High-Tech Dental Office or Another Winchester Mystery House?

By Bruce A. Stephenson, DDS

During the early part of the 20th century, a very eccentric widow named Sarah Winchester, heiress to the Winchester rifle fortune, spent 30 years having an unusual house built. It incorporated a lot of features that most less-eccentric people don't understand. She also spent lots of money for stained glass windows placed against walls and doors that opened into rooms only 6 in deep or to a 20-ft drop. Until the day she died, she had carpenters working continuously, adding on, taking off, or rearranging things in her house. People from all over the world now visit her Winchester Mystery House in San Jose, Calif, and wonder what she was trying to do.

Have you noticed that your office computer system is beginning to resemble your own mystery house? I visit a lot of dental offices and see this phenomenon often. An expensive staircase that leads to a ceiling, an elegant window that opens onto a wall, or lots of people working on a project without any idea of what it is supposed to look like when it is done.

Sarah Winchester built her house that way because she wanted to and was mentally ill. But dentists build their office computer systems that way because they get bad advice from people who want to sell them something. They also get bad advice from people who do not understand what dental offices are all about and what dentists want to do with their computers. Dentists purchase unsuitable printers and buy "buggy" software that doesn't integrate with their other software or contend with costly and inappropriate networks. They buy high-priced computers from expensive sources and pay a lot of money for the wrong features and poor support they don't really need.

Now, it's getting worse. Vendors are busy selling digital X-ray units, intraoral camera computer imaging devices, and cosmetic imaging packages that may not integrate with each other or even run on the same computer.

However, there is a bright side. When all this back-office technology does work together, it's efficient and great. Using dental management software on the operatory computer, dentists can schedule appointments and enter patients' exams, treatment plans, and clinical notes. Using voice entry, dentists or hygienists can record periodontal pocket markings by speaking into a small microphone and having the data entered automatically into the appropriate fields of the computerized patient record.

They can then use the management software to load the correct patient information into a digital X-ray program to quickly take very high-quality X-ray images with much less radiation and no trip to the darkroom. Within 5 seconds of pushing the button on the X-ray system, the "filmless" radiograph is "developed" on the computer screen. Dentists can also immediately see if the image is adequate. Because the X-ray tube head and the sensor in the patient's mouth have not been moved, minor corrections can be made easily and quickly. A new exposure can be taken (when necessary), and the results can be seen without waiting for film to develop. This is much faster and guarantees better quality. There are no more excuses for cone-cuts or overlapped contacts. The digital images can be immediately viewed, stored, sorted, retrieved, and inexpensively printed from any computer on an office network. Doctors can review hygienists' digital X-rays within seconds and without leaving the operatory. The brightness and contrast of digital films can be easily manipulated by the software to correct some deficiencies in exposure, or optimally display crestal bone density or interproximal caries. All insurance carriers I deal with currently accept a plain paper copy of digital images in lieu of "wet" films. This means that when insurance documentation is needed for a crown, a copy of the preoperative X-ray of the tooth can be easily and immediately printed. A 5- X 12-in sheet of X-ray duplicating film costs almost $1.25; a digital paper print costs almost $0.02. And dentists don't have to go find the chart, search through it for the needed films, and then refile it. The computer instantly does all that for them.

High-quality X-ray images can also be printed and sent to a colleague, while the original "films" never leave the office. When another office sends films of a mutual patient, dentists can digitize them using a scanner and enter the images into the patient's computer record. The films can then go back to the other office, while a digital copy, which is almost as clear as the original and more clearer than a "wet" duplicated X-ray, is retained.

After impressing patients with high-tech, low-radiation X-rays, dentists can show them the teeth that need treatment with an intraoral camera. But there is no need to roll a gigantic cart down the hall from the other operatory to use the camera. It can be connected to a computer with a "docking station," so only the small camera needs to be moved from room to room. The image acquisition can be done by computer, and a copy can be made using a printer located in a central office area.

