ELECTRONICALLY CONNECTING RETAILERS AND CUSTOMERS: *Summary of an Expert Roundtable*

Fred Phillips
Professor and Department Head,
Management in Science and Technology Dept.
Oregon Graduate Institute of Science & Technology, Portland, Oregon

Andrew W. Donoho
Donoho Design Group, Austin, Texas

William Keep
College of Business and Economics
University of Kentucky, Lexington, Kentucky

Walter Mayberry
Portland, Oregon

John M. McCann
Fuqua School of Business
Duke University, Durham, North Carolina

Karen Shapiro
VP and Internet Channel Manager
BankAmerica, San Francisco, California

David Smith
KVO, Portland, Oregon

Overview

This paper summarizes the exchanges of a panel of executives and academics interested in electronic retailing. The panel focused on the cost-saving aspects of electronically connecting

retailers and customers, and on identifying organizations on the leading edge in these areas. Many modes of electronic communication were examined in addition to the World Wide Web, and a balanced use of these modes is advocated. Guidelines emerged for using communication technology to enhance relationship marketing—and not just to effect payment transactions. Results of the exchange are of interest to communications entrepreneurs and traditional retailers trying to come to grips with electronic retailing.

■ Introduction

This paper reports on a collaborative study of a particular aspect of electronic commerce—the use of electronic communication technologies to link retailers and customers. The form of the study was an "electronic roundtable" of experts, a modified Delphi process that consisted of two rounds of formal submissions[1] supplemented by informal e-mail, telephone and personal exchanges, and much Web-surfing.

The study aims to achieve a balanced presentation of the subject by correcting two erroneous directions in the current literature on electronic commerce. The first is the overemphasis on payment transactions as the holy grail of electronic commerce. Much has been written in recent years about "relationship marketing." Like strategic alliances, relationship marketing is made necessary and desirable by the greater ability of the parties to exchange information, usually via communications technologies, and both are in contrast to the older, arms-length-transaction model of business. It seems senseless and retrograde for electronic commerce, effected by and through communications technology, to focus exclusively on the transaction. Equally important is the fact that the right kinds of information sharing reduce costs for both buyer and seller. Of course, it is transactions that make money for the seller; but there is a wide—and more immediate—scope for *saving* money via electronic retailing.

The second erroneous direction is overemphasis on the World Wide Web (WWW). Table 1 lists many communications technologies other than the Web, and their uses in electronic commerce. Each kind of communication device has its own advantageous uses and interesting synergies with the others. Some of them are well-suited to helping square-footage based retailers retain competitive advantage against newer, locationless retailers.

TABLE 1: ELECTRONIC CONNECTIONS BETWEEN RETAILERS AND CUSTOMERS: Examples by Medium and Type of Customer Connection

	Types of Customer Connections					
Electronic Media	**Product & Store Information**	**Answer Customer Queries**	**Refer to Other Media**	**Persuasive or Image Advertising**	**Purchase Transactions**	**Feedback & Market Research**
• World Wide Web (WWW)	*Amazon Books; AA, Delta Airlines*	*Powell's Bookstore* Compaq: User support over Compuserve	PBS posts transcripts of TV specials. MS/NBC.	Samsung on Yahoo *B of A* cosponsors startup disk with AOL.	*Best Western Hotels* Many vendors on AOL, Compuserve	Communications Week: online subscription qualif.
• On-line services	*Public Libraries*		Mall games refer to game reviews on WWW. AT&T links WWW and telephone.			
• Electronic kiosks; Arcade games	Ikea, Nordstrom, Barnes & Noble Radio Stations: Free cellular					Phone surveys. Viewer polls.
• Phone/voice-based info services • Pagers/Beepers	cellular	800 numbers		Telemarketing Pepsi		
• CD-ROM	Local video network beamed to Food Court		Bill Gates' *The Road Ahead* refers to MS s/w products. Toyota: URL on TV ads; NPR Music Resource	Almost all retailers		
• Television/Radio • ATM machines • Video Phones/Conferencing, White Boards • Agents • E-mail, Usenet, Listservs	Netframe Bargainfinder	*Banks* B&Bs			Visa, MC, Amex Idealist	E-mail surveys
• Virtual Reality • Smart Cards, Digital Signatures, Electronic Wallets	Virtual "walk-thru" real estate properties.			Phone cards	Phone cards, debit cards	

Types of Customer Connections

	Increased Selection	**Frequent/ Preferred Buyer Clubs**	**Connect Customers with Each Other**	**Contests/ Tie-ins**	**Personal Shopping Services**	**Ameliorate Waiting Time**	**Other Services**
• World Wide Web (WWW)	Music Boulevard	Lexus	GM Saturn Division	KVO's "Where's Pierre?"	*Nordstrom*	*AA, Delta*	Site list other sites of interest to customers. *Target* computerized bridal registry
• On-line services		Easy-SABRE Valley View Center Smart Shoppers Club (Dallas)					
• Electronic kiosks; Arcade games							Newspapers offer recorded info on many topics.
• Phone/voice-based info services				900 numbers Pepsi, *Videoland* beeper giveaways.			
• Pagers/Beepers						*Restaurants* beep When table is ready	
• CD-ROM							Software- try before you buy
• Television/Radio						*Warner, Disney stores*	
• ATM machines						All *banks*	
• Video Phones/Conferencing, White Boards			Netframe				
• Agents							
• E-mail, Usenet, Listservs			Newsgroups for users of product X				Confirm WWW transactions
• Virtual Reality							
• Smart Cards, Digital Signatures, Electronic Wallets						Phone cards: "No fumbling for change"	

Matrix entries in italics represent direct users of retail space; entries in bold represent members of the present expert panel.

As the latter point implies, it was also hoped that the study would shed light on the tension between all-electronic retailers (non-users of retail real estate space), and traditional mall and center retailers (users of retail square-footage), and on implications for providers of commercial real estate.

The paper begins with an examination of how electronic marketing reinforces relationships and reduces costs. We next look at the range of electronic media that can be brought to bear on these tasks, and at some creative examples drawn from industry. We move on to an extensive list of reasons the World Wide Web is "not ready for prime time" as regards electronic commerce, but conclude that the momentum is present to make the WWW into a significant commercial channel. We provide some guidelines and cost data for retailers who wish to get started on the Web, and three short cases of diverse companies' early experiences on the Web. The paper concludes with implications for traditional retailers, and some forecasts about retailing's future electronic environment. An appendix lists additional resources.

■ Electronic Marketing Reinforces Relationships and Reduces Costs

Knowledgeable people with whom we have spoken generally agree that:

- *True electronic commerce, in the sense of a sizeable fraction of U.S. retail transactions occurring over electronic channels, is not yet here and will not be for some years.* However, there is enormous scope for all retailers to use electronic strategies to enhance customer relationships and to provide advertising and other timely information that will lead to increased sales.[2] Moreover, most research company and trade press studies predict the volume of actual electronic transactions will increase rapidly.
- *Businesses are not yet making money using Internet marketing; they are* saving *money by using Internet marketing.* Like US West (Moylan, 1996), companies begin Internet marketing "with the hope of eventually making money" but with the knowledge that, with exceptions, returns on their Internet investment will be indirect at first. Early examples of profitable successes in online transactions include many narrow-specialty retailers with geographically dispersed customers.

