47	4	48	50	88	50	16	3,234	--	--	--	--	25	--	771	--	Dec
Asyst Technologies	ASYT	25	(4)	50	(51)	47	35	15	133	1.10	2.28	23	11	--	--	142	--	Mar
BE Semiconductor	BESIF	13	3	(11)	(4)	6	18	11	350	--	0.47	--	28	23	1.3	257	13	Dec
Brooks Automation	BRKS	17	5	33	24	5	21	9	131	0.82	0.15	21	--	28	--	82	12	Sep
Credence Systems	CMOS	24	10	46	(12)	18	26	11	518	1.31	1.00	18	24	23	1.0	218	18	Oct
Cymer	CYMI	49	(2)	--	253	2	56	13	744	--	1.35	--	36	45	0.8	95	--	Dec
Electroglas	EGLS	21	5	47	(34)	27	22	12	366	1.29	0.45	16	45	21	2.2	126	--	Dec
Etec Systems	ETEC	35	(3)	5	240	(10)	46	15	734	1.37	2.15	25	16	32	0.5	188	--	Jul
FSI International	FSII	14	(5)	50	(26)	(10)	18	10	313	1.09	0.35	12	39	22	1.8	285	--	Aug
Fusion Systems	FUSN	31	2	7	(24)	44	34	17	237	1.46	1.41	21	22	17	1.3	65	--	Dec
Gasonics International	GSNX	11	2	25	(24)	2	20	7	150	0.41	0.41	26	26	22	1.2	116	--	Sep
Genus	GGNS	4	2	(6)	(27)	(24)	12	3	71	(0.54)	--	--	--	20	--	76	--	Dec
Integrated Process Equipment	IPEC	17	(4)	41	(23)	(6)	34	10	309	0.15	0.85	--	20	26	0.8	150	--	Jun
KLA Instruments	KLAC	49	(1)	6	36	37	51	18	2,624	2.08	1.97	23	25	23	1.1	666	23	Jun
Kulicke & Soffa	KLIC	31	(3)	121	(18)	63	34	9	622	(0.22)	2.25	--	14	19	0.7	342	--	Sep
Lam Research	LRCX	34	(2)	23	(39)	22	45	20	1,052	3.19	(1.04)	11	--	20	--	1,116	12	Jun
LTX	LTXX	6	7	125	(36)	(5)	11	4	197	0.42	0.35	13	16	14	1.1	231	7	Jul
Mattson Technology	MTSN	10	2	56	(37)	7	17	7	144	0.42	0.10	24	--	25	--	64	10	Dec
Novellus Systems	NVLS	81	(1)	8	0	50	91	32	1,392	5.70	4.15	14	20	25	0.8	448	30	Dec
OnTrak Systems	ONTK	27	(2)	(50)	1	88	30	13	212	0.58	0.34	47	81	25	3.2	68	--	Jun
PRI Automation	PRIA	34	2	118	30	51	37	10	540	0.95	1.14	36	30	32	1.0	141	--	Sep
Semitool	SMTL	12	0	15	(27)	21	17	8	159	0.97	0.82	12	14	23	0.6	180	12	Sep
Silicon Valley Group	SVGI	22	(3)	22	(20)	9	28	15	666	1.65	0.93	13	24	23	1.0	575	11	Sep
SpeedFam International	SFAM	31	(3)	1	153	10	41	10	370	1.63	1.58	19	20	23	0.9	168	11	May
Submicron Systems	SUBM	3	7	90	(56)	(33)	11	2	46	(1.19)	--	--	--	--	--	171	--	Dec
Tegal	TGAL	7	0	(20)	(49)	33	10	5	75	0.43	0.19	16	--	25	--	57	8	Mar
Tencor Instruments	TNCR	45	0	27	8	69	47	14	1,462	2.10	1.69	21	26	--	--	391	25	Dec
Teradyne	TER	36	2	48	(3)	49	38	11	3,121	1.48	1.38	25	26	18	1.4	1,071	15	Apr
Trikon Technologies	TRKN	9	16	(38)	4	(26)	20	4	125	(0.18)	(0.73)	--	--	--	--	46	--	Dec
Ultratech Stepper	UTEK	20	(1)	36	(8)	(15)	31	14	436	1.67	1.31	12	15	28	0.5	181	--	Dec
Uniphase	UNPH	48	(1)	147	194	(9)	61	19	793	0.79	1.25	60	38	38	1.0	95	20	Jun
Unit Instruments	UNII	9	3	57	(29)	(5)	16	7	39	0.15	--	--	--	--	--	49	--	May
Varian Associates	VAR	52	1	36	6	2	62	41	1,639	3.43	3.19	15	16	17	1.0	1,491	--	Sep
Veeco Instruments	VECO	39	1	43	52	76	41	10	238	1.36	1.71	28	23	22	1.0	106	13	Dec
Watkins-Johnson	WJ	30	4	47	(44)	23	36	17	257	0.35	1.50	86	20	14	1.5	406	1	Dec
Mean:		1	38	13	22							25	26	1.2		14		
Median:		1	36	(10)	14							21	24	1.0		12		
Sum:									35,852						14,346			

