

APPENDIX 4

DIGITAL DELIVERY OF GOODS AND SERVICES: ANALYSIS AND CASE STUDIES

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DIGITAL DELIVERY OF GOODS AND SERVICES

Software, CDs, magazines articles, news broadcasts, stocks, airline tickets and insurance policies are all intangible goods whose value does not rely on a physical form. Much of today's intellectual property is produced, packaged, stored somewhere and then physically delivered to its final destination: a radio station, movie theater, book store or news stand. The technology exists (or soon will) to transfer the content of these products in digital form over the Internet.

Airline tickets and securities are already being bought and delivered electronically in large numbers. Other industries such as consulting services, entertainment, banking and insurance, education and health care face some hurdles but are also beginning to use the Internet to change the way they do business. Over time, the sale and transmission of goods and services electronically is likely to be the largest and most visible driver of the new digital economy.

CONTENT

Nearly 90 percent of people use the Internet to gather news and information and another 80.5 percent use it for research.¹ Many of the Web's most trafficked sites revolve around news, information and entertainment. Time Warner's Pathfinder, Warner Brothers, CNN, C/NET, USA Today, Disney, ABC and HotWired all rank among the top 20 most popular Web sites.²

Companies also access the Web's information to keep abreast of news affecting investments, currency obligations, transportation blockages and other events or trends that could affect their business on a daily or long-term basis. Some Web businesses integrate news feeds, stock tickers, trusted third-party company ratings and analyses directly into products and services they offer to their customers online as well as into their internal business processes.

Information Retrieval Services

A trip to the library to find books and articles for a term paper can take hours with limited results. Usually a multi-step process, it starts with a keyword search online to find relevant journal articles or books. Next, the researcher must go to the floor containing the book or periodical and walk past stack after stack to locate it. In the case of periodicals, the researcher might have to page through six months' or a year's worth of publications to find the right month or week that contains the article. If a quick read shows that the article contains interesting information, the next step is to walk to the photocopying machine and make a hard copy.

Information retrieval services such as Dialog Information Services, Lexis-Nexis, Westlaw and others made a business by streamlining this process, pulling together a variety of sources and allowing librarians, law students and businesses to search electronic databases for information online using a dial-up connection.

The Internet offers a range of information retrieval services. The sheer number of Web sites in almost every conceivable industry (companies representing all 4-digit SIC codes except soybean farming can be found on the Net³) has driven an industry of "search engines." Instructing people where to find children's clothing, a birthday card, or the Web address for the University of Michigan is the business of Yahoo!, Excite, WebCrawler, Infoseek, Lycos and AltaVista. Directories of individuals and businesses, WhoWhere? and Four11, serve a similar purpose. More than 25 million adults in the U.S. alone use Yahoo!⁴ to scan the Web for sites selling used cars, magazines covering the entertainment beat, trade associations representing pharmaceutical companies; they can also get stock quotes, read press releases, and find out what is playing at the movie theaters in San Francisco and where to go for dinner or meet up with friends after the movie.

Web-based information retrieval services find and organize content, they shop for the best deals or they “remember” to look out for new merchandise and notify the customer by-email when something becomes available. Some perform the service only when someone requests it; others can be programmed to continue providing the information until the user stops the service. There are sites for people interested in technology with searchable databases crossing a variety of technology magazines. To find the day’s or week’s stories from the country’s leading newspapers on the steps governments are taking to ban human cloning, an Internet user can go to Wired.com’s HotBot News service, enter the keyword “cloning” and the “search” button, and links to current stories appear. Jango, a software shopping agent, will search sites for those selling products like decaffeinated Colombian coffee beans and present the array of choices, along with product and price information.

Web Publishing

The distinction between daily newspapers and weekly or monthly magazines blurs online where content is updated as often as 24 hours a day, and editors use color graphics and photos, video and audio and other techniques to attract visitors to their sites. They compete for the same viewers, much more than they would in their print editions.

Book publishing remains apart, as the sheer length of a book does not lend itself to being read from start to finish on a computer screen. However, the book industry has a strong online presence to promote and supplement its traditional retail business.

Online Newspapers: A reader can get news on the Internet, usually free of charge, from any of a couple thousand newspapers from around the world. The Editor & Publisher Company’s online newspaper database lists more than 2,700 newspapers have online businesses, of which over 60 percent are U.S.-based.⁵

The top 25 daily newspapers all have Web businesses, featuring the day’s stories from the paper, some special Web-only sections, searchable online archives, as well as reviews of books or movies. A few work in partnership with other local businesses to highlight a given city, in addition to the general news. For instance, Boston.com features news from the *Boston Globe*, *Boston Magazine* and other local print and radio channels, classified advertising for cars, homes and job listings in the Boston area, local sports highlights, AND traffic and weather reports. “Cleveland Live” has content sponsored by the *Cleveland Plain Dealer* and other local newspapers, radio and television stations and the Cleveland Orchestra.

The nation’s most widely-circulated daily newspaper, the *Wall Street Journal*, launched its Interactive Edition in April 1996. The Interactive Journal’s coverage includes politics, economics, technology news, marketing, in-depth sports reporting and features, an extended editorial page, and weather. U.S. readers receive the Journal’s national edition, and can also access content from the European and Asian editions online.

The New York Times on the Web offers readers the day's print stories online, along with AP Breaking News and AP radio, 50,000 book reviews dating back to 1980, hosted and unhosted online forums, and "Web specials" covering women's health, sports and special in-depth features (recent features covered the handover of Hong Kong to China and inner-city housing). Readers do not pay anything for general access; small fees are charged for crosswords and archived news stories.

Most online newspapers have yet to turn a profit, but they remain committed to the Internet. Knight-Ridder, a publisher with newspaper holdings across the country, invested \$27 million in its 32 Web sites in 1997 while generating just \$11 million in revenue. The Tribune Company, owner of the *Chicago Tribune* among many other newspaper and broadcasting businesses, lost about \$30 million on its Web activities in 1997 and expects to lose \$40 million in 1998.⁶ The New York Times Interactive Edition 1997 revenues grew 66 percent over 1996, but the company's online ventures lost between \$12-15 million for the year.⁷ C/NET's 1997 third quarter revenues, while two-and-one-half times greater than its revenues for the same period in 1996, still did not cover its costs.⁸

Magazines: More than 3,600 magazines can be found on the Internet.⁹ All but three of the top 50 magazines in the country (as defined by paid circulation) have an Internet presence in January 1998.¹⁰

However, what is popular in print is not necessarily popular with Web users. In fact, only 9 of the top 50 magazines show up in Web21's "100 Hot Magazine" sites for the week of September 30, 1997. Today's Web readers appear to be more interested in science, technology and entertainment than do their offline counterparts.

Science Daily Magazine, Scientific American, New Scientist Planet Science, and the Pharmaceutical Information Network rank among the top 100 Web Magazines.

Ziff-Davis' magazines, *PC Week* and *PC Magazine*, are but two of the attractions in ZDNet's highly trafficked site. Visitors to the site can also purchase products, read product reviews, play games, download software and interact as part of a community of like-minded people. Other popular technology sites include PC World Online, Windows Magazine: PC Tips, News & Reviews, and BYTE.

Like their print editions, Web sites for Reader's Digest and TV Guide attract large audiences. Sites for games (the Imagine Games Network and Online Gaming Review) and music (SonicNet, Dotmusic and Billboard Magazine) are also frequently visited.

Most of today's online content is drawn from content prepared for the print brand. Publishers do not believe this is enough to ensure success with their online audiences. Instead, they believe that content needs to be developed and presented in a format compelling enough to encourage repeat

visits. This means updating the content daily or hourly (rather than weekly or monthly as in print editions) and building a sense of community.¹¹

Magazine publishers, like newspapers, are investing more than they earn from their online businesses, perhaps breaking even in 1998 (Figure 1). They continue to experiment with different revenue sources in order to build a solid business model online. Advertising revenues, still very small on the Internet, account for 53 percent of magazines' online revenues, followed by online production services, 22 percent, and subscriptions, 6 percent.¹²

Figure 1. Online Magazine P&L

	1996	1998	2000
Expenses	\$2.6 M	\$5.2 M	NA
Revenue	\$1.5 M	\$5.4 M	\$15.3 M
Profit	-\$1.1 M	\$0.2 M	NA

Source: Ernst&Young, MPA survey. Per-publisher averages based on responses from 29 MPA members.

Book publishing: The book industry uses the Internet primarily to market and sell products. The Internet can also be used to make a book's contents interactive and tailored for a user's specific needs.

Amazon.com introduced the idea of a virtual bookstore in the summer of 1995. Today, Barnes & Noble and a host of specialty booksellers offer readers a choice of sites from which to buy books.

Readers can find book reviews in a variety of places: online book stores, newspapers, and online magazines bring readers together to critique and discuss authors and their works. For example, Salon's "Table Talk" invites visitors to join author Carol Shields in the Classics reading group to discuss Jane Austen's *Mansfield Park*.

McGraw-Hill, the leading publisher of K-12 and college textbooks, sees the Internet as an extension of its printed materials. The company has been working with universities to develop an online study resource combining presentation materials, e-mail and discussion groups that students can use to further their study. McGraw-Hill also sees the Internet as a way to provide its scientific and research audiences with more up-to-date articles in its reference publications.

Television Broadcast/Cable

More than 800 TV stations across the U.S. have Web sites.¹³ All the major broadcast networks have Web sites that combine information about TV programming and profiles of the shows' stars, along with special Web services. Viewers can also find their favorite cable channels online. UltimateTV.com lists 151 U.S. cable channels including CNN, fX, HBO, MTV, and the Weather Channel.¹⁴

The following examples illustrate how broadcast networks and cable channels use the Internet to complement their regular programming as well as introduce new products and services developed exclusively for the Internet:

A January 14, 1998 report on abcnews.com entitled, “Secrets or Lies in Iraq?”—a report on the arms inspection controversy in Iraq—was much more in-depth than a 30- or 60-second television news clip would have been able to accommodate. Visitors to the site could get a quick overview by scanning the Reuters news story on the latest developments involving the American-led U.N. arms inspection team in Iraq. Those wanting to learn more could search the index to all abcnews.com coverage on the subject, read what experts have to say on the subject, or view a chronology tracing events from the Gulf War to the present. Interactive maps showed the build-up of American and Iraqi forces in the region. An interactive guide described the U.S. military bombers, aircraft carriers and ships that were deployed for the Gulf War. Or, visitors could listen to audio clips from U.S. Ambassador to the United Nations, Bill Richardson, and Chief U.N. weapons inspector, Richard Butler, or view Peter Jennings’ video clip profiling Scott Ritter, the American leading the U.N. arms inspection team in Iraq.

NBC has six online shows adapted from its popular TV programs. Viewers meet the stars, take part in plots and interact with other fans. Its first Internet-only entertainment series, “Second Shift,” premiered in February 1997. The online counterpart to NBC’s TV series, “Homicide: Life on the Street,” Second Shift features a different cast and new plots developed for the online show. Viewers can also get behind-the-scenes interviews with actors from the TV show, read about past episodes and learn about the music played on every show.

CNN’s custom news delivers the user’s choice of sports scores, stock quotes, local weather and news from CNN and articles from over 100 magazines and news outlets. Instead of jumping from one news site to another looking for the day’s articles on the financial crisis in Indonesia or debates on Capitol Hill, CNN’s custom news service scans online databases and presents only those articles that the reader indicates as important on the reader’s own customized news page.

“Webcasting” gives Internet users the ability to watch their favorite TV programs on their computers. National and local TV and cable stations from the U.S. and around the world offer live and on-demand programming options from “Sesame Street” and “Buffy the Vampire Slayer” to “Court TV” and “Bill Nye the Science Guy”.

Radio

To watch television or listen to the radio online, PC owners need a sound card and speakers (available on new PCs) and a special software program. According to RealNetworks, the leader in “streaming media,” 30 million copies of RealPlayer (a software program used to play audio and video broadcasts) have already been distributed and they continue to be downloaded at a rate of more than 500,000 copies per week.¹⁵

Radio stations from around the country broadcast alternative music, the blues, classic rock, classical, contemporary, jazz, country, oldies, top 40 and urban music to Web users. News, sports, traffic, talk radio and weather are also online.