These points imply that retailers interested in cost savings should focus on the cost-reducing benefits of electronic communication with

customers—rather than on the actual execution of payment transactions with customers. These benefits can include providing reliable store and product information directly to customers, thus reducing costs and uncertainties of sales force training; capturing customer queries about location and availability of merchandise; and increasing customer satisfaction by reducing customer waiting times.

Management Horizons (1996) reports that information system advances have been applied primarily to the supply/distribution end of retail business (e.g., WalMart, The Gap)—not the customer end. But Greco (1995) claims the key to taking advantage of information technology is to create a cost-effective, "one-to-one" relationship with individual customers. The technologies for electronic commerce have been advancing rapidly, and *Business Week* notes that customers have now become accustomed to "friendly amenities such as . . . touch screen computers" at Nordstrom, Ikea, and Barnes & Noble.

Cost-reducing benefits of communications technologies are tied to the consumer's pursuit of (or indifference to) shopping benefits. In other words, it is not possible to discuss cost-reducing benefits for the retailer without discussing consumer buying behaviors that make such reductions possible. The cost reductions are of two kinds: reductions in costs due to incorrect demand forecasts, and reductions in the direct costs of marketing.

Reduce Demand Uncertainty and Cost of Goods Sold

The retail income statement inset below suggests the first kind of cost-reduction results when electronic commerce helps reduce demand uncertainty for the retailer. If the retailer can more quickly and more accurately identify those products that sell well and those that do not, and act appropriately, the retailer's cost of goods sold as a percentage of sales will decline. For each dollar of sales, the retailer will retain more as gross margin. There may also be a reduction in certain operating expenses associated with the buying process, but the most significant impact will be felt by reducing the cost of goods sold. In the case of Internet shopping, when the customer base on the Internet represents a significant proportion of the retailer's market, the speed with which the customer responds to the available products will allow the retailer to adjust stocks accordingly. The result will be fewer unplanned mark-downs, improved buying and faster inventory turnover.

Retail Income Statement
Sales
− *Cost of Goods Sold*
GROSS MARGIN
− *Operating Expenses*
= PRETAX PROFIT

Reducing Marketing Expense—Active/Passive and Interactive/Non-interactive Forms

The second kind of cost-reduction is reflected in the operating expenses associated with marketing. Because marketing expenses are overwhelmingly communication expenses, the potential for cost-reduction is significant in this area. Consider the separation of electronic communication according to two characteristics: active/passive and interactive/non-interactive. Active electronic communication would occur when the seller reaches out to the buyer, through e-mail, faxes, pagers, electronic signs, and so forth. Passive electronic communication requires the buyer actively to seek information, such as in searching the Internet or loading a CD-ROM (though in the latter case the retailer may have been active by virtue of sending the CD-ROM through the mail).

When making the active versus passive decision, the retailer must calculate the frequency with which the consumer will be exposed to the message. While frequency is well understood and easily measured for some media (e.g., newspapers and radio), consumer usage of newer media, including specific media areas (e.g., the apparel shopping section of the Internet) is less well known. Thus, if a passive electronic form, such as information available on the Internet, is substituted for more active non-electronic forms, such as placing an advertisement in the local newspaper, different exposure frequencies could result in higher costs even if the electronic form has a lower out-of-pocket expense. Alternatively, if the retailer substitutes a less expensive active electronic form like e-mail for a more expensive non-electronic active form like direct mail, and the frequency exposure is similar, there may be a significant cost reduction. The retailer will have to answer three important questions: Can the electronic form be targeted as accurately as the non-electronic form? What is the frequency of message exposure for the various media involved? Will the response rate of the electronic form differ from the response rate of the non-electronic form?

The active versus passive distincion is not a strict dichotomy, since exposure to a message typically involves some active participation on the part of the consumer (e.g. reading the newspaper, traveling a road that features billboard advertisements, or surfing the Internet) as well as some passive exposure. Underlying this issue is the more fundamental one regarding consumers' frequency of exposure to marketing communications, and the cost-effectiveness of these exposures. Active communication by email, fax or pager is much more invasive and potentially noxious than active communication by traditional means such as television. Mass e-mailing without permission is called "spamming" and is considered very bad "netiquette." The Internet community responds with mass replies to the senders in an attempt to overload their capabilities. Technology is now being deployed by most online services that allows users to block receipt from undesirable senders. Similar technology exists to block undesirable phone and fax calls. The television/bulk mail active model cannot be applied to the Internet approaches. The key will be to solicit permission from the consumer and then to provide value through the communication. Some advocate that advertisers move to paying consumers to motivate them to read their ads (perhaps with micro-transaction cash or discount credits).

Figure 1 summarizes active/passive electronic channels, and classifies these according to an additional dimension, i.e., whether the medium can be "rifle-shot" to customers with very specific psycho/demographic profiles. It is also constructive to introduce a similar categorization—the buying mode of the consumer, i.e., is s/he target shopping for a specific item or need, or casual/recreational shopping by browsing in an undirected manner? A target shopper is more likely to appreciate a passive/interactive medium that will respond with accurate, detailed, relevant information. Any active communication must then be relevant, to avoid being a counterproductive irritation. Casual/recreational shoppers would be more open to influence and suggestion from active communication, and may prefer non-interactive communication modes if they want to minimize the effort expended in the shopping task.

Another area of savings is in the administration of promotions. An electronic service can present special offers and suggest related purchases as creatively and consistently as a retailer may want.

Finally, interactive electronic forms seem to offer the greatest potential for cost reduction because the variable costs associated with responding to the individual customer are lower than other currently available interactive means, such as person-to-person selling (store and non-store) and telemarketing. It is not yet known how best to present information in an interactive format. Some retailers use pictures of groups of products, similar to a catalog type format (e.g., www.spiegel.com/

