Report from Comdex 2002
6 up-and-coming dental-office technologies

Dr. Emmott looks at six technologies from Comdex 2002: Smart Displays, tablet PCs, dual-screen laptops, wireless networking security, network security, and Smart Personal Objects Technology (SPOTS).

By Dr. Larry Emmott

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For the past seven years, I have been making a sacred pilgrimage to Las Vegas every November to visit Comdex, the world's premier computer and technology trade show. Comdex is a huge geek fest. Every year I discover exciting new technologies that will have an effect on our personal lives and dental practices.

This year, however, Comdex was different. The show was much smaller than in the past due to the dot-com debacle, the steep decline in technology stocks, and the economy in general. The mood was at once both cautious and optimistic.

Despite problems, though, everyone agrees technology will continue to change our lives, as evidenced by new technologies and trends featured at Comdex, six of which are featured in this article, as follows:

1. Smart Displays (this page)
2. Tablet PCs (this page)
3. Dual-screen laptops (page 36)
4. Wireless networking security (page 36)
5. Network security (page 38)
6. SPOTS and more (page 39)

See also "Comdex 2002: High-tech Web sites" (page 37).

SMART DISPLAYS

An intriguing new device will be on the shelves this month that easily could completely change our computing experience. It's called a Smart Display. The display looks like a laptop screen with a few buttons along the side. What you see is the *screen only*—no computer is attached; it's back in your home or office under the desk. The Smart Display connects to a computer using a wireless networking standard known as 802.11b or Wi-Fi. You can walk around your home or go outside carrying your display. It will do everything you used to do while "chained" to a desktop computer.

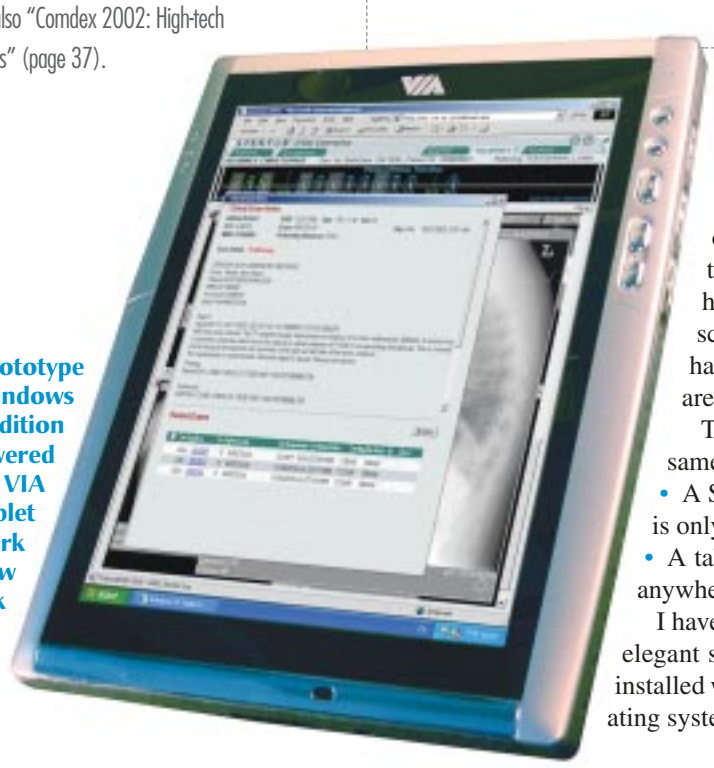
You work the computer display with a touch screen using a stylus or fingertip. You can do all the things on the display you now do on your own computer, including using the Internet. And you can do them all while sitting comfortably in a living room chair or moving from room to room. However, the real promise of this new technology is that it will allow us to do things we never did before. Here are some examples:

- How do you show friends and family the digital photos from your last vacation? A Smart Display acts as your electronic digital photo album. Use it to pass your pictures back and forth among friends while they are sitting on your couch.
- How do you go online while watching television for information about a site someone is talking about? Or instant message a friend? Or vote in a poll when the TV announcer asks you to? If doing the tasks means getting up, going to another room, firing up a computer, and sitting at a desk, most people won't do them. If all you need to do is pick up your Smart Display lying on a coffee table, the tasks will be fast, easy, and fun to do.