AudioNet calls itself the leader in Internet broadcasting, with live continuous broadcasts of over 175 radio and television stations, play-by-play of thousands of college and professional sporting events, live music, on-demand music from the CD Jukebox (over 1600 full-length CDs), live and on-demand shows and Internet-only Webcasts and live and on-demand corporate and special events.

Yahoo!'s Net Events has links to online radio shows on the air at any given time. One afternoon in January 1998, Yahoo! provided links to 130 different music and talk radio programs.

Business Information

Companies that provide news and information to the business community have their own stand-alone Web sites. They provide information feeds to enhance other companies' online businesses, and they provide feeds into internal business processes through corporate intranets.

Reuters has its own site with online news reports, quote data, market snapshots and other products and services. In addition, Yahoo! readers can keep up-to-date with breaking news provided by Reuters. Personal investors on some online brokerage sites may see Reuters' delayed stock quotes, historical pricing charts, and portfolio tracking services.

Small and medium-sized companies use Dun & Bradstreet's (D&B) Web site to access standard business reports including credit and risk management reports for evaluating buyers, purchasing products reports for evaluating sellers, and database marketing reports for evaluating prospective markets. Larger companies also get information feeds directly into their corporate intranets or private networks.

Individuals comparing term life insurance policies on InsWeb's or Quicken InsureMarket's Web sites can see how independent rating firms like Moody's and others rate different insurance carriers and how much business they write.

The securities industry has long subscribed to proprietary newswires and business reports transmitted over private networks. Institutional traders use these services to track stock prices, currency fluctuations, and commodities prices, all in real-time.

DRIVERS OF GROWTH

The movement of information services to the Internet is being driven by consumer demand, more effective distribution and increased advertising on the Internet.

Competition and Consumer Demand

Publishers, networks, radio broadcasters and others have quickly established an Internet presence, some with significant marketing budgets spent on well-placed ads and hot links (buttons or underlined and highlighted text which can be clicked to take the viewer to another site) to “capture eyeballs” (or, in other words, to attract viewers to a site). Those that do not have a presence could potentially lose market share to existing competitors or new ones that connect with this audience first.

The key advantages of Internet-based content from the consumer’s point of view are choice and convenience, savings, and timely, personalized news.

The Internet’s selection of news and information is so vast, it would be impossible to find its equivalent in any other place due to physical constraints and the costs to carry such a wide inventory. Traditional chain stores tend to stock the publications they can sell to a general audience. Small, specialty shops tend to sell the books, magazines or journals that serve a more targeted community of interest.

The Internet provides the umbrella for both types of stores. Internet users can find obscure or limited circulation journals online along with the top sellers. What is limited to text and perhaps a picture in a print edition may be supplemented with video or audio clips, maps or in-depth background research.

At present, Internet users can access most newspaper, magazine, TV and radio content free of charge. Businesses offering content from trade and technical publications, investment advice and other specialized content targeted to particular audiences may charge a fee or bundle it with other products and services.

Because the online content industry is not yet mature, pricing structures will continue to evolve. Internet businesses may begin to charge for general news and information if they think they can maintain and grow their audience even after they impose a fee.

Timeliness and personalization are two other factors that may influence consumer demand for Internet-based content. Books can take several months or years to go from concept to the shelves in bookstores and libraries. Magazines come out weekly or monthly and newspapers, once a day. Almost as soon as a new story is written and approved, people can start reading it online. With Web news, readers can also choose to skip an article in today’s news and still find it again tomorrow, next month, or next year in the site’s searchable archives.

Internet users can select only the news, entertainment and information they want and have it “delivered” to their personalized Web page, to an e-mail box, or as a service that the computer defaults to when at rest.

More effective distribution

Distributing newspapers and magazines can cost as much as 30 - 40 percent of the retail price. By contrast, an Internet version of that newspaper or magazine avoids the expense of the trucks that move the papers from the printing plant to the city news stands or the cost of postage to send a magazine to a subscriber across the country. Instead, the publisher’s distribution costs include paying off the investment in the Web servers and other technology that makes sure that when someone clicks on the site that it responds quickly.

Unlike newspaper or magazine content that gets used once, content stored digitally can be repackaged and used again. Storing content in a digital library means that it can be used not only on the Internet, it can be called up on TV as a broadcast feed or video-on-demand, made into customized CD-ROMs or electronic games.

Because they focus on a single special interest category, computers, C/NET’s different sites can share some of the same services and information. Someone visiting download.com is probably interested in the same set of targeted employment classifieds or software available for downloading as someone visiting computers.com. C/NET selectively uses information in different places throughout its 10 Web sites.

Several cameras record professional sporting events, but very little of the footage is seen by viewers during the game and in after-game analysis. The National Hockey League and IBM have come together in a joint venture called NHL Interactive Cyber Enterprises to bring more of that content to interested fans. The joint venture presents nhl.com, with lead hockey stories, live game radio, video highlights of NHL games, statistics, scores and recaps, schedules, features, a fan forum and a store. A fan interested in how Wayne Gretzky did in the 1998 NHL All-Star Game can call up footage showing his assist in the game-winning goal.

Internet content businesses do not have enough experience behind them to draw conclusions about their eventual cost structures and how they compare to print editions. At a minimum, these businesses require a much lower capital investment than their print counterparts. Some publishers argue that storing and distributing content electronically will cost much less than distributing the print version and their overall costs should therefore be lower. Others are less certain. They think the costs may simply shift from physical printing and distribution to acquiring, operating and maintaining technology and paying a larger share of operating expenses in marketing costs.

Potential loss of existing revenue sources

Though less than \$1 billion was spent on advertising on the Internet in 1997,¹⁶ traditional media companies are preparing for the time when existing revenue sources, particularly local business and classified advertising, will in part shift from traditional media to the Internet. Other non-traditional competitors are using the Internet to position themselves to tap into the \$175 billion advertising industry.¹⁷

Companies started using the Internet to advertise in late 1994. Two years later, 46 of Advertising Age's 100 Leading National Advertisers had purchased Web advertising and nearly all had corporate Web sites.¹⁸

Advertising in 1996 reflected the characteristics of early Web users: tech-savvy, higher income, and male. The top advertisers on the Web were computing products (38 percent), consumer-related goods (20 percent), new media (17 percent), telecommunications (9 percent), and business services (6 percent).¹⁹

In the space of a year, Internet advertising has begun to reflect the interests of more mainstream audiences. Consumer goods companies' share of spending surpassed that of computer hardware and software companies, with 32 percent and 22 percent of the total advertising dollars, respectively. Financial services had a strong online ad presence in 1997, contributing 20 percent of the total.²⁰ Yahoo, a leading Internet search engine and one of the top recipients of advertising dollars, confirms the shift: its mix of advertisers went from 85 percent technology companies in 1995 to close to 80 percent consumer brand companies in 1997.²¹

Forrester Research predicts that \$1.5 billion in local ad purchases will shift to the Internet in the next three to five years.²² More than 60 corporations crossing different industries, including online services, broadcast and cable, directory providers, search engines, telephone companies and newspaper networks have announced plans to tap into the \$70 billion in local advertising with Internet-based services.²³

Classified advertising represents 37 percent of a newspaper's total advertising. In order not to lose this revenue, most of the online dailies have at least some portion of their classifieds online.²⁴

Knight-Ridder supplements its 32 city newspapers with online city guides called Real Cities. CarHunter and HomeHunter put online the newspapers' already vast database of automotive and real estate classified ads, and combine them with real estate news and information on education and health, schools, parks and recreation and shopping. Cox Enterprises' City Sites center around its newspaper and television holdings. In 1998, the New York Times on the Web plans to launch "New York Today," a guide for Big Apple residents and visitors.²⁵ The Times Mirror Company, Tribune Company and the Washington Post Company have come together to form a new online company called Classified Ventures. The company's first service, cars.com, will link the online classified ad systems of all its affiliates as well as serve as a national ad management network

facilitating the network-wide placement of sponsoring ads from national and regional advertisers selling vehicles and related products and services.²⁶

Software and online service companies like Microsoft, Yahoo, Digital Cities and others are also vying for local advertising dollars. Microsoft's Sidewalk.com has guides to ten cities, listing movie and restaurants, what's going on in arts and music, current events, places to go, local sports, news and tickets. Yahoo has similar metro guides in 12 cities as well as "get local" guides across the U.S. and the world. America Online's Digital City covers movies, dining, real estate, stocks, arts & culture, business & finance, health & fitness, news & media, employment, shopping, travel and sports in 24 cities.

CBS plans to launch a 24-hour online news service, augmented with local news from affiliates (150 affiliates have signed on to participate). CBS will transfer a user who logs onto its Web page directly to the home page of the CBS affiliate in that person's TV viewing area.²⁷ CBS signed a deal with Classifieds2000 to provide a searchable database of automotive, real estate, computers, personals, employment, and other classifieds on its affiliated and network stations. ABC Television is expected to provide content from ESPN SportsZone and Disney, with the ability for local affiliates to insert local headlines directing users back to the local site.

CableSoft is developing set-top box technology to allow cable operators to offer interactive "communications neighborhood" channels that include community news, weather, Yellow pages, school menu information, etc. Warner Brothers and Telepictures Distribution (City Web) plan to launch Web sites for local TV affiliates in mid-1998 that will feature a localized version of Lycos' search engine, local information and classified ads/on-air promotion from the TV affiliates, a customized CityWeb browser from Netscape as well as other content.²⁸

Directory listings and mapping services like Big Book and InfoSpace partner with newspapers, software companies and others to offer their own city guides. Telephone companies have their own directory listings and mapping services and are partnering with others for real estate listings, restaurant guides, and other local information and services.

At the same time that the competition for a very small pool of advertising dollars on the Internet is intensifying, traditional sources of revenue that media companies rely on may not be available online.

Subscriptions currently generate about 30 percent of a newspaper's and 40-60 percent of a magazine's revenues.²⁹ Online, newspapers and magazines are weighing the tradeoff between "attracting eyeballs" and charging for their content. To attract advertising dollars, Internet businesses attempt to amass as large an audience as possible, even if that means their businesses operate in the red for a period of time. Imposing a fee to access the content on the site could result in greater revenues in the near term, but it may mean that the ultimate audience size will be limited. So far, most content sites are opting for building audiences rather than imposing subscriptions.

The Wall Street Journal Interactive Edition is one of the notable exceptions. Launched as a free service in April 1996, the site attracted 650,000 nonpaying subscribers. Five months later, the site was relaunched with a subscription fee of \$49 per year for non-print subscribers and \$29 if the reader also subscribed to the print edition (an additional \$175/year). Thirty thousand people subscribed to the relaunched site.³⁰ As of November 1997, a year and a half after its launch date, the Interactive Edition had 150,000 online subscribers, the largest group of paid subscribers for any online publication.³¹

According to Forrester Research, revenue from online subscriptions will grow from \$22 million in 1997 to more than \$158 million by 2002.³²

In addition to traditional advertising and subscriptions revenues, Web publishers anticipate that they will be able to generate a growing amount of revenues by charging transactions fees (also called “commerce” fees). This works as follows: visitors to one site can hot link to another to purchase a CD, book travel, buy stock. The “host” company receives a fee for renting the space on its site, a percentage or flat dollar amount for each lead or purchase that results at the other company, or some combination of the above.

For example, Time Warner’s umbrella content site, Pathfinder.com, has a Marketplace with retailers selling books, music, travel, computers and electronics, sporting goods and memorabilia, gardening supplies, vitamins and more. If an article about skiing out West piques a reader’s interest to book a flight to Aspen, Travel & Leisure and American Express Travel have an arrangement where readers can make reservations directly from the site.

AOL reported close to \$300 million in advertising, merchandising and e-commerce revenue for its 1997 fiscal year which closed June 30. Some exclusive multiyear deals include 1-800-FLOWERS for \$25 million, Tel-Save Holdings for \$100 million and direct marketer Cendant Corporation (formerly CUC International) for \$50 million.³³

The Future

Forrester Research predicts that online revenue sources from advertising, subscriptions and transactions fees will grow from just over \$520 million in 1997 to \$8.5 billion within five years. Jupiter Communications projects that online advertising and direct marketing will grow from \$1 billion in 1997 to \$9 billion by 2002.³⁴

The fact that very few consumer-oriented Internet content businesses are making money today does not reveal much about the long-term viability of the industry as a whole. In the early stages of a high-growth market it is often wise to focus on capturing market share rather than making profits. Even the most mature Internet-based content companies have only three to four years of experience. Most date back 18 months to just over two years.