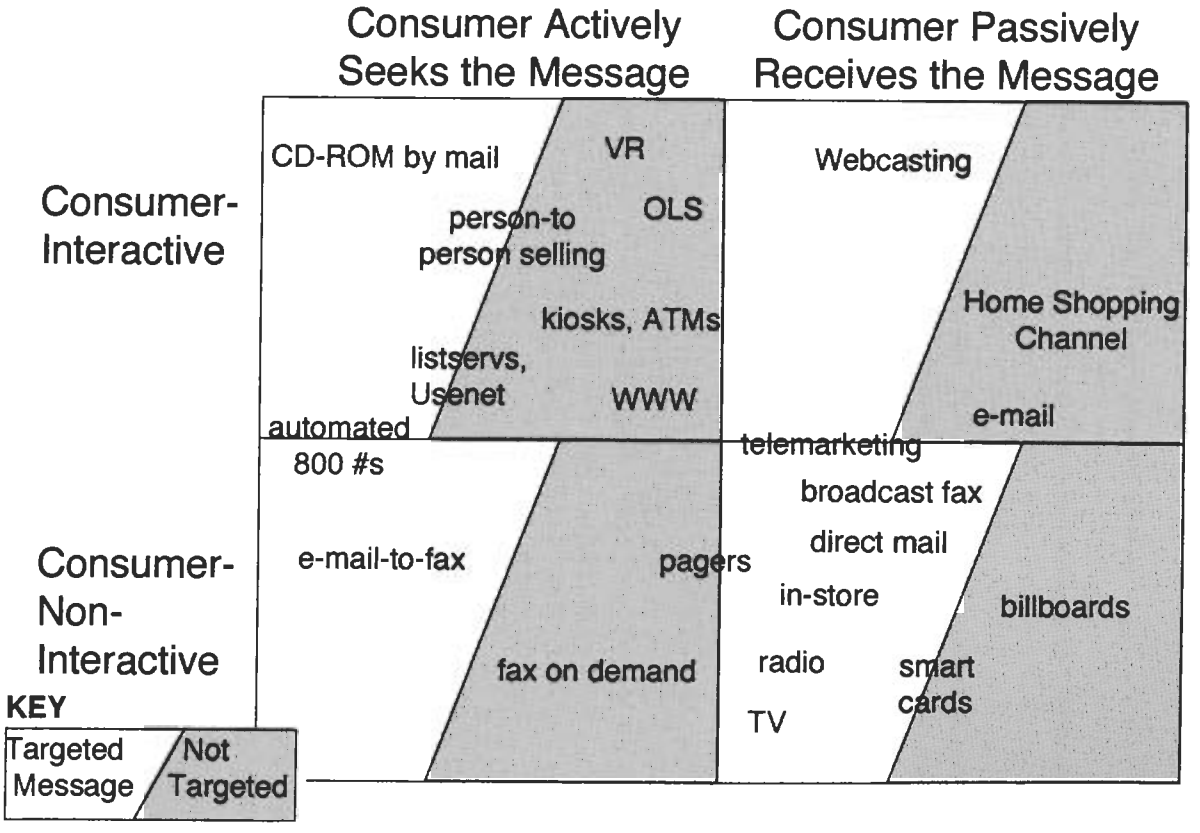

FIGURE 1. WAYS TO GET THE MESSAGE ACROSS

spiegel/vol2.04/cover/index.html), whereas others are using pictures that attempt to highlight the qualities of a single product (e.g., www.londonmall.co.uk/tmlands/default.htm). How useful are generic interactive approaches such as "frequently asked questions" (FAQs) on the Internet? Nonetheless, interactive electronic commerce promises to reduce those selling expenses directly associated with responding to the customer. There will also be cost reductions in other support areas. For example, not only will interactive electronic commerce reduce labor costs associated with selling, it will also make other tasks, such as changing prices, faster and less expensive. Dabholkar (1996) shows that (for service businesses) expected savings in waiting times and expected reliability of the electronic aid are highly important determinants of the consumer's willingness to substitute an electronic self-service capability for contact with a human assistant.

Cost Savings and Customer Satisfaction

What is the magnitude of the cost savings from electronic marketing? The Aspen Institute (Bollier, 1995) estimates that 10 times the units can be sold with 1/10 the advertising budget and it is 25% less costly to conduct direct marketing through the Internet than through conventional channels. As an example, Internet Shopping Network (http://www.internet.net) is a virtual computer store with no physical inventory or telephone operators. All transactions are handled online. Transaction costs are 20–50¢ per transaction compared with $5 for 800-number telephone sales and $15 for retail store sales. Most of the savings comes from distribution expense, which is widely thought to comprise 50–80% of the cost of consumer products. An exception is banking, where there is little transportation or storage of material goods: "Cyberbanking costs about 20% of net operating income versus 60% for branch transactions" (Borsuk, 1996). As the volume of online shoppers grows, this cost advantage will provide a positive feedback that will greatly accelerate the growth of e-commerce.

So much for the cost savings. Of possibly greater magnitude is the benefit of increased customer satisfaction and loyalty stemming from quick, reliable information delivered by electronic means. There is not enough space here to look in detail at the many benefits to the retailer of reducing headcount, reducing employee training expense, hiring lower-priced employees for less demanding jobs, and ensuring that uniform, correct, and timely information is, nonetheless, delivered to each customer. As one sage notes, "Try going into a shoe store in a mall and say-

ing to a clerk: 'I have a pronation problem. What shoe do you recommend?' " Interactive information services can solve this problem with accurate, on-demand answers even to obscure questions.

■ The Media-Service Matrix

The columns of Table 1 comprise 12 positive roles for communication technology in retailer-customer relationships, in addition to simple purchase transactions. The rows show the variety of such communications technologies and devices, and the cell entries provide examples of the use of each technology to enhance each customer relation and marketing function. Things to note from the table:

- The media represented in the rows are in a process of convergence; soon, some that are displayed separately in the table will be actualized by a single device, and no longer thought of as separate technologies. An amusing example of convergence is the success of "1-800-FLOWERS" on the Internet, AOL and Prodigy.
- The multimedia and interactive nature of the WWW make many applications possible, resulting in examples in almost every cell of the WWW row.
- Retailers use each medium to refer the customer to their presence on other media, thus reinforcing the relationship with the customer. (See the third column.)
- Many of the businesses noted in the cells—for example, the automobile makers and Microsoft—do not now deal directly with customers. But disintermediation may well occur. For example, airlines now sell tickets directly to customers, and electronic services threaten to eliminate the traditional retail travel agent. Beginning by offering electronic marketing support to their independent dealers and retailers, producers of goods and services will eventually take advantage of the interactive contact with customers to sell directly to them. But it is important to see that new kinds of middlemen are also appearing on the scene, notably web-based retailers. Existing traditional vendors may defend themselves by using electronic means to create demand pull from consumers back to their distributors. They can complement the marketing and service their distributors provide, reducing the cost to train/support distributors and compensating for weak distributors. They can also develop a direct dialog with end users so that they can better determine market needs and trends.

Creative Applications

Some of the more creative retailers represented by cell entries in Table 1 are:

- The Idealist, a source for bargains on Macintosh products. Idealist solicits subscribers through e-mail discussion groups. Interested consumers subscribe by returning e-mail to Idealist. The company represents any manufacturer offering a closeout or extraordinary bargain on Apple-related products, and e-mails periodic notices to subscribers.
- "A company called Dial-A-Book lets users look at the first chapters and other excerpts of books before purchase" (*Chronicle of Higher Education,* 1996).
- AT&T utilizes Internet-phone (real-time two-way audio to and from the customer's desktop computer) to allow consumers to talk to sales representatives. Customers activate the I-phone connection using a hot button on the company's WWW site. Being able to speak to a representative will make transactions safer than sending credit-card numbers over the Internet, AT&T says.
- NetFrame allows its computer systems customers to track their own case histories, audit their environment and access pertinent product information.
- Anderson Consulting's Bargainhunter agent tracks down the WWW retailer charging the lowest price for a specified compact disc (Hilzenrath, 1996).
- Amazon.com Books (http://www.amazon.com) offers a personal notification service for new releases.
- Dell Computer's Web site (http://www.us.dell.com/us) permits buyers to custom configure, price, order, and check the shipment status of their computer.
- Security First Network Bank, FSB (http://www.sfnb.com), a bank based in Pineville, Kentucky, now serves customers world-wide for U.S.-based transactions.
- At Charles Schwab & Co (http://www.schwab.com), customers can trade stocks and mutual funds, check account information, and access investment research over the Internet.
- The University of Minnesota online course registration system (http://www.umn.edu/registrar) includes a current camera shot of the length of the checkout lines in the student bookstore.
- eShop Plaza (http://www.eShop.com) is an excellent example of a virtual mall. It includes retailers like Tower Records, Spiegel, Avon, 1-800-Flowers, and "The Good Guys," and allows consumers to

download free shopping software to emulate a real shopping environment. The company was acquired by Microsoft in June 1996. Its technology is being integrated into the Microsoft Merchant System and the mall into Microsoft Network (MSN).