ViewSonic's Smart Display airpanel, a touch-screen wireless device, can be used to display photos, surf the Web, or perform other computing tasks in almost any room of the home. The airpanel display is powered by Microsoft Windows XP Professional.

The Smart Display can be used as a portable computer or, when placed in a docking station, as a regular monitor. The first Windows-powered Smart Displays, called "airpanels" from ViewSonic Corp., will be available in retail stores this month. They run only on Microsoft Windows XP Professional and are portable within a range of 100 to 300 feet. The displays are seen mainly as a home-consumer product, but I am sure we will find many ways to use them effectively in dentistry.

The ViewSonic airpanel V150 10-inch Smart Display won the Best of Comdex award in the personal hardware division.



VIA's Tablet PC prototype runs on Microsoft Windows XP Tablet PC Edition software and is powered by processors from VIA Technologies. A tablet PC wireless network computer would allow dentists to check x-rays and enter diagnoses while on the move.

TABLET PCs

A close cousin to the Smart Display is the tablet PC, introduced at Comdex two years ago by Microsoft's chairman Bill Gates. Last year, the first prototypes came out; this year, tablet PCs are everywhere. A tablet PC is the next generation of laptop. It looks a lot like a Smart Display, but it's a complete computer. Tablets may have attached or detached keyboards (attached keyboards can be folded under the screen). Users also can make entries by tapping or writing on the screen; recorded handwriting can be saved as handwriting or converted to typewritten text. Tablets are made to be portable and an 802.11b wireless connection generally is used.

Tablets and Smart Displays look a lot alike and seem to function in much the same way. So, what's the difference? A good analogy is the telephone.

- A Smart Display is like a cordless phone. It needs a base phone to operate, and it is only useful in your home. Take it out of town, and it is useless.
- A tablet PC is like a cell phone, which is a fully functioning phone that will work anywhere. A tablet PC is a fully functioning computer that will work anywhere.

I have always advised against using laptops in the treatment room. They seem like an elegant solution, but they are not very effective. However, a tablet PC with a properly installed wireless network connection could be very effective. Microsoft's Tablet PC operating system—Windows XP Tablet PC Edition—won overall Best of Comdex honors.

Continued on page 36

A cool variation of a laptop computer is the 2-VU dual-screen mobile laptop from Estari Inc.

Continued from page 34

DUAL-SCREEN LAPTOP

3

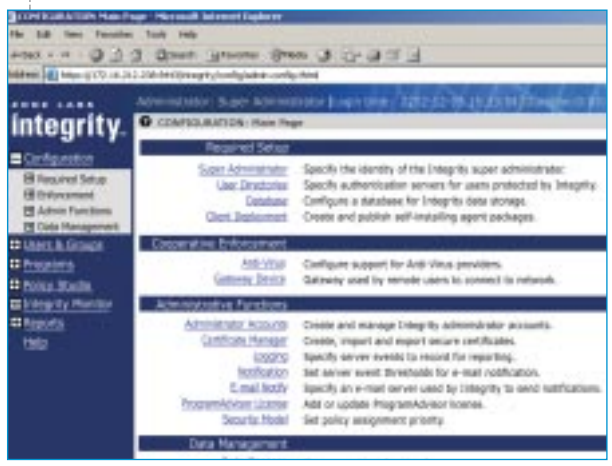
A cool variation of a laptop computer that I saw at the show is the 2-VU dual-screen mobile laptop computer from Estari Inc. It looks like an open book. The 2-VU allows users to work with two full-page documents simultaneously, such as a text file on one screen and a Web site on the other. Notes can be entered with a stylus, keyboard, or mouse. The 2-VU uses Microsoft Windows 2000 or XP operating system and Estari FileScout, a digital document management software.

