Since 1998, the Hong Kong (HK) Special Administrative Region (SAR) government has implemented territory-wide e-government initiatives, which are pursuant to the Digital 21 Information Technology Strategy (info.gov.hk/digital21). Subsequently, the years 1998 to 2007 marked the initial stages of e-government development in HKSAR as information and services were made available online (refer to stages 1 to 4 of e-government in Exhibit 7.3, p. 303). As a result, an infrastructure where citizens, business organizations, and the government can perform electronic transactions was established by February 2007. Moreover, the city of Hong Kong is now regarded as a “mature city” in terms of e-government development (Accenture 2003). The following are some of the key e-government projects in HKSAR that were developed from 1998 to 2007.

Electronic Service Delivery (ESD) Scheme
Since 2001, the Electronic Service Delivery Scheme, or ESD, has provided a central electronic platform through which the Hong Kong public can transact business with the government. ESDlife (esdlife.com), a Web portal launched under the ESD scheme, hosts over 200 e-government applications for more than 50 bureaus, departments, and agencies. Moreover, the average monthly number of visits to all government Web sites is 280 million, and over 90 percent of HKSAR government services are provided to the public with an e-option. Some examples of the ESD services include the following:

- Booking for leisure and sports facilities
- Performing civic duties, such as filing tax returns, paying tax bills, and purchasing tax reserve certificates
- Applying and registering for public examinations
- Searching for job vacancies
- Renewing driving and vehicle licenses
- Selling statistical data and government publications
- Booking appointments for registration of identity card
- Booking appointments for giving marriage notice
- Registering to vote
- Applying for a senior citizen card
- Paying government bills
- Serving as a one-stop venue for changing one’s address with multiple government departments

ESD employs a variety of CRM characteristics. For example, the 200 interactive and transactional services made available to the public are organized around their daily needs under the categories of “Health,” “Personal Growth,” “Leisure,” “Household,” and the like. A life-event service index is also made available to facilitate the search for services under categories such as “Building a Career,” “Establishing a Family,” “Having a Baby,” “Retiring,” and so on. Some public services, such as weather reports, an air pollution index, and a government telephone directory, also are available through the mobile network.

The GovHK Web Portal
Between 2001 to late 2006, the HKSAR Government provided online government information and services through two Web portals—ESDlife (esdlife.com) and the Government Information Centre (GIC) (info.gov.hk). The former Web portal is controlled and operated by a private company and hosts all e-government applications. As a separate function, the GIC operated by the HKSAR Government provides easy access to some 200 departmental/thematic Web sites administered through different bureaus/departments (B/Ds). A new government Web portal GovHK (gov.hk) was launched in early 2007 to replace the government-centric GIC, and this new portal serves as the one-stop shop for online government information and services. For instance, related information and services provided by different B/Ds are brought together in service clusters on GovHK, the purpose of which is to serve one or more target customer groups with needs and interests within a particular subject (e.g., environment, employment, education, and transportation) or in a particular age range or role (e.g., business and trade, visitors, and residents). The goal is to migrate e-government applications hosted on ESDlife to GovHK by January 2008. In its inception, the GovHK portal was developed to provide a citizen-centric way of e-government services delivery.

Smart Identity Card
The HKSAR government started issuing smart identity cards to its citizens in June 2003. By March 2007, Hong Kong’s 7 million residents acquired the new generation of smart ID cards. This project has effectively made Hong Kong one of the largest populations in the world to use smart ID cards. The smart ID facilitated the formation of a community-wide information infrastructure for the government and the private sectors to introduce value-added e-applications.

The following are some applications provided on smart ID cards:

- E-certificates. The embedding of a free e-Cert in the smart ID card presents Hong Kong citizens with an option to possess an “electronic-ID” that can be used for identity authentication and for ensuring confidentiality, integrity, and nonrepudiation of data transmitted in electronic transactions.
- E-channels. The Immigration Department of HKSAR introduced an automated passenger clearance system (e-channels) in December 2004. The e-channel system performs mutual authentication with the smart identity card key and then deploys fingerprint verification technology for the authentication of a person’s identity. This (continued)
way, HKSAR residents can use their smart identity cards to perform self-service immigration clearance.

- **E-library card.** Cardholders have the option to use their smart ID card as a library card.
- **E-driving licenses.** Smart ID card holders have the option not to carry their driving licenses when driving.

