

10 Questions on E-Commerce

By Jiri Weiss
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Business on the Net is booming, and just about everybody seems to be getting into the act. Before you jump in, we'll help you get up on the technology, standards, and regulatory climate of today's online businesses.

There does seem to be a lot of confusion surrounding electronic commerce, or e-commerce, on the Net. To help clear up matters, we've asked--and answered--ten key questions about e-commerce, from "[What is it?](#)" to "[What is its future?](#)"

Once you learn these e-commerce basics, you'll be able to throw your e-cash around with the best of them, and you'll be well on your way to converting your run-of-the-mill Web site into a moneymaking online retail store or a cost-cutting distribution operation. So, what are you waiting for?

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What Is E-Commerce?

Most people think e-commerce means online shopping--workaholics pointing their browsers to [Amazon.com](#) to order an emergency present because they forgot someone's birthday again.

But Web shopping is only a small part of the e-commerce picture. The term also refers to online stock and bond transactions and buying and downloading software without ever going near a store. In addition, e-commerce includes business-to-business connections that make purchasing easier for big corporations. And many people hope that so-called microtransactions will let people pay small amounts--a few cents or a few dollars--to access online content or games.

As for the hottest areas of e-commerce, in terms of tangible goods sold via the Internet and other electronic means (such as interactive TV), [Simba Information](#) says the biggest sellers are computer products, consumer products, books and magazines, and music and entertainment products.

Clearly, e-commerce is here to stay. [International Data Corporation](#) has projected that 46 million Americans will buy \$16 billion worth of goods annually by next year, and \$54 billion by 2002. [Forrester Research](#) predicts e-commerce sales of almost \$7 billion by 2000. Looking further ahead, [Morgan Stanley Dean Witter](#) estimates sales of anywhere between \$21 billion to \$115 billion annually by 2005.

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Is the Government Going to Regulate E-Commerce?

Not if President Clinton has his way.

Last year, the Senate overwhelmingly approved the [Internet Tax Freedom Act](#), which imposed a three-year moratorium on new Internet taxes. This act bars state or local governments from imposing new taxes on access to the Internet and data flowing over the Internet, as well as prohibits any new e-commerce taxes.

Local legislators are the ones chomping at the bit to get a cut of the e-commerce action, and they are not all waiting for the end of the three-year moratorium. The National Association of Counties recently unanimously approved a resolution asking Congress to impose a sales tax on all online purchases.

Local governments estimate that \$5 billion annually are already lost to out-of-state mail order business, and with the rapid rise of e-commerce, this number will only increase. While there have been some rumblings of impatience in Congress, the federal government is urging local and state officials to respect the Internet Tax Freedom Act's ban.

It is very likely that when the moratorium expires, the taxation situation will be in for some changes. There is an advisory committee already meeting to work on post-moratorium issues, and many ideas are being discussed. The Advisory Committee on Electronic Commerce was mandated by the Internet Tax Freedom Act, and it will consider such topics as a flat national Internet tax and ways to simplify sales tax for online purchases.

While the feds favor no additional taxes for now, state governments are grappling with the issue individually. Texas taxes not only Internet access charges, but also all the money collected when content providers sell online subscriptions, as well as the fees charged by Web developers for building sites. On the other hand, New York decreed that Internet access charges are not subject to state sales or telecommunications taxes. Currently nine states tax Internet services, and six states, including California, have moratoriums on Internet taxes.

Most states still don't know what to do, according to the accounting and consulting firm [Deloitte & Touche](#), which published a comprehensive guide called "Taxation in Cyberspace."

For now, e-commerce providers such as [AT&T](#) are treating Web purchases much like mail-order sales. The providers collect taxes if the merchant has a significant presence in the state where the buyer resides. "There are lots of gray areas," acknowledges James Kwock, a Web services marketing director with AT&T Networked Commerce Service, "but I don't feel any pressure from tax lawyers yet."

There's another problem with Net taxes: the Internet crosses international borders as easily as it skips over state lines. President Clinton wants to turn the Internet into a free-trade zone. Japan agrees, but other countries have already indicated a willingness to regulate the Net. For example, France has long tried to mandate the use of French on Web sites, while Germany has attempted to stamp out both pornography and neo-Nazi materials online, and Australia has regulated pornography as well. Getting international agreement on Net taxes may be the biggest hurdle to overcome.