WIRELESS NETWORKING SECURITY

4

Wireless networks are popping up everywhere. They have great potential in the dental office, and they would allow true mobile computing with either a tablet PC or the ultra-new Smart Displays. Wireless is the future. The only limitation about wireless is an ongoing concern about security, especially wardriving.

Wardriving is a term used to describe the act of driving around in a car with a wireless receiver looking for open wireless networks. And such networks are easy to find. Once the wardriver locates your network, he or she could steal information or simply mess up your system for the fun of it. To prevent wardriving, check out security programs.



Integrity 2.0 software from Zone Labs is geared for businesses with networked PCs. It includes a program (see screen at left), which helps IT personnel manage and enforce security measures and protocols.

At Comdex, Integrity 2.0 from Zone Labs Inc. won an award for the best security product. Integrity 2.0 software is geared for businesses and includes a management program (see screen at left) for information technology (IT) managers. The program keeps track of security setups, enforcement support, and administrative functions and policies.

Another security measure is to establish a Virtual Private Network (VPN), a software solution that prevents unauthorized access to your network by assigning passwords, setting up firewalls, and encrypting transmitted information.

There are many other ways to secure your wireless network. However, most people don't care or don't know how to secure their sites. If you just set

Comdex 2002: High-tech Web sites

Check out the following Web sites for more information on the technologies and trends covered in Dr. Emmott's review of Comdex 2002:

COMDEX
www.comdex.com

DUAL SCREEN LAPTOPS
www.dualscreen.com

SMART DISPLAYS
www.viewsonic.com
www.microsoft.com/windowsxp/smartdisplay

TABLET PCS
www.microsoft.com/windowsxp/tabletpc
www.via.com.tw

USB MOBILE STORAGE
www.macally.com/new/new_flashdrive.html
www.bioslimdisk.com

Security: companies/trends

BIOMETRIC KEYBOARDS
www.cherrycorp.com

FACEON
www.symtrontech.com

MISC. SECURITY
www.secursoftware.com
www.multitech.com

WIRELESS NETWORKS
www.netgear.com
www.weca.net
www.lynksis.com

ZONE LABS
www.zonelabs.com

Security: articles

Here are some informative articles on wireless networking security:

"802.11 WIRELESS SECURITY IN BUSINESS NETWORKS"
www.dell.com/downloads/global/vectors/wireless_security.pdf

"FEDS TO CLAMP DOWN ON WIRELESS LANS"
www.nwfusion.com/news/2002/134874_08-19-2002.html

"NETWORK EXPERTS CALL FOR BETTER WI-FI SECURITY"
www.globeandmail.com/servlet/ArticleNews/front/RTGAM/20021205/gtwifisec/Front/homeBN/breakingnews

"TIPS ON WIRELESS SECURITY"
www.gocsi.com/pdfs/alert0701a.pdf

"WIRELESS LAN SECURITY - WHAT HACKERS KNOW THAT YOU DON'T"
www.airdefense.net/eNewsletters/hackersfeature.shtm

up a wireless node out of the box, it will be open to wardriving hackers. Be sure your tech installer understands your need for security and sets up your wireless system properly.

Wireless rocks; just be safe. (For more information on wireless security, check out the articles listed in the "Comdex 2002: High-tech Web Sites" sidebar, above.)

Continued on page 38

Continued from page 37

NETWORK SECURITY

Security concerns aren't just a wireless problem. As professionals, we have a clear duty, both ethically and legally, to protect the information we gather from our patients. This includes sensitive health information as well as personal and financial information. In addition, we are running a business and need protection against theft and embezzlement.

One of a computer system's great strengths is its ability to gather, store, and retrieve information easily. The system also has a great weakness—it is easy for anyone with a computer to access, or even alter, that information. Ideally, anyone using office-system computers should be logged onto a specific machine with a secret password and granted access only to information needed to do the job. In that way, a business is protected, and every action from every computer can be tracked over time.

