Dental Computing
Major Trends and Caveats

By Bruce A. Stephenson, DDS, FAGD

You are on the digital superhighway whether you like it or not. You can drive in the fast lane, the middle lane, or the slow lane, but you can't stop. Computers are everywhere! Even dentists in the slow lane have noticed that someone at their front desk is using a computer. Dentists in the fast lane are already paperless, and have computers jammed onto every countertop and even embedded in some of their walls. And because computers have become such an integral part of modern dental practice management, making the wrong decision can lead to disaster—akin to driving blindfolded! Making decisions based on yesterday's technology or on tomorrow's promised "vaporware" is equally costly and dangerous.

Your whole office, including all your patient records, images, and x-rays can now be stored on a wireless, mobile computer only slightly larger than a clipboard. This means you can buy fewer, more versatile computers and save lots of money. Information technology is rapidly evolving in dentistry. The Tablet PC is the next step in that evolution.

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I have been involved with dental computing since 1979, and have had the opportunity to work with several hundred dentists. I have seen some very stunning successes and some very gruesome "road kill." This article reviews what I consider to be three major trends occurring in dental computing, and briefly outlines the three major liabilities of careless computer use. I hope it provides some "safe driving" and navigation tips regardless of which lane you are in!

THREE TRENDS IN DENTAL COMPUTING

Computerized Management Versus Pegboard Management

Modern computerized office management has evolved from an "electronic pegboard" to a more effective way to administer your practice. Early software simply provided an easier and faster way of doing the same tasks you did with paper-based accounting systems. Newer software provides different and better ways of managing tasks such as billing, insurance processing, recare, and treatment tracking. But using computers to the best advantage means you need to make some changes in office routines.

For example, when you used a paper-based pegboard system for patient accounting, you always sorted patients alphabetically. It was the only way you could find patient information quickly. But computers can sort information instantly by many different criteria. Now it is more effective to sort an accounts receivable report by largest or oldest balance rather than alphabetically by the patient's last name. Obviously, it is more productive to have staff "work" accounts based on the oldest or largest balance instead of starting each time with the A's. But staff need to understand that making these minor changes in their routines allows them to work smarter and more productively without working harder. In fact, with some minor changes, their jobs become much easier!

The manual "aging" of outstanding insurance claims used to be an arduous process with paper-based systems. Now, software provides an instant report of all claims over 30 days and easily "re-bills" the carrier either electronically or on paper in just a few seconds. "Slow lane" dentists who have not yet switched to digital radiography can still save money and prevent the loss of their original x-ray by simply scanning them into their patient computer files. These "duplicates" can be made in less than 1 minute, are much better quality than film-based duplicates, and can be printed for insurance companies for about two cents!

With paper-based systems, it was hard not to lose track of patients when they failed to respond to their initial recare "recall card." With computer-based recare systems, lists of "overdue" patients are easy to produce (sorted by any criteria you wish), and multiple, additional reminder cards or letters can be sent automatically. Everyone benefits: the patient receives better care, the staff's jobs become easier, and the practice is more profitable.

In the pre-computer days, management consultants used to suggest a "chart audit": pulling paper charts and tabulating the amount of treatment recommended but not completed. This was very productive but time-