During this early period, companies will experiment with different sales techniques, marketing approaches, and product adaptations to determine the most effective business model. Every couple of months, a visitor to a Web content site may find an entirely new layout, new product additions, technology enhancements, or specialty sections that did not exist before.

The sheer number of Internet content businesses suggests that the Internet will become a significant market. Analysts believe that the revenue streams will soon materialize to support these businesses, with online revenues from advertising, subscriptions and transactions fees growing from just over \$1 billion in 1997 to over \$8 billion within five years,³⁵ or close to 5 percent of today's advertising expenditures.

Long-term success for the online content industry is tied to solutions for protecting copyrights and improvements in the Internet infrastructure. Uncertainty about whether digital copies sold over the Internet will be prone to copyright infringement and piracy impedes growth. How quickly the speed and convenience of Internet access for home users improves will also drive the size and growth of the Internet content marketplace.

Technological solutions, including "watermarks" and "digital object identifiers," are being developed to protect copyright. A treaty negotiated at the World Intellectual Property Organization in December of 1996 addresses the question of how copyright should be legally recognized and protected in global Internet commerce. Legislation to ratify this treaty is now pending in the U.S. Congress and in legislative bodies in other countries around the world.

Until users can download a video in a matter of seconds, Web sites will not create many video products to sell online and Web users will prefer to read text, watch television or use their VCR. As broad-band Internet access becomes possible from the home via faster telephone connections, cable, satellite and wireless technologies, the demand for multi-media content will increase. Publishers point out that the lack of portability and difficulty in reading lengthy articles or magazines from cover to cover on a computer limits the potential of the online content market. Their readers like being able to buy a newspaper or a magazine on their way to work and read it on the subway, or get it delivered at home to read when and where they choose.

These limitations may diminish as opportunities to access the Web from other devices increase, whether from a television set, telephone, car console, wearable computer or lightweight, portable screen.

MCGRAW-HILL

McGraw-Hill publishes and distributes \$3.5 billion worth of educational materials, financial information and industry and professional publications under 100 different brands and 28 business units.

Just over ten years ago, the financial information services division became the first McGraw-Hill division to distribute its products electronically. Initial sales of digital products barely made a dent in the overall business; up until three years ago, print revenues made up 85 percent of the division's sales. Today, securities brokerages, banks and other financial institutions count on online publications to make their business decisions. Revenues from the online business account for more than 50 percent of total sales.

By contrast, printed materials drive 90 percent of McGraw-Hill's sales to the education market. Information technology's impact on the book publishing business thus far has been in reducing the book publishing cycle by half, from 18 months to 9 months.

The publisher anticipates that electronic distribution and the Internet will play an increasingly important role in core business processes and market positioning in each of the company's divisions.

Before the company even had a presence on the Internet, McGraw-Hill employees accessed the Internet for editorial research. In 1995, the company launched 84 different Web sites with sales and marketing materials for its different brands. At the same time, McGraw-Hill began to post its print products on the Web, with the content from the print edition as the centerpiece. This continued through 1996, when the company decided it needed to develop new products designed to take advantage of the unique capabilities of the Internet.

For the past year, McGraw-Hill has been developing products and services exclusively for the Internet market, spanning consumer, education and business-to-business products. By the spring of 1998, the company plans to launch 62 new products. The following are selected highlights:

Education

The company's higher education division has been working with 25 schools on a supplemental online study resource to run over university intranets. Soon after January 1998, students in participating universities will be able to access online presentation materials, linked with e-mail and discussion group capabilities to help them study outside of the classroom.

Because of the expense and time involved, science and technical reference publications are updated perhaps once every 3 years. Two years before the publication of a new textbook, the editorial publisher begins to gather research for peer review. "New" research is actually more

than a year or two old before it finally reaches the reader. McGraw-Hill's *Harrison's Principles of Internal Medicine Online* will change this. Research will be reviewed on an ongoing basis and posted on the site each week. Still in the development stage, the objective for the online medical journal is to make the latest research available to the medical community as soon as it has been reviewed by their peers.

Financial Services

Standard & Poor's, a McGraw-Hill company, will introduce a Personal Wealth product in early 1998 that integrates financial services tools and information from separate S&P products. For \$10 a month, the Personal Wealth adviser will recommend how best to allocate assets based on information the customer provides about his earnings, investment priorities, and current holdings. The service will even provide recommendations for specific stocks or mutual funds that meet the customer's profile. Personal Wealth will have a link to an online broker where its customers can buy or sell investments.

Industry and Professional Publications

McGraw-Hill offers its trade publications to Internet users on a subscription basis. Dodge Dataline Direct delivers construction information. Newsletters and magazines targeted to the aviation industry, including *Aviation Week*, are also available online. New products and services soon to be announced will draw upon the vast databases of information from the different McGraw-Hill businesses and tailor them to different industry audiences.

Consumer Market

McGraw-Hill introduced *Business Week Online* back in 1994 to see what lessons it could learn about doing business on the Web. The company has discovered that readers of *Business Week Online* do not behave as its print readers do. Online users read the front page article and then use the site to research the magazine's archives and special report sections, features not found in the print edition. And, different types of readers - - someone running a small business or a marketing executive in a large multinational corporation - - have different interests. Building on the knowledge, McGraw-Hill intends to introduce new products and services tailored for particular audiences.

Benefits McGraw-Hill expects from the Internet

- *Creating a unified brand:* McGraw-Hill has 100 different brands today, each with its own products, marketing strategy and image. With the Internet, customers will see a unified McGraw-Hill and will be able to get information and products from each of the company's business units, regardless of whether the customer starts at one of the K-12 education sites or Business Week.
- *Additional revenues:* by storing content electronically, what was once only used in one publication can be repackaged and tailored for use across different McGraw-Hill units.
- *Lower distribution costs:* McGraw-Hill expects that distributing its content electronically will drive down printing and distribution costs which can be as high as 50 percent of the retail price in some markets.

NEW YORK TIMES

In anticipation of highly profitable classified advertising revenues leaving the print media for the Web, the New York Times Company (along with hundreds of other newspapers) launched its online business in early 1996.

The company's strategy to combat the shift in local advertising is two-fold: the paper has been positioning itself as more of a national paper than a regional paper, drawing a larger share of its revenues from national advertisers. The second part of the still-unfolding strategy is the online business. Right now, the New York Times on the Web offers readers the day's print stories online, along with AP Breaking News and AP radio, 50,000 book reviews dating back to 1980, hosted and unhosted online forums, and "Web specials" covering women's health, sports and special in-depth features (recent features covered the handover of Hong Kong to China and inner-city housing).

The dynamics of the online world are different than print:

- *Low barriers to Web entry results in greater initial competition:* Because it costs so much to build a printing plant (the company's newest printing plant had a price tag of \$350 million), competition in the newspaper business has traditionally been limited. Starting a content business on the Web requires much less capital, resulting in a very competitive market of thousands of different content sites. The Times views this as temporary, however. For those companies competing for the mainstream reader and trying to build a business funded primarily by advertising dollars, the marketing costs to "capture eyeballs" and build a brand will be high. Over time, sites without sufficient funding will find it increasingly difficult to compete online.
- *Different business model:* In the print business, the New York Times controls the entire chain: they operate the plant, write the stories, sell ads, buy the newsprint, manufacture and distribute the papers. The company considers the development of the content as its expertise, and the rest, a necessary part of doing business. In the online business, the need for the physical plant disappears, freeing the company to focus on its core expertise.
- *Revenue streams:* The revenue stream for the online business is still evolving. Though small, the main revenue stream comes from advertising. Additional revenues are generated from a subscription fee charged to the international audience, along with fees to print stories from the archives and an annual fee for online crossword puzzles. The company is banking on advertising revenues to ramp up quickly.
- *Business rhythm:* The print business is well-tuned and predictable. James Terrill, Vice President and Controller of the New York Times, describes its rhythm like this: "Before noon on the day before, we decide the shape of the newspaper. Once you know the advertising spend, you know the size of the paper. The look and feel of the newspaper

does not change—everyone knows the positioning of articles on a page and what should go in each section. Where it goes says, ‘this is today’s news, this is what’s important.’ We have to make sure that 365 days of the year, we go through the sequence properly. Once every 20 years we reinvent the newspaper.”

Cris Zukowski, director of business operations at New York Times electronic media company paints the contrast : “Our business is a 24x7 operation. It’s much more dynamic. The key is to attract viewers and get them to stay, while at the same time deciding what’s worthy of the *New York Times*’s brand name. We’re very informal and have to be because of the speed this market moves at.”

- *Cost structure:* though too early to tell how its cost structure will look once the online business is mature, the New York Times points to significant differences between the print and online businesses. The online business does not have to support the three largest expenses of the print business: the newsprint (the price of which they do not control), physical distribution, and the costs to manufacture and print the paper. Combined, these costs represent 30-40 percent of the total cost structure. The major expenses of the online business are content creation, sales and marketing. The Times points out that marketing expenses are the wild card in the equation. Depending on how the Internet marketplace evolves, marketing expenses could be higher as a percentage of total operating expenses for the online business than for the print business, particularly if users continue to access the Internet via a handful of “start” sites as they do today.

Future plans

The company plans to expand its online site, pulling together specialty sites under the strength of the *New York Times* brand name. With its large base of print subscribers and growing base of registered online users, the company will strive to be the trusted aggregator of news for an expanding audience.

REUTERS

Reuters, a \$5 billion global financial news and information company, traces its roots back to 1851, to a small service delivering stock prices by carrier pigeon to clients in London's financial district. The business soon outgrew the carrier pigeon and the company relied on the telegraph and other technology to communicate breaking news from around the globe. By the early 1960's, Reuters' clients received their stock quotes from the new Stockmaster, a computerized quotes display system. Through the early 1990s, many securities brokers and traders relied on Reuters' terminals to keep current on the latest news and analyses that could impact foreign currency, stocks and commodity prices.

Up until recently, Reuters has taken a conservative approach to using the Internet to distribute its products because of technical issues, particularly in Europe. As the Internet's reliability and performance continue to improve, however, Reuters believes that it has the potential to shift the way Reuters does business. Just as the PC eliminated its dedicated terminals in the space of five years, the Internet provides enough compelling reasons for the company and its customers to exchange proprietary networks for the Internet. Reuters' director for European operations, Jean-Claude Marchand, predicted that "all the Reuters' services would be delivered either on the Internet or via Internet-related products within five years."³⁶

Between now and then, Reuters anticipates that proprietary networks will be the mainstay for institutional trading. Because program traders and institutions rely on having real-time information delivered without fail to their desks, they will continue to pay a premium for the reliability and predictability of a proprietary network. Businesses geared to the individual investor will gravitate to the Internet, as individual investors will not pay the price premium for network support services and real-time access.

Over time, the premium paid for network reliability and predictability will decline. Instead, the differentiation will come in service, training, proprietary information, and the value of analysis.

Reuters launched an information-only corporate Web site in 1994. Today, Reuters online offers a variety of services designed for the Internet, including:

- *Online news reports tailored for specific audiences:* business news, securities reports, financial markets, breaking news from around the world and a growing number of reports that cover the top 10 stories for a given country.
- *Brokerage products and services:* delayed quote data, historical pricing charts, company news, Market Snapshot and Portfolio Tracker can be plugged into other companies' customized applications. For those that want a turn-key Internet brokerage solution, Reuters provides custom labeling, hosting, maintenance and updating. As of November 1997, 19 online brokerages subscribed to the service. Reuters expects to have 50 customers by spring 1998.

- *Air Cargo Service*: for a monthly subscription fee of \$100, Reuters provides buyers and sellers of air cargo space the latest news and information affecting the air cargo world. Airlines, charter companies and forwarders can post available space on their aircraft and shippers can post their needs for cargo space from one location to another. A structured e-mail system provides instant contact between buyers and sellers wishing to make a deal.
- *Media World*: Reuters online community lets media buyers and sellers stay current on the latest advertising, media and brand news from industry sources, view samples and purchasing offerings from vendors of market data and services.

Reuters has announced the creation of a 50[^] million global technical center to develop Internet-related products. The company is also investing in pay per view technology and a smart card that will allow Reuters subscribers to access services from anywhere in the world via the Internet.

