

Report from Comdex 2003

Mobility, security, and seamless computing emerge as three key themes of the Comdex 2003 technology show in Las Vegas.

By Dr. Larry Emmott



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For many years I have been going to Comdex, the computer and technology trade show held in Las Vegas in November. At Comdex, I often have discovered emerging technologies, which make their way into dentistry and mainstream usage soon after the show. In the past, Comdex has been like a glimpse into the future—a truly amazing show. It's also been great fun. In its peak years, the show attracted more than 250,000 people, and it had

as much show biz and glitz as it had technology.

Comdex 2003, though, was quite different from these past shows. Attendance was down—about 50,000 people attended. The glitz was gone, too, and the atmosphere was much more businesslike. This year's show, run by MediaLive International, seems to have matured, and so has its technology. I didn't find any amazing new ideas; instead, I mostly saw improvements on old concepts.

For example, the Comdex "Best of Show" award did not go to a brand-new, sexy, never-before-seen,

"Tablets with ink-capable dental charting will allow dentists to make notes or circle items on an electronic dental chart."

wow, techno goodie. Instead, the award went to the Microsoft Small Business Server 2003 software. This Windows software includes server-based solutions for e-mail, fax, database, and security, in one integrated program, according to *PC Magazine's* online Comdex report (www.pcmag.com). While this software is helpful for small businesses, it's pretty boring when the show's best item is the latest version of Windows.

Nevertheless, Comdex 2003 did have some exciting developments that will impact computing in the dental office. In particular, three technology themes emerged that could apply to products on display throughout the show, namely mobility, security, and seamless computing.

Mobility

Wireless mobile computing continues to evolve. The future vision for the dental office will be com-

puters assigned—not to rooms—but to people. In this scenario, each team member and the dentist will have a portable computer, allowing staff to roam freely about the office. Their computers always will be connected wirelessly to an office network and, beyond that, to the Internet.

Tablet PCs. The tablet PC drives this transformation. Introduced two years ago at Comdex, the tablet design, or form factor (a term referring to a device's size and shape), is evolving rapidly. Now, more than 40 different hardware makers manufacture tablet PCs, including Hewlett Packard, Toshiba, and Gateway, which claims, "The Tablet PC combines the ease of pen-and-paper notetaking with a powerful notebook computer."

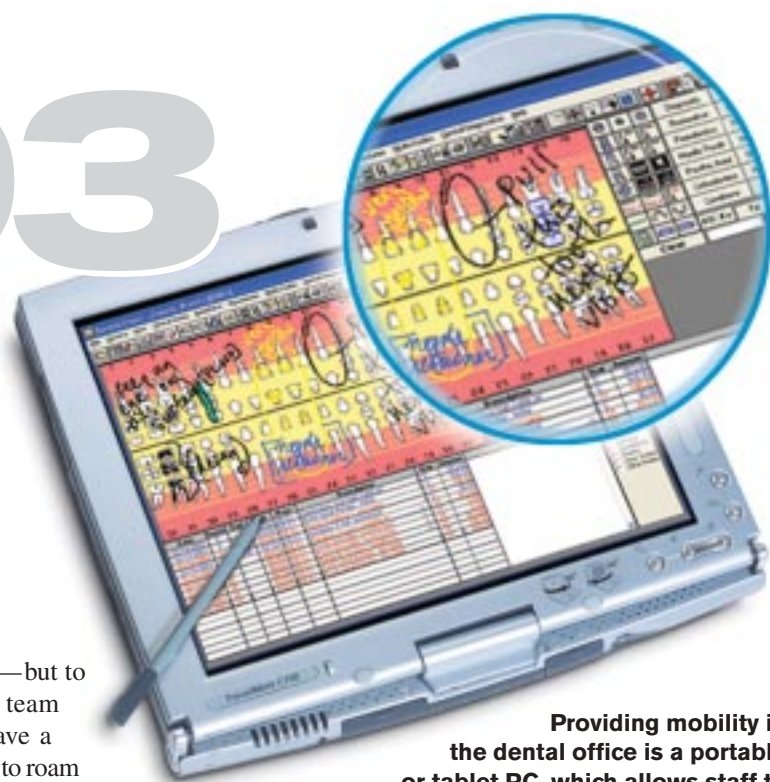
Tablets have screens that are approximately 8½ by 11 inches in size and come in two basic styles—slate and convertible. A convertible tablet has a keyboard; a slate table does not. Convertible tablets seem to be more useful than slates, while they also maintain the extreme portability of the tablet design.