The problem in a dental office is that people tend to move from one computer to another throughout the day, with several different people using each machine. Passwords are passed around, as it's just too awkward to take time to log on every time ones sits down and log off every time one leaves. The result is logging/password protection just doesn't get done.

5

The biometrics/smart-card keyboard from Cherry Corp. allows users to log on and identify themselves without passwords. A user's identification is checked via a fingerprint sensor and a smart-card reader.

Now, though, there's a way to provide security that is easy and foolproof. It involves using embedded biometrics and smart cards. An example of a biometric device is a fingerprint reader built into a keyboard or a mouse. When a user sits down and starts to work, he or she simply presses his or her thumb on the reader. No passwords. What happens if someone logs on with a fingerprint and then leaves? Anyone could use his or her machine. To thwart this, a computer can be set to log off after a set time.

For added system protection, a smart card can be used, too. A smart card resembles a plastic hotel key. Each card is coded and works only with specific computers. A smart-card user puts the card into a computer's smart-card reader and confirms the security check with a fingerprint. When the user leaves the computer, the smart card comes out of the slot, and the user is logged off.

To make such a security check even easier, new security keys are available that plug into a USB port, eliminating the smart-card reader. Another secure log-on—FaceOn Logon from Symtron Technology—uses a picture of a user's face to access the computer. The ultimate security check may be a proximity sensor; it logs off whenever the designated user is out of range. (Setting up a secure computer with a biometric security system will cost about $200 per computer.)

All of the world's security devices won't help, though, if people using them don't care about our security concerns. As Chey Cobb, a computer security expert and author of *Network Security for Dummies* (John Wiley & Sons, October, 2002) says, "The weakest links in the security chain are people."

At Comdex, Microsoft Chairman Bill Gates demonstrates everyday objects made "smarter" with Smart Personal Object Technology (SPOT), including clocks, wristwatches, key chains, and refrigerator magnets (displaying calendars and sports scores).

6

SPOTS AND MORE

What's a "SPOT"? It's the name given to Smart Personal Objects Technology (SPOT). A SPOT refers to the technology that adds computer chips to everyday items, such as alarm clocks, to make them more intelligent and useful.

For example, in addition to telling the time, a prototype SPOT clock can auto-adjust to time-zone changes and display information about road closures along an expected travel route. Smart key chains would help people with physical security, such as locking and unlocking doors.

At Comdex, both Microsoft Corp. and National Semiconductor Corp. announced a strategic relationship to develop a new chip set to create and power SPOTS.

SPOTS are part of another concept, ubiquitous computing, which means that they (computers) are everywhere. Computers are not just some device you sit down to operate; they are part of everything we do.

Although Comdex 2002 was smaller and more subdued than many past shows, there was a strong feeling in the air that technology will continue to change our lives in remarkable ways. In fact, I believe that the future is coming, and it will be amazing! DPR

***Dr. Larry Emmott**, a recognized authority on dental technology in America, is a practicing general dentist in Phoenix. He also is an award-winning professional speaker, a featured instructor at the Las Vegas Institute, and a member of the American Academy of Dental Practice Administration. He has written hundreds of articles on dentistry, computer use, and management. Since 1995, he also has written a monthly electronic newsletter, Emmott on Technology, showing dentists how to use technology effectively. Dr. Emmott offers regular hands-on programs to selected dentists in his Phoenix office. At these seminars, you will receive personalized advice on setting up your office to maximize your high-tech future. To find out more, check out Dr. Emmott's Web site,* www.drylarryemmott.com*, or call 602-279-1641.*

Photo credits

- Photo of Smart Display on page 34 courtesy of ViewSonic Corp.
- Photos of tablet PC on page 34 courtesy of Microsoft Corp. and VIA Technologies Inc.
- Photo of Estari's 2-VU dual screen laptop on page 36 courtesy of John Rudy Photography.
- Photo of of Integrity 2.0 software on page 36 courtesy of Zone Labs Inc.
- Photo of Biometrics keyboard on page 38 courtesy of Cherry Corp.
- Photo of Bill Gates and SPOTs on page 39 courtesy of Microsoft Corp.