- Clodfelter and Overstreet (1996) report on a grid of receivers in store ceilings picking up infrared transmissions from shoppers' carts, resulting in a map of "hot" and "cold" spots in the aisles. They note too that it is not only restaurants, but also pharmacies, automotive service centers, gift wrap counters, and one-hour eyeglass centers that use pager systems to inform customers when their order is ready.

Fit the Marketing to the Market

The columns of Table 1 can be divided into six categories: Corporate Identity/Public Relations, Sales/Marketing, Order Taking/Distribution, Payment/Collection, Service/Support, and New Product Research/Market Feedback. Clodfelter and Overstreet's (1996) comparable categories are customer tracking and database marketing, entertainment and visual merchandising, information and shopping assistance for customers, and on-line shopping services. All contribute to successful retailing. Compare these functions with current WWW business usage patterns: 30% of businesses now using the Web do so to publish product information; 75% to gather product information; 30% to purchase products; 38% to provide customer service, but only 15% to sell products (Commercenet, 1996).

■ Current Limitations of the World Wide Web for Electronic Commerce

Electronic commerce on the Web requires a lot of work to reach a still-small audience. It is hard for the information provider to make the most of WWW contact once it is made, and hard for the customer to find and assimilate the right information. This is not a promising situation for marketing. In particular, there are several disadvantages associated with the Web:

- A chaotic, unorganized abundance of sites and information makes it difficult to find value, even after overcoming technical roadblocks. High tolerance of uncertainty and lots of spare time are prerequisites for surfers and seekers. On the positive side, online malls pre-screen retailers and their web art. Search engines are becoming

more sophisticated and, while still limited, can help cut through the clutter.

- It is slow. Without a high-speed connection, users may not consider the payoff to be worth the wait.
- There are 500,000 channels with no quality control. ("Unlike TV where there is nothing on 50 channels, on the WWW almost everything is there on an infinite number of channels.") Anyone can create a Web site. No authorities separate the "prime time" players from those "not ready for prime time."
- Both providers and users get lost in hyperspace. Organizing Web information for "intuitive" customer access is an even harder problem than graphic design of the Web page, which is difficult in itself.
- A real danger is that you put things up on a Web site and then forget that you have to maintain the site.

While a giant step forward, the Web still is not a user-friendly environment; it is chaotic, variable in quality, and unindexed. Users must hassle with their Internet Service Providers (ISPs), and each browser and home page points people in idiosyncratic directions. It is time consuming, you can't look at everything, and when you stop browsing, you don't know what you've missed. Moreover, 14.4 modems are slow, browsers are buggy and will crash your system, Web pages give you huge gratuitous graphics, servers are busy or missing, and navigation is poorly planned. The provider doesn't know whether the user will download material (should the producer minimize Mbytes to be downloaded?) or read online (will the user be nervous about paying the ISP for connection time?).

A provider may use certain "extensions" to HTML to build an exciting page, but it cannot be viewed effectively without a browser that supports these extensions. This is like a TV broadcaster not knowing whether the audience is using PAL, NTSC, or other kinds of receivers (Schrage, 1996).

At present, only 12% of the U.S. population has access to something other than e-mail on the Internet, and not all of these individuals utilize their access. Of those that do, only 14% have purchased a product or service via the Internet, and the number of non-U.S. total users is still quite small.

WWW-based electronic commerce can be fairly passive, requiring the potential customer to take the initiative to search out the product while at the same time providing retailers with limited ability to target potential customers. Other electronic formats, such as CD-ROM catalogs, faxes, and infomercials, can be more aggressively directed at pretargeted consumers.

There are schemes afloat to resolve the bandwidth shortage by charging for Internet access that has been "free" heretofore. Demand elasticity surely exists, and use pricing will drive down demand in the short run. *Business Week* (August 26, 1996, 66) reports that a majority of Internet users *already* believes access cost is a problem. A majority of users also told the magazine that slow access, hard-to-locate information, and difficult connections were at least minor problems. Only 16% of the users called their Internet experience "excellent."

There are also more current negatives. Incompatible products are typical, and competing standards are proposed. Investment is quickly made obsolete by new developments. Inadequate security and lack of privacy places users and their assets at risk. Fear of obscenity scares off decent folks. Conduct is often not guided by existing laws and existing laws are often not enforceable. Current retailers and distributors of products often have geographically based exclusive sales rights. Because the Internet is blind to geography, it is difficult to enforce exclusivity in some territories and not in others. Internet commerce, having no location, in the worst future case may be taxed in all locations.

This is by no means intended to minimize the potential impact of the Web. It will get a lot better. Expect more distributed access, more bandwidth, interactivity, and media richness. The Web is "cool," currently newsworthy, and user demographics are highly desirable. Historically, the greatest transformations in commerce have occurred when new vehicles for product distribution and retailing were invented. Each has been driven by the goal of selling higher volumes of products more cheaply by reaching a wider universe of consumers through more efficient distribution systems. Earlier examples have been catalog sales pioneered by Sears and super-stores pioneered by Wal-Mart. Given observed rates of change in Internet growth and innovation, the "long run"—in which most of these problems are resolved—could be a mere two to three years.

One of the main benefits of the WWW is that it is a time saver. It is much faster than driving around town or phoning various vendors. It can be surfed at 9:30 at night after putting the kids to bed. A summary of benefits to consumers and retailers includes:

- 24-hour, 7-day-a-week access/service.
- access to wider geographical area, low entry cost for new markets.
- expertise can be spread across a larger geography.
- potential for personalized relationship between vendor/consumer.
- consolidated inventory, greater availability of wider range of goods.

The ready availability of current information is a central point. One panel member noted, "Infomercials, or for that matter paper and CD-ROM catalogs, may appear on my doorstep when I have no interest in their products. Months later when I am ready to buy, it may be impossible to find the infomercial or catalog, or it may be outdated if found. With online commerce, I do not need to maintain my own library of outdated catalogs. The latest information is readily available."

For these reasons, we devote the next section to the costs of setting up a variety of innovative retail functions on the World Wide Web.

■ Web Site Strategies and Costs

A recent International Data Corp (IDC) survey found that Fortune 500 companies spent from $804,000 to $1.5 million to get their Web sites up and running. This estimate is probably inflated by a number of collateral costs. A more plausible analysis from the Gartner Group reports that startup costs for a Web presence range from $104,000 to $285,000 with additional annual costs ranging from $49,000 to $110,000. In most cases, big companies try to do too much on the Web before they've learned enough about the medium. Retailers should focus on the most important purpose of the site, the measurement criteria and goals, then tailor the effort and cost to that purpose.

We estimate Wal-Mart's investment (www.wal-mart.com) to be at the top of that range. At Wal-Mart's site, the company polishes its image through information about its community involvement programs, corporate information, and even a visitor's center where you can see Walton's pickup truck and his wife's wedding dress. Bloomingdale's, another positive example (www.bloomingdales.com), looks ultra-hip, as any big New York concern should. At the opposite extreme, consider K-Mart's site (www.kmart.com), which one can safely assume required an out-of-pocket investment of no more than $20,000. The site reflects little long-term strategic planning, direction from marketing, or involvement by professional Web designers. The result is a Web site that reminds consumers of the wrong side of K-Mart's image, instead of reinforcing a better image of value and selection.

