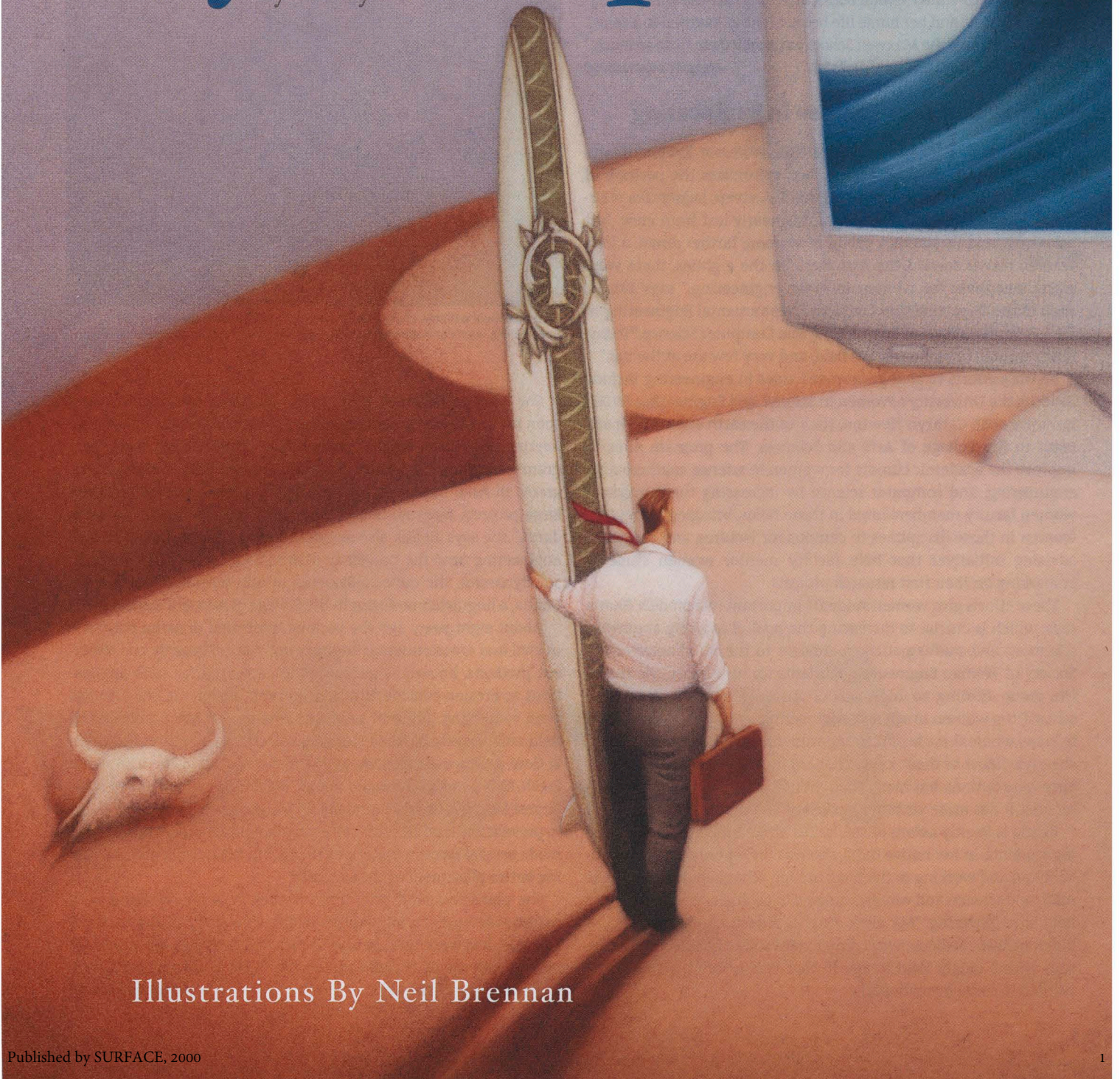# Wheeling and Dealing in
Cyberspace

By Gary Pallassino

Illustrations By Neil Brennan

SU experts examine

how e-commerce is

changing the way

companies and

consumers conduct

business

G litches notwithstanding, 1999 was a good year for electronic commerce. Thanksgiving weekend—on which many retailers traditionally rely to put themselves in the black for the year—brought record numbers of shoppers online. America Online said spending nearly tripled over 1998, with more than four million members making purchases. Yahoo!, one of the Internet's most popular portals, or entry points, reported record shopping transaction volumes on November 26, posting an increase of more than 400 percent over 1998. The single most popular keyword entered into its search engine? Pokémon.