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			5-day	1995	1996		1997 YTD	High	Low	C96A	C97E						
Semiconductors - John Marren/Daniel Myers																	
Advanced Micro Devices	AMD	43	(5)	(34)	56	66	49	10	6,255	(0.51)	1.48	--	29	16	1.8	1,961	-- Dec
Alliance Semiconductor	ALSC	8	(4)	(16)	(39)	8	11	5	299	(1.04)	0.03	--	--	13	--	83	-- Mar
Altera	ALTR	50	(5)	138	46	38	54	13	4,680	1.16	1.59	43	32	28	1.1	503	34 Dec
Analog Devices	ADI	27	(4)	51	44	6	29	13	4,316	1.02	1.17	27	23	20	1.2	1,205	19 Oct
Atmel	ATML	26	(6)	34	48	(23)	49	22	2,610	2.01	1.63	13	16	25	0.6	1,083	29 Dec
Burr Brown	BBRC	30	5	183	2	73	31	10	757	1.01	1.25	30	24	15	1.6	214	14 Dec
C-Cube Microsystems	CUBE	26	(3)	558	(41)	(31)	53	22	968	1.63	1.51	16	17	35	0.5	346	29 Dec
Chips & Technologies	CHPS	10	(4)	29	103	(48)	27	8	209	1.30	0.74	7	13	19	0.7	169	18 Jun
Cirrus Logic	CRUS	10	(2)	76	(22)	(36)	25	8	651	(1.38)	(0.53)	--	--	19	--	917	-- Mar
Cypress Semiconductor	CY	15	(5)	9	12	3	17	9	1,184	0.68	0.41	21	35	18	2.0	484	14 Dec
Cyrix	CYRX	22	2	17	(23)	26	37	12	455	(1.25)	1.23	--	18	19	0.9	208	-- Dec
Dallas Semiconductor	DS	37	(8)	25	11	59	40	17	1,053	1.37	2.13	27	17	16	1.1	311	19 Dec
DSP Communications	DSPC	10	1	336	78	(50)	32	6	456	0.57	0.45	17	22	37	0.6	92	28 Dec
DuPont Photomasks	DPMI	55	(3)	--	124	21	63	18	860	2.21	2.55	25	22	22	1.0	252	-- Jun
ESS Technology	ESST	14	(7)	44	22	(50)	35	9	581	1.25	1.71	11	8	23	0.4	267	36 Dec
Integrated Device Technology	IDTI	14	1	(13)	6	3	15	7	1,157	0.15	0.29	--	49	16	3.1	537	2 Mar
Intel	INTC	155	(3)	78	131	18	165	64	139,613	5.80	8.92	27	17	21	0.8	22,651	36 Dec
International Rectifier	IRF	15	9	106	(39)	(4)	27	11	752	0.88	0.43	17	34	15	2.3	512	12 Jun
Lattice Semiconductor	LSCC	56	(3)	95	41	23	63	20	1,325	1.95	2.33	29	24	25	1.0	204	29 Mar
Linear Technology	LLTC	52	(4)	59	12	18	57	22	4,078	1.68	1.88	31	27	25	1.1	365	50 Jun
LSI Logic	LSI	41	(7)	62	(18)	53	45	17	5,769	1.09	1.44	38	28	19	1.5	1,236	15 Dec
Maxim	MXIM	54	(7)	120	12	25	59	21	4,007	1.88	2.07	29	26	29	0.9	427	47 Jun
Micro Linear	MLIN	18	0	21	(16)	106	20	6	236	0.51	0.88	35	20	33	0.6	55	-- Dec
Microchip	MCHP	33	(8)	33	39	(3)	41	13	1,843	1.00	1.33	33	25	25	1.0	334	24 Mar
Micron Technology	MU	36	(6)	80	(26)	22	45	17	7,481	1.30	1.59	27	22	16	1.4	3,076	7 Aug
National Semiconductor	NSM	26	(3)	13	11	7	32	13	3,695	0.50	1.46	53	18	14	1.3	2,521	5 May
S3	SIII	10	(11)	124	(8)	(38)	24	9	521	0.95	0.84	11	12	27	0.4	493	16 Dec
SanDisk	SNDK	12	0	(10)	(35)	19	17	9	280	0.60	0.45	19	26	24	1.1	98	13 Dec
SGS-Thomson	STM	77	(0)	77	74	11	83	30	10,755	4.26	3.88	18	20	14	1.4	4,040	17 Dec
Sierra Semiconductor	SERA	20	(3)	82	8	30	21	8	622	0.83	0.91	23	21	24	0.9	158	-- Dec
Texas Instruments	TXN	91	(5)	38	24	42	96	41	17,298	1.96	3.72	46	24	18	1.4	9,528	-- Dec
Tseng Labs	TSNG	4	5	60	(67)	30	14	2	78	(0.24)	--	--	--	--	--	25	-- Dec
Vitesse Semiconductor	VTSS	34	(1)	149	257	11	38	11	1,294	0.52	0.90	65	38	31	1.2	83	23 Sep
VLSI Technology	VLSI	24	(2)	51	32	1	29	10	1,162	0.48	1.19	50	20	18	1.1	727	6 Dec
Xilinx	XLNX	53	(7)	54	21	45	59	25	4,291	1.48	1.71	36	31	27	1.2	568	31 Mar
Zilog	ZLG	20	(4)	24	(29)	(24)	38	15	398	1.46	1.16	14	17	17	1.0	288	15 Dec
Mean:												28	24	1.2	22		
Median:												27	22	1.1	19		
Sum:										231,987					56,019		
Universe Mean:										32	26	1.1	14				
Universe Median:										25	22	1.0	13				
Universe Totals (million)														1,274,397	631,971		