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Is E-Commerce Safe?

Although Internet security breaches have gotten a lot of press, most vendors and analysts argue that transactions are actually less dangerous in cyberspace than in the physical world.

That's because a great deal of credit card fraud is caused by retail sales employees who handle card numbers. E-commerce systems remove temptation by encrypting the numbers on a company's servers. For merchants, e-commerce is actually safer than opening a store that could be looted, burned, or flooded. The difficulty is in getting customers to believe that e-commerce is safe for them.

Consumers don't really believe it yet, but experts say e-commerce transactions are safer than ordinary credit card purchases. Every time you pay with a credit card at a store, in a restaurant, or over an 800 number--and every time you throw away a credit card receipt--you make yourself vulnerable to fraud.

But ever since the 2.0 versions of Netscape Navigator and Microsoft Internet Explorer, transactions can be encrypted using [Secure Sockets Layer \(SSL\)](#), a protocol that creates a secure connection to the server, protecting the information as it travels over the Internet. SSL uses public key encryption, one of the strongest encryption methods around. A way to tell that a Web site is secured by SSL is when the URL begins with *https* instead of *http*.

Browser makers and credit card companies are promoting an additional security standard called [Secure Electronic Transactions \(SET\)](#). SET encodes the credit card numbers that sit on vendors' servers so that only banks and credit card companies can read the numbers.

No e-commerce system can guarantee 100-percent protection for your credit card, but you're less likely to get your pocket picked online than in a real store.

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How Do I Start Selling Online?

From cheap and simple to expensive and complex, there's a wide range of products designed to get your e-commerce site up and selling in a matter of days or weeks.

Small businesses may not have to look beyond their local Internet service providers for a bare-bones solution. For example, Brooklyn-based [Forman Interactive](#) offers Internet Creator for less than \$150. The software uses a series of wizards to help you create secure pages for selling your product. Plus, if your pages reside on Forman's servers, the company handles electronic payments via [CheckFree](#).

If you're ready to step up, you can use Yahoo's [Yahoo Store](#), which lets you create a transactional business Web site from your browser. Yahoo hosts the site, and the cost is based on number of items--\$100 per month for a store selling 50 items and \$300 per month for up to 1,000 items.

However, most e-commerce development tools targeted at small and midsize businesses cost \$5,000 to \$10,000. They generally include templates for online catalogs and databases, so it's easy to change items and prices. Dynamic database searches can serve different information when an item is out of stock or on special, and they can be hooked up to existing back-end systems for order fulfillment and a range of automatic payment options.

Companies that have a high volume of sales--especially those that deliver soft goods such as articles, reports, software, or music over the Net--require industrial-strength solutions costing anywhere from \$10,000 to \$100,000 or more. See the More Resources column at right for examples of tools from all price ranges.

Of course, the software sticker price is only a small fraction of what it costs to run an e-commerce site. Many high-end e-commerce products are used by third-party companies to provide services for individual merchants.

Most companies take advantage of e-commerce hosting services run by the likes of [AT&T](#), [MCI](#), and GTE's [BBN Planet](#). "This is a low-risk, low-cost way of finding out how to do it," says Karl Lewis, vice president of production at [Proxicom](#). Proxicom is a Web consulting company that recently set up an e-commerce site for [Day-Timer](#) and an extranet for Mobil Oil and its distributors.

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Are There Any Technology Standards for E-Commerce?

In addition to the alphabet soup of standards that governs the Internet, e-commerce employs several of its own standards, most of which apply to business-to-business transactions.

Electronic Data Interchange (EDI): Created by the government in the early 1970s and now used by 95 percent of Fortune 1,000 companies, EDI is a common document structure designed to let large organizations transmit information over private networks. EDI is now finding a role on corporate Web sites as well.

Open Buying on the Internet (OBI): This standard, created by the Internet Purchasing Roundtable, is supposed to ensure that all the different e-commerce systems can talk to one another. OBI, which was released by the [OBI Consortium](#), is backed by leading technology companies such as Actra, IntelliSys, Microsoft, Open Market, and Oracle.