**Hong Kong Education City**

Set up in 2000, the Hong Kong Education City (HKedCity) provides an interactive electronic platform with rich e-learning resources for students, teachers, and parents. Users can exchange experiences and promote effective practices through the portal. As of February 2007, over 1.4 million registered users were on the platform.

**Electronic Tendering System (ETS)**

The Electronic Tendering System (ETS) enables international suppliers to do business with the HKSAR government online. Approximately 3,000 suppliers from over 30 countries were registered to use ETS in 2005.

**Government Electronic Trading Service**

The Government Electronic Trading Service (GETS) enables the trading community to submit official trade-related documents to the government through electronic means. Commercial service providers enable value-added services creating opportunities for the further enhancement of the local e-commerce service industry. Between 1998 and 2009, HKSAR moved to the established stages of e-government, placing emphasis on the clustering of common services and full-enterprise reform and collaboration (refer to stages 5 and 6 of Exhibit 7.3 p. 303).

**Questions**

1. Identify each initiative as G2C, G2B, C2G, or G2E.
2. Visit info.gov.hk/digital21 and identify the goals of the five e-government initiatives.
3. Section 7.1 and Exhibit 7.3 (p. 303) discuss the stages of e-government development. Specifically, the HKSAR government is at what stage of transformation?
4. How will the role of the HK government change when the initiatives mature and are fully utilized?
5. Compare the services offered by Hong Kong with those offered in other Asian cities/countries, such as Taiwan (gov.tw) and Singapore (ecitizen.gov.sg). What are the major differences among these e-governments?

**REFERENCES FOR ONLINE FILE W7.1**


<table>
<thead>
<tr>
<th>No.</th>
<th>Key Issues and Trends</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Although there is a growing body of e-government literature, relatively little of it is empirical. More empirical investigation on e-government development and implementation will be needed in the future.</td>
</tr>
<tr>
<td>2</td>
<td>More research on privacy issues in e-government is needed. The Central Intelligence Agency came under public criticism when it was discovered that its Web site used persistent “cookies” to track Web visits, in violation of federal privacy policy.</td>
</tr>
<tr>
<td>3</td>
<td>E-government adoption and diffusion in public sector, especially in local government. Prior study in the United States shows that e-government has been penetrating state government much more rapidly than local government. Future research should study the effects of factors such as proper marketing, privacy issues, equity, and financing on full penetration of e-government in the public sector.</td>
</tr>
<tr>
<td>4</td>
<td>Information technology provides some powerful supporting tools for e-government, which may empower government to provide additional and/or new services to the public that otherwise may not be possible. Future studies can look into how to provide new and value-added services through integrated e-government.</td>
</tr>
<tr>
<td>5</td>
<td>Very little is known about e-government usability issues for older citizens who do not have skills in computer usage or computer access.</td>
</tr>
<tr>
<td>6</td>
<td>Future research should study the relationship between e-government and e-governance; specifically, how one issue influences another in e-government development and implementation.</td>
</tr>
<tr>
<td>7</td>
<td>E-government and accountability. Will e-government lead to a more transparent, interactive, open, and, hence accountable, government? If not, what should we do to make it happen as e-government strategies are developed?</td>
</tr>
<tr>
<td>8</td>
<td>Qualification and training issues in e-government. Although e-government has a potential to substantially change the current way the public sector operates and functions, new qualification requirements arise for users, managers, and decision makers in public administration. As a result, effective training programs should be worked out to meet this potentially large demand from the public sector. However, little research has been done in this area.</td>
</tr>
<tr>
<td>9</td>
<td>Risk issues in e-government. Although e-government transaction services may offer a potential of increased efficiency and quality with minimum cost in the way the public administration deals with its customers, recent reports show that this is far from reality as e-government projects seem to be failing to deliver. Future study should look into this important issue on identifying key risk factors and how those factors influence the success or failure of e-government projects.</td>
</tr>
</tbody>
</table>
The business forces that are driving the transition from traditional education to online learning are described here. They are divided into several categories, as shown in Exhibit 7.4 (p. 306). See elearnmag.org for more information on drivers and justification. The major drivers are:

**Technological Change.** Technological changes and global network connectivity have increased the complexity and velocity of the work environment. Today’s workforce has to process more and more information in a shorter amount of time. New products and services are emerging with accelerating speed. As product life cycles and life spans shorten, today’s knowledge quickly will become obsolete. In the age of just-in-time (on demand) production, just-in-time training becomes a critical element to organizational success.

