

6. Research the status of 3G and the future of 4G by visiting *itu.int*, *4g.newstrove.com*, and *3gnewsroom.com*. Prepare a report on the status of 3G and 4G based on your findings.
7. Explore *nokia.com*. Prepare a summary of the types of mobile services and applications Nokia currently supports and plans to support in the future.
8. Enter *kyocera-wireless.com*. Take the smart tour and view the demos. What is a smart phone? What are its capabilities? How does it differ from a regular cell phone?
9. Enter *mobile.commerce.net* and find information about car navigation systems. Write a report.
10. Enter *ibm.com*. Search for *wireless e-business*. Research the resulting stories to determine the types of wireless capabilities and applications IBM's software and hardware supports. Describe some of the ways these applications have helped specific businesses and industries.
11. Using a search engine, try to determine whether there are any commercial Wi-Fi hotspots in your area. Enter *wardriving.com*. Based on information provided at this site, what sorts of equipment and procedures could you use to locate hotspots in your area?
12. Enter *mapinfo.com* and look for the location-based services demos. Try all the demos. Find all of the wireless services. Summarize your findings.
13. Enter *packetvideo.com* and *microsoft.com/mobile/pocketpc*. Examine their demos and products and list their capabilities.
14. Enter *internethomealliance.com* and review their white papers. Based on these papers, what are the major appliances that are currently in most U.S. homes? Which of these appliances would most homeowners be likely to connect to a centrally controlled network?
15. Enter *onstar.com*. What types of *fleet* services does OnStar provide? Are these any different from the services OnStar provides to individual car owners?
16. Enter *autoidcenter.org*. Read about the Internet of Things. What is it? What types of technologies are needed to support it? Why is it important?
17. Enter *mdsi-advantex.com* and review the wireless products for the enterprise. Summarize the advantages of the different products.
18. Enter *attwireless.com/mlife* and prepare a list of the services available there.
19. Enter *wirelesscar.com*. Examine all the services provided and relate them to telemetry.
20. Enter the site of a wireless e-mail provider (BlackBerry, T-mobile, Handspring); collect information about the capabilities of the products and compare them.

Minicase 1

Dresdner Kleinwort Wasserstein Uses Wiki for Collaboration



Dresdner Kleinwort Wasserstein (DrKW) is the international investment banking arm of Dresdner Bank. Based in Europe, DrKW provides a range of capital markets and advisory services employing approximately 6,000 people worldwide.

Because of the large number employees, their geographic distribution, and the diversity of cultures, it became necessary to provide a range of collaborative tools, from blogs and wikis to instant messenger, chat, and audio/videoconferencing, in order to allow people to move between modes, depending on which was most appropriate at the time. DrKW installed a primitive open source wiki in 1997. The company reviewed Socialtext products in March 2004 and ran a small pilot on the hosted service in July 2004. Based on the pilot, DrKW decided to upgrade to Socialtext Enterprise, which was installed in the third quarter of 2004.

DrKW chose Socialtext because the company was willing to work with DrKW on better authentication, permissioning, and sharing of information and communication among

silos, as well as the vendor, and understood the necessity for information to flow across multiple forms of communications. Because DrKW is highly regulated, everything must be recordable, archivable, searchable, and retrievable.

Usage and Benefits

The Information Strategy team was the first group to use Socialtext on a hosted service. Because its work needed structure, skills were geographically dispersed, and publication and collaboration at individual levels gained many capabilities through the Socialtext workspace. The team uses it as a communications tool, a collective discussion tool, and as a storehouse for documents and information.

The User-Centered Design (UCD) team incorporates usability into external-facing applications used across all business lines. The wiki allows all team members to upload information more easily, which encourages collaboration and transparency through making the sharing of e-mail conversations and other ideas uncomplicated. UCD also

uses the wiki to help explain what “user-centered design” is and why it is important to a wider DrKW community as well as to share presentations, documents, and reports.

One of the most important roles of the wiki is to track project development so that the team and management know what progress is being made regardless of individual geographical locations and raising the awareness of the team about what each person is doing, the status of each project, and what actions should follow.