The Open Trading Protocol (OTP): OTP is intended to standardize a variety of payment-related activities, including purchase agreements, receipts for purchases, and payments. It was created as a competing standard to OBI by a group of companies, including AT&T, CyberCash, Hitachi, IBM, Oracle, Sun Microsystems, and British Telecom.

The Open Profiling Standard (OPS): A standard backed by Microsoft and [Firefly](#), OPS lets users create a personal profile of preferences and interests that they want to share with merchants. The idea behind it is to help consumers protect their privacy without banning online collection of marketing information.

Secure Sockets Layer (SSL): This protocol is designed to create a secure connection to the server. SSL uses public key encryption, one of the strongest encryption methods around, to protect data as it travels over the Internet. SSL was created by Netscape but has now been published in the public domain.

Secure Electronic Transactions (SET): SET encodes the credit card numbers stored on merchants' servers. This standard, created by Visa and MasterCard, enjoys wide support in the banking community. The first SET-enabled commerce is already being tested in Asia.

Truste: This partnership of companies seeks to build public trust in e-commerce by putting a *Good Housekeeping*-style seal of approval on sites that don't violate consumer privacy.

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What Buzzwords Do I Need to Know?

E-commerce is rife with buzzwords and catchphrases. Here are some of the current terms people like to throw around:

Digital or electronic cash: Also called *e-cash*, these terms refer to any of several schemes that allow a person to pay for goods or services by transmitting a number from one computer to another. The numbers, just like those on a dollar bill, are issued by a bank and represent specified sums of real money. One of the key features of digital cash is that it's anonymous and reusable, just like real cash. This is a key difference between e-cash and credit card transactions over the Internet. For more information, see [PC Webopaedia](#).

Digital money: This is a grab-bag term for the various e-cash and electronic payment schemes on the Internet. [Yahoo](#) lists 21 companies offering a form of digital money.

Disintermediation: *Disintermediation* is the process of cutting out the middleman. When Web-based companies bypass traditional retail channels and sell directly to the customer, traditional intermediaries (such as retail stores and mail-order houses) may find themselves out of a job.

Electronic checks: Currently being tested by [CyberCash](#), electronic checking systems such as PayNow take money from users' checking accounts to pay utility and phone bills.

Electronic wallet: This is a payment scheme, such as [CyberCash's](#) Internet Wallet, that stores your credit card numbers on your hard drive in an encrypted form. You can then make purchases at Web sites that support that particular electronic wallet. When you go to a participating online store, you click a Pay button to initiate a credit card payment via a secure transaction enabled by the electronic wallet company's server. The major browser vendors have struck deals to include electronic wallet technology in their products.

Extranet: This extension of a corporate intranet connects the internal network of one company with the intranets of its customers and suppliers. This makes it possible to create e-commerce applications that link all aspects of a business relationship, from ordering to payment.

Micropayments: Transactions in amounts between 25 cents and \$10, typically made in order to download or access graphics, games, and information, are known as *micropayments*. Pay-as-you-go micropayments were supposed to revolutionize the world of e-commerce. One early scheme, for example, let visitors to [ESPN SportsZone](#) use their [CyberCash](#) CyberCoin accounts to buy a \$1 day pass to the site's premium content, without having to spring for a full month's subscription. But many potential customers have been unwilling to play along with micropayments.

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How Can Small Businesses Take Advantage of E-Commerce?

Large companies pour millions into fancy e-commerce sites, but even mom-and-pop shops can make money on the Web with a simple, no-frills site.

Sometimes, all it takes to succeed is the promotional savvy to get noticed by customers. Word of mouth, postings in newsgroups, and registration with search engines may be enough to get the customers rolling into your site.

Kevin Donlin is a writer and Web developer who opened [Guaranteed Résumés](#) on the Internet back in 1994. Now, he gets about 100 visitors each day and draws half his income from his resume-writing business.

Donlin succeeds by keeping his costs down: the site sits on the server of his local ISP, and customers, who come from Japan and Europe as well as the United States, pay with a credit card via phone, fax, and even email. Instead of subscribing to an expensive, third-party payment system to handle the credit card transactions online, he enters all the purchases into a swipe terminal that he leases for \$30 per month.

