

6 trends shaping dentistry's high-tech future

Trends shaping dentistry's high-tech future include operatory computers, digital cameras, industry consolidation, greater interoperability, the Internet, and wireless systems.

By Dr. Larry Emmott



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Dentistry's high-tech future is being shaped by a number of trends, including continuing or established trends, industry-specific trends, and new trends.

Continuing trends include the use of treatment-room computers and the software/devices that go with them, including digital cameras. Underway for several years, these trends continue to

grow and are shaping how dentists use technology in the office.

Meanwhile, within the dental-technology industry, there are trends (often remaining "unseen" to the typical dentist) that have made buying technology less risky. These trends include industry consolidation and greater interoperability.

And, finally, there are new trends, just starting to develop, that are shaping dentistry's high-tech future, such as the use of Internet-based services and wireless systems. Many of these new trends are based on technology that wasn't even available a few years ago.

Following are more details on each of these trends. See also the sidebar, "In this issue: 3 DPR high-tech surveys/reports" on page 44, for a list of three related articles on high-tech in dentistry.

Continuing trends

■ Trend: Computers moving to treatment rooms

In dentistry, one of the strongest, ongoing computer-technology trends is the movement of computers from the front office into treatment rooms. The trend has continued to gain momentum for several reasons.

Behind the move is the rapid evolution of practice management software from simple accounting programs to clini-

cally based programs. For example, we now have software for true electronic charts, and the best place to use an electronic chart is, of course, in the treatment room.

Front-desk computers are a mainstay in U.S. dental practices, according to a new *Dental Products Report* survey. Ninety percent of survey respondents said they have computer hardware for the front desk, according to the survey, conducted in September.

Meanwhile, about one-third of operatories are computerized, according to the DPR survey. Thirty-three percent of respondents said they have computer hardware in the operatory. (For more details about the September survey, see "Equipment for the 21st Century," on page 17).

Using a computer with electronic charts in treatment rooms has several benefits. Its use improves interoffice communications, speeds up patient care, and improves recordkeeping. Plus, over time, an operatory computer will pay for itself by saving time and increasing revenues.

In addition to the growing sophistication of practice management software, two complementary factors are behind the increasing general use of treatment-room computers: (1) the cost of hardware has gone down; while at the same time, (2) the number of devices a dentist can use with treatment-room computers has increased.

■ Trend: Growing use of digital cameras

The digital camera is a good example of the growing number of devices that a dentist can use with treatment room computers. The digital camera trend, started four or five years ago, has picked up momentum in the last year. (This mirrors digital cameras' fast growth among the general public.)

Almost half (47%) of responding practices said they currently own a digital camera, according to the new DPR Equipment Survey, while 13% of respondents said they plan to

buy a digital camera in the next 12 months.

Digital cameras have several benefits over traditional 35-mm cameras. Taking clinical photos with digital cameras is much easier, faster, and less expensive than taking them with 35-mm film-based cameras.

However, using digital cameras can be complicated, and they need accessories to work well in dentistry. To overcome these problems, several dental camera vendors offer simple and functional