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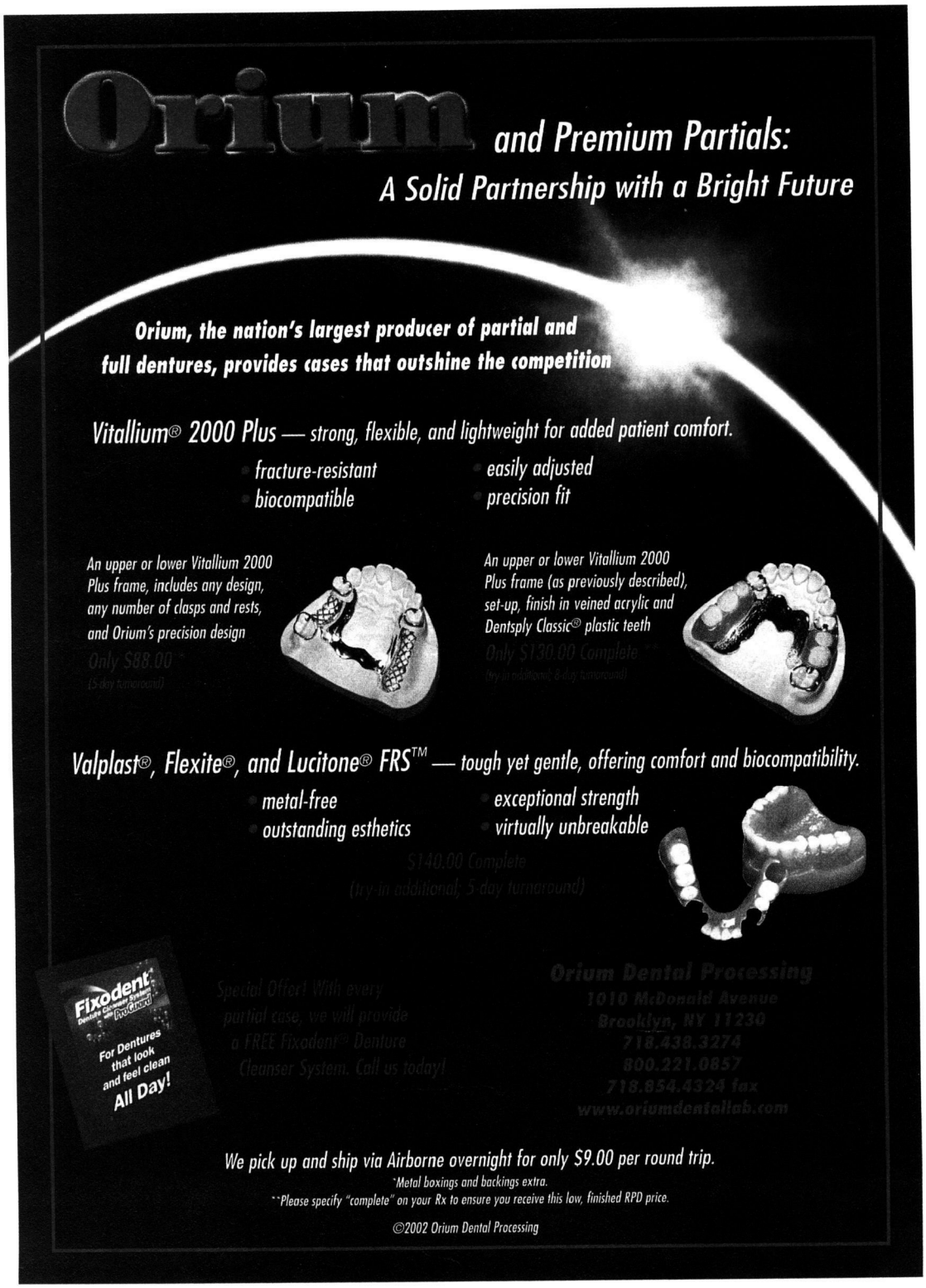
consuming. With current computer systems, an instant report can be generated and sorted by largest treatment plan amount or by specific treatment plan procedures such as "denture" or "pontic." This list can include or exclude every patient in the practice based on the criteria you select. Toward the end of the calendar year, we run a report that shows all the treatment plans entered but not completed during that year, then sort the report by dollar amount of the total treatment plan and by the unused portion of the patients' dental insurance. We then "mail-merge" a letter to these people, reminding them that they will lose this unused portion of their insurance if they do not use it before the end of the year. The computer does all the work, and everyone (except the insurance company!) benefits.

Some advanced management software takes automation to the next logical level by using "office experts" that suggest how staff might most productively use time. The criteria for these suggestions are entirely definable by the individual dentist or office manager. The computer becomes an "assistant for the assistant" but with an infallible memory for details. "I forgot" is no longer an excuse!

These are examples of how small changes in office routines allow you to take advantage of computer-based rather than paper-based management. It is also a great topic for your next staff meeting: "How can we make the office more efficient and our jobs easier by using our computers?"