Both Wal-Mart and K-Mart maintain a copy of their monthly circulars online. These modest efforts may cost them roughly $10,000 per month, especially if the circulars are designed up front for conversion to electronic media. In a much more exciting example, Bloomingdale's is opening its site in September 1997 with special online deals and four $1,000 shopping sprees given away in the month following the opening of the store. Estimated additional cost for the promotion program is

roughly $50,000, which includes developing and maintaining content and programming to support the promotion, the prizes, and managing the entries, the selection, and awarding of the prizes. (This merchandising is entirely consistent with Bloomy's image, and the price tag lower than what the company may pay in other media for the same level of design and production.)

The Internet is a great channel for quick answers to common questions, so consumers feel a retailer is convenient and responsive. One simple point: Wal-Mart's store locator lets you find stores by city, state, zip code or area code. We estimate the cost of this capability at about $20,000, plus perhaps $5,000 every quarter to keep the database online and up to date.

Commercial software is available to implement real-time communication ("chat") or message-board communication (threaded discussion) for customers. KVO has implemented such capabilities for prices starting at $10,000, although a large retailer may need to invest $20,000 or $25,000 for a nationwide audience.This is just the setup cost; the larger cost is in the time it takes to monitor these communications capabilities to prevent abuse and direct conversations. Each customer communications service can require one-half of a full-time position for monitoring alone.

A $100,000 Web project may be seen by tens of thousands of upscale consumers ($50,000+ household income) over a three-month period; a similar investment in TV advertising would have negligible impact. A Web site doesn't have to do everything; it must do one or two things extremely well. With that kind of focus (a concept called a microsite) a retailer can accomplish one or two specific goals (market research and coupon distribution, for example) at costs starting below $100,000.

■ Some Examples

The NECX Direct Experience

One revealing case study is the NECX Direct (www.necx.com) computer-products catalog company, which opened an online semiconductor and components store. The Web site cost roughly $1 million to develop, and requires a staff of 40 to operate: Webmasters, developers, networking staff, graphics designers, telephone sales and support personnel, merchandisers, buyers and management. A substantial investment, to be sure, and NECX Direct already had much of the back-end

Electronic Data Interchange (EDI) in place. Still, in its first nine months (April to December, 1995) the Web site generated $5 million in revenue, and the company expects that to balloon to $50 million this year. It's interesting that 30% of the income comes from advertising (banner ads placed on its site) and merchandising fees.

Ordering, payment, invoicing and inventory management are handled electronically. "We've learned that it's expensive to operate a Web site," says Randall Ashley, NECX's director of MIS, "but on an ongoing basis, this is a cheaper sales channel than other media because we have fewer people involved per transaction. . . . The biggest expense is just to maintain the site, to keep it fresh and keep it changing . . . launching the site really being the easy part."

When NECX began its development, there was very little commercial software to facilitate an electronic store. Today, many new products speed the effort and reduce the cost. For example, iCat Corporation of Seattle recently announced its Electronic Commerce Suite, which "allows companies to create interactive catalogs, deliver them on the Internet, and accept electronic transactions from shoppers. Key features of Version 2.1, priced from $1,495, include support for the First Virtual Internet payment system, e-mail order verification for merchants, over 250 predefined catalog templates and user interfaces, improved catalog searching capabilities, and compatibility with Sun-O/S and Digital Alpha NT Internet Server platforms." Such products are relatively new, so retailers should expect a considerable engineering effort to configure, test and debug electronic stores based on them. Still, the overall investment is now plummeting to half or less of the original overall cost of the NECX Direct project.

The Bank of America Experience

Bank of America has $237 billion in assets, eight million checking customers, 95,000 employees, 6,700 ATMs, and more than 2,000 global retail locations in 37 countries. The Internet is important to BofA not only for getting the word out, but for bringing banking into the home.

Bank of America was the first major bank on the Web in September 1994. The "Build Your Own Bank" theme premiered in October 1995, and the home banking launch in June 1996. The bank's early Web presence featured limited applicability, was not sufficiently interactive, and did not allow enough control over placement of graphics.

The current, in places whimsical, Web site reflects a lesson the bank has learned: The more mysterious the message, the more people will come (see The Nike Experience, below). BofA has also learned that

online ads are not driving sales. Companies selling on the Internet have to advertise off-line anyway, and technological complexity forces them into strategic alliances that generally slow their progress even while making continued progress possible.

Due to banking regulations, some of the services listed on BofA's Web site are not available to customers outside California. Until this situation is resolved, it will continue to cause frustration for non-California visitors to the site.

The Nike Experience

Nike's Digital Media Group began with a problem of "legacy communications"—its new electronic ads had to match the feel and quality of the company's traditional communications. In Nike's case, this meant action sports video and exciting sound. These capabilities were not available on the WWW, at least prior to the 1996 Olympics, making the Web unsuitable for Nike's consumer advertising.

Although not an Olympic sponsor, Nike obviously had an interest in the games being a showcase for Nike products and Nike's endorser athletes. Because of the human drama of the games, these athletes would be highly visible to Nike customers; and in any situation, Olympic or otherwise, the athletes are inherently more interesting than the shoes. The trademark and copyright situation surrounding the Olympic games did not mean athletes could not wear shoes and apparel with the Nike swoosh, but did mean that Nike ads could not mention the Olympics or Atlanta by name. These considerations led to Nike's Olympic WWW strategy: Develop Nike's first Web site. Direct its content at journalists covering the Olympic games, but avoid mentioning the legally unmentionable (the site was called "@lanta"). Do not reserve copyright rights on any of the site's text or photos. Coyly pretend that the site is not meant for consumers. (The homepage stated, in artistically fuzzy-edged Courier type of varying sizes, "The purpose of this site is not to sell shoes. Or glorify apparel. Or market a brand. For the time being, Nike.com exists only to provide useful information about Nike athletes to the press. If you're not a member of the press, you can still sneak in and see the stuff they get to see. Just don't expect anyone to try to sell you anything.")

The site provided sportswriters, and of course ordinary folks, with up-to-the-minute coverage of Nike athletes' Olympic performances and scores, as well as downloadable digital photos of athletes, transcripts of all their press conferences, and personal profiles. A rolodex-style database interface led reporters to material on any desired athlete. The site

was one of the most heavily accessed during the games. (Nike will not disclose the number of hits.) Nike got exceptional exposure by leveraging the best of then-current Web technology, namely news text, downloadable audio clips, digital photography and database search. It provided grist for daily press stories about Nike athletes, increasing the value of the endorsements. It was able to thumb its nose at the Olympic committee by demonstrating that Nike did not need to pay the exorbitant Olympic sponsorship fee in order to get first class exposure from the games.

The mission was to provide a "living media guide" for the 1996 summer "events." (At the Barcelona games, the slickly printed Nike media guide had been outdated in days.) This year brought the interactive, continuously updated "@lanta press box '96." It had a Netscape graphics version, a text-only version, and a special version for the America On-Line browser—the latter because surveys show 40% of the journalists who use the Web go in through AOL.