**Competition and Cost Pressures.** Fierce competition in most industries leads to increasing cost pressures. In today’s competitive environment, organizations can no longer afford to inflate training budgets with expensive travel and lodging. Time spent away from the job, traveling or sitting in a classroom, tremendously reduces per-employee productivity and revenue.

**Globalization.** Globalization is resulting in many challenges. Today’s businesses have more locations in different time zones and employ larger numbers of workers with diverse cultural backgrounds and educational levels than ever before. Corporations worldwide are seeking innovative and efficient ways to deliver training to their geographically dispersed workforces in other countries. E-learning is an effective way to achieve just this. Companies do not need to bring employees to a trainer or training facility (or even send a trainer to the employees); online classes can run anywhere in the world.

**Continual Learning.** In the new economy, corporations face major challenges in keeping their workforces current and competent. Learning has become a continual process rather than a distinct event. To retain their competitive edge, organizations have started to investigate which training techniques and delivery methods enhance motivation, performance, collaboration, innovation, and a commitment to lifelong learning.

**Network Connectivity.** The Internet provides an ideal delivery vehicle for education. The emergence of online education relates not only to economic and social change but also to access. Through its increasing penetration and simplicity of use, the Internet has opened the door to a global market where language and geographic barriers for many training products have been erased. Because of the popularity of the Internet, e-learning is perhaps the most effective way to deliver training electronically.

Fueling the boom in Internet-based management education are corporations hungry for better-trained executives. General Motors pays for its employees to earn an MBA through an Internet-based school launched in 2003 by the New York Institute of Technology and Cardean University. Ingersoll-Rand has a deal with the University of Indiana to customize an online MBA program for its employees. Capella offers tuition discounts to Fortune 500 companies such as Boeing, Johnson & Johnson, and Wells Fargo for putting the school on “preferred provider” lists. Online MBAs serve “a real market need,” says Trace Urdan, an analyst with Robert W. Baird’s equity research unit. “It’s a win–win for companies and employees” (Crawford 2005).

Examples of top traditional MBA programs that are introducing e-learning are MIT, Kellogg (Northwestern), INSEAD, University of Chicago, Duke, Berkeley, Purdue, Wharton (University of Pennsylvania), and Cornell. Examples of joint ventures of MBA programs with industry can be seen at Duke, Darden (University of Virginia), UCLA, INSEAD (partners with Pensure), Columbia, Stanford, University of Chicago (partners with UNext), and Wharton (partners with FT Knowledge). Of special interest is the Harvard/Stanford Joint Venture in developing e-learning materials for executives. The materials are delivered in a combination of classroom teaching and e-learning known as Leading Change and Organizational Renewal. A similar venture is that of MIT (Sloan School) and IMD of Switzerland. As of 2007, more than 150 accredited business schools offer online versions of their curricula, according to GetEducated.com (geteducated.com), which tracks online education trends.
ONLINE FILE W7.4

Application Case

ONLINE GLOBAL LEARNING AT W. R. GRACE

The newest concept for training and development is the online learning center. Online learning centers combine the Internet, intranets, and e-delivered courses with conventional learning media, such as books, articles, instructor-led courses, and audio and video.

W. R. Grace, a global specialty chemicals company (grace.com), initiated its online learning center in 2001. The company’s human resources leaders were looking for a solution that would provide fast and easy access to a wide selection of tools for developing employee skills. Surveys indicated a need for self-paced professional and personal training support for employees. Strategic Partners’ learning center concept provided the solution. A pilot program was initiated in March 2001. Within 6 months, the center was available 24/7 to 6,000 employees worldwide.

The learning center is organized around the core competencies that characterize the knowledge, skills, and abilities all W. R. Grace employees are expected to achieve. It offers internal classroom training; external courses; CD-ROM courses; self-paced learning tools; streaming video; Internet learning conferences; e-learning courses; coaching tips for managers and mentors; audio and videotapes; books and articles; information about the corporate mission, values, and strategy; strategy guides suggesting specific development actions, on-the-job and in the community; and corporate and industry news. Employees can access resources on a particular topic; they can search a range of appropriate tools and action alternatives specific to their needs, including training sessions, recommended readings, a rental library, and a strategy guide.

The center’s Global Steering Committee, made up of representatives from all the functional areas of the business from around the world, keeps the center in tune with the development needs of employees and encourages the use of the center in all regions. The committee also provides human resources management with feedback on how the center is meeting identified needs.