Paperless Dentistry

Paperless dentistry makes a profound change in the way you practice dentistry. Patient care is enhanced, overhead is reduced, and everyone's jobs get easier. But, like computerized management, it requires some changes in the way you do things. You enter all your information into the computer instead of into a paper-based record. The computer system, not a paper chart or paper records, becomes the repository for all information in the dental office. This includes medical histories, x-rays, treatment plans, billing information, insurance information, and progress notes. No more paper charts! This is actually easy to do and requires very few operational changes in the office. If you already are using a modern dental computer system, you don't have to spend any money at all! The real challenge is the conceptual change that has to happen: you need to embrace the reality that a computer system can be a far better, safer, more reliable place to store information. Then you need to ensure that your computer system is a safe, serious, business computer system by adhering to the specific safety standards discussed below. When you decide to drive in the fast lane of paperless dentistry,



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you don't need a Ferrari but you do need to be sure you are not driving a 50-year-old clunker with four bald tires, worn brakes, and no seat belts!

Paperless dentistry enhances patient care by ensuring that all information is safe, legible, instantly retrievable, and can be sorted by multiple criteria. There are no more lost paper charts. Patients, dentists, and other dental offices are not kept endlessly waiting while we "look for the chart." Chart notes, medical histories, treatment plans, all patient information can be quickly read. There is no more struggling to decipher handwritten notes. Queries such as "show me the patient's allergies," or "show me all the treatment notes pertaining to tooth No. 30," can be immediately displayed. This ready access to information, sorted in more useful ways, reduces errors, encourages better chart reviews, and improves decision making.

Because all record-keeping and processing tasks are much easier and quicker with a paperless system, staff time for these activities is reduced. Also, it is easy to move responsibilities such as charting and appointment scheduling into the operatory where they belong. This decreases front desk "gridlock" and speeds patient processing.

Paperless dentistry provides everyone in the practice an easier way to complete everyday jobs. Need an x-ray for an insurance claim? You don't need to get up, hunt for the chart, then hunt for the correct x-ray and go to all the trouble of duplicating it. The x-ray is in the computer right in front of you, and can be "duplicated" with a few mouse clicks. All the information you need is right at your fingertips! Easier, faster, cheaper, and better!

When someone leaves because of normal employee attrition, you have the opportunity to ask, "Do I really need to replace this person or can our computer systems be used to make the rest of my employees efficient enough that we can save this expense?" Offices are finding that fewer people can get more done with a paperless system. This is why the migration to paperless dentistry is now sweeping the country.

Wireless and Mobile Computing

The third trend, which is just beginning in dentistry, is wireless and mobile computing. Two recent changes now make this possible. First, wireless computer networks have become standardized, widely available, and cheap. Of course, some of these work much better than others, and computer consultants are now learning how to evaluate, test, and install these systems.

The second thing that has happened to spur the wireless and mobile trend is the long-awaited arrival of the "tablet PC." Handheld PDAs (personal digital assis-