And yet there were glitches: The Toysrus.com web site, bogged down by thousands more visitors than it was designed to handle, often simply locked out disappointed shoppers. Even Amazon.com, king of the "e-tailers," was slowed by surfers eager to plunk down credit cards for books, CDs, toys, and other products from the site's extensive inventory.

While most e-commerce is done in the name of saving time and, thanks to a host of Internet incentives, money, there are other reasons for the phenomenal growth of online shopping. "Some people like the anonymity of the web," says Amy Falkner, advertising professor at the S.I. Newhouse School of Public Communications. "They don't want to answer someone asking, 'How ya doing today?' While some people like that service and will go to a department store for it, others hate it. And if they can get out of going to the mall and trying to find a parking spot, they will."

The nature of e-commerce is the subject of numerous marketing studies, says School of Management professor Chung Chen. "Some people argue that this is a new form of commerce that could eventually replace a lot of existing market forms," he says. "Others say consumers still like to go to traditional markets, so e-commerce is a complement rather than a supplement to the existing forms. But there's no doubt that the volume of transactions and the number of industries getting involved in this trend are growing."

The biggest growth in e-commerce is projected to come this year, and it will be in the area of businesses selling to businesses, says School of Information Studies professor Rolf Wigand, who directs the school's new Center for Digital Commerce (see related story, page 27). "Electronic commerce is finally hitting home with businesses," he says. "It's not this year's fad. This is going to be with us, and it will change the way we do business."

Leapfrogging the Middlemen

Retail/consumer sales on the Internet grew from $2 billion in 1996 to $20.2 billion in 1999, according to Internet analyst Forrester Research Inc. Wigand, an internationally renowned e-commerce scholar and researcher, says there is no question that electronic markets will continue to flourish. "Typically you have this marketing hierarchy—the manufacturer sells the product to the wholesaler, who sells it to the retailer, and then we can go to the store and buy it," he says. "Now, especially if your product is

SU Students Strike Chord with MP3 Company

Sometimes, new ideas come from the most unlikely sources. Consider School of Management student Jim Milton's inspiration. Two years ago, he read an article about a lawsuit between the Recording Industry Association of America and Diamond Multimedia, which was defending its manufacturing of an MP3 playback device. MP3, or MPEG Audio Layer 3, software compresses digital music files, so that they can be easily stored and shared over the Internet.

But it wasn't the lawsuit's outcome that interested Milton '01, it was the opportunity that such a technology presented. "I saw the digital distribution of music as the Holy Grail of e-commerce, since digital music is one of the few soft goods deliverable via digital download," Milton says.

With that, Milton launched The Digital Music Company Inc. (TDMC), a retail and promotional outlet for musicians. Using Milton's site, *www.BuyMP3.com*, artists can release music that consumers purchase directly over the Internet.

Milton recruited fellow students and other friends to help build the company. Finance major Shawn Socoloff '00 is project manager, while computer science major Philip Strnad '00 and information studies graduate Kenneth Beinert '99 provide technical support. "We all sacrifice our social lives for this company," Milton says. "Forging strategic alliances, building the technology, licensing music, and forming our entry and exit strategies leave little time for anything else."

The site's featured artists are a combination of those signed to labels the partners are familiar with, and those who sought *www.BuyMP3.com* as a means of distribution. The key to success, Milton says, is knowing the customer. "We choose featured content based on what we believe will provoke maximum sales from our customer base," he says. "In the future, we plan to accommodate the total consumer demand for digital music from within a network of different web sites. We've had the luxury of watching our competitors spend their money first, giving us the opportunity to see customers' reactions."