Every 6 weeks, the center’s electronic newsletter lands on each employee’s desktop. The publication keeps employees up-to-date on the offerings of the center, reports on how employees are using the center, and encourages all employees to use the center as a source for learning and development. Corporate news also is included in the newsletter, keeping the company’s initiatives and communications visible to all employees.

Based on its experience, W. R. Grace offers the following suggestions for the successful implementation of a learning center:

- Line up strong senior management support.
- Build gradually—start with a modest center, get it running smoothly, gather feedback from the users, make needed adjustments, and develop a more extensive center over time.
- Invite involvement—people support what they help to create.
- Provide a variety of learning tools, mixing in-house and external resources.
- Keep the learning center visible.
- Ensure the content is fresh and up-to-date.

W. R. Grace’s Global Learning Center supports employee growth in a cost-effective manner while relating learning to performance and talent management, strategic communication, and individual development planning. It has proved to be a powerful learning and communications channel for the entire corporation.

Questions

1. List the factors that drive e-learning at W. R. Grace.
2. How is e-learning integrated with other learning methods?
3. List the e-learning offerings of W. R. Grace’s learning center.
4. Describe the critical success factors of e-learning offered by W. R. Grace.

REFERENCE FOR ONLINE FILE W7.4


Several types of e-books are available:

- **Traditional book format.** This type of e-book is a classic or new book that is presented in traditional linear format, usually without special features, such as hyperlinks or search mechanisms. With the right software (Adobe Portable Document Format), a reader can print the book.

- **Online bookshelf.** This is a collection of books (rather than just a single book) that can be read online or downloaded. They are simple in format and do not have hyperlinks.

- **The download.** This is an e-book in simple text files, HTML source documents, or Adobe Acrobat files that can be downloaded once the viewer has paid a fee.

- **The Rubik’s–Cube hyperlink book.** This is a truly multimedia, online-only book. It has hyperlinks and provides three-dimensional text and display, employing graphics, audio, and video in a dramatically supportive manner. It supports nonlinear exploration of topics. It is especially useful in supporting learning.

- **The interactive, build-your-own (BYO) decision book.** This kind of book puts the reader “in the driver’s seat.” Combined with multimedia and VRML (a three-dimensional version of HTML), this e-book leads to dramatic engagement with content, plot, destiny, and responsibility. More information about BYO Decision books can be found at From Now On ([fno.org](http://fno.org)).

- **The online reference book model.** Safari, a joint venture of technical publishing giants O’Reilly and Pearson Technologies, provides online reference book services. Users search across the content of the Safari e-books, get relevancy-ranked search results to answer their specific query, and then view the content immediately in a Web browser.

In addition to regular books, electronic technical documents and manuals are available from the eMatter division of Fatbrain (now a Barnesandnoble.com company). In addition to all the major publishers that sell e-books directly from their Web sites, readers also can buy e-books at electronic bookstores. All major textbook publishers (e.g., Pearson Education, the publisher of this text) are creating electronic companion textbooks that feature audio, video, and other interactive elements.
### ONLINE FILE W7.6

#### Application Case

**ONLINE KNOWLEDGE SHARING AT XEROX**

In the early 1990s, Xerox Corporation had a nationwide database that contained information that could be used to fix its copiers, fax machines, and high-speed printers. However, the information was not readily available to the 25,000 service and field employees and engineers whose job it is to repair the machines at customer sites. Satisfaction with customer service was low.

The engineers at Xerox’s Palo Alto Research Center (PARC) spent 6 months observing repair personnel, watching how they worked, noting what their frustrations were, and identifying what kind of information they needed. They determined that the repair personnel needed to share their knowledge with their peers. PARC engineers developed Eureka, an online knowledge-sharing system created to assist the service people with time-consuming and complicated repair problems.

Ray Everett, program manager for Eureka, describes the powerful impact the program has had on service: “You went from not knowing how to fix something to being able to get the answer instantly. Even better, you could share any solutions you found with your peers around the globe within a day, as opposed to the several weeks it used to take.”

The system is available to all of Xerox’s service engineers via notebook computers and is accessed through the intranet and Internet. Product fixes, documentation updates, and product-update bulletins are delivered over the Web. Individual service employees and engineers enter possible new solutions to problems into the system. The solutions appear in Eureka, giving credit to the author and noting the service employee’s country of origin and location. An alert about a new solution is sent to validators who test the solution; if it works consistently, it is sent to all engineers via Eureka updates.