How the Internet impacts Reuters' business:

- *Different pricing model*: subscribers to Reuters newswires over proprietary networks pay a fee per key station. For Internet-based services, customers pay a minimum subscription fee, transaction fees and advertising revenues.
- *Cost structure implications*: Sales and distribution costs are high in the traditional areas of Reuters business, and do not scale well. To deliver products via a proprietary communications network, the company pays staff and operating expenses associated with purchasing communications capacity, managing the network, and providing network-related customer service and training. As the business shifts to the public Internet over time, Reuters will get out of the business of managing its own network and this could lower costs significantly.

Sales and marketing operations via the Internet scales much better than in-person sales calls. Replacing paper-based contracts with online credit card sales transmitted via the Internet would free up time for the sales force to focus on customer relations and generating additional business. Over time, Reuters expects to use the Internet to expand its reach into the lower-end of the market.

DUN & BRADSTREET

For over 155 years, Dun & Bradstreet (D&B) has provided information services to assist businesses in buying and selling decisions. Today, D&B is one of the leading providers of business-to-business credit, marketing, purchasing, receivable management and decision-support services worldwide.

Supplementing reports and products available in CD-ROM, proprietary software and via direct electronic feeds, D&B delivers a growing number of its current products via the Internet or via corporate intranets. Responding to customer demand, D&B is also beginning to develop new products and services designed for the Internet.

D&B positions itself as “organizing the business space” on the Internet much as it does in traditional markets. Buyers and sellers need information to validate the identity and legitimacy of a potential business partner. They also need a basic corporate profile to determine credit worthiness, size, geographic presence, management and ownership structure.

D&B’s D-U-N-S® Number, a registry for 46 million businesses around the world, is used by governments, standards organizations and industry associations to verify a business’s identity online, whether for an Internet or EDI transaction.

Small and medium-sized companies use D&B’s Web site most often to access standard business reports including credit and risk management reports for evaluating buyers, purchasing products reports for evaluating sellers, and database marketing reports for evaluating prospective markets.

Larger customers also use D&B’s standard reports, but they have begun to request more specialized information and customized solutions their employees can access from corporate intranets and the Internet.

In the past, a buyer of solid wood products would have asked the corporate librarian to print out a supplier evaluation report on each mill being considered for the pine contract for the company’s North Carolina furniture factories. Today, the buyer is no longer satisfied with a printed report. Instead, he wants to pull up information about different mills right from his desktop computer, store certain fields of data and compare data across companies to qualify them and look for opportunities to negotiate better prices.

A large telecommunications company in the process of deciding which vendor to lease computer equipment for a year uses D&B’s Financial Stress Score, a statistical model that predicts the likelihood of that vendor’s business failing in the next 12 months. The D&B information is built right into the workflow. Instead of having to interrupt the process to call up a D&B report, the information is fed directly into a vendor scorecard that the procurement officer uses to evaluate different vendors.

D&B has realized many benefits from the Internet

- *New customers:* D&B's corporate customers traditionally have consisted of a few key individuals within purchasing, credit and marketing departments who controlled a company's access to D&B reports. With the Internet and corporate intranets, the "gatekeeper" mentality is changing. Customers now request hundreds or thousands of passwords for their employees to access D&B products from the Internet. In fact, D&B has had a 6-11 percent growth in revenues from customers accessing information from the Internet while its traditional business has remained flat.
- *New products and services:* Driven by requests from its customers, D&B has been working to develop new products and services for customers to integrate into business applications on their corporate intranets. At the same time, D&B is working with Internet companies to provide businesses with D&B's D-U-N-S® Numbers system when they register for a domain name. They also provide their services to certification authorities to validate businesses conducting commerce on the Internet.
- *Deeper integration into clients' business processes:* Clients have asked for new products that allow them to directly incorporate D&B information into key business processes. Because it is easier to change vendors for a standard report than it is to change a business process, D&B is becoming more of a strategic partner than it has been in the past.
- *Lower data acquisition and labor costs:* Collecting information used to mean maintaining a labor force in different geographical locations who physically visited courthouses and government offices to request and photocopy documents. With automation and electronic feeds for much of its data collection process, D&B has been able to centralize its collection activities and save a considerable amount of money. The Internet will make data acquisition even more efficient. Individual companies will register and update their profiles with D&B online rather than by fax or mail, and a greater share of public information will be transmitted to D&B electronically.

The Future

Going forward, D&B believes that its business will continue to evolve from producing standard reports to providing customized services that rely heavily on collecting, interpreting, storing and presenting information in ways that are meaningful to individual customers. D&B expects that more than half of its business will come through the Internet shortly after the turn of the century.

TRAVEL

Vacationers and business travelers can now find information on the Internet about cities they plan to visit, including driving directions, recommended itineraries, weather patterns and business telephone numbers and addresses. Many hotels have detailed property descriptions, along with photos of the property's grounds, public rooms and bedrooms. Rental cars can be reserved online. Top travel magazines offer online suggestions for the best week-end getaways.

Business travelers increasingly book travel online over corporate intranets. Customized solutions incorporate corporate travel policies, preferred suppliers and negotiated rates, and tools that simplify and streamline expense reporting.

Perhaps the biggest initial travel business being done online is the purchase of airline tickets. Internet-based travel services put the reservations engines that airline customer service representatives and travel agents use at the fingertips of the leisure and business traveler. Customers enter point-to-point destinations, desired travel times and dates, preferred airlines, and other preferences into the reservation system. Moments later, the system delivers a choice of options, along with a secure transactions environment for customers who wish to purchase the ticket online.

In 1996, Internet users booked \$276 million online, of which 90 percent of which went to airline tickets. A year later, the figure tripled, to \$827 million.³⁷ By the year 2000, online travel sales could reach \$5 billion, or close to 7 percent of U.S. airlines' revenues for passenger air travel.³⁸

A snapshot of the top travel sites shows how quickly online travel is growing (Figure 2).

Internet Travel Network became the first Web-based travel service with its launch in May 1995. Within three months' time, it had 70,000 registered users. Less than a year later, the number jumped to 450,000. By the end of 1997, 3 million people had registered on ITN's Web site. Early in 1997, ITN projected it would sell \$75 million in travel for the year.³⁹

Figure 2. Travel Bookings Take Off

(Bookings/Wk)

	1/96	2/97	7/97	11/97
Travelocity/ EasySABRE	\$1 M	\$2M	\$2M+	\$3 M
Expedia	NA	\$1 M	\$2 M	>\$2 M
Preview Travel	NA	\$1 M+	\$2 M	NA

The SABRE Group’s EasySABRE (a PC product also available on the Internet) sold \$1 million/week in travel as early as January 1996. In March 1996, the SABRE Group added an Internet-specific site, Travelocity. The two sites booked \$100 million in 1996. By November 1997, the two sites’ combined weekly business was \$3 million.

Microsoft’s Expedia, launched in October 1996 was doing \$1 million in sales per week in February 1997. By July 1997, its weekly business had doubled. It closed 1997 having booked more than \$100 million in travel sales. By January 1998, its sales exceeded \$3 million per week.⁴⁰

Preview Travel, launched in May 1996, booked \$20 million in travel for 1996 and over \$80 million for 1997.⁴¹

Airlines began to experiment with the Internet in 1995, first as a corporate public and investor relations vehicle. They quickly realized that the Internet provided a low-cost way to reach their consumers, and within a year, airlines began to offer fare quotes, flight schedules and other information via the Internet.

Today, the major U.S. airlines let customers purchase tickets via the Internet, in addition to information about fares and flight schedules. Some sites also include their frequent flyer membership programs, allowing current members to check their status and new members to enroll. Special e-mail services notify customers of fare discounts.

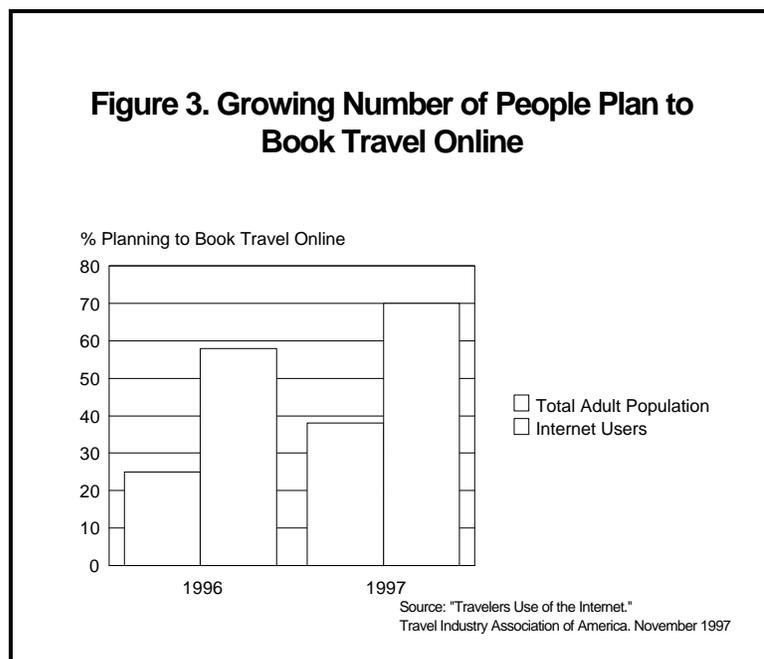
Even in its infancy, electronic commerce is expected to have a quick and measurable impact on the travel industry—most visibly in the migration of bookings to online travel sites and travel suppliers’ own sites. A growing number of leisure travelers use the Internet to make their travel plans and bookings. Airlines

benefit from significant potential savings, driven by lower online commissions (or no commissions if booked directly with airline), lower customer service costs, and lower ticketing costs as more online customers accept electronic tickets.

Some airlines are also now using the Internet to improve capacity utilization.

Growing consumer demand

According to a survey released in November 1997 by the Travel Industry Association of America,

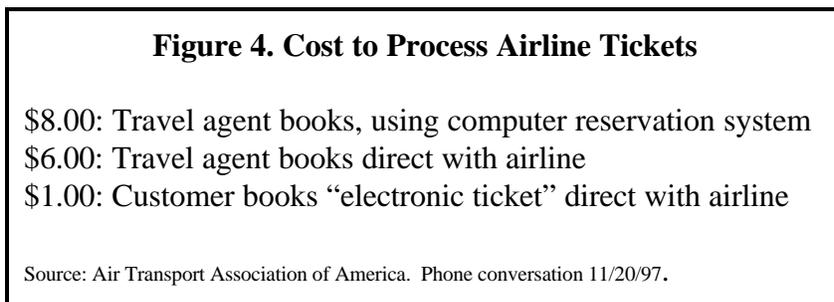


13.8 million Americans use the Internet to plan their trips and 6.3 million make reservations on the Internet. And, the acceptance is growing. In 1996, 10 percent of Internet users used the Internet to make travel plans and purchases. Nearly 70 percent say they plan to do so in 1998. Acceptance is not limited to today's Internet audience. Thirty-eight percent of all adults said they would consider using the Internet for their travel in the next year (Figure 3).

Lower sales and marketing costs:

Airlines are pursuing various strategies to drive their distribution costs down: lowering travel agent commissions, selling through the Internet and offering more electronic ticketing opportunities. Through technology and the Internet, airlines expect to cut sales and marketing costs by 20-30 percent over the next three years.⁴²

At \$12 billion, sales and marketing costs comprised of travel agent commissions, marketing and advertising expenses, labor costs and other expenses for airline reservations agents, are airlines' second largest operating expense.⁴³



How a ticket is sold, through an agent or by the airline directly, and whether the ticket is paper or electronic, can mean the difference between paying \$8 or \$1 to process a ticket (Figure 4).

Today, 80 percent of tickets are sold through travel agents, most who book through a computer reservation system (CRS). Bookings made direct with airlines (typically through a toll-free number) account for the remaining 20 percent.