Inking. Tablets have two key features: touch screens and inking. A tablet's touch screen allows a user to easily enter information. The user just taps on the screen with one hand (via a mouse, lightpen, or stylus) while holding the tablet in the other hand. Inking allows a user to write or draw on a tablet's screen just as if it were a piece of paper.

We soon will be seeing tablets with ink-capable dental charting. This will allow dentists to make notes or circle items on an electronic dental chart displayed on a tablet just as we now make notations or draw on paper charts (see illustration above).

We also will be seeing ink-capable dental forms. This means a patient will not have to fill out a paper form. Instead, a team member will hand a patient a tablet displaying a form, such as a health form. Then, using a stylus and "ink," the patient will fill out the form on the tablet. When the patient has completed the form, the patient and the dentist can sign it using "ink."

Even now we're seeing a form of inking in our everyday lives. Inking occurs, for example, when we're in a retail store and sign our name on a signature pad that is hooked up to a computer. The "inking" allows the computer to digitally capture our signature.



Providing mobility in the dental office is a portable or tablet PC, which allows staff to move freely about the office, while adding handwritten notes to charts.

Signature pads and "inking" also are being used in the dental office to simplify compliance with the Health Insurance Portability and Accountability Act (HIPAA) regulations. Dentists can hook up a signature pad to their computers and digitally capture patient signatures along with the date and reason for an appointment (see illustration on page XX).

Tablets are run using Microsoft Windows XP Tablet PC Edition's operating system (OS). At Comdex, Microsoft announced that an updated version of its tablet OS with improved ink features will be released by mid-2004.

Security

Wireless mobile computing has wonderful possibilities. However, such computing is by its very nature a security risk. While wide-open instant access to information through a computer system is what makes office computers, and even the Internet, so useful, it also is what makes them so vulnerable to attack.

Interestingly, many of the speakers at Comdex addressed the issue of security in relation to HIPAA, whose privacy regulations went into effect this year. It seems medical/dental security and privacy issues are driving much work in the area of security.

Most observers predict increased problems with Internet hacker attacks, computer viruses, and spam (junk e-mail). Nevertheless, the benefits of computing and data exchange still far outweigh the risks. Think of these problems in terms of another advanced technology we simply take for granted, our cars. It is possible that your car could break down, stranding you. You could be in an accident and cause some injury. Over the next few years, you will be spending thousands of dollars on new cars, maintenance, and repairs. Yet, despite these possible negative events, none of us would consider going back to walking just to avoid a possible car problem.

In the dental office, though, we do need to address two security concerns associated with wireless computing: network vulnerability and unauthorized workstation access.

Network vulnerability. A wireless network is open to anyone with a wireless receiver in the area in which you are using the computer. To protect a network from

attack, a wireless system needs security in the form of encryption, which includes a virtual private network (VPN) and a firewall.

An example of a security device is the SOHO TZW wireless appliance from SonicWall (www.sonicwall.com), which won a Best of Comdex award in the “Wireless Infrastructure” category (see photograph on page xx). The device integrates firewall and VPN technologies, according to *PC Magazine’s* online Comdex report.

Unauthorized workstation access. Controlling workstation access is important to protect private information from being seen by unauthorized people and to track what is being done from each station. In the past, passwords protected network access. However, using passwords is awkward, slows down the work process, and can be easily bypassed by sharing passwords. Passwords can work, but in dentistry they hardly ever do.

The newest approach to protecting workstation access is a combination of a security key and a biometric. A security key is a hardware device. A biometric is a device that digitally measures a unique feature of an individual, such as a fingerprint. The security key is needed to log on or to gain access to a computer. The biometric assures the right individual is using the machine and records who that person is.