Footnotes:

(a) P/Es based on First Call EPS estimates.

(b) I/B/E/S mean of analysts' long-term growth rate estimate

(c) LTM sales based on latest available data. Other LTM figures based on latest fully reported twelve month period.

++ = Estimates for this company have been removed from consideration in this report because under applicable law Morgan Stanley & Co. Incorporated may be precluded from issuing such information with respect to this company.

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Table 17-3
Public Internet Companies

Ticker	Offer Date	Split Adjusted IPO Price 5/16/97	Discount/ Premium % to IPO	52 Week		Discount/ Premium % to the 52 -Wk		Current S/O(MM)	Current Mkt. Cap. (\$ MM)					
				High	Low	High	Low							
Infrastructure														
Data Networking/Telecommunication Equipment														
Ascend	ASND	5/12/94	2	48	2,275	80	36	(41)	130	6,240				
Cascade	CSSCC	7/28/94	3	32	1,180	91	24	(65)	36	2,976				
Cisco	CSCO	2/1/90	1	62	6,050	76	45	(19)	37	688				
US Robotics	USRX	10/1/91	4	65	1,758	106	41	(38)	60	96				
							Avg	(41)	41	Total				
										58,112				
Internet Security Equipment and Software														
Axent Technologies	AXNT	4/24/96	14	13	(9)	24	9	(47)	36	13	169			
Check Point Software	CHKPF	6/28/96	14	30	114	36	13	(17)	126	37	1,110			
CyberGuard (1)(2)(3)	CYBG	10/7/94	3	10	225	25	7	(61)	39	7	70			
Cylink	CYLK	2/15/96	15	12	(21)	25	7	(52)	79	27	324			
Dr. Solomon's	SOLLY	11/26/96	17	23	32	28	17	(19)	36	18	414			
Milkyway (CN)	MKY-T	7/2/96	10	4	(60)	14	3	(72)	31	9	36			
Raptor	RAPT	2/6/96	15	14	(7)	33	9	(57)	58	15	210			
Secure Computing	SCUR	11/17/95	16	8	(52)	38	5	(80)	61	15	120			
Security Dynamics	SDTI	12/13/94	4	36	800	55	21	(34)	71	37	1,332			
Trusted Info Sys.	TISX	10/9/96	13	11	(19)	18	8	(43)	27	12	132			
V-One	VONE	10/23/96	5	5	2	9	4	(45)	21	13	65			
Vasco Data Security	VASC-U	8/10/90	0	3	5,525	11	3	(68)	10	16	48			
							Avg	(50)	50	Total	4,030			
Internet Service Providers														
BBN Planet/BBN Corp. (4)	BBN	1970s	N/M	29	-	29	15	(1)	92	21	609			
Digex	DIGX	10/17/96	10	9	(10)	13	7	(29)	40	10	90			