Until 1995, the airlines paid travel agents 10 percent of the ticket price for domestic and international flights they ticketed. An additional 3 percent went to agents who steered business in an individual airline's direction. In February 1995, the airlines capped agent commissions for domestic travel bookings at \$25 for one-way tickets and \$50 for round-trip tickets. According to Salomon Brothers, this move saved the airlines \$500 million in 1995.⁴⁴

In late September 1997, the airlines lowered the commission structure again, to 8 percent for both domestic and international flights, maintaining the \$50 cap per round-trip domestic ticket. Delta and United Airlines have been reported as saying this will save them up to \$100 million annually.⁴⁵

Travel agents have fought the cuts in commissions, arguing that the lower commission structure does not cover their costs. So far, airlines have not backed down.

In 1996, Southwest Airlines became the first major U.S. airline to let passengers buy tickets directly on its Internet site, completely bypassing the agent and the commission. A new breed of travel services started to emerge - - online travel sites sponsored by airlines themselves, “virtual”

**Figure 5. Commission Structure:
Travel Agent Versus Online Travel**

	<u>Travel Agent</u>	<u>Online Travel*</u>
Commission %:	8%	5%
Cap on one-way:	\$25	\$10-15
Cap on round trip:	\$50	\$25

*Airlines do not pay a uniform fee or commission for travel booked online. For instance, American pays \$15/ticket, United pays \$10/ticket, Continental and Northwest pay 5% with a maximum of \$25 for domestic trips.

travel agents like Microsoft’s Expedia.com and SABRE’s Travelocity.com, and travel agents’ own sites. Whether customers purchase tickets on an airline’s site or through online travel agents, the airlines get a break. They save money if their own travel reservations centers do not have to be involved in the purchase, and the commissions they pay to online agents are about half what they pay to traditional agents (Figure 5).

Doing away with printed tickets—the paper, the machines to print the tickets, and the labor involved—would also reduce airlines’ sales and marketing expenses. Instead of getting a physical ticket in the mail, customers with electronic tickets receive a reservation or locator number that they give to the airline representative at the airport gate as proof of purchase.

Southwest Airlines started the push into “ticketless travel” in 1994. By 1997, more than half of Southwest’s customers fly without printed tickets.

U.S. Airways and American Airlines began issuing electronic tickets later than Southwest and have a smaller base of customers using them - - about 15-17 percent of U.S. Air’s customers and 10 percent of American’s.⁴⁶

While the airlines’ ability to move customers away from paper tickets to electronic tickets does not depend on the Internet, it’s proving useful to airlines as a way to get more of their customers to use electronic tickets. Internet customers reserve their ticket, select a seat and give their credit card information online. Using an electronic ticket is a natural extension of the process.

Airlines have been encouraging their Internet customers to use electronic tickets by offering frequent flyer miles for travel booked online with an electronic ticket. Northwest Airlines has been offering its WorldPerks members who purchase via its Web site an additional 1,000 frequent flyer miles for using an electronic ticket. Travelocity started offering electronic tickets on 10 major airlines late September 1997. Without the use of any special incentives, Travelocity now tickets 40 percent of its business electronically.

Opportunity for New Revenue

Yield management, or, in other words, allocating how many tickets should be sold at different fares for a given flight in a given market, is a key driver of airline profitability. For each flight, an airline has to sell about two-thirds of all the seats in order to cover the fuel, the pilots' and flight attendants' salaries and the other costs of operating that flight. On average, airlines sell about 70 percent of the seats.

According to the Air Transport Association of America, airlines' yield management has been steadily improving over the years, through a combination of cautious investment in new aircraft and investments in information technology. Today, sophisticated computer programs can pretty accurately gauge demand for a particular flight at a particular time at particular seat prices.

No matter how precise an airline's forecasting, however, seats still go unsold on some flights. Auctioning airline seats to the highest bidder and offering special "cyberfares" for leisure travel are two techniques made possible by the Internet to sell seats at the last minute.

Knowing that the Thanksgiving holiday period was usually slow for trans-Pacific travel, Cathay Pacific tried an experiment using its Web site. Between October 13 and October 26, 1995, the airline auctioned off 50 business class seats for a round-trip flight between Los Angeles and Hong Kong. Bidding started at \$25 for these \$2,882 round-trip seats and increased at increments of \$25. Cathay received 2,400 bids for the 50 seats. All 50 seats were sold at an approximately \$1,500 each. The result of the gamble was \$75,000 in incremental revenue.⁴⁷

Salomon Brothers recently projected that airlines could realize substantial improvements in profitability by more widely using an auction system.⁴⁸

The Future

Selling travel online appears to have few constraints to growth, perhaps because the computer infrastructure at the airlines and car rental companies has been in place for years. Its growth will depend on the speed at which the Web audience grows and bandwidth to the home increases. Analysts predict rapid growth in travel services, from less than \$1 billion in 1997 to close to \$8 billion within five years.

AMERICAN AIRLINES

In May 1995, American Airlines launched its Web site for public and investor relations. Less than six months later, American's passengers could use the site to access basic customer service information, including flight schedules, fares and flight status. By June 1996, passengers could buy tickets online, either through American's "AAccess" Web site or through a PC software dial-up program.

American's site really took off in February 1997. The day after a pilot strike was averted, American announced a fare sale. In every announcement, the company posted its Web site. When passengers realized they could avoid the long holds on the 800 number by going onto American's Web site and booking the reservation themselves, the site's numbers surged: for every one person who had accessed the site before, nine people did so during the fare sale. As of November 1997, American had approximately 500,000 registered online users. Online revenues already in the "millions of dollars" every month were growing 22 percent month over month.

Reservations center savings

Over half of the phone calls to American's reservations centers are requests for flight information, not to book reservations. Answering these questions via the Internet allows American to provide its online customers with a higher level of customer service and, at the same time, saves the airlines money. Similarly, flights that are booked online are cheaper to process than flights booked through their reservations center or through travel agents and CRS systems.

American estimates that about 20 percent of the flight information queries answered via the Internet would have otherwise been calls to their reservations center. Because the online volume is still very small relative to the airline's total call volume, American has not yet experienced significant savings.

American anticipates that in 1998, its online ticketing and customer service volumes will be large enough to have an impact on their overall costs.

Savings on ticket processing

Roughly 10 percent of American's customers fly with electronic tickets. With online customers, the average is closer to 70 percent. As online volumes grow, the airline expects that more of its ticketing will be done electronically, driving down its ticket processing costs.

Potential for increased revenue

In spite of its reputation as leading the industry in yield management, American still ends up with unsold seats in some markets. Before the Internet, the airline did not have a profitable way to market these seats at the last minute.

Today, every Monday or Tuesday, American looks at its yield management results and picks out low-performing markets. Mid-week, over one million "NetSAAver" subscribers get an e-mail from American listing rock-bottom fares for certain markets for travel that weekend. The NetSAAver program has generated tens of millions of incremental dollars for the airline since its launch in March 1996.

In 1998, American plans to link its AAccess Web site to its frequent flyer database. Each time a frequent flyer logs onto the site, the site will know which cities that customer most frequently travels between, whether his preference is for coach, business or first class travel, how many points he has earned toward a free flight or upgrade, and a host of other preferences. Matching that customer's profile to its internal information about available seats in different markets will give American the ability to personalize fares, suggest promotions and travel packages that suit that customer. In the end, American hopes to benefit from new revenue opportunities.

THE SABRE GROUP

Back in the 1930s, making a reservation on an American Airlines flight meant calling a reservation agent, who would telephone the central number at American where seat inventory was maintained. After checking the seat inventory against the request, the travel agent would get a teletype response. Through the 1940s, reservations were recorded manually with a pencil on different colored index cards and arranged in a “lazy Susan.” Flights were controlled by half a dozen employees sitting around a table spinning the lazy Susan for index cards that would correspond to particular flights. By counting the pencil marks on each card, a clerk at the reservations center could give a “yes” or “no” to a request for a seat. To complete a booking for a round-trip reservation from New York to Buffalo required 12 different people performing more than a dozen separate steps during a three-hour period—longer than the flight itself.

Through the 1940s and the 1950s, the system became more sophisticated, and American’s first truly electronic reservations systems, SABRE (Semi-Automated Business Research Environment) emerged in 1959. By 1964, the telecommunications network extended across North America. In May 1976, the first SABRE unit was installed in a travel agency. By the end of the 1970s, more than 1,000 travel agency customers were linked.⁴⁹

The SABRE Group is now a publicly traded company (82 percent of the equity is controlled by the AMR Corporation) with sales of just under \$1.8 billion. Today’s SABRE system processes \$66 billion in travel sales and serves a network of travel agents in more than 105 countries, hoteliers, car rental companies, travel suppliers and consumers who use SABRE to reserve and book travel with almost every major airline, 39,000 hotel properties, 50 car rental companies, railroads, tour operators, and a host of other travel products and services around the world.

The SABRE Group’s electronic commerce strategy straddles four customer groups: travel agents, airlines, businesses and individuals.

Planet SABRE, the SABRE Group’s PC-based travel agent reservations system, gives travel agents a direct connection to the Internet so that they can benefit from the vast amount of information published on the Web. SABRE Web Reservations is another product that provides links to the SABRE system so that travel agents in North America, Europe, Australia, Latin America, the Caribbean and Mexico can offer their customers planning and booking services directly from the agent’s Web site.

The SABRE Group operates Web sites for major airline carriers, including American Airlines and Japan Airlines.

Corporations can choose from full-service travel products running over Lotus Notes, Windows and corporate intranets, or customized tools to assist with business travel planning and reservations. SABRE Business Travel solutions (SABRE BTS) provides a live connection to the SABRE system that incorporate corporate travel policies and rules, along with expense reporting

packages. About 30 corporations use the full-service solution, and nearly 100 corporations use elements of the product in their own travel systems.

The SABRE Group has two Internet sites for individual travelers—easySABRE and the better-known Travelocity.

Launched in March of 1996, Travelocity provides one-stop online leisure travel services backed up by the SABRE transaction and reservations engine. Travelers can book flights, cruises, hotels and rental cars, and can also access interactive street maps, photos, video clips, driving directions, travel guides, and weather forecasts. For customers searching for the lowest fares on a particular itinerary, Travelocity's "3 best itineraries" service prioritizes flights based on price. On selected flights, Travelocity customers can view the airplane seat plan, see what seats are free, and select a seat.

Personalized touches are also available. If a flight is canceled or delayed, Travelocity will page or e-mail the customer to let him know. Travelocity will monitor fares in certain markets and will notify interested customers by e-mail when the fares have changed. And, AT&T PocketNet customers in need of travel updates on the road can access real-time arrival, departure, gate information as well as flight schedules through their cellular phones.

EasySABRE and Travelocity together booked about \$100 million in travel reservations in 1996; in February 1998 they reached the \$4 million/week mark. Two years after its launch, Travelocity has 2 million registered members.

RETAIL BANKING

Consumers use the Internet to get up-to-the-minute balance information on their checking, savings, certificates of deposit and credit cards accounts. They can use online services to see whether checks have cleared, verify deposits, and transfer funds from one account to another. Those who wish to have the bank pay their bills can go online to set up one-time or repeat payments and the bank will automatically make the payment and debit the appropriate customer account.

In addition to basic banking services, customers banking via the Web can learn about and apply for credit cards, mortgage and home equity loans, automotive and education loans, as well as personal lines of credit. They can also get quotes on insurance policies and review mutual fund performance and download prospectuses.

About 4.5 million households were banking online in 1997 through a dial-up connection direct to their bank or through the Internet. By 2000, between 10-16 million households are expected to do their banking online.⁵⁰

Many banks have Web sites, but most are information-only today. Before the decade is out, banks increasingly plan to give their customers the ability to do most of their banking transactions on the Web.