There are many versions of security keys. Among the newest are portable de-

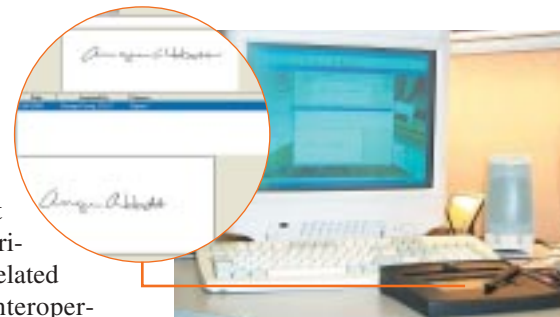
vices that connect easily to a computer’s USB port. Since the devices are portable, they can be moved easily from one machine to another.

Seamless computing

According to Microsoft Chairman Bill Gates, who gave the keynote speech open-

ing Comdex, the next decade in technology will be all about making the computing experience seamless. Three interrelated processes—connectivity, interoperability, and Web services—will help create this seamless environment.

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Providing HIPAA security in the dental office is a signature pad that digitally captures patient signatures.

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Found at Comdex:

The National Cristina Foundation

You will need to replace your computers every three to four years, but when this happens, what do you do with your old computers? You can throw them out, but that seems like such a waste. And who wants our landfills to be packed with old computers? A more socially responsible way to get rid of them is to donate them. But who wants an old computer?

Now there is a group that will take old computers and put them to good use—the National Cristina Foundation (NCF). Its mission is “to provide computer technology and solutions to give people with disabilities, students at risk, and economically disadvantaged persons the opportunity, through training, to lead more independent and productive lives.” To find out more, go to www.cristina.org

Note: Whenever a computer leaves your office—whether you give it away or throw it away—be sure the hard drive has been wiped clean. There could be protected information on there that we have an ethical and legal obligation to protect.

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Connectivity. This refers to the ability of programs or devices to share information. In dentistry, this means that a management-software program shares patient information with a word-processing program to create a letter or with a check-writing program to track expenses. Connec-

tivity is the ability to import or export data from one program to another.

Interoperability. This refers to the ability of different devices from different vendors to work together. In dentistry, this could mean that a digital radiography program accepts x-rays from several different sensors, including corded solid-state sensors

and wireless phosphor-plate sensors. The radiography program then could send the image to another completely different program, and the x-ray image could be viewed or enhanced using the second program. Interoperability comes from vendors working together using shared standards, such as the Digital Imaging and Communica-



Providing security for an office network's wireless devices is a wireless appliance, the SOHO TZW from SonicWall, a Best of Comdex winner in "Wireless Infrastructure."

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tions in Medicine (DICOM) standard.

Web services. These are used mainly as a means for businesses to communicate with each other and with clients. Users can communicate data without intimate knowledge of each other's computer systems; different applications from different sources can "talk to" each other without expensive time-consuming custom coding.

In dentistry, we will be using Web services and the Internet to enhance our lives in many creative ways. These include online backup, real-time claims and eligibility, online billing and payments, specialty referrals, laboratory communications, collections, and payroll services. For example, a dentist could e-mail x-rays to a specialist for review. In addition, to protect the data, the dentist could give the specialist a password to use to open the x-ray file.

In summary, while Comdex 2003 was not as much fun as some previous meetings, it did provide a showcase for future technology and a look at innovations in the areas of mobile, secure, seamless computing. From what I saw there, I can say with confidence: 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 a 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. He also writes a monthly electronic newsletter, "Emmott on Technology," on using dental technology.

Technology on the Rocks. Dr. Emmott also runs hands-on technology seminars. His next seminar, "Technology on the Rocks," will take place in Sedona, Ariz., June 1-5, 2004. Join Dr. Emmott and Dr. Dale Miles, another dental technology expert, on a five-day educational/recreational program. Each day includes a mountain biking or golf group in the morning and a seminar in the afternoon. For tuition fees and details, call 602-279-1641 or 480-816-6078. Or visit www.drLarryEmmott.com or Dr. Miles' Web site, www.learnDigital.net.

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