The company will change the site's name to *www.BuyDigitalMusic.com* and expand its distribution methods, keeping in step with changing audio formats. "The future of digital music ultimately lies in the wireless transmission of streaming media," Milton says. "In addition to our e-commerce site, TDMC is developing complementary sites: *www.audioSurge.com*, an interactive record label; and *www.InternetStereo.com*, a music access service that is set to launch in the fourth quarter of 2000."

Socoloff credits the School of Management and the School of Information Studies with providing support and recognizing e-commerce as an important element of the marketplace.

Milton believes the impact of e-commerce will have far-reaching consequences for the international business landscape. "In a world where the consumer is empowered by the Internet, given the awesome ability to pull information on demand, making progress in business is essential," he says. —**TAMMY DIDOMENICO**

information-based, you can bypass that market chain. In essence, you can leapfrog over the wholesaler and retailer, and the technology makes it possible."

Travel and real estate agents and stockbrokers already are feeling the heat, as buyers and sellers find each other through the World Wide Web. Wigand says the astonishing successes of online stockbrokers Schwab.com and E*Trade are causing industry giants such as Merrill Lynch to reconsider their opposition to Internet trading. "Merrill Lynch made a clear-cut announcement two years ago: 'We will not put our customers out there on the Internet. Our customers need advice, they need person-to-person contact.' And you pay heavy-duty fees for that advice and the subsequent commissions for buying and selling of stocks. Well, guess what? Last summer Merrill Lynch came around, saying it will now offer this service to customers. So it does both, in essence."

There are now 55 companies in the online brokerage arena. Wigand believes many will either fold or be bought by bigger companies within three years. Wigand says E*Trade, the number-two company behind Schwab.com, has advertised heavily with prime-time commercials and full-page *Wall Street Journal* ads. The company spends 50 percent of its revenue on advertising. "It's losing money right now but certainly has its foot in the door," he says. "The idea is to grow the customer base, get as many customers as possible, become established as a brand name. Given its marketing and advertising costs, E*Trade now spends $150 on average to get a new customer. That figure may be $1,500 in a few years."

Businesses are finding ways to use electronic commerce to cut costs. For some time, retailers have used "just-in-time delivery" to reduce warehouse costs. The average grocery store, for example, handles reordering nearly automatically—every time a product is scanned at the register, an inventory program takes note. If the inventory is getting low, the program—which knows how much of the product is sold seasonally at the store—reorders from the supplier so the stock will arrive when needed. "The ideal warehouse is no warehouse at all," Wigand says. "In many ways, warehouses today have become trucks on the road from the supplier to the place where the product is sold."

Chen says Dell Computer's online ordering process eliminates the need for inventory. "Dell keeps only parts on hand, not assembled computers," he says. "The company receives your order, processes it within 24 hours, and ships it out. Everything's online, so it doesn't need many offices to handle these orders."

What Dell and other electronic retailers do need, however, are large enough web servers to accommodate visitors to their web sites, Chen says. As an example, he points to the failure of Toysrus.com's designers to predict how many people would simultaneously visit the company's site. "This obviously was a mistake by their information managers, who wanted to save some money," he says. "When they designed their system, they said this is the storage space we'll need for maybe 10,000 visitors at the same time. But what happens