Earthlink	ELNK	1/22/97	13	12	(10)	23	9	(48)	36	9	108			
Hookup Communications (CN) *	HU-T	3/25/96	8	0	(95)	5	0	(92)	5	7	0			
ID Internet Direct (CN) (5)(6) *	IDX-V	2/28/92	0	0	93	2	0	(84)	10	8	0			
IDT	IDTC	3/15/96	10	8	(23)	18	4	(56)	94	21	168			
iStar Internet Inc.(CN) (7) *	WWW-T	11/27/95	12	2	(82)	9	1	(76)	67	25	50			
Metricom	MCOM	5/1/92	6	10	63	20	6	(51)	63	14	140			
WorldCom (9)*	WCOM	(10)	N/M	26	-	29	18	(10)	41	949	24,674			
MindSpring	MSPG	3/14/96	8	9	9	13	5	(33)	67	7	63			
Netcom	NETC	12/15/94	13	13	1	45	8	(71)	67	12	156			
OzEmail	OZEMY	5/28/96	14	6	(56)	17	5	(64)	14	10	60			
PSINet	PSIX	5/1/95	12	8	(33)	19	6	(58)	45	40	320			
Rocky Mountain Internet	RMII	9/5/96	4	2	(32)	3	1	(24)	138	4	8			
Startronix	STNX	7/786	5	0	(95)	2	0	(88)	93	23	0			
							Avg (9)	(55)	59	Total (9)	1,614			
Total for Infrastructure (9)							Avg	(50)	53	Total	63,756			
Software and Services														
Application Software														
Accent Software	ACNTF	7/21/95	5	2	(64)	35	1	(95)	17	12	24			
ForeFront	FFGI	12/20/95	8	3	(63)	22	2	(86)	50	6	18			
FTP Software	FTPS	12/16/93	5	5	6	14	4	(67)	10	34	170			
MetaTools	MTLS	12/12/95	18	12	(36)	38	7	(69)	77	14	168			
Microsoft (9)*	MSFT	3/13/86	1	115	19,140	124	54	(7)	115	1,322	152,030			
NetManage	NETM	9/20/93	4	3	(17)	19	3	(82)	33	43	129			
Netscape	NSCP	8/8/95	14	29	109	75	24	(61)	24	93	2,697			
Spyglass	SPYG	6/27/95	9	8	(10)	30	6	(73)	34	13	104			
VocalTec	VOCLF	2/6/96	19	7	(64)	12	4	(45)	74	9	63			
Voxware	VOXW	10/30/96	8	5	(40)	9	2	(49)	125	12	60			
							Avg (9)	(70)	49	Total (9)	3,433			
Enterprise and Related Software														
Business Objects	BOBJY	9/23/94	18	10	(40)	55	7	(81)	44	17	170			
Verity	VRTY	10/6/95	12	7	(42)	41	5	(83)	37	11	77			
Open Text	OTEXF	1/23/96	15	8	(49)	13	4	(42)	86	17	136			
Versant	VSNT	7/18/96	8	9	8	28	4	(70)	109	9	81			
Visigenic	VSGN	8/8/96	8	9	25	18	7	(49)	29	13	117			
							Avg	(65)	61	Total	581			

Sources: Bloomberg, Securities Data Corp., NASDAQ Stock Market, FactSet Data, latest quarterly report, prospectus, and Morgan Stanley Research.