Most of the top 100 banks in the U.S. have a Web site. However, Online Banking Report classifies 24 of them as “True Internet Banks”—banks that let their customers review balances, transfer funds and pay bills directly from their Web sites.⁵¹

According to a 1996 Booz-Allen & Hamilton survey of North American financial institutions with Web sites, 80 percent of respondents planned to allow their customers to conduct most traditional banking transactions over the Internet within 3 years.⁵²

Having a Web presence is by no means limited to the nation’s largest banks. In Online Banking’s list of 133 “true Internet” banks, 109 do not make the list of top 100 U.S. banks ranked by assets.⁵³

Even community banks are seeing what PC banking and the Web can do for them. According to a late 1996 survey of community banks, only 1 percent offered PC banking, but an additional 25 percent of them planned to do so. Fifteen percent had a home page on the Internet, with another 30 percent saying they planned to have one soon.⁵⁴

The State National Bank of Big Spring, Texas, a locally owned bank managing about \$131 million in assets, launched its Web site in January 1997 to better serve its customers who preferred to

bank online. Customers can see full statement details, pay bills, transfer funds as well as order checks, set up direct deposit authorizations and stop payments on checks. The bank is happy with the success of its site, which gets about 2,000 hits per day. New features such as showing images of checks a customer has written and notifying them by e-mail of any account problems (for instance, if your balance falls below a certain level) are soon to be added.⁵⁵

Beneficial National Bank, a wholly-owned subsidiary of a \$17 billion bank holding company, became the first bank in the U.S. to introduce the two-minute consumer loan on the Web in late 1996. As of mid-May 1997, about \$4 million in loan checks had been cut for successful applicants for unsecured consumer term loans between \$1,000 and \$10,000. Beneficial bases the interest rate and maximum loan amount on the applicant's credit score. It issues a preliminary loan decision while the consumer is online, and approved applications are automatically routed to a human analyst for further verification. If the approval holds, the loan check is mailed the next business day.⁵⁶

Credit unions are beginning to develop Web presences. As of September 1997, 811 credit unions had Web sites, with about half offering online loan and membership applications. Credit unions operating "cyberbanks" generally have assets of around \$100 million. That spans a group from Star One Federal Credit Union with \$1.3 billion in assets and 52,000 members to the much smaller Valley Community Credit Union in Nampa, Idaho, with \$4.2 million in assets and 2,100 members. Interactive services like credit/debit card applications, mortgages, auto and personal loans, and check viewing and reordering continue to be added.⁵⁷

A few new banks have been created especially for the Internet. Security First Network Bank (SNFB) became the world's first Internet bank in October 1995 and Atlanta Internet Bank followed a little over a year later. The core of the business for both of these banks is remote banking, with the Internet as the center and telephone and ATM access as supplemental services. Two more all-Internet banks are expected to open soon: Georgia-based Rockdale National Bank and Houston-based CompuBank.⁵⁸

In addition to what they are doing on their own, banks and non-financial companies are coming together to create technical standards for communicating and building out the necessary networks to speed the development of online banking.

Integrion Financial Network, an alliance of 18 banks, Visa USA and IBM, intends to seamlessly connect all the devices a consumer might use for banking—telephone, PC, the Web, screen phone or Personal Digital Assistant—to a bank's back-end computer systems. Consumers should be able to access balances, account histories, transfer funds, get transaction information and pay their bills from any of these devices. In time, these capabilities will be enhanced to include bill presentment, stock quotes, interactive loans and other applications. The basic platform is operational; a process is now underway to customize the product at participating banks through 1998. NationsBank and BancOne were the first two banks to go online with Integrion in mid-1997. The participants in Integrion will use a common messaging standard called the Gold Standard.

Intuit, CheckFree and Microsoft are working with other banks and financial institutions on a standard messaging initiative called the Open Financial Exchange. Participating institutions will use the OFX standard for basic banking transactions, bill payment and presentment and investing.

The two groups have publicly committed to making the Gold Standard and the OFX standard compatible and interoperable. Lines are already blurring—a recent 10-year agreement was reached between Integrion and CheckFree, where CheckFree will handle all bill payment for the network.

DRIVERS OF GROWTH

The growth of Internet banking is driven by banks' interest in lowering costs to serve their customers, new competitive pressures and growing consumer acceptance.

Lower operating costs

Banks have vast networks of distribution. In virtually every neighborhood, there's a branch bank, an ATM, or, increasingly, a mini-branch in the grocery store. Banks supplement these physical locations with toll-free numbers, and, more recently, online banking services.

Banks are seeking to reduce operating expenses and to gain competitive advantage by increasing consumer convenience.

James Culberson, President of the American Bankers Association, notes, "transactions through bank branches will decline by nearly one-third by 1998. Already, nearly half of all banking transactions today no longer involve human interaction."⁵⁹

Grocery store banking is on an upswing. These small branches offer the human touch to those customers who want it, they are inexpensive to build—they cost \$175,000 to build versus \$1-\$2 million for a traditional branch bank—and they get a regular flow of customer traffic—an average grocery store gets 12,000-15,000 shoppers who visit 2.5 times a week. In 1986, there were less than 400 grocery stores with in-store banks. Ten years later, 4,400 grocery stores had in-store banks.⁶⁰

Phone banking, also popular, is predicted to increase 50 percent between 1996 and 1998.⁶¹

The largest banks have started pushing PC banking as a way to reach customers who prefer to do business with them electronically. Eighty-one of the top 150 U.S. banks offer some type of PC banking service, up from 57 in 1996.⁶²

Banks see the Internet as one more remote service they can offer to customers who want to bank that way. It has not yet reached a critical mass to impact their operating costs, but expectations of the "early adopters" is that it will.

Based on early 1996 work, Booz-Allen estimates the cost to create a fully functioning Internet banking site—one where customers can check balances online, transfer funds between accounts, pay bills online—to be between \$1-\$2 million (excluding regulatory capital), or about as much as it would cost to set up a traditional branch.⁶³ IBM suggests that the price tag is significantly higher: anywhere from \$2 million - \$10 million, depending on how much work there is to integrate the bank's back-end systems to their Web site.

For banks that outsource online banking to third parties, less expensive solutions are available. Basic online banking solutions created for banks with assets in the \$100 million range are available for \$20,000-\$22,000, with ongoing charges of \$1 per user per month for banks that offer bill payment services. For that investment, banks can offer their customers a secure transaction environment where they can view account balances, download data into personal financial management software, pay bills, order checks and stop payments.⁶⁴

Online banking services are much less expensive to offer to customers than any other form of banking. Booz-Allen & Hamilton estimates that it costs about a penny to conduct a banking transaction using the Internet and more than one dollar if it's handled by a teller at a branch bank.⁶⁵

A branch bank can serve as many customers as it has staff to handle. On the Internet, once the site is up and running (assuming it is robust enough to handle the demand), it can handle as few as one customer inquiry to hundreds of thousands a day without additional expense.

Although too early for banks to determine what kind of impact the Internet will have on their overall business, Wells Fargo expects to generate significant cost savings as more than one million of its customers move from higher-cost channels like the branch to lower-cost channels like the Internet by the end of the year 2000.

New Services

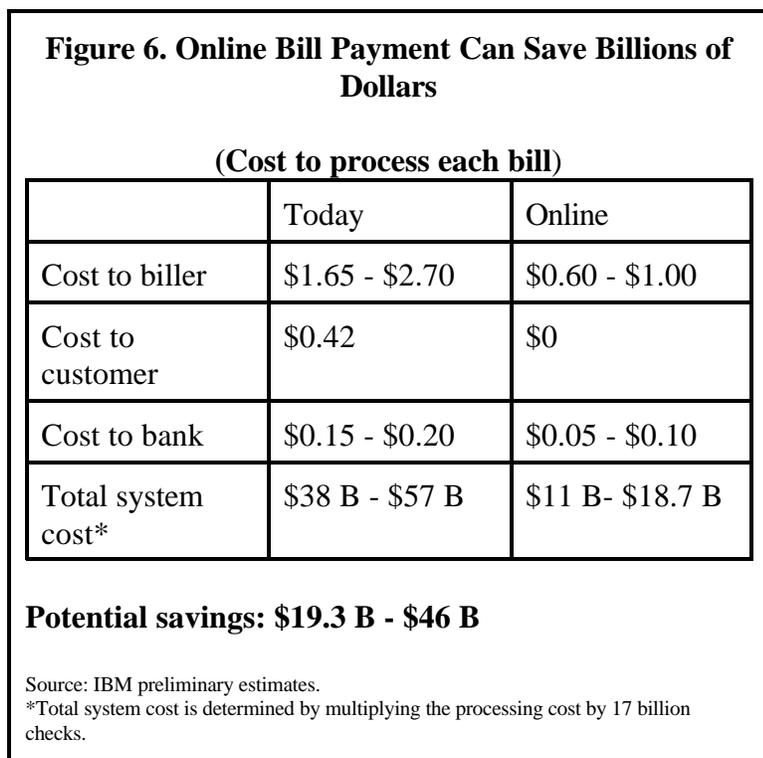
Today's online banking allows customers to conduct basic transactions such as checking account balances, transferring funds, and updating customer account information. In the future, banking on the Web has the potential to be much easier and convenient than banking by ATM, by phone or visiting a branch bank. One example is online bill payment.

The ability to pay bills electronically has been around for nearly two decades, but it has really begun to catch on in the past two years, as banks have begun aggressively marketing their home banking products.

In 1995, CheckFree had less than 400,000 electronic bill pay customers. Two years later, the company has 2 million customers, or about 50 percent of the overall market. At present, half of CheckFree's electronically initiated payments are still paid with paper. This is because only a slim percentage of its billers have electronic connections with CheckFree (1,000 out of 3 million

billers). With the goal of increasing the number of billers electronically connected to CheckFree, the company introduced an Internet-based bill presentment and payment service in March 1997.⁶⁶

Another initiative aimed at increasing the electronic connections between billers and payors is MSFDC, a collaborative effort by Microsoft and First Data Corporation. MSFDC has developed a software product that connects the biller, the payee and the bank via the Internet. The company expects the service will attract large companies initially, and smaller companies will follow later.⁶⁷



According to a preliminary analysis by IBM, it costs a biller between \$1.65-\$2.70 each time he sends out a bill - - \$0.65-\$1.50 to prepare and send out each bill and another \$1.00-\$1.20 to process the payment once it is received. To pay the bill, his customer writes a paper check, puts it in an envelope and sends it back to the merchant. This costs about \$0.42. Then, the bank gets involved, sorting the checks and stamping them, debiting the customer's account and then crediting the merchant's account. This costs about \$0.15-\$0.20 per bill. In total, simply processing the physical bills and checks costs \$38 - \$56 billion for the 17 billion bills that flow through the system (Figure 6).

Using the Internet for bill presentment and payment could dramatically reduce the amount of paper-based processing, resulting in potential savings of up to \$19 - \$46 billion each year.⁶⁸

Changing customer demands and competitive pressures

Personal assets have flowed dramatically out of banks and into asset management firms. In 1976, banks held 25 percent of the \$2 trillion market of invested household assets. Today, their share has been cut nearly in half, to just 13 percent.⁶⁹

In order to better compete for consumers' assets, banks have expanded the variety of products and services they offer. In addition to credit card and lending products, some bank Web sites market insurance products, mutual funds, and may offer financial advice. In these instances, the customer

clicks on a button that links the bank's site to another legal entity affiliated with the bank. The appropriate statements of disclosure notify the customer that the products are not FDIC-insured, nor are they obligations of or guaranteed by the bank.

For instance, NationsBank presents retail customers with credit card services, home equity and mortgage lending from its Mortgage Corporation, insurance from a variety of outside carriers, investment services such as mutual funds distributed by Stephens Inc., military banking and PC banking services. Bank of America offers retail customers basic banking products and services, along with mutual funds and other investment products through BA Investment Services. Visitors to the Fleet Financial Group's home page may enter the site through one of several centers: banking, investment, business, mortgage, or borrowing. Through its recent acquisition of Quick & Reilly, Fleet's banking customers now have an online service to trade and track stocks, options, mutual funds and bonds.

The Web customer does not focus on the boundaries between the different companies providing the services; he sees a one-stop shop for financial services. By combining the bank's offering with online financial management tools like Intuit's Quicken or Microsoft's Money, the Web customer can do his budgeting, pay their bills and manage their assets without leaving a Web site.