In 2004, the Equity Delta1 equity financing team was one of the largest users of the wiki. This unit deals with loans, equity swaps, and so on. They use the wiki workspace to eliminate the cumbersome number of e-mails, to view the development of business plans, and to store commonly used information. The team also creates an open forum where anyone can post views, comments, and questions on given subjects, publish and share whitepapers and bulletins, coordinate sales and marketing activities, and organize important team tasks.

The E-Capital London Team develops back-end applications for the Digital Markets business line and supports a number of legacy systems. They use Socialtext to share and develop new system specifications and product overviews, and help with documentation. The wiki provides an instantly editable collaboration platform that simplifies the publication process. The version his-

tory function is useful for product specs where it is important to retain a complete audit trail.

Socialtext also enables individuals to edit the intranet quickly and easily. For example, it will also help build an internal glossary that will define company “jargon” through employees doing similar jobs. The Wikipedia-style usage cuts down the training time and costs of new hires as it will help them to understand internal and external jargon and terms with less difficulty. It also simplifies the roles of people writing in other locations and languages. Eventually, the wiki will be used for informal training, which will encourage its use.

Sources: Compiled from SocialText (2004) and BusinessWeek Online (2005).

Questions for Minicase 1

1. What are the capabilities of the wiki not available in a regular e-mail?
2. Describe the applications in finance and operations.
3. How does the wiki increase employee productivity?
4. Relate wiki to foreign languages and training.
5. What are some social, cultural, and ethical issues involved in the use of wikis for business collaboration?

Minicase 2

Converged Networks Support Complex and Global Business Relationships



What a business can do depends on what its networks can do. And those effects are cumulative; there tend to be increasing returns from deploying several new networking technologies. Network convergence, based upon the Internet Protocol (IP) and SIP (Session Initiation Protocol), makes it possible to economically develop and offer a wide range of complex, multifunction services. Those services merge voice, data, video, and mobile in the same application. Given the flexibility of the new technologies, innovative personalized services and specialized applications can be developed.

To illustrate, consider IP, SIP, and SOA (service-oriented applications). An SOA architecture is essentially a collection of services. These services communicate with each other. The communication can involve either simple data passing or it could involve two or more services coordinating some activity. SIP is critical because some means of connecting services to each other is needed. With SIP, signaling of communications is standardized between var-

ious types of devices and end-points, such as IP phones and IM clients, from different vendors.

From a business value perspective, this enables remote and instant collaboration among employees, supply chain partners, and customers—regardless of the hardware devices they have. Recall that different devices could not communicate because of incompatible protocols.

From an IT development perspective, SIM has made it easier to develop communication applications. This is important because business applications that incorporate communications can lead to greatly improved organizational efficiency.

IP Telephony Offers Significant Strategic and Operational Value

Enormous value can be achieved in procurement and supply chain management through the use of converged networks. Supply-chain capabilities are the set of

downward. Hertz has been a “first mover” to information technologies since the 1970s, so it has pioneered some mobile commerce applications:

- **Quick rentals.** Upon arrival at the airport, Hertz’s curbside attendant greets you and transmits your name wirelessly to the renting booth. The renting-booth employee advises the curbside attendant about the location of your car. All you need to do is go to the slot where the car is parked and drive away. This system, which once operated over a WLAN, is now part of a national wireless network that can check credit cards, examine your rental history, determine which airline to credit your loyalty mileage to, and more.
- **Instant returns.** A handheld device connected to a database via a wireless system expedites the car return transaction. Right in the parking lot, the lot attendant uses a handheld device that automatically calculates the cost of the rental and prints a receipt for the renter. You check out in less than a minute, and you do not have to enter the renting booth at all.
- **In-car cellular phones.** Starting in 1988, Hertz began renting cell phones with its cars. Today, of course, this is not as big a deal as it was in 1988, when it was a major innovation.
- **NeverLost Onboard.** Some Hertz cars come equipped with an onboard GPS system, which provides route guidance in the form of turn-by-turn directions to many destinations. The information is displayed on a screen with computer-generated voice prompts. An electronic mapping system (GIS) is combined with the GPS,

enabling you to see on the map where you are and where you are going. Also, consumer information about the locations of the nearest hospitals, gas stations, restaurants, and tourist areas is provided.