No single Web development company was up to this task. Consequently, Nike hired a team of companies to provide the graphics, database, servers, a publishing system for continuous updating, translation (into 26 languages), Web access stations for the press in Atlanta, and telecommunications.

After the games, analysis revealed 78% of "hits" were from the U.S. Canada and Japan were clearly the largest source of non-U.S. hits. Seventy-seven percent of the site's hits were from Netscape users. Although this would seem to confirm a significant number of non-journalists browsing the site, apparently it is possible to access Internet via AOL, then invoke the Netscape browser to view Web sites, and Nike suspects this is what happened. A high proportion of Windows '95-sourced hits—and 60% of all hits traced to ".com" domains—indicated business (presumably press) users outnumbered home computer users.

Now that the games are done, Nike's Web site needs a new mission. The homepage now reads, "The number you have reached is no longer in service. Nike.com will be dark for several months while we rebuild the site and prepare for the future. So thanks for thinking of us and be sure to come back when we go on-line again. Don't worry, you'll hear about it."

■ Implications for Traditional Retailers

Don't Rush to Electronic Payment

The only native Internet payment system, "e-cash," is disliked equally by retailers (it is anonymous, therefore no customer information is cap-

tured) and by governments (currency is effectively issued independent of central banks). Recent articles detail hackers' ability to sweep consumers' personal information from online service files and Usenet archives. *Business Week* has categorically advised consumers not to reveal credit card numbers on the Internet (Baig, 1996). As noted above, a focused microsite can be a more effective initial Web presence than an attempt at a complete virtual store with payment transactions. Yet, there have been few reports of actual credit card fraud on the Net, and our expert panel was unable to identify threats to the consumer that are in any way greater than those present when paying a restaurant bill with a credit card.

The consulting firm Arthur D. Little has just conducted an online survey to gauge the effects of electronic commerce on business, finding that while over 30% of businesses rate other customer-related electronic communications a current priority, "performing consumer transactions in real time . . . were ranked top activities by less than 10% of the respondents." (This is consistent with the CommerceNet survey we cited earlier.) But rather than explore why this is so, an Arthur D. Little vice president (http://www.adlittle.com; see also http://www.gigaweb.com) urges all businesses to regard electronic transactions as an untapped opportunity that must be pursued immediately.

While it is probable that the worst consequences of a credit card receipt discarded in a restaurant are a few unauthorized charges and a $50 liability for the cardholder, a misrouted credit card number on the Internet can result in many large, simultaneous charges and dissemination of the number to innumerable databases. The conflict between the shopper's desire for privacy and the electronically facilitated tendency of industry and government to collect and disseminate personal data is likely to persist. While consumers, credit card companies, government, and even retailers continue to perceive disadvantages to electronic transactions, retailers are wise to attend to the other beneficial aspects of electronic commerce—cost reduction and relationship building.

A Niche Channel with High Uncertainty

Anyone surfing the WWW can conclude that Web-based selling is still most suited to:

- reaching geographically-dispersed customer populations with specialized interests. Hobbyists, collectors, and scientists are examples of such populations. Because there is no efficient physical location for stores to serve these groups, the WWW takes on a role similar to that of sales catalogs.

- information-based products. Software, computer games, weather reports, and research reports can be distributed directly over the Internet. Moreover, these products appeal to the consumer segments that are heavy Internet users. As our colleagues at MIT would say, "bits, not atoms" are the natural products for the early stages of electronic commerce.
- small sellers with nothing to lose by trying the WWW. As an inexpensive advertising medium, the WWW is an ideal alternative to leased space for a small start-up business bootstrapping its way into the marketplace.
- low cost, low risk goods. These are the goods most likely to be bought sight-unseen from a non-local retailer with whom the consumer may not be familiar.
- upscale, higher-risk goods only when presented by sellers with ultra-high reputations. Land's End, REI, and Eddie Bauer are brand names known for quality. They and other such producer/merchants are able to sell expensive goods electronically because their names are trusted.

Retailers do not yet know (no one does) how the Internet will change due to new technologies. Agents, expert system Web crawlers, and virtual reality, to name a few, will continue to present a high level of technological uncertainty to Internet-based merchants.

Also, as with many retail decisions, the decision to adopt an electronic format may require significant up-front costs with little certainty of return. Naturally, the accuracy with which the retailer will be able to forecast demand will be in large part based on whether electronic customers are representative of non-electronic customers. Ideally, as in the case of Peapod (currently available on a limited number of online systems with information posted at: www.peapod.com/), all customers are electronic customers. In these instances customer databases containing demographic and shopping behavior information will become important for forecasting sales. As retailers become increasingly familiar with their customer bases, purchases from retailers will better match demand and become less costly. At some point retailers such as Wal-Mart will have some customers shopping electronically, others shopping only in stores, and still others shopping both ways. Similarities and differences between the groups will greatly affect the retailer's ability to forecast overall demand for specific products in specific geographic areas. The retailer's ability to develop a rich and accurate database is very important.

The same can be true for other electronic commerce forms such as electronic kiosks, CD-ROMs mailed to targeted customers, and ATM machines. Because these forms of electronic commerce are location-based, the retailer will be able to use the demographics of the customer base to

project demand for products and services in the area. The result will be the accurate placement of product inventory and service potential.

The retailer will need to be sensitive to a number of issues in this period of transition. First, in the eyes of some consumers, interactive electronic commerce may be a poor substitute for interactive, person-to-person contact. Second, interactive electronic commerce may be a poor substitute for non-interactive store retailing. Many store customers rely on self-service and have only minimal contact with retail personnel. The fact that they could have more interactive contact through on-line shopping is really of little consequence, especially as they will have to wait to acquire their purchases. Third, some electronic forms offering limited interactive capabilities (such as CD-ROMs), or no interactive capabilities (such as videos), may be considered poor substitutes for such non-interactive, non-electronic forms as mail order catalogs. Sitting at a computer monitor or television is not quite the same as curling up in bed with a good catalog. Finally, some non-interactive electronic forms may or may not substitute for some interactive non-electronic forms. For example, in what instances can a video or CD-ROM successfully replace a person-to-person sales presentation?

Avoid What Is Too Unfamiliar to the Customer

Not surprisingly, the products consumers are most willing to purchase via electronic means are those with which they are the most familiar. Products such as music CDs, videos of favorite movies, previously purchased apparel items, and basic computer equipment lend themselves to purchases via electronic means. Shopping situations where the consumer feels the need to acquire product information through a tactile experience, where the consumer is uncertain as to the specific product being sought, or where the consumer pursues non-product related shopping benefits (e.g., social benefits) are slower to adapt successfully to an electronic format.

As a result, successful electronic retail formats tend to be those which offer products well known to the customer base or products not well known to the customer base but that otherwise carry high non-price costs. Peapod Interactive provides a good example of an electronic retailer offering products well known to experienced supermarket shoppers. A large percentage of household supermarket purchases are repeat purchases; therefore, in many product categories uncertainty is fairly low for the electronic shopper. Furthermore, familiarity with product categories means textual and pictorial information can provide meaningful information to the consumer even for products new to the product category. Internet Web pages offering computer hardware and software to the experienced computer user are another example. There are, however, important differences in presentation quality, product information, and service among the various

electronic sites. Thus, while some initial supermarket shopping sites by Big Bear and Winn-Dixie (available on some Compuserve and America Online systems; for information on Big Bear see: http://www.bearhug.com/index.html) offered products well known to the consumer, they did not offer the price information, presentation quality, or service necessary to provide a critical level of shopping benefits. These systems will, of course, develop over time.