Consumer Acceptance

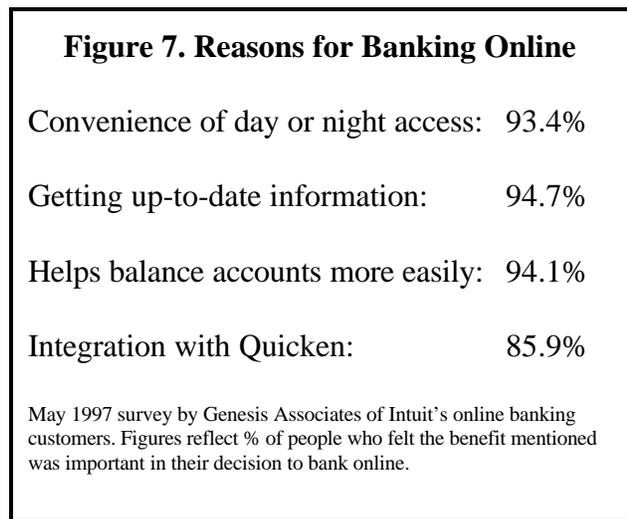
Banks are finding that just because they offer a new service does not mean that customers react in the way that the banks would like (that is, move from a higher-cost distribution channel to a lower-cost one); instead, they actually transact more with the bank. According to a senior official at BankBoston, "instead of just going to a branch four times a month, now they go to the branch twice but also go to the ATM six times, call the phone center twice and do PC banking maybe three nights a week."⁷⁰

Banks have begun aggressively marketing lower-cost delivery channels (ATMs, phone banking, online banking) to encourage customers to change their behavior. Sixty percent of them offer lower monthly fees for customers who use low-cost delivery systems.⁷¹ For example, Florida's Barnett Bank announced a \$4 a month fee discount to any customers who banked by ATM, phone or online.⁷²

Some banks prefer the "stick" to the "carrot" approach. First Chicago NBD is one example. Back in 1995, the bank made a bold move for the industry. After discovering that its most profitable customers "went for self-service" and that tellers were the most expensive way for the bank to service checking accounts, the bank repriced First Chicago's check and savings accounts and started charging for teller services. Other banks considered the move "PR suicide." The approach seems to have generated positive results for First Chicago. The bank reportedly lost less than 1 percent of customers (not the 10 percent others had predicted)—despite some other Chicago-area banks advertising against First Chicago. Branch personnel decreased by 30 percent and ATM

activity “skyrocketed,” growing 100 percent in 3 months. NBD announced plans to follow First Chicago’s example and will begin instituting teller fees in 1998.⁷³

How quickly people will take to doing more of their banking transactions online will depend on their comfort with technology, how much the bank promotes it, whether they feel that online banking offers an advantage in terms of convenience, additional services, or price, and how easy it is to do it.



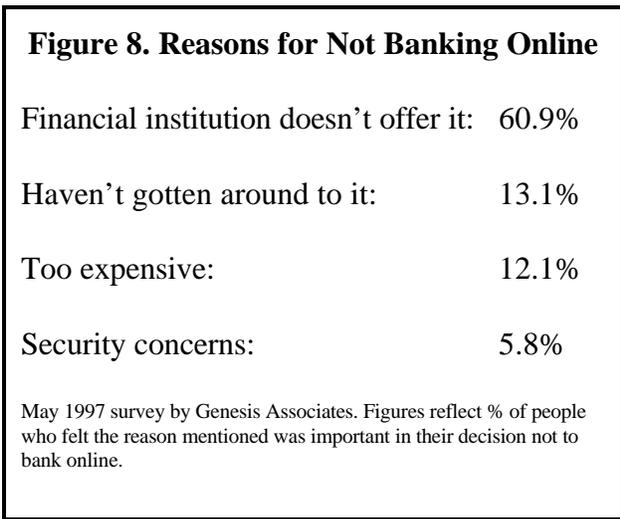
Intuit, one of the leaders in online banking, sees its online banking service beginning to take off. In the fall of 1995, the company introduced online banking. As of July 1997, over 800,000 of their customers use the service. In fact, more than 25 percent of these customers switched financial institutions in order to be able to use online banking with Intuit’s Quicken product.

When asked why they bank online, Intuit’s customers cited convenience, keeping up to date with/balancing their accounts, and the integration with Quicken (Figure 7).

The number one reason given by customers who were not banking online was that their financial institution did not offer the service. Banking fees and security concerns were also raised (Figure 8).

Intuit discovered that the people they surveyed often did not know how much their financial institutions charged for online banking. They just assumed the fees were high. (In fact, many online banking services are free.)

Security, also cited as a concern, ranked lower on the list, with fewer than 6 percent raising it as a concern. Intuit reports that other research it has conducted revealed that security had been a concern of more than three-quarters of its current online banking customers before they started using the service. Once they started using the service, however, the concern faded—98 percent of them reported being comfortable with the online security.



Eighty-eight percent of current PC bankers said they plan to do more online banking in the next 3 years, according to a 1997 survey of consumers by Dove Associates. More than 60 percent of people who did not bank online thought they would begin doing so within that time period.⁷⁴

The Future

Online banking today merely duplicates what can be done through other channels. The market is expected to grow at the point when online services provide an advantage to traditional channels. The ability to pay bills electronically may be enough of a time savings to customer to encourage more of them to bank online. Others may be drawn in by personalized advice and information, online trading services, or the convenience of accessing and seeing their up-to-the-minute account balances and activity presented in a single place.

The more consumers become aware of the benefits of online banking, and the more they understand about how it works, the more people will use it. Many consumers do not know that their financial institution provides online banking,⁷⁵ how much it costs, and what precautions are being made to ensure secure transactions. According to the Yankee Group, over 47 percent of all PC households are not aware that their banks offer online services.⁷⁶ The greater the consumer awareness, the faster online banking will grow.

Some believe that banks have been waiting until a single standard was created before investing in online banking solutions. The public commitment of the two primary standards for Internet financial transactions—OFX and Integrion's Gold Standard—to be interoperable will likely spur more financial institutions to act.

WELLS FARGO ONLINE BUSINESS

Wells Fargo, one of the nation's largest banks, has physical locations in 10 states and manages roughly \$109 billion in assets.

To meet changing customer preferences and to lower operating costs, the bank has introduced new distribution channels for retail banking:

- *Telephone banking*: more than 400,000 customers call Wells Fargo's toll-free number each day. The company estimates that for every 2 million transactions moved from a branch to a telephone operator saves \$15 million, or \$7.50 per transaction.⁷⁷
- *Grocery store branches*: Wells has closed many traditional full-service branches in favor of smaller, less-expensive grocery store branches.
- *Online banking*: for customers who prefer the convenience of in-home banking, Wells started offering PC banking services in 1989. Its initial launch with Prodigy and a proprietary direct dial-up offering generated little interest. The addition of Microsoft Money, Intuit's Quicken and its own Web site in 1995 really kicked off Wells' online banking business. By December 1997, over 430,000 customers were online with Wells.

Back in 1992 and 1993, Wells began the information systems work it would eventually use to provide the backbone of its Web and online banking services. Up until that point, data about a customer's checking account, savings account and other accounts had been stored and reported separately. Most customers received one statement for checking, another for savings, and so on. In the mid-1990s, Wells invested in a new object-oriented infrastructure supplied on a TCP/IP network that would poll the bank's different computer systems in real-time and build a complete customer profile. Today, the bank can see a customer's entire relationship with the bank and the customer receives a consolidated statement across all of the accounts he maintains with the bank.

In developing its online banking strategy, the bank surveyed its customers and determined that they not only wanted to conduct basic banking transactions, they also wanted a core financial services product for record keeping, taxes and budgeting. Wells therefore developed a solution incorporating Microsoft Money and Intuit's Quicken software packages.

Wells also decided to experiment with the Internet. The bank launched an information-only Web site in December 1994. By May 1995, Wells became the first bank to offer its customers access to account balances online.

Today, customers can access account balances and transaction history, transfer funds between accounts, pay all of their bills, apply for new accounts, and order travelers checks, cashiers checks and foreign currency online. Internet banking is free.⁷⁸ Bill paying services cost \$5 per month, with the fee waived for Internet customers with balances of \$5,000 or greater.

Wells recently announced its plans for an integrated bill presentment and payment pilot with MSFDC in early 1998, with the aim of rolling it out to customers within the year. The new offering will be free of charge.

Small business banking

Wells began offering Internet payment services to businesses in late 1996. Its product targeted at the small business market, Business Gateway, sells for \$14.94 and includes a \$5 monthly fee. Developed to work over corporate intranets, authorized users can transfer funds between accounts, access balances and transactions details, and send e-mail to Wells. As of November 1997, about 1,200 of Wells' total base of 80,000 merchants accepted payments on the Internet.

The bank is also exploring options to let small merchants view their card-related activity and transfer funds from the acquiring account to their checking accounts on the Internet.⁷⁹

Benefits of online banking

- *More profitable customers:* According to the bank, customers who bank online today have higher balances and are more profitable than customers using traditional channels.
- *Better customer retention:* Banking experts say it costs twice as much to acquire a new bank customer as it does to retain an existing one. Wells has been able to keep online customers at higher rates than their other customers.⁸⁰
- *Lower costs:* By the end of 2000, Wells expects to have more than 1 million online customers. As its customers move from high-cost channels like the branch to low-cost channels like the Internet, Wells expects to recognize significant savings per transaction.
- *Real-time response:* The Internet gives the bank real-time feedback of what works and what does not. Making a change in the way a product is presented on the Internet does not require creating new written pamphlets and distributing them. New text can be communicated to thousands of people within the time it takes to get the wording onto the Web site. And, the site can be tailored to meet the needs of the individual banking at the time. Such flexibility and customization is not possible in other distribution channels.
- *One-to-one marketing:* Wells has integrated the data from its different databases, and therefore has a customer's profile when he visits the bank's Web site. Wells can match the profile to products and services it currently offers or can offer via a third party. Over time, Wells plans to use the Web to target offers to individual customers. At this early stage, the bank has only just begun to explore its potential.

INSURANCE

Individuals can find information about and purchase an array of insurance policies from insurance carriers, banks, securities brokerages, real estate companies and automobile marketplaces on the Internet.

In early 1997, 81 percent of leading insurers had at least one Web site. All planned to have one within a year. Most of these sites provide sales and marketing information, along with basic tools to help customers determine their insurance needs. In order to receive a quote or purchase a policy, however, customers must have contact with an offline agent. To do more than that, insurers would need to link their Web sites to the computer systems that drive their business. Only 10 percent of insurers have these needed links.⁸¹

Internet customers may also shop for insurance through bank Web sites. NationsBank and Chase Manhattan have insurance affiliates that market term life policies underwritten by insurance companies. Customers on the NationsBank site can receive real-time, online quotes and have the possibility to begin the application process online; Chase customers complete an online questionnaire requesting a quote and a representative either calls or sends an e-mail to the customer within 2-3 business days.

Charles Schwab's online securities brokerage not only enables investors to buy and sell stocks online, it also distributes term life insurance underwritten and issued by Zurich Life Insurance Company of America and universal life policies underwritten by Great-West Life & Annuity Insurance. Investors using Quote.com's Web site, an all-purpose financial market data site, with quotes on stocks, options, commodity futures, mutual funds and other financial news and information can also enter an insurance center and receive online quotes for life insurance and annuities.

InsWeb, an Internet-based insurance marketplace offers online quotes or contact information from 10 carriers selling auto insurance, 3 carriers selling term life insurance, and a few carriers selling health, professional liability and disability income insurance. The level of automation varies by type of policy and insurance carrier. For instance, Nationwide Insurance gives online automobile insurance quotes to potential customers in California. AIG, American Express Property & Casualty and TIG Insurance have customers complete a basic questionnaire online but then send their automobile insurance quotes via e-mail. Zurich Kemper and Lincoln Benefit Life offer online quotes for term life. Interested customers can request an application and be contacted by a representative.

Insurance policies are also sold when buying a car or a shopping for a home online. Auto-by-Tel new and used car shoppers can purchase auto insurance through a direct link to AIG Auto

Insurance. Although not yet widely in practice, some full-service real estate Web sites, including Newhomesale.com, have links to agents selling homeowners' insurance. Over time, as the practice of offering consumers one-stop shopping for new vehicles and homes expands, more sites are expected to offer insurance as part of the complete package.

By 2001, about \$1.1 billion in premiums will be generated via the Internet, the vast majority from automobile insurance (Figure 9).⁸²

Figure 9. Personal Insurance Premiums to Surpass \$1 billion by 2001

	1997	2001
Auto	\$21 M	\$850 M
Term Life	\$17 M	\$108 M
Homeowner	\$1.1 M	\$152 M
Total	\$39.1 M	\$1.1 B

Source: Forrester Research

DRIVERS OF GROWTH

The insurance industry will begin to use the Internet in order to lower distribution costs, meet challenges posed by new competition and deregulation, and to meet changing customer preferences.