The 2008 version is designed also to work over wireless Internet connections. Eureka is a constantly evolving and growing system that connects and shares the collective knowledge of Xerox’s service force. Since its inception in 1996, Eureka has been implemented in over 70 countries. It has helped solve over 500,000 problems and has saved $3 to $4 million in parts and labor every year.

### Questions

1. **What knowledge is shared via Eureka? How is it shared?**
2. **What EC technologies are described in this case?**
3. **Classify the EC transactions.**
4. **What were the drivers of the program?**
5. **What advantages may be provided by the wireless system?**
6. **Can Eureka be considered an internal enterprise social network? Why or why not?**

### REFERENCES FOR ONLINE FILE W7.6


Online File W7.7 Knowledge Work Tasks with Examples of Supporting Knowledge

**Assets**

<table>
<thead>
<tr>
<th>Capture/Extract</th>
<th>Analyze/Organize</th>
<th>Find</th>
<th>Create/Synthesize</th>
<th>Distribute/Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Submit to Document Database</td>
<td>• Organize Project Artifacts in Folders</td>
<td>• Search for Competitive Information</td>
<td>• Create Budget</td>
<td>• E-Mail Request for Help on Project</td>
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<tr>
<td>• Link to Document Database</td>
<td>• Create and Organize a Project Workspace</td>
<td>• Browse Document Archives and Search for Documents on Topic</td>
<td>• Outline Issues</td>
<td>• Add Project Plan to Project Workspace</td>
</tr>
<tr>
<td>• Request Information from Colleagues</td>
<td></td>
<td>• Search for People</td>
<td>• Create Project Timeline</td>
<td>• Organize and Schedule Teleconference to Review Plans</td>
</tr>
<tr>
<td>• Modify Profile</td>
<td></td>
<td></td>
<td>• Draft Project Proposal</td>
<td>• Organize Meeting/Video Conference to Review Plans</td>
</tr>
</tbody>
</table>

**Technology**

<table>
<thead>
<tr>
<th>Crawl</th>
<th>Analyze Content and Meta-Data</th>
<th>Text Search</th>
<th>Spreadsheet</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Categorize</td>
<td>• Cluster</td>
<td>• Present Meta-Data, Content, and Summaries for Browsing</td>
<td>• Outline</td>
<td>• Project Workspace (Notes Teamroom)</td>
</tr>
<tr>
<td>• Extract Named Entities</td>
<td>• Analyze Web Usage/Profile Descriptions</td>
<td>• Summarize Documents</td>
<td>• Graph Data</td>
<td>• Video Conference (Notes Sametime)</td>
</tr>
<tr>
<td>• Analyze Web Usage/Profile Descriptions</td>
<td>• Index Text Content</td>
<td>• Graphical Display of Meta-Data</td>
<td>• Project Graph</td>
<td>• Teleconference</td>
</tr>
<tr>
<td>• Index Text Content</td>
<td></td>
<td></td>
<td>• Author/Project Artifacts</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Report Generation</td>
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</tbody>
</table>

**Business Processes**

- Engage Customer
- Customer Background
- Build Team
- Create Customer Presentations
- Solution Proposal

P2P technology is really two different things—the direct sharing of digital files and the sharing of different computers’ processing power. The main benefit of P2P is that it can expand enormously the universe of information accessible from a personal computer or a mobile device. Additionally, some proponents claim that a well-designed P2P system can offer better security, reliability, and availability of content than the client-server model on which the Web is usually based. Other advantages over the client-server architecture include the following: no need for a network administrator, the network is fast and inexpensive to set up and maintain, and each PC can make a backup copy of its data to other PCs for security. P2P technology is more productive than client-server technology because it enables direct connections between computers. However, P2P has some drawbacks that limit its usability, including bandwidth limitations, privacy violations, and potential security problems.

Characteristics of P2P Systems

P2P systems have the following key characteristics: They provide for real-time access to other users through techniques such as instant messaging and multichannel collaboration applications. The users’ computers can act as both clients and servers. The overall system is easy to use and is well integrated, and it includes tools for easy creation of content or for adding functionalities. P2P systems maximize the use of physical attributes such as processor cycles, storage space, bandwidth, and location on the network. They employ user interfaces that load outside of a Web browser. They address the need to reach content resources located on the Internet periphery. They support “cross-networking” protocols such as SOAP or XML-RPC (remote procedure call, a protocol that enables a program on one computer to execute a program on a server computer). Finally, they often do something new or exciting, which creates popular interest.