Some online and Internet sites, CD-ROM catalogs, and infomercials may offer products not readily available in the local marketplace, such as jewelry designed and sold only in Las Vegas (See http://www.manifest.com/Jewelers/index.html). Since the non-price costs of acquiring these products are high (i.e., travel to another geographic area), the retailer can put together a viable, geographically-dispersed market even though some potential shopping benefits are reduced. In these situations the consumer has lower non-price costs but an acceptable package of potential shopping benefits. In the jewelry example, the consumer cannot touch the product but does receive important information regarding product quality and endorsements from previous customers, some of whom are internationally famous. It should be noted that, historically, mail-order catalogs have offered customers both products that were and were not readily available in local markets. In the latter case, mail order catalogs did secure a portion of local market share but frequently found it difficult to increase that share over time.

Location-based versus Virtual Retailing

Table 2 shows, in its columns, a view of what retailers can offer consumers in terms of the characteristics of the shopping experience. The upper portion of the table gives the expert panel participants' view of the importance of these characteristics to three important customer segments: Teens, Baby Boomers, and Seniors. Of course, each of these age groups could well be subdivided further, and the table entries are called "presumptive" because the panel did not perform primary research to confirm them (although the entries conform well to Kang, Kim and Tuan's 1996 study of very comparable characteristics). The table's bottom portion assesses, separately for users and non-users of retail real estate, retailers' ability to provide customers with the positive characteristics of the shopping experience. The table implies that traditional mall and shopping center retailers would do well to emphasize the social and local community aspects of shopping, as well as the sensory advantage that accrues from the high bandwidth of actual physical presence. The participatory layout of The Sharper Image, Disney Stores and Tandy Incredible Universe—and the free foot massages at the Texas and Colorado

TABLE 2: PRESUMPTIVE UTILITY OF VARIOUS DIMENSIONS OF THE SHOPPING EXPERIENCE FOR THREE CUSTOMER SEGMENTS, AND ABILITY OF RETAILERS TO PROVIDE THE UTILITY

	Sensory Experience	Social Experience	Local Community Experience	Global Community Experience	Convenience	Selection	Safety	Price
			Customers' Utility					
Teens	high	high	mid	low-mid	low	?	high	mid
Boomers	low	mid/low	high	low-mid	high	?	high	mid
Seniors	low	high	high	low-mid	high	?	high	mid-high
			Retailers' Ability to Provide					
Traditional center retailers	high	high	high	low	mid-high	mid-high	?	mid
All-electronic retailers	low	low	low	high	high	varies by category	high	high

outlets of Larry's Shoes—make the most of this sensory advantage (Rosenburg, 1996; Clodfelter and Overstreet, 1996).

Note that Table 2's ratings of retailers' abilities to provide "Social Experience" and "Local Community Experience" are more ideal than real. Shopping in a traditional retail center in a city, and in most large towns, is a solitary activity in the sense that the individual has little or no contact with other shoppers. And most retail centers do little, if anything, to tie their centers with the surrounding community. Thus, the traditional retail centers should not be given high marks for the social experience nor for the local community experience. All-electronic retailers may prove to dominate on these dimensions if efforts by firms such as Microsoft (with its planned thrust into local electronic newspapers with heavy community content) are successful.

One member of the expert panel wrote, "One company now offers configured systems for auctioning goods over the Internet. The scenario that may arise is that of megasites built around using computers and telecommunications to match buyers and sellers instantaneously. I will go to TVCentral, and type in '20-inch, stereo console, Portland.' In seconds, I will get offers from several local stores on their best prices for matching products. If I choose, I may simply leave my e-mail address, indicating to participating merchants that I want to be notified as soon as my preferred model goes on sale. I as consumer get the best possible price; merchants get immediate response to merchandising programs." The Internet is a natural medium for auctions; traditional retailers can anticipate the price pressures that could result.

■ Conclusions and Forecasts

The Internet is "here for the interim." What we will see in two to five years will be quite different from what we see today.

- Sites will coalesce around a "conceptual proximity" that we do not yet understand. Because there is no clear definition of "distance" in Internet hyperspace, we are a long way from the theory of geographic trading areas that is long-established for physical space. We will learn what consumers look for in a Web site and why they click on links. In response, there will be a convergence of Internet business functions as, for example, more access ramps (presently, AOL, MSN, Compuserve, and local Internet service providers) will offer content.
- Research, references, decision support, self-servicing, and e-mail will improve with agents, personalization, advanced retrieval, and storage capabilities. In plainer language, better software will enable WWW users to benefit even more from the Web.

- Broadband delivery will merge the Internet, full-motion video, picture phones, online shopping, games, etc. Exchanging more bits per second will allow greater multimedia, multi-sensory interactive experiences on the WWW—some of which are available now only at a lower level of interactivity via the telephone or television, and some of which are not yet imagined.
- In every business sector, the best, the brightest, the bravest (and the youngest) are creating Internet businesses around the things you already do in your life. "Killer applications" that will keep you coming back again and again are on their way.
- The interactive nature of WWW means, for example, that gardening ads can be targeted to a customer who is reading about gardening *now*. Customers will be more receptive to pitches when they're already thinking about a topic. Does this mean general WWW malls (analogs of physical shopping malls, intended for undirected browsing) will not flourish in the long run? Our panel disagreed on this point. While online malls can exercise quality control, it is not always clear from a search engine's output whether a Web site is a mall or an individual retailer. The list of sites that is output by the search engine may offer all the benefits of most online malls, i.e., a clickable list of relevant retailers.

The retailer's ability to capitalize on the cost-reducing benefits of electronic commerce will stem from two areas. First, cost of goods sold as a percentage of sales will decline if electronic commerce allows the retailer to understand market demand better. Second, electronic commerce holds the promise of lowering the marketing expenses associated with communicating with customers. In each instance, however, the retailer is pursuing cost reductions while also altering potential consumer shopping benefits. In some cases this trade-off will succeed nicely, while in others it will not.

There is a movement underway, led by IBM, Oracle, and others, to centralize control of computing resources by marketing near-passive network computers (NCs, as opposed to powerful PCs with floppy drives and locally resident software). The purpose of this movement is to make the Net an advertising medium, more like television. This may work in some sectors. But unlike the early days of TV, there is now a significant segment of users who are in a position to fight back and make the Net a truer community (i.e., with content both downloaded and uploaded) than TV, with its crude community-access products, has been able to achieve.

New telephone modem technologies will provide leaps from today's 28,800 bits per second to 10,000,000 bits per second. This is the speed that is coming soon from cable companies via cable modems, tele-

phone companies via entirely new technologies, and perhaps from startup companies such as Teledesic via satellite connections. This new change is so dramatic that retailers will have to learn how to think about it without being able to use their existing experiences as models or guides. They need to learn how to plan new in-store environments and new in-home environments based upon powerful, cheap computers connected at high speed and low cost to multimedia servers. There are many reasons why consumers will prefer the flexibility and convenience of electronic shopping from home or office. But stores will lead the way in applications like computer visualization of cosmetic makeovers, or fitting of men's suits, that must prove themselves on expensive, specialized or fast equipment that is not yet ready for the home, the desktop or the Internet.