Management software can be used to load the correct patient information into the imaging software. This allows for only one set of patients in the computer record. An infinite amount of images can be taken because the storage space (computer hard disk) is almost unlimited and free. Computer hard drives are currently so inexpensive that dentists can save more than 1,000 X-rays or intraoral camera images for less than the cost of a single 4- X 5-in print from a nonintegrated analog camera system on a gigantic cart.

Just as with radiographs, clinicians can sort, retrieve, display, or print any of the images from any office computer whenever they desire. Because the storage and acquisition is instant, patients can be shown the images on a chairside, 17-in, color computer monitor, which can be used (with a wireless remote-control mouse) to point out important areas. Seeing a 1-ft wide carious lesion in color is a great motivator for patients to seek treatment before it hurts. And just to be sure they don't forget, for almost $0.50 each, high-quality 8.5- X 11-in color prints can be sent home with the

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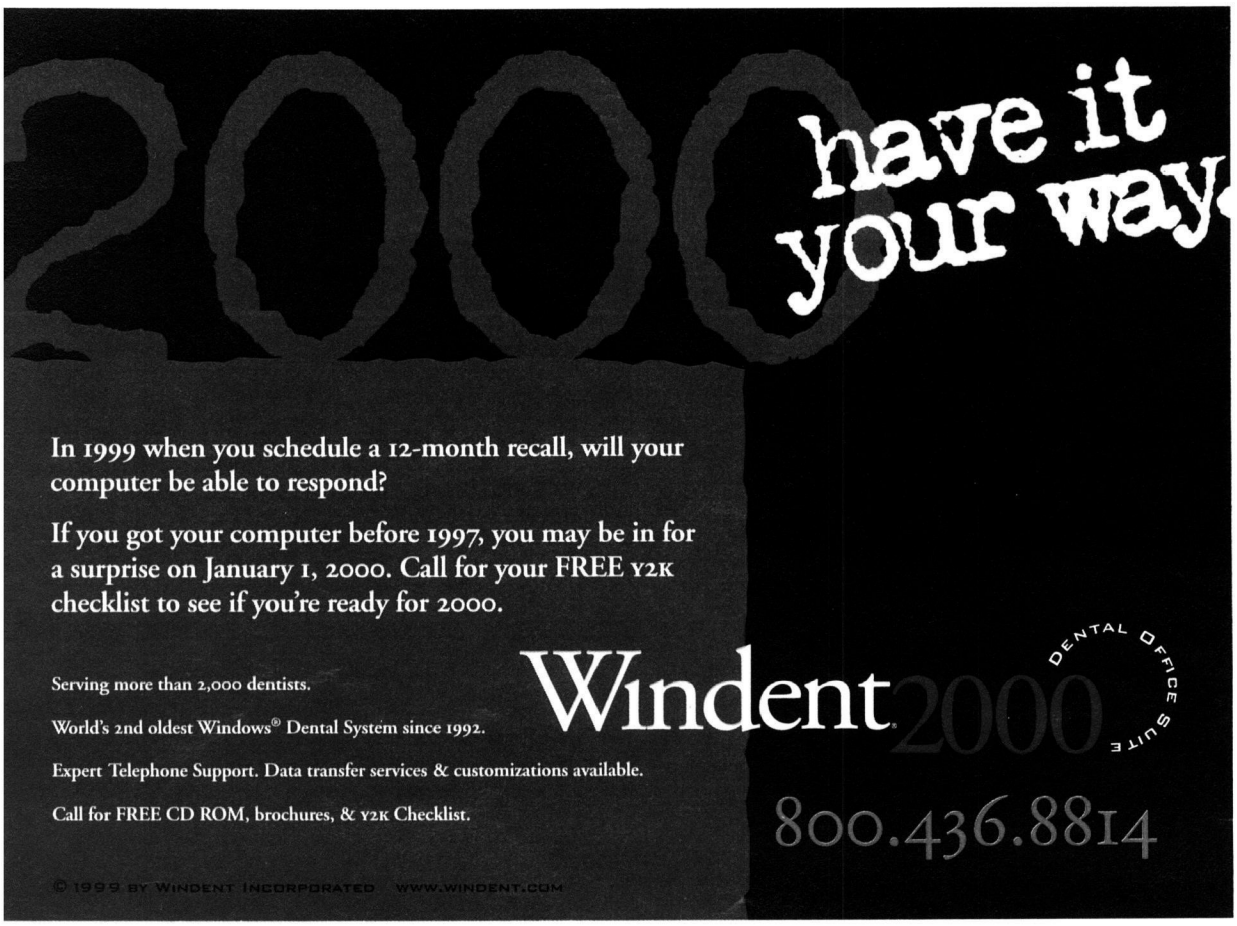