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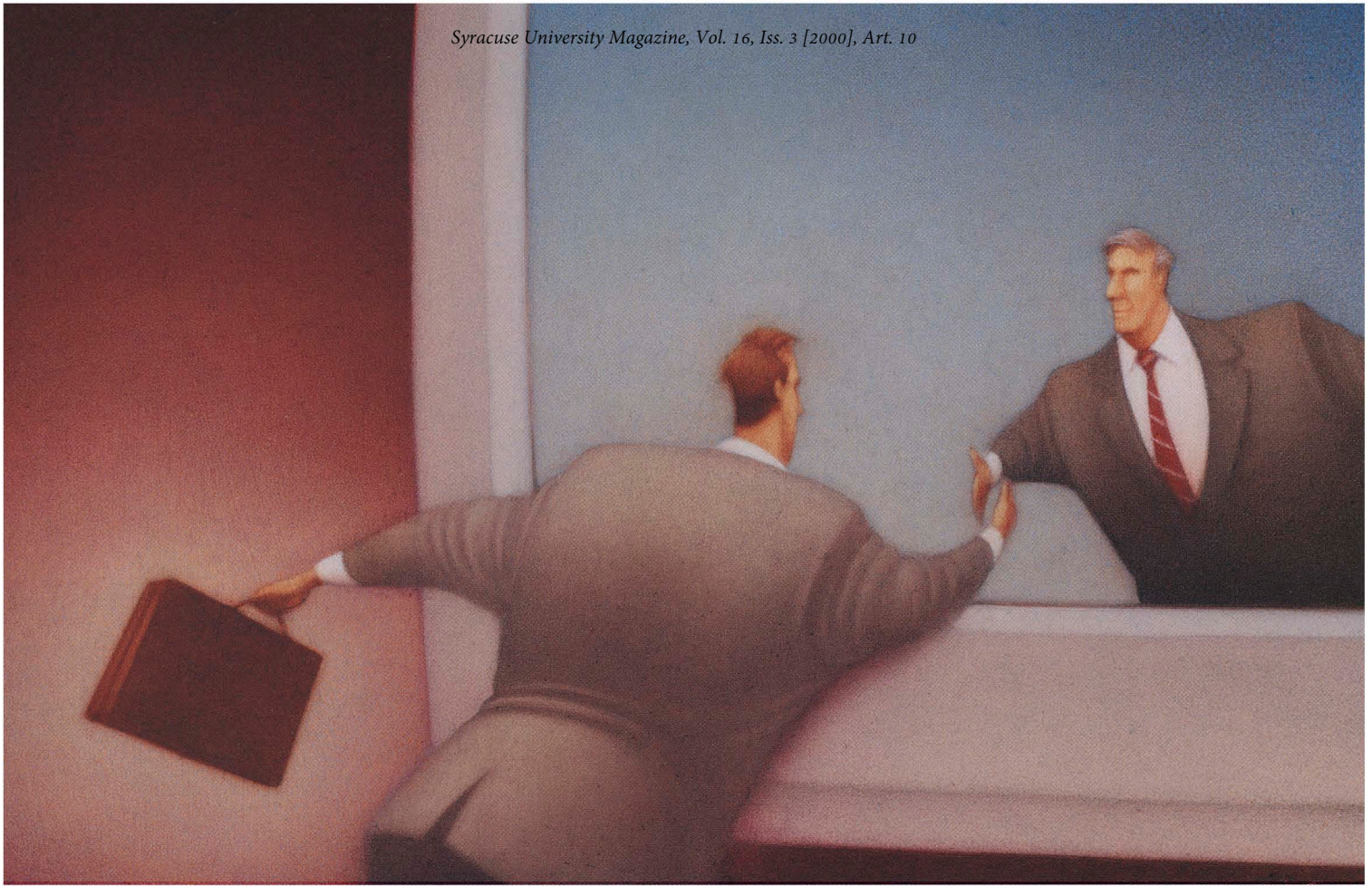
when there are 20,000 or a half-million visitors there? Nothing's going to move." Such technology forecasts are difficult, he says, because there are no past data to rely upon. "We don't know how many people will be online next year. The growth rate is still unknown."

The most successful web sites are interactive, allowing consumers to provide input, Chen says. "In the traditional market, vendors show their products, and the buyers come and buy what they like," he says. "So the actual purchases show consumers' preferences. People usually use some kind of market research to find out what customers need. But with e-commerce, oftentimes consumers provide the information to you, even without transactions." Visitors to Amazon.com are asked to click on buttons showing their interests. "You go through this book review, you click this, and Amazon.com records it," Chen says. "Then Amazon.com learns about you, the consumer, and your interests. You don't even have to buy anything. You go through three book reviews today; one month later, you go to the site and it says, 'We have some new books related to your interests.'"

Trust is an ongoing concern in e-commerce, both for consumers and businesses. "You find this new store on the World Wide Web, but you don't know who is behind it," Wigand says. "Is it two guys in a basement who weren't around last week, or is it a subsidiary of General Motors? You don't know. You not only trust them with a purchase, you give them your credit card. And the whole thing could technically be a fraudulent setup to get a bunch of credit card numbers to do nasty things with, and then they close up shop once things get hot."