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Table 17-3 (*continued*)**Public Internet Companies**

	Ticker	Offer Date	Split Adjusted IPO Price	Price 5/16/97	Discount/ Premium % to IPO	52 Week		Discount/ Premium % to the 52 -Wk		Current S/O(MM)	Current Mkt. Cap. (\$ MM)
						High	Low	High	Low		
Commerce Enablers											
Broadvision	BVSN	6/20/96	7	7	(7)	10	4	(37)	49	20	140
Connect	CNKT	8/14/96	6	2	(73)	10	1	(84)	73	19	38
Cybercash	CYCH	2/15/96	17	15	(13)	65	12	(77)	21	11	165
Edify	EDFY	5/2/96	15	13	(12)	56	9	(76)	49	18	234
OneWave	OWAV	7/1/96	16	2	(88)	22	2	(91)	20	15	30
Open Market	OMKT	5/22/96	18	9	(50)	42	7	(79)	38	30	270
Premenos	PRMO	9/19/95	18	7	(52)	26	5	(71)	42	12	84
							Avg	(74)	42	Total	961
Internet/Online Consulting and Development											
CKS Group	CKSG	12/14/95	17	23	34	43	18	(47)	26	15	345
Eagle River Interactive	ERIV	3/21/96	13	11	(16)	22	5	(50)	118	15	165
The Leap Group	LEAP	9/27/96	10	4	(64)	11	3	(65)	16	14	56
							Avg	(163)	160	Total	566
Total for Software and Services (9)							Avg	(68)	50	Total	5,541
Content/Aggregation/Commerce											
Organization/Aggregation											
Excite	XCIT	4/3/96	17	9	(46)	22	5	(58)	83	12	108
Infoseek	SEEK	6/11/96	12	6	(52)	17	5	(65)	15	26	156
Lycos	LCOS	4/1/96	16	15	(4)	23	6	(32)	167	14	210
Yahoo!	YHOO	4/14/96	13	32	145	37	16	(15)	106	32	1,024
							Avg	(43)	93	Total	1,498
Online Services/Information Services											
America Online	AOL	3/92	1	49	4,825	58	22	(15)	120	114	5,586
Compuserve	CSRV	4/18/96	30	10	(65)	29	9	(64)	20	93	930
Individual	INDV	3/15/96	14	5	(67)	23	4	(79)	19	15	75
Infonautics	INFO	4/29/96	14	2	(86)	15	2	(87)	19	9	18
M.A.I.D.	MAIDY	11/24/95	15	15	0	21	9	(29)	62	23	345
Online Systems	WEBB	5/22/96	7	2	(73)	11	1	(84)	32	3	6
							Avg	(60)	46	Total	6,960
Publication/Static											
CMG Information Services	CMGI	1/25/94	8	16	97	32	9	(50)	73	10	160
Mecklermedia	MECK	2/11/94	3	18	504	30	14	(40)	29	9	162
							Avg	(45)	51	Total	322
Publication/Interactive											
CNET	CNWK	7/1/96	16	22	38	36	12	(38)	87	13	286
							Avg	(38)	87	Total	286
Transaction Processing, Financial Services, and Online Commerce											
Amazon.com	AMZN	5/14/97	18	21	15	30	21	(31)	1	24	504
CheckFree	CKFR	9/27/95	18	17	(4)	25	10	(31)	82	50	850
CUC International	CU	11/5/84	1	24	1,605	28	19	(13)	24	415	9,960
CyberCash	CYCH	2/15/96	17	15	(13)	65	12	(77)	21	11	165
E*Trade	EGRP	8/15/96	11	16	52	27	8	(40)	93	34	544
First Virtual	FVHI	12/13/96	9	6	(29)	10	4	(33)	82	9	54
iMall, Inc. (8)	IIM	1/24/96	3	2	(33)	16	2	(88)	15	57	114
Onsale	ONSL	4/16/97	6	7	13	8	5	(16)	46	18	126
Security First Network Bank	SFNB	5/23/96	20	8	(61)	45	7	(83)	21	8	64
							Avg	(46)	43	Total	12,381
Total for Content/Aggregation/Commerce							Avg	(53)	53	Total	21,447
Total for all Internet Companies (9)							Avg	(56)	53	Total	90,744
Amex Internet Index	II	--	--	225		279	175	(19)	28		
MS Tech 35	MSH	--	--	410		427	266	(4)	54		