- **Additional customer services.** Hertz’s customers can download city guides, Hertz’s location guide, emergency telephone numbers, city maps, shopping guides, and even reviews of restaurants, hotels, and entertainment into their PDAs and other wireless devices. Of course, driving directions are provided.
- **Car locations.** Hertz is experimenting with a GPS-based car-locating system. This will enable the company to know where a rental car is at any given time, and even how fast it is being driven. Although the company promises to provide discounts based on your usage pattern, this capability is seen by many as an invasion of *privacy*. On the other hand, some may feel safer knowing that Hertz knows where they are at all times.

Sources: *hertz.com* (2003) and Martin (2003).

Questions for Minicase 1

1. Which of these applications are intrabusiness in nature?
2. Identify any finance- and marketing-oriented applications.
3. What are the benefits to Hertz of knowing exactly where each of its cars is? As a renter, how do you feel about this capability?

Minicase 2

Washington Township Fire Department Goes Wireless



The Washington Township Fire Department (WTFD) is located just north of Columbus, Ohio. WTFD responds to more than 4,500 emergency medical services (EMS) calls every year. Time is critical when WTFD is responding to emergencies, which range from heart attacks to fire injuries to highway accidents. The service is run by emergency medical technicians (EMTs).

Rushing victims to the hospital is only one part of the service offered by these dedicated technicians. Providing first aid at the accident scene and while transporting the injured in the ambulances is the other part. When a patient is transferred to the hospital, the EMTs must also provide information on what treatments and medications were administered, and what health-related signs they observed in the patient. Such patient care reports are critical to the continuance of the treatment in the hospital, and they become a permanent part of the medical record. The information is also used to keep EMS records for

planning, budgeting, training, and reporting to the state of Ohio.

In the past, the department had problems using 8" × 14," multipart, multicopy paper forms. Using paper forms caused several problems. First, not everyone’s handwriting is legible, so it was often difficult for hospital personnel as well as the WTFD office people to decipher the information. Second, on many occasions, the information was incomplete, or even inaccurate. To restore the information took considerable valuable time. Office employees at WTFD had to spend close to 1,800 hours a year processing information after the completion of the patient care report. In fact, 85 percent of one full-time office employee’s time was required just to reenter data that were already entered on the paper reports. But the major problem was the time spent by EMTs filling out forms, since this prevented them from returning quickly to the station, to respond to other emergency calls.

A solution to the paperwork problems was a mobile data collection device (MobilEMS of Clayton I.D.S. Corp. powered by SQL Anywhere Studio from Sybase Corp.). The device allows EMTs to collect patient information quickly, easily, and accurately at the scene and to deliver that information to the hospital in a printout. This is done by using a series of data entry screens with drop-down menus containing vital information such as diagnoses, treatment rendered, drug administered, and even street names. It also includes a signature-capture feature that allows EMTs to document a patient's refusal of treatment as well as transfer of care to the hospital.

Once the incident data are entered into the system's embedded SQL database, printing reports is simple. The technician beams the information from MobilEMS to the hospital printer's infrared port and a clear document is produced. Back at the station, the EMTs synchronize the data in their handhelds with the department computer systems by placing MobilEMS in a docking station.

It now takes about 15 seconds to move the data into the system. This is a significant improvement over manual rekeying; using MobilEMS has reduced costs by more than 90 percent. Also by eliminating handwriting and

mandating the completion of required data fields that previously could have been skipped, the accuracy increased significantly.

Finally, the system is customizable. Fields can be added and additional information can be stored. Thus, additional applications are leading to a completely paperless environment.

Sources: Compiled from Sybase.com (2003) and Walsh (2003).

Questions for Minicase 2

1. The system uses a mobile device with a docking station for data synchronization, but no wireless is used. Would you recommend adding wireless? What for? Why or why not?
2. What are the potential legal and pricing issues in this case?
3. The system is based on electronic forms with checkmarks. Why not use a similar set of paper forms?
4. What are the benefits of the mobile system to the patient, to the hospital, and to the employees?
5. What are the benefits to WTFD?

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