College of Law professor Lisa Dolak, who teaches in the Law, Technology, and Management Program, notes that credit card holders are liable only for the first $50 of unauthorized charges. In addition, she says, such sites as Amazon.com offer a 100 percent security guarantee. Wigand says secure transaction standards, used by most web sites that deal with credit cards, encrypt information so well that it is unlikely to be broken. In fact, the two most popular web browsers, Netscape and Microsoft Explorer, have versions available that feature encryption so powerful that anyone downloading them must sign a statement verifying U.S. citizenship, since federal law prohibits export of such technology.

Doing Business Electronically

Revenues from business-to-business Internet transactions are expected to rise dramatically within the next few years, from less than $100 billion in 1999 to more than $500 billion by 2002. Over the past few years, Wigand says, businesses have spent millions to prepare for the Y2K problem, choosing to hold off on any e-commerce investments until the new year. Now, he says, consulting firms are pushing what they call e-business, a broader term intended to get companies thinking bigger. "Some companies think electronic commerce may be viewed as just an individual

application somewhere in the company," Wigand says, "whereas the e-business perspective looks at the whole picture; in essence, an integrated perspective. It permeates everything we do."

One business area that e-commerce penetrates is procurement. General Electric has announced that, by 2005, it will do all its purchasing online. "That's $25 billion worth of products and services per year," Wigand says. "If you're a GE supplier right now, you'd better make sure you can interact with the company electronically. Similarly, if you want to become a supplier to GE in five years or so, GE probably doesn't even want to talk to you unless you are set up to do things electronically."

Chen says online procurement offers businesses new links on the supply chain. "Traditionally I would sign a contract with a supplier, maybe for five years," he says. "Now with all this information technology, all the convenience of information exchange and update, more companies will take bids through many suppliers and see who beats the cost. They can do it because they know where the suppliers are. That's healthy competition and will eventually benefit the consumer."

An interesting development has been the creation of web portals targeted toward specific industries, such as Plasticsnet.com and e-Steel.com, which serve the plastics and steel-buying markets, respectively. "Plasticsnet.com has become the de facto place you go to buy plastics now," Wigand says. "You find what trends are happening in the plastics industry, search for jobs, and learn about new items. And then there are buttons for 8 or 10 different types of plastics. You click on a button, and can buy and sell the kind of plastics you want. In essence it has become like an auction, where you submit a request and then the product suppliers submit bids."

Billboards on the Web

Despite all the hype about digital ads, advertising dollars spent on the Internet last year totaled $2.6 billion—behind newspapers, television, and radio, but just ahead of billboards. "It has to do with how many people are online," says Newhouse's Falkner. "If I estimate high and say 110 million people are online in the United States, that is still roughly 40 percent of the country. That's it. What percentage of the United States has access to television? 99.8 percent. Advertisers are interested in reaching as many people as possible, as often as they can afford to."

Advertisers use the web in several ways, not all entirely successful, Falkner says. There are destination sites, such as Wal-Mart's, where people go either for information or to buy something. "When web sites first came out, it was, 'Here's our information. Oh did you want to order something? Forgot about that,'" Falkner says. "Now most of them realize that people are not necessarily looking just for information, but at some point might like to order something."

Probably the most familiar form of Internet advertising is the banner ad, which usually sits across the top of a web page. Despite garnering the most advertising dollars on the Internet last year, banner ads are in trouble. "Everybody loves to hate

them," Falkner says. "Ninety-nine percent of banner ads do not get clicked on. Half the people don't even look at them. You know they're there, you know they're at the top of the page. So what do you do? Just ignore the top of the page." Advertisers have responded by putting banners in the middle of pages, and by adding animation or music to the ads. Daughter windows, commonly known as pop-up ads, are another alternative. A small window opens up on the user's screen when the banner is clicked, leaving the main window untouched. "Advertisers have always recognized there's clutter on the screen, so the question was how to break through," Falkner says. "They started with the banner ads when there wasn't banner advertising. Now banner ads are the clutter, so they are coming up with these wonderful animated video pop-up ads."