Note: Share data are taken from FactSet, prospectus or latest quarterly report

* Indicates data not included in market cap. figures

(1) On 10/7/94 Harris Computer Systems Corp. was spun off from Harris Corp. and began trading publicly under (NASDAQ: NHWK) on 10/10/94.

(2) The spin-off was in the form of a tax-free stock dividend to holders of Harris Corp. on the basis of one share in the new company for every 20 Harris Corp. shares.

(3) On 6/27/96 Harris Computer Systems changed its name to Cyberguard (NASDAQ: CYBG).

(4) BBN Corp. was founded in the 1940s. Its internet business began in 1995 (5) Changed name to ID Internet Direct from Arling, effective December 7, 1995

(6) ID Internet Direct agreed to merge with Montreal based Totalnet Inc. to trade publicly under TotalNet name.

(7) Created by merger of NSTN Incorporated and i*internet Inc. in August 1995

(8) Began trading after merger with Nature's Gift, a previously publicly traded company

(9) Microsoft and WorldCom not included in average discount/premium to 52-week high/low or in market cap. figures (CN) = Canadian company

(10) WorldCom, formerly LDDS Communications, was a private company until its merger with publicly traded IDB Communications in 1989

Sources: Bloomberg, Securities Data Corp., NASDAQ Stock Market, FactSet Data, latest quarterly report, prospectus, and Morgan Stanley Research.

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Internet IPO Market Environment

Since the Netscape IPO, **investors have lost \$607 million in Internet investments** (excluding the Netscape gain), and **market capitalization of these companies has decreased \$1.7 billion** (as of May 16, 1997). Of the 55 In-

ternet-related IPOs filed since Netscape's, four were withdrawn, 21 were priced below the mid-point of the filing range, and **only 11 of the 55 (or 20%) currently trade above their offering prices.**