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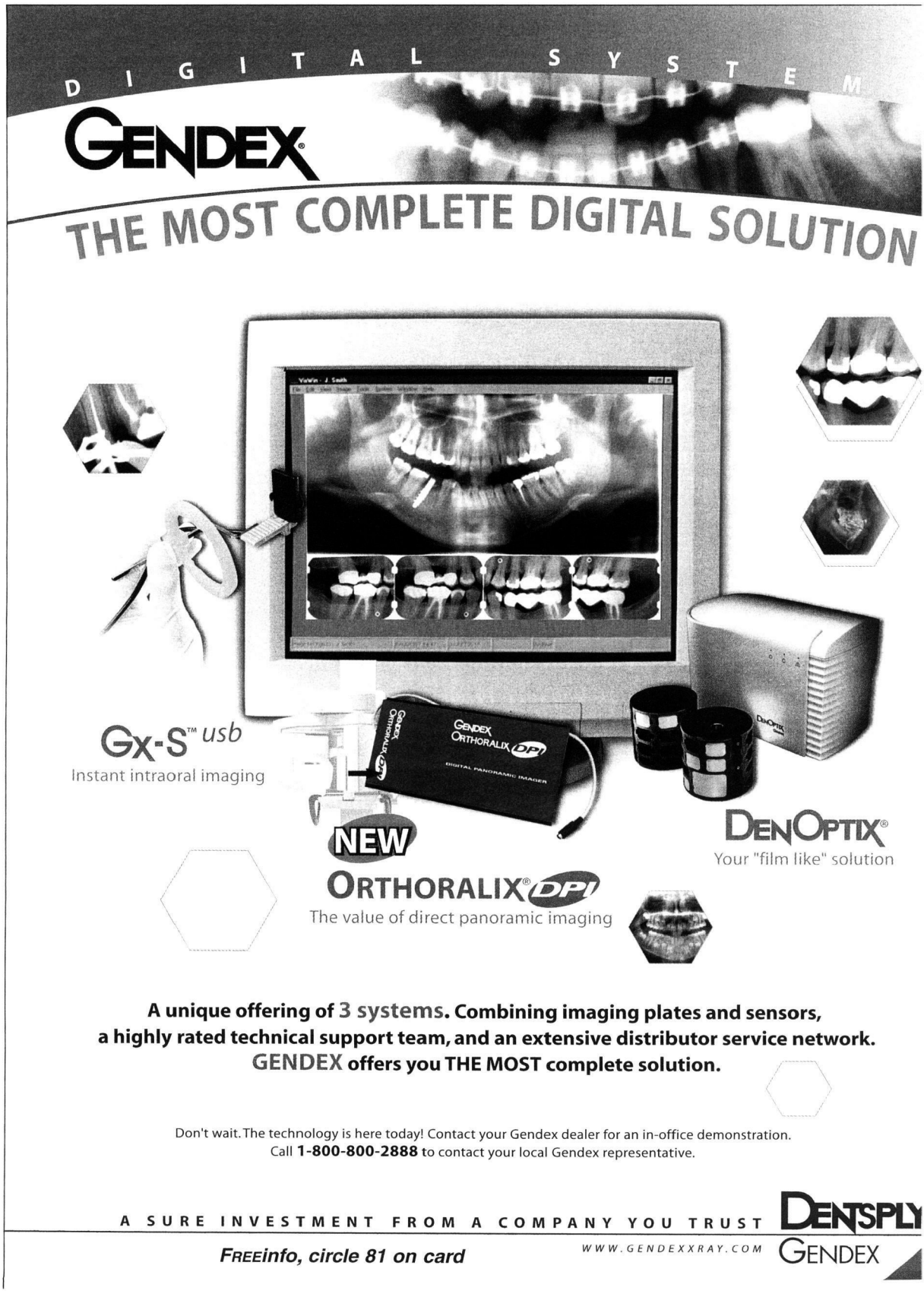

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tants) using the Palm OS and/or Windows CE are valuable for certain limited tasks but are not versatile enough to run a dental practice. However, tablet PCs, although handheld and only slightly larger than a Palm Pilot, are not limited in function like PDAs. They use full Windows 2000 or Windows XP operating systems. They can run any modern Windows-based software, including dental management, imaging, x-ray, etc. They can be used just as any other wired desktop computer in your office, but, because they only weigh about 4 pounds, they can be easily moved from operatory to operatory, or anywhere else in the dental office. They are not tethered by any wires and can be operated while handheld or placed on the operator's knee. They quite literally put your whole practice on a computer the size of a clipboard.

The mobility of these tablet PCs, coupled with the decentralization that has already occurred with in-operatory charting and appointment scheduling, significantly changes the way a dental office should be designed. With wired desktop computers, you needed to have fixed computer workstations situated around the office. You went to the computer to work. For efficiency, you needed more computers than people, and had to put computers in some very tight spaces such as overcrowded operatories.

Wireless and mobile computing changes this. Now, the computer goes with you where you work; you no longer have to go to the computer. You get the benefit of having cordless or cellular telephones, ie, great mobility. This changes how we design operatories and eliminates the need for the expensive duplication of computers. Tablet PCs can do everything full-size computers can do, including acquire intraoral camera images and take x-rays, but fewer of them are necessary. Therefore, the cost of clinical computing drops dramatically. The paramount question becomes not where would you want to use a tablet PC in your office, but where would you *not* want to use one.

NOW THE BAD NEWS: THREE CAVEATS

I have discussed some of the major benefits good computer systems bring to a dental practice. Sadly, the vast majority of dentists I encounter are not ready. Their computing habits are way too sloppy to allow reliable computer-based storage of anything as valuable as their patient records. Dentists need to understand that their dental computers are very serious, critical business tools; they are much different from their casual, anything-goes home computers. Very briefly, I have outlined three areas of badly needed reform.

