Visit to the Cutting Edge

Save to myBoK

by Gwen Hughes, RHIA

From biometrics to password recovery, data transmission to surveillance software, technology is advancing on every front. Below is a roundup of some of the latest technological advances likely to benefit healthcare.

Fiber-optic Networks Without the Fiber

To speed data transmission, laser beams may be used to replace last mile fiber-optic lines. Currently, national and international fiber-optic networks transmit data over thousands of miles at extraordinary speeds. At the termination point of these long-haul networks, however, data must cross a final or last mile to reach each customer site.

The medium for this last mile is typically copper, which is low in bandwidth and slow in transporting data. Constructing the physical connections to correct these last mile bottlenecks, however, can be slow and expensive, because it often requires companies to obtain construction permits, dig trenches, and lay underground cable.

In lieu of physical fiber-optic lines for these last miles, a provider of broadband Internet protocol services offers laser beam technology. The technology works a lot like a traditional fiber-optic network, only the data is sent through the air. Using fiberless optical technology, the company sends a safe, low-power, invisible stream of light through the air to connect businesses to inter-city destinations, the Internet, and gateways of national broadband fiber-optic networks. Because the optical signals can travel through building glass, customers can install a transceiver close to a window at their site.

The optical stream is small in diameter and very directional, thus purportedly difficult to intercept. Still, encryption technology is also being developed. For more information, visit www.terabeam.com.

Shareware for Automatic File Back-up

Anyone who has lost an important computer file to corruption, power outage, or accidental deletion knows the importance of regular data backups. Software utilities and hardware devices are effective only when users remember to perform regular backup procedures. Fortunately, there is a shareware program that relieves users of the need to perform regular backups. The software monitors files within specific folders and backs them up as they change. Once the program is downloaded and the watches established, the program runs automatically throughout each session. For more information, visit www.diginaut.com/shareware/fw.

New Developments in Employee Surveillance

When employees use employer time to play games on personal computers, surf the Net, or dial 900 numbers for entertainment, it robs the employer of the productive labor they purchase and ultimately inflates costs.

For productivity reasons, and a desire to avoid offensive e-mails and breaches of confidential information, many employers monitor employee communications and activities on the job, including phone calls, e-mail, and computer files. A survey conducted by the American Management Association revealed that of the major US firms surveyed, 67 percent use some form of electronic monitoring or surveillance.

Nearly 2,000 companies nationwide use monitoring systems that capture a picture of an employee's computer screen every one to 30 seconds. Employers can then review the pictures of the monitored computers-or have the images sent to an e-mail account for later review. For more information, visit www.amanet.org/research/monit/intro.htm.

Keystroke Dynamics Serve as Biological Identifier

Murder mystery fans will recall that typewriters do not produce all characters in exactly the same way. Similarly, the way individuals type can vary. Even "two-fingered" typists have a unique way of keyboarding.

Software is now available that measures how letters are typed onto a keyboard or keypad. The keystroke dynamics, such as pressure on the keys and timing between keystrokes, are measured and can prove unique enough to serve as a type of electronic signature.

When first setting up the electronic identifier, the user types his or her identification and password several times. After establishing the user's typing pattern, the software compares subsequent sign-on attempts to the one originally entered. If the pattern matches the profile, the user is accepted. If someone whose pattern does not match the authorized user's profile attempts access, entry into the system is denied. Should an individual's typing pattern change due to injury or disability, the system administrator can arrange to temporarily disable the profile or have the user establish a new profile. For more information, visit www.biopassword.com.

Keeping Data Current Across Machines

Although purchasing compatible devices and synchronization utilities can help, those who use personal digital assistants, desktop and laptop computers, cell phones, and pagers still struggle to synchronize every device.

An all-encompassing solution requires support from the entire industry. To this end, Panasonic, Nokia, Palm, IBM, Psion, Lotus, Motorola, Starfish, and Ericksson have joined to develop a new synchronization protocol that makes it possible to get ubiquitous access to updated information with any application. The new cross-industry initiative, called SyncML, is supported by 568 companies.

In addition, leaders in the telecommunication, computing, and networking industries are bringing Bluetooth wireless technology to the market with Bluetooth-enabled gadgets. This cable replacement technology allows devices to network automatically when they are near one another.

SyncML, Bluetooth, and wireless Internet access have the potential to make synchronization problems a thing of the past. For more information, visit www.syncml.com and www.bluetooth.com.

Recover Your Password Without Calling IS

Software is now available to help users recover forgotten passwords for many common programs, including all Microsoft Office components. Some recovery programs go to the particular password position within the file and find it. Others attempt to guess at the password by running all potential words from an English dictionary, testing thousands of passwords per second, changing cases, and reversing the letters in a word. When those methods fail, a third type of software program runs all possible combinations for the password including special characters and upper- and lowercase letters. The third method is much slower and works best when the user knows how many characters are in the password or what types of special characters were used.

Check All Your Mailboxes

Many computer users maintain more than one e-mail account. Free downloadable software is now available that may help users access all accounts. At scheduled intervals, the program automatically checks up to eight password-protected e-mail accounts for AOL, AltaVista, EarthLink, Email.com, Go, Hotmail, Lycos, Mail.com, Mindspring, Netscape, POP3, Rediffmail, Switchboard, USA, Yahoo!, ZDNetOneBox, and hundreds of other e-mail domains. The program allows the user to read or delete online or offline with the click of an icon. For more information, visit www.eprompter.com.

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Article citation:

Hughes, Gwen. "A Visit to the Cutting Edge." *Journal of AHIMA* 72, no.3 (2001): 21-22.

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