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patients.

Before patients leave the operatory, take a moment to talk about cosmetic dentistry. This is truly a moment when a picture is really worth a thousand words. An extraoral digital camera can be used to take a full-face view and upload it into the cosmetic software. In almost 3 minutes, patients can be shown exactly what bleaching, laminates, and other cosmetic procedures can do for their smile. Of course, patients should be sent home with another high-quality, before-and-after color print.

If they have questions about particular procedures, they can be shown a patient-education video played on a DVD player built into the operatory computer. If desired, the output from the DVD player could be sent from the computer screen or intraoral camera to a large television monitor mounted in the operatory ceiling, or to a pair of virtual reality glasses the patient can wear. This is a lot more entertaining for them than looking at the dead moth in the ceiling light fixture.

How can all this high-tech be integrated into the office without building another Winchester Mystery House? Doctors can start by doing some research. When the digital X-ray salesman says his product works great with XYZ camera software and ABC cosmetic software, ask him for the names and telephone numbers of other dentists using that combination of products. Then, call those dentists and ask how much trouble it was to install, who did the training, and how was the support. Has the system "gone down" and how often? Who fixed it and how long did it take? Are these the same people who will be installing and supporting the product in your office? If at all possible, visit an office using the same combination of products you want to use, including the management software. Not all management software can integrate with all high-tech products.

Also, find out what kind of computers are being used in their operatories. Almost without exception, all Windows '95 or '98 programs will run on all Windows-based computers. But this is not true of all back-office high-tech add-ons. There are some combinations that will simply not work. Buying an expensive major brand name computer for the operatory does not solve this problem. Often, it's a matter of patience and trial and error to find out what combination will work together. Hopefully, dentists can take advantage of the work someone else has done to solve these problems.

If there are existing computers, dentists should make sure their high-tech vendor guarantees to refund money if the product doesn't work in an existing system.

High-tech, back-office products are great time and labor savers, providing a level of patient service unavailable in the past. They have become very cost effective, and now is the time to seriously consider incorporating them into the practice. Just make sure all of the high-tech equipment purchased integrates easily and functions properly.✦

Dr. Stephenson consults and lectures on dental office computers and is a system integrator for high-tech dental office applications. He maintains a computer-supported general dental practice in San Leandro, Calif. He can be reached at Professional Education Associates at 510-483-2168, faxed at 510-483-1671, or e-mailed at bruce@nice-teeth.com.

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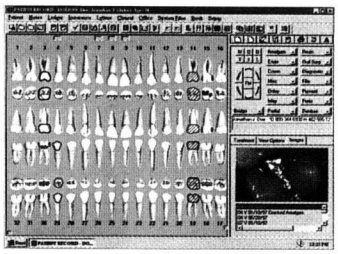

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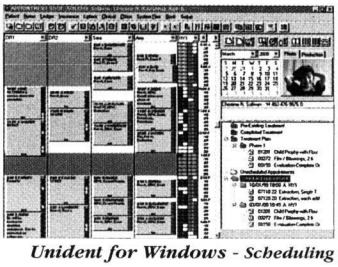

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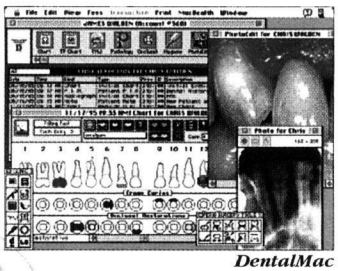

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