Table 17-4
Internet IPO Market Environment

Issuer	Offering			Offer to Current				
	IPO Date	Mkt. Cap. at Offer	Price at Offer	5/16/97 Price	% Change	IPO Shrs. Gain/(Loss) (2)	Current Mkt. Cap.	Mkt. Cap. Gain/Loss
	(\$MM)	(\$)	(\$)	(%)	(\$MM)	(\$MM)	(\$MM)	(\$MM)
Netscape Communications	08/08/95	\$1,068	\$14.00	\$29.25	109%	\$153	\$2,655	\$1,587
VictorMaxx Technologies (1)	08/10/95	26	6.00	0.13	(98%)	(16)	1	(25)
Desktop Data	08/11/95	123	15.00	8.00	(47%)	(14)	70	(53)
Premenos	09/19/95	178	18.00	7.44	(59%)	(45)	87	(91)
Secure Computing	11/17/95	223	16.00	7.63	(52%)	(17)	117	(107)
Kinetiks.Com ⁽²⁾	12/06/95	32	6.00	0.44	(93%)	(4)	2	(29)
MetaTools	12/12/95	202	18.00	11.50	(36%)	(20)	164	(38)
CKS Group	12/14/95	210	17.00	22.75	34%	14	340	130
DeltaPoint	12/20/95	12	6.00	2.06	(66%)	(4)	5	(7)
ForeFront	12/20/95	38	8.00	3.00	(63%)	(9)	19	(19)
Open Text	01/23/96	228	15.00	7.69	(49%)	(29)	132	(96)
Raptor	02/06/96	178	15.00	14.00	(7%)	(3)	210	32
VocalTec	02/06/96	162	19.00	6.75	(64%)	(31)	58	(103)
CyberCash	02/15/96	175	17.00	14.88	(13%)	(5)	160	(15)
CyLink	02/15/96	361	15.00	11.88	(21%)	(16)	315	(46)
MindSpring Enterprises	03/14/96	60	8.00	8.75	9%	2	65	6
IDT	03/15/96	187	10.00	7.75	(23%)	(10)	162	(25)
Individual	03/15/96	163	14.00	4.63	(67%)	(23)	67	(96)
Eagle River Interactive	03/21/96	145	13.00	10.88	(16%)	(9)	163	18
Lycos	04/01/96	219	16.00	15.38	(4%)	(2)	212	(6)
Excite Inc	04/03/96	183	17.00	9.13	(46%)	(16)	111	(72)
Worldtalk Communications	04/12/96	77	8.00	6.00	(25%)	(4)	62	(15)
Yahoo!	04/12/96	334	13.00	31.88	145%	49	1,009	675
CompuServe	04/18/96	2,706	30.00	10.38	(65%)	(314)	961	(1,745)
Infonautics	04/29/96	131	14.00	1.94	(86%)	(27)	18	(113)
Edify	05/02/96	233	15.00	13.25	(12%)	(4)	238	4
Open Market	05/22/96	485	18.00	9.00	(50%)	(36)	266	(219)
OnLine Systems	05/22/96	20	6.75	1.81	(73%)	(5)	6	(14)
Security First Network Bank	05/22/96	187	20.00	7.88	(61%)	(30)	65	(122)
OzEmail	05/28/96	143	14.00	6.13	(56%)	(25)	63	(79)
Infoseek	06/11/96	305	12.00	5.75	(52%)	(22)	150	(155)
BroadVision	06/21/96	137	7.00	6.50	(7%)	(2)	130	(7)
Check Point Software	06/28/96	458	14.00	30.00	114%	67	1,117	659
CNET	07/01/96	211	16.00	22.00	38%	12	293	81
OneWave	07/02/96	236	16.00	1.88	(88%)	(53)	28	(208)
Connect	08/15/96	111	6.00	1.63	(73%)	(11)	30	(80)
E*Trade Group	08/16/96	308	10.50	15.94	52%	31	541	233
Rocky Mountain Internet	09/05/96	14	3.50	2.38	(32%)	(2)	9	(4)
The Leap Group	09/27/96	136	10.00	3.63	(64%)	(26)	50	(86)
Trusted Info Sys.	10/10/96	142	13.00	10.50	(19%)	(9)	121	(21)
DIGEX	10/16/96	107	10.13	9.13	(10%)	(5)	87	(20)
V-One	10/23/96	63	5.00	5.13	2%	0	65	2
VoxWare	10/30/96	87	7.50	4.50	(40%)	(8)	56	(31)
Dr. Solomon's	11/26/96	313	17.00	22.50	32%	31	415	102
TMP Worldwide	12/12/96	327	14.00	21.50	54%	36	503	175
First Virtual	12/13/96	79	9.00	6.38	(29%)	(5)	56	(23)
EarthLink Network	01/21/97	123	13.00	11.75	(10%)	(3)	111	(12)
OnSale	04/17/97	98	6.00	6.75	13%	2	111	12
Amazon.com	05/14/97	428	18.00	20.75	15%	8	494	65
Sportsline	filed	-	-	-	-	-	-	-
Peapod	filed	-	-	-	-	-	-	-
NetSpeak	filed	-	-	-	-	-	-	-
Auto-By-Tel	withdrawn	-	-	-	-	-	-	-
PrimeNet	withdrawn	-	-	-	-	-	-	-
N2K (Need to Know)	withdrawn	-	-	-	-	-	-	-
Wired Ventures	withdrawn	-	-	-	-	-	-	-
				Including Netscape	(463.1)	(66.9)		
				Excluding Netscape	(607.4)	(1,654.2)		

Note: (1) De-listed by Nasdaq in October 1996. (2) IPO Loss/Gain is Change in Aggregate Value of Shares Offered

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