Unreliable Data Backup

Most dental offices do not have valid data backup. They

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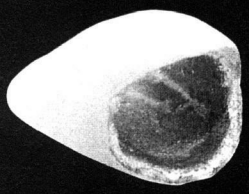
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have a backup "ritual" they perform faithfully each day, but usually the backup medium does not contain enough valid information to "restore" their data. This is such an important part of your "safe computing" that it should be set up by one computer consultant and then rechecked by another knowledgeable, experienced computer consultant. In addition, you should check your backups at least every 3 months by restoring them on another computer to confirm their integrity. If you cannot do this data restore yourself, find someone who can do it for you. Reliable data backup and restore are the most important components of your computer system, and the most frequently overlooked! Backup must be a tested procedure, not a ritual.

The Internet Is Not Safe!

While there are some very real benefits to be derived from the Internet, there are some "hidden costs" and risks that often are not mentioned in the dental literature. Everyone has heard of "malicious software" (viruses, worms, Trojan horses, etc), but now many dental offices are getting firsthand experience. Two years ago it was virtually unheard of for a dental office to become infected. It is now extremely common. It can be very expensive (several thousand dollars), and sometimes impossible, to remove these infections from computer systems. The worst part is that they can infect all your backups as well. More bad news: anti-virus software, even when current, will not always protect you.

Computer hackers, although far less of a threat to a dental office than malicious software, also present potential risk even when you are protected by a firewall. Why would anyone want to hack into a dental office computer? For the same reason they run a key down the side of your new car in a parking lot—just for the heck of it!

You need to make a business decision, based on the possible benefits of Internet use weighed against the very real risks of damage, as to whether or not you want to expose your dental computer system to the risks inherent with Internet use. The safest thing is to access the Internet only from a home computer (ie, an expendable computer that does not contain any patient information and is not connected to your office computer network.) Yes, you can have a home computer in the dental office. The staff lounge is a good place to put it.

Dental Computers Are Serious Business

I used to be a strong advocate of "do it yourself" dental computers. Fifteen years ago, most dentists could take a couple of classes, read a few articles, and do a pretty good job of picking a computer and printer. These days, unless you spend a fair amount c time "keeping up" with com puter trends, you are bette off finding someone to hel you. You don't need to kno

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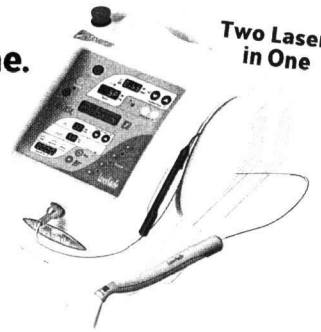

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the difference between a RAM chip and a taco chip, but you do need to have a clear idea of the role of computers in modern practice management. And you need to set up a budget that reflects your needs and expectations. You must examine this new expense line item just as you do each of the other items on your profit and loss statement. (Most P&Ls I see from dental offices don't even have a line item for computers, and if they do, it is not calculated correctly! CPAs, shame on you!) If an increase in "computer expenses" does not lead to an immediate (1 year or less) decrease in other expenses, you (or your consultant) are doing something wrong. The most common mistake I see is spending too much on hardware and not enough on training and support.

Whether you are driving a car on the freeway or managing a dental practice on the digital superhighway you must exercise constant vigilance.

Also, keep in mind that even if you spend $100,000 (usually a mistake) on the latest and greatest computer system that does everything but empty the suction traps, it becomes obsolete immediately and will need to be replaced over the next 3 to 5 years. Computer systems are not like your 25-year-old dental chair that still works great. Dental computer systems are rapidly evolving and require frequent upgrading. But, when done properly, each upgrade should make your practice more efficient, your patient care better, and everyone's jobs easier.

CONCLUSION

Whether you are driving a car on the freeway or managing a dental practice on the digital superhighway you must exercise constant vigilance. Pay attention! The benefits are enormous but mistakes are very costly. So, whichever lane you are driving in, I hope this article provides some insight into the direction we are going and some of the hazards we need to face. Good luck and happy computing!✦

Dr. Stephenson practices in a paperless and wireless restorative dental practice in San Leandro, Calif. He is also the president of Painless Computing, Inc, a consulting, system integration, and "in vivo" testing laboratory exclusively for dental computing. He can be reached through Painless Computing, Inc, at (510) 483-2788 or bruce@painlesscom.com.

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