Sponsorships are expected to surpass banner ads this year, Falkner says. A company's logo is placed in a prime spot on a page, such as the search key. "It gives you some control over editorial placement," she says. "It's the same concept as a garden advertiser wanting to be placed across from the gardening column in a magazine. They pay more for that, because that's where people's eyes are going." Another method becoming more popular with advertisers is opt-in e-mail. "I go to an advertiser's web site because I'm interested, and it says if I subscribe to its newsletter, the advertiser will send me stuff," Falkner says. "Advertisers are starting to use the Internet to build these relationships with people, the same way they can if they send direct mail." Setting up and managing a list of some 75,000 subscribers is no easy task, but advertisers seem to be up to the challenge. "That's where a lot of the dollars are headed now," Falkner says.

Working with E-commerce

To be successful in e-commerce, Chen says, companies need to view it as more than an add-on to their present systems. "If they realize the potential impact of this, companies have to put e-commerce or web-related operations into their total business program, consider the overall picture of the company," he says. "Their whole business process has to be revised. E-commerce is only part of this information technology revolution—the entire decision-making process now is different. CEOs can easily look at the whole picture. They have a database that is continuously updated all over the world. They have e-mail and teleconferencing. Their decisions are global." Chen adds, however, that such fundamental issues as resource allocation still come down to good business sense. "This technology cannot replace a wise business decision," he says. "But with this, the business environment will become much more efficient. We still need to train our managers well, even though we have better tools, because all these tools cannot substitute for a better managerial decision."

Wigand also believes businesses must look at the big picture when considering their dealings with the Internet. "In conjunction with its traditional forms, marketing has to have some kind of link to the World Wide Web," he says. "For that matter if you teach marketing today, you can no longer cover that topic with a textbook that was written three or four years ago. The same principles apply, but the execution is totally different."

Center for Digital Commerce Helps Companies Connect with Cyber-Customers

You won't find a door marked "Center for Digital Commerce" at the School of Information Studies. The center—established in August to help resolve issues of management, strategy, economics, and policy in the area of electronic commerce—exists for the most part in cyberspace *(istweb.syr.edu/~digital/)*. But its work in the rapidly changing field is very real, says center director Rolf Wigand. "We want the center to be research-focused, but we also like to involve students," he says. "They get hands-on experience dealing with real-life problems."

A major project at the center involves a look at the impact of electronic commerce on the real estate industry. Wigand and colleagues Kevin Crowston and Steve Sawyer began the work under a National Science Foundation research grant, and the center will expand upon their findings. "We know there are more than three million homes advertised on the World Wide Web. Is it possible that buyer and seller can find each other without the real estate agent?" Wigand says. "We can go to a real estate web site by Microsoft right now and search for available homes in almost any city in the United States. You could search for a home in Denver, let's say, that is in your particular price range, specify characteristics of the home, and find one within a three-mile radius of a particular police station, church, or school."

Many real estate agents have adapted to the changes, even taken advantage of the new technology, Wigand says. "Agents now use e-mail extensively. They have their own web sites listing properties that are available. In the past, houses were listed exclusively in multiple listing services, which real estate agents carefully guarded. Since the World Wide Web became prevalent, agents freely give that information away. They post it on their own web sites, on Microsoft's web site, and on the National Association of Realtors site."

Another project involved establishing an Internet presence for upscale Corning subsidiary Steuben Glass. "The company makes glass art pieces, handcrafted and handblown in Corning, New York," Wigand explains. "The least expensive item costs $250. Other pieces go into tens of thousands of dollars, and many have become gifts for heads of state." The company has stores in Manhattan, Washington, D.C., and Corning, as well as a mail-order catalog. "Steuben wanted to know: Might there be an opportunity for a luxury product like that on the World Wide Web? So we had a student team research that area, looking at customer profiles in specific categories and demographic information in general. Then we looked at similar luxury products and tried to see what those companies do in regard to the web."

After seeing how companies like Tiffany and Godiva Chocolates presented themselves electronically, Wigand's team developed and presented a web site concept to Steuben Glass. "They loved it, and took it under advisement," Wigand says, adding that he'd like to see similar projects started. "It's the kind of thing I think will be exciting for the center to do." **—GARY PALLASSINO**