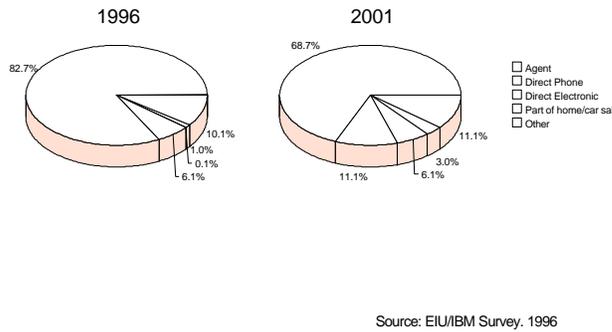
Lowering distribution costs

Core property and casualty (P&C) and life insurance businesses have experienced little to no growth over the last several years and their operating cost structures have not improved.⁸³ Life and P&C insurers have long used agents and brokers to sell their products. In the case of life insurance, this selling system is characterized by productivity that has not improved in 20 years: an agent still sells one policy per week. Low productivity translates into distribution costs as high as 33 percent or more of the product's price.⁸⁴

According to an Economist Intelligence Unit Ltd. (EIU)/IBM survey of insurance executives, less than one-third of insurers report being "highly confident" or "confident" that their current product distribution methods are the right ones. More than a third are "less than confident" or "not confident at all" about it. In the next 5 years, they plan to make some changes. Direct sales by phone and the Internet will increase from just over 6 percent today to 17 percent in 5 years (Figure 10).⁸⁵

Selling and servicing policies via the Internet has the potential to greatly reduce sales and distribution costs. Booz-Allen & Hamilton estimates that P&C, health and life insurers selling and providing customer service over the Internet will have a cost advantage of as much as 58-71 percent versus those using agents and telephone call centers.⁸⁶

Figure 10. Insurers Expect to Sell More Policies by Phone and Internet in 2001



Online, the customer does much of the work himself. Through policy information and online financial tools, he can determine which policy is right for his needs. He then completes an application and may purchase the policy online. The Internet could also be used to handle customer service, billing and payment functions. The more of these functions available online, the more the insurer can ultimately save.

For a direct online sale by the carrier, the agent commission is avoided. If the sale is through an online agent, the commission is cut by more than half.

Application and underwriting processes involve many time-consuming, manual steps that could be made more efficient by electronic communications. Electronic linkages with third parties such as the Department of Motor Vehicles, medical technicians, hospitals and others should minimize time and labor involved in the application and underwriting process.

The process of servicing the policy can also be streamlined through the Internet. Basic customer service functions can be put online such as giving customers the ability to update their own customer profiles, locate service providers, or track the status of a claim. Even billing and payment processing will be done more efficiently as customers have the ability to transfer funds electronically from a bank account when a premium payment is due or a deductible must be paid. Most of these services are not yet available online, but are expected to be offered soon.

New competition/changing relationships

Banks and securities brokerages are getting into the business of selling insurance in their aim to be the one-stop shop for consumers' financial services needs.

In the mid- to late-1980s, banks began offering annuities and other insurance products to stanch the flow of deposit dollars to insurance companies and brokerage firms.⁸⁷ Some banks have taken this online.

According to Ernst & Young, insurers do not want banks underwriting insurance, but a growing number of them do not mind banks distributing insurance products for a few key reasons: 1) the banks' branch network would allow them to reach virtually every neighborhood in the U.S.; 2) unlike insurers' databases which record information by policy rather than by customer, banks' sophisticated customer databases give them tools to match customers' needs with products; 3) consumer surveys show that the general public tends to be more trusting of, and therefore more receptive to, bankers than insurance agents.

Securities brokerages have also started selling insurance products through traditional offline brokers and, more recently, through their online services.

Whether through alliances with insurers or in direct competition with them for business, how aggressively banks and securities brokerages enter the insurance business will have an impact on the existing insurance industry. It's likely to have an impact on their online strategies as well: Banks are moving more quickly than insurance companies to embrace new technology: by year-end 1997, 80 percent of the top 20 banks will offer electronic transaction processing, 45 percent will offer Internet transaction processing. Only 15 percent of the top insurers plan to do so.⁸⁸

New Sales Opportunities

Surveys of consumers reveal that a vast, under-served middle market of potential insurance buyers hasn't been reached by traditional insurance sales methods.⁸⁹ Because of the time they have to invest to sign up a new customer and because their compensation is based on the size of the premium, agents tend to focus on clients they believe will buy larger policies. Penetration among customer segments that buy smaller policies is therefore lower.

The low cost of sales and marketing through the Internet has the potential to extend insurers' reach into previously under-served customer segments.

Changing customer preferences

Insurance executives expect their customers' insurance needs and expectations to change significantly in the next five years. Today, they believe that only 2 percent of their customers prefer the Internet to an agent when purchasing auto and term life policies. In five years' time, more than 40 percent believe their customers will prefer using the Internet to purchase these policies.⁹⁰

Customers will want to go online to get product information and quotes, pay premiums, compare prices, access and update their policy information, access their claims status, and get advice from financial service experts.

Most insurers feel comfortable giving product information online and already do, or plan to do so. However, fewer than half plan to provide the other services online, and just over 30 percent plan to let their customers buy a policy online.⁹¹

Customers will increasingly view insurance as part of an overall financial portfolio, not as a distinct product. Like banks and securities brokerages, insurers are expanding their product lines. As an example, Prudential's Web site combines insurance, retirement planning, education funding, health care, investing, real estate, banking services, estate planning under one umbrella called "personal investments and insurance."

The Future

In spite of their belief that the Internet will be a driving force of change in their industry and their belief that it is a good sales channel for simple products like term life, home owner and car insurance, most insurers remain cautious in their use of the Internet.

That caution is fueled by a requirement to invest in integrating their Web sites with the computer systems that drive their business. Very few have made the necessary investments.

Their caution is fueled by a perceived conflict with their existing sales channel. Insurers worry about how their own agents and independent agents will respond if they move aggressively to offer online transactions over the Internet. If the independent agents feel threatened, they might drive business to other insurers.

State regulations also contribute to the caution. Existing state regulations that add cost to online insurance businesses could inhibit the growth of online insurance. These include: a requirement to be licensed in every state in which the on-line company conducts business; a requirement for a "wet" (paper-based) signature in addition to the on-line signature; a requirement in some states to employ local agents to solicit business; and a requirement to register all new products and product changes with each state insurance commissioner.

If the market for online insurance is large enough, competition from other industries may drive the speed at which it develops. If customers increasingly look for one-stop shopping for their financial service needs, businesses like securities brokerages and banks that offer insurance sales online may pressure traditional insurers to follow suit.

QUICKEN INSUREMARKET

The Quicken® InsureMarket® service, owned and operated by Interactive Insurance Service Corp. (IIS), a wholly owned subsidiary of Intuit Inc., began operations on the Internet in October 1996. In Quicken InsureMarket's first 12 months of operation, \$500 million in life insurance coverage was sold through the term life marketplace. Today, Quicken InsureMarket customers across the United States can shop for life insurance, auto insurance, homeowners insurance, disability income or long-term care insurance.

As with other Web sites, the site visitor chooses where to begin. The "Insurance Planner" is a logical first step for someone wishing to get a general assessment of his insurance needs. Upon completing a basic questionnaire about age, income, family situation, health, home ownership and existing insurance coverage, a software program processes the information and, in moments, presents the site visitor with a prioritized list of his insurance needs.

Site visitors in the market for life insurance can learn about the differences between term life, variable, universal or universal variable policies by answering a few simple questions. If a site visitor decides he is interested in purchasing a policy, he can then contact an agent, and, in the case of term life insurance, get personalized quotes or apply for a term life policy online.

Clicking on the "Easy Quote" button is like entering a "store" for term life insurance. Information the site visitor supplies—zip code, age, health, income, family status, and desired insurance coverage—can generate personalized quotes from up to seven carriers (from among Zurich Direct, John Hancock Marketplace, Prudential, Transamerica Occidental Life, Lincoln Benefit Life, Ohio National and Travelers Life) and up to four agent contact options (Prudential, State Farm, Met Life and AllState). The system randomly generates the order of the insurance carriers providing quotes and agent referrals the site visitor sees so as not to give an advantage of the best "shelf space" to any one carrier. A visitor's zip code is used as a filter so that information is provided only from carriers licensed and willing to sell insurance in that state. The visitor can also access a Web page with detailed information about the policy and the carrier, including how independent sources such as A.M. Best, Moody's, Standard and Poor's and Duff & Phelps rate the carrier, how many years it's been in business, total assets and the amount of insurance in force.

Depending on the carrier the customer chooses, the application process and method of payment differs. One carrier's highly automated application process permits the customer to begin the application on line, schedule an appointment for a medical exam, and submit the first installment of the premium on-line either by credit card or using a billing option. The policy is often received by the customer as quickly as four to six weeks after the exam. For the other carriers, a representative from the carrier contacts the customer to complete the application and schedule the medical exam.

Quicken InsureMarket site visitors can also access information about other types of insurance and be put in touch with agents to apply for and purchase policies. For instance, a visitor can go into

the “home insurance basics” area online to learn about homeowner’s, renter’s and condo or co-op owner’s insurance policies, coverages, features about the home or apartment that affect the rate of the premium, and steps that can be taken to lower the premium. The auto insurance marketplace provides that information and also pulls together information from sources including the Federal Bureau of Investigation, the Insurance Research Council and others to advise the visitor about his level of risk for injury, theft, and accidents, given where he lives and what kind of car he drives. At the beginning of 1998, Quicken InsureMarket offered online auto insurance quotes and transactions in one state and referrals to insurance agents in fifty states. Over the upcoming months, Quicken InsureMarket will expand this service to customers in additional states.

Benefits to Business

Insurance carriers that offer their term life products today via the Quicken InsureMarket Web site benefit from real-time sales and lead generation, enhanced customer service through the company’s toll-free number, and direct marketing links to Quicken.com with its tens of millions of site visitors monthly. Insurance carriers can potentially save hundreds of dollars for each policy sold online.

<p>Internet Distribution Costs 50-100% Less Than Selling Through Traditional Agents</p> <p>Traditional agent fee: \$400-700 InsureMarket fee: \$200-350 Savings: \$200-350/policy</p> <p><small>Source: InsureMarket estimates, based on figures for term life policy of \$400,000 with \$700 annual premium</small></p>

Benefits to Consumers

Quicken InsureMarket offers one-stop shopping for insurance products and information. A visitor to the site can compare policies, receive real-time quotes and purchase online or through an insurance agent.

Consumers may benefit from lower prices than they might have found elsewhere, simply because of the ability to comparison shop on InsureMarket’s site. As online competition increases and the share of the insurance company’s online business grows, and as consumers are able to more easily compare insurance prices, insurance prices for consumers are likely to come down.

Future plans

IIS launched its Quicken InsureMarket auto insurance service in early 1998 and plans to enhance it over the upcoming months. IIS also plans to add home, annuities, long-term care, disability and business insurance marketplaces to the Web site.

Quicken InsureMarket anticipates that more of its existing and future insurance carrier partners will enable customers to purchase policies online. Quicken InsureMarket will help streamline the application process by knitting together the customer, the carrier and the third-party sources necessary for completing the application process. For instance, instead of having to make a separate call to schedule a medical exam, the customer may be linked directly to a local paramedic, find a convenient time and schedule the appointment online. Similarly, a customer applying for auto insurance may not have to wait until his driving record is pulled from the Department of Motor Vehicles (DMV). With an online link to a DMV's records, the carrier will have that information in close to real time so that the application can be processed more quickly.

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	1997	1998	1999	2000	2001	2002
Media	\$0.9B	\$1.9B	\$3B	\$4.4B	\$5.8B	\$7.7B
Direct mkting	\$0.1B	\$0.2B	\$0.4B	\$0.6B	\$0.9B	\$1.3B

Total	\$1B	\$2.1B	\$3.3B	\$5B	\$6.7B	\$9B
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JUPITER	\$276 M	\$827 M	\$1.9 B	\$3.2 B	\$4.7 B	\$6.5 B	\$8.9 B
FORRESTER	NA	\$654 M	\$1.5 B	\$2.8 B	\$4.7 B	\$7.4 B	NA
ROBERTSON STEPHENS	\$150 M	\$500 M	\$1 B	\$1.6 B	\$2.6 B	NA	NA

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