Although most businesses can benefit from a home page on the Web, e-commerce isn't for everyone. Firms likely to profit most are those offering unique products or services that are not readily available locally. A small bookstore such as [Moe's Books](#) in Berkeley might want to advertise readings by authors and tell its customers about specials, but it would not want to compete with [Amazon.com](#). But [onlyGourmet](#)--a Web-based business that sells premium coffee, chocolate, and specialty foods--might find new customers in small towns around the country, where people can't find lemongrass or Swiss bitter chocolate at the corner store.

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What Are the Biggest Barriers to E-Commerce?

According to a survey conducted by [CommerceNet](#), shoppers don't trust e-commerce, they can't find what they're looking for, and there's no easy way to pay for things. Other than that, it's smooth sailing.

Customers are worried about credit card theft, the privacy of their personal information, and unacceptable network performance. Most shoppers still aren't convinced that it's worthwhile to hook up to the Internet, search for shopping sites, wait for the images to download, try to figure out the ordering process, and then worry about whether their credit card numbers will be filched by a hacker.

To convince consumers, e-merchants will have to do a lot of educating. However, Gail Grant, the head of [CommerceNet's](#) financial research arm, predicts that most buyers will be won over in just a few years.

Grant says that if Web pages were labeled with tags giving product and pricing information, it would be easier for search engines to find stuff to buy online. That hasn't happened yet, she adds, because merchants want people to find their products but not their competitors'--especially if another company's goods are cheaper.

As for business-to-business systems, the issues are less emotional but still serious. Businesses do not yet have good models for setting up their e-commerce sites, and they have trouble sharing the orders and information collected online with the rest of their business applications. Many companies continue to grapple with the idea of sharing proprietary business information with customers and suppliers--an important component of many business-to-business e-commerce systems.

The key to solving the business model is for merchants to stop relying on fancy Java applets and to restructure their operations to take advantage of e-commerce, says Grant. "E-commerce is just like any automation--it amplifies problems with their operation they already had."

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Who Stands to Lose From Businesses Moving Online?

The companies most directly threatened by e-commerce include travel agencies, entertainment ticket operations, mail-order catalogs, and retail stores--particularly software stores. E-commerce is already successfully invading their territories. A recent [Forrester Research](#) report predicts that sales of entertainment and travel tickets on the Internet will climb from \$475 million in 1997 to more than \$10 billion by the year 2001. Forrester says that figure represents 8 percent of all travel tickets.

As Bill Gates puts it, e-commerce is about to eliminate the middleman. The buzzword of the day is [disintermediation](#), a way of saying that anyone between the seller and the buyer is in big trouble. But a closer look reveals that e-commerce may be creating of a new kind of middleman.

Some of the most talked-about e-commerce success stories, such as [Amazon.com](#) and [Virtual Vineyards](#), are really a new kind of intermediary. Amazon.com doesn't publish books, after all, and Virtual Vineyards doesn't make wine. They are simply online distributors.

But these e-middlemen must demonstrate that they add value to the buying process, through marketing, customer service, or some other method. If they don't, customers will vote with their modems and cut them out of the loop.

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What Is the Future of E-Commerce?

Rest assured, there is a bright future for e-commerce. Once the details of online commerce are worked out, it and the Internet in general could reshape the structure of the business world.

The huge growth of virtual communities--people getting together in ad hoc interest groups online--promises to shift the balance of economic power from the manufacturer to the consumer. At least, that's the view of John Hagel and Arthur Armstrong, a pair of analysts at [McKinsey & Company](#), an international management consulting firm.

These virtual communities are already making their presence felt. Investment site [Motley Fool](#) lets members exchange investment advice without the benefit of a stockbroker. [ParentsPlace](#) is a meeting ground for parents that gives smaller vendors an avenue to reach potential customers for products such as baby food and shampoo.

Virtual communities erode the marketing and sales advantages of large companies. A small company with a better product and better customer service can use these communities to challenge larger competitors--something it probably couldn't do in the real world.

In *Net Gain: Expanding Markets Through Virtual Communities*, published by Harvard Business School Press, Hagel and Armstrong argue that rather than fight the trend, smart companies will help build such communities and use them to reach customers.