This is especially true because the ultra-high bandwidth applications must be wired, often at specialized institutions like large stores. Individual consumers will be slow to accept mobile (wireless) applications that are appreciably slower than those at the desktops at their homes and workplaces. In order to avoid ionizing the atmosphere (and perhaps vaporizing small animals), the bit speed of wireless units will top out at much slower levels than those connected to cable or fiber optic.

■ Appendix: Electronic Commerce Resources

• Relevant Web Sites

Finding and buying a book:	www.amazon.com
Picking a movie, finding a theater:	www.firefly.com; www.777film
Decision support for buying a car:	www.autosite.com
Banking, paying your bills:	www.bankamerica.com
Investing:	www.quote.com; www.schwab.com
Planning a trip:	AOL;www.travelocity.com; www.mapquest.com; www.americanexpress.com/travel/; www.americanair.com/
Finding a mate:	www.match.com
Dial-A-Book	http://www.psi.net/chaperone/
Music Boulevard	www.musicblvd.com
makers of touchscreen kiosks	http://www.trolltouch.com/
VISA Expo Electronic Commerce	http://www.visa.com
Digicash	http://www.digicash.com/

AT&T	http://www.att.com/features /0896callmenow.html
Peapod Interactive	www.peapod.com/
jewelry	www.manifest.com/Jewelers /index.html
Big Bear and Winn-Dixie America OnLine systems	available on some Compuserve and
Big Bear	http: www. bearhug.com/index.htm
CommerceNet	http://www.commerce.net

- Portland's ICON (Interactive Community Online Network) at http://www.icon. portland.or.us/ highlights the uses of the WWW for local community-building.
- http://www.lexitech.com/ and http://www.rockmedia.com/multimedia, both for Windows, work with Netscape Navigator, replacing the controls with large buttons and enabling surfing restrictions. Both also provide the option to create self-running multimedia presentations to attract people to the kiosk and main menu buttons. (Lydia Lee, "Online News," *NewMedia,* 7/15/96, p.24)
- To subscribe to The Idealist : Send an email message to: listmanager@sonic.net. In the body of your message, put: SUBSCRIBE IDEALIST.
- JC Penney, at http://www.jcpenney.com, includes these categories in its Web site: Investor Relations What's New Store Locator JCP n You Gift Registry Penney Arcade On Sale Quality Assured Gift Certificates Shopping Customer Survey. The home page text reads, "Welcome to the JCPenney Web Site. If you are looking for information about one of America's largest department store chains . . . or you're looking for a great deal . . . or you are just looking . . . you've come to the right place. Start your visit by entering the Penney Arcade. Here's where you'll find what's interesting and exciting at JCPenney . . . from shopping specials to fashion tips. Or for the newest scoop, visit What's New. Visit all of our other areas to learn more about us - and then tell us something about you by filling out our Customer Survey."
- "Internet Retailing: Profitable Merchandising on the Internet - Position Paper," June 1996. Microsoft (http://www.microsoft.com /ecommerce), coming from the most major of major players, cannot be ignored.
- *Retail Watch* Special Issue on Electronic Shopping. McMillan-Doolittle, Chicago, Vol. X, No. 6, June 1996.

■ Notes

[1]This paper is a summary of the participants' first and second round submissions, and also benefited from a presentation by Steven Gehlen, Director of Nike's Digital Media Group, to the Oregon Multimedia Alliance. The participants' full submissions are posted, with supplementary material, on OGI's net-commerce website, http://www.cse.ogi.edu/,benning/RG/net-biz.html.

[2]"The initial prediction for electronic commerce entailed a large degree of orders and the exchange of funds, using the Internet as the pipeline for facilitating these transactions," says Frost & Sullivan information technology analyst William Fredericks. "However, this has not proven to be the case for a variety of reasons" (Newsbytes, 1997). According to Alba et al. (1996), "Optimistic projections about electronic shopping clearly are not anchored by the status quo." When estimating total electronic transactions, care must be taken to exclude the costs of servers and networks that enable the e-commerce but do not represent consumer transactions. Also, of course, discussions of electronic transaction volumes do not include bank ATM withdrawals, or non-consumer computerized trading of currency, securities, and derivatives, etc.

Online advertising is still the largest component of Internet electronic commerce revenue (Newsbytes, 1997), "with revenues growing from $8.9 million in 1994 to well over $25 million in 1995, and expected to total $156.5 million at the end of 1996."

■ References

Alba, J., J. Lynch, B. Weitz, C. Janszewski, R. Lutz, A. Sawyer, and S. Wood (1996), "Interactive Home Shopping and the Retail Industry," working paper, Marketing Science Institute, Cambridge, Mass.

Baig, E. (1996), "How to Practice Safe Surfing," Personal Business section, *Business Week* (Amy Dunkin, ed.), September 9, pp.120–121.

Bollier, D. (1995), "The Future of Electronic Commerce, A Report on The Fourth Annual Aspen Institute Roundtable on Information Technology." The Aspen Institute, Aspen, Colorado. (http://www.aspeninst.org)

Borsuk, M. (1996), "Third Wave Wipeout: Infotech's Impact on Retail Space Demand," presented to Institute for Real Estate Management Mid-Year Convention, June.

Clodfelter, R., and J. Overstreet (1996), "Technological Profiles of Shopping Centers: Present and Future Use," *Journal of Shopping Center Research,* 3(1), (Spring/Summer), 59–94.

Chronicle of Higher Education (1996), July 19, A21.

"CommerceNet/Nielsen Internet Demographics Recontact Study—Executive Summary." (March/April 1996), (http://www.commerce.net/work/pilot/nielsen 96/exec.html).

Dabholkar, P.A. (1996), "Consumer Evaluations of New Technology-based Self-service Options: An Investigation of Alternative Models of Service Quality," *International Journal of Research in Marketing,* 13(1), (February), 29–51.

Greco, S. (1995), "The Road to One-to-One Marketing," *Inc.* October,

Hammonds, K.H. (ed.), (1996), "Internet Travelers Aren't Fed Up—Yet," *Business Week,* August 26, p. 66.

Hilzenrath, D.S. (1996), "Putting Prices on the Line: Bargain Hunting in Cyberspace May Not Live up to its Advance Billing," *Washington Post National Weekly Edition,* August 5–11, p. 21.

Kang, J-Y., Y-K. Kim, and W-J. Tuan (1996), "Motivational Factors of Mall Shoppers: Effects of Ethnicity and Age," *Journal of Shopping Center Research,* 3(1), (Spring/Summer), 7–32.

Management Horizons (1996), *Retail Preview—Softgoods,* (January), 14.

Moylan, M.J. (1996), "US West Powers up Potential of Electronic Yellow Pages,' Knight-Ridder News Service, September 3.

Newsbytes (1997), "Internet Commerce on Rise—Report," (March 5), Newsbytes News Network, http://www.newsbytes.com, ©1997 by Individual, Inc., Burlington, Mass.

Rosenburg, J.M. (1996), "Malls Entice with Fun," Associated Press, (September 3).

Schrage, M. (1996), "Not Supported," *Hotwired,* http://www.packet.com/packet/ (October).

■ Acknowledgment

This research was supported by a grant from the International Council of Shopping Centers Educational Foundation.