As these characteristics of P2P computing indicate, devices can join the P2P network from any location with little effort. Instead of dedicated LANs, the Internet itself becomes the network of choice. Easier configuration and control over applications enables non–network-savvy people to join the user community. In fact, P2P signifies a shift in peer-networking emphasis—from hardware to applications.

P2P networking connects people directly to other people. It provides an easy system for sharing, publishing, and interacting that does not require knowledge of system administration. The system wraps everything up into a user-friendly interface and lets people share or communicate with each other (for details, see Kwok et al. 2002). P2P networks overcome existing client-server inefficiencies and limitations. They will not replace the client-server architecture, but they can be used to create hybrid P2P/client-server networks that are faster, cheaper, and more powerful. According to Kini (2002), P2P networking improves upon the existing client server hierarchy to efficiently use the processing power, disk space, and data available in a significant number of information sharing and knowledge management applications.

An example of a P2P network is shown in Exhibit W7.8.1. The PCs shown in the drawing perform computer-to-computer communication directly through their own operating systems; individual resources such as printers, CD-ROM drives, or disk drives are transformed into shared, collective resources that are accessible from any PC on the P2P network.

Notice that these characteristics—such as self-expression, trading, selling—enable more Internet equality. Activities that previously required large amounts of money are now available at low costs, as suggested by Agre (2003).
B2B P2P Applications

P2P could be a technology panacea for systems innovators building B2B exchanges. With P2P, people can share information, but they are not required to send it to an unknown server, as they do when using a regular exchange. Some companies fear that exchanges make it possible for unauthorized personnel to gain access to corporate data files. P2P applications enable such companies to store documents in-house instead of on an unknown, and possibly unsecured, server. P2P networks allow companies to avoid the fees charged by B2B exchanges and reduce the complexity and expense of the networking. Netrana Corporation’s (netrana.com) software replaces the model of funneling all buyers and sellers into a central place with the ability of direct connection.

Several companies are using the P2P architecture as a basis for speeding up business transactions, as shown in the following examples:

- Groove Networks (now a Microsoft company) enables direct collaboration by small groups. Its products have many P2P-based capabilities.
- Hilgraeve of Monroe, Michigan, has a technology called DropChute (hilgraeve.com/dropchute.html) that establishes a connection between two computers and allows users to transfer files. The company has won a U.S. patent for its P2P communication process, which touts four levels of encryption and virus-scanning protection. Fort Knox Escrow Service in Atlanta, Georgia, which transmits legal and financial documents that must be highly secure, has leveraged DropChute to enable clients to deliver material electronically. "Instead of having to wait for an overnight package, we can do it all over the Internet,” says Jeanna Israel, Fort Knox’s director of operations.
- Biz2Peer Technologies offers a trading platform that allows P2P product searches, cataloging, and order entry.
- Blue Tiger Networks offers a platform for P2P trading between businesses.
- Consilient creates “sitelets,” which are mobile XML documents designed to manage themselves through built-in workflow rules. (For further explanation of this complex technology, see openp2p.com; search for Consilient.)

Peer networks effectively address some of the Web’s B2B deficiencies. The model is a natural fit for the needs of business because business relationships are intrinsically peer to peer. Peer networks enable businesses to communicate, interact, and transact with each other as never before by making business relationships interactive, dynamic, and balanced—both within and between enterprises.

However, the success of P2P in B2B is not guaranteed. It depends in part on the ability of the technology to address security and scalability issues.

B2C P2P Applications

P2P has potential applications to marketing, advertising, and B2C payments. For example, Certapay (certapay.com) is a P2P e-mail payment platform that enables e-banking customers to send and receive money using only an e-mail address. Another company, Fandango (fandango.com), combines P2P with collaborative filtering (Chapter 4) for online ticket-buying activities. Assuming a user is conducting a search for a ticket using Fandango’s product, the user enters a search keyword, and the keyword is sent to 100 peers, which search local indexes of the Web pages they have visited. Those computers relay the query to 100 of their peers, and that group submits it to 100 of theirs, yielding, in theory, up to 1 million queries. The resulting URLs are returned to the user, weighted in favor of the most recently visited pages and peers with similar interests.

P2P is certain to enable new EC applications, but it has both technical and social limitations. Although sensitive information may require special security arrangements and many users may encounter scalability issues, P2P is indeed a very promising technology.

REFERENCES FOR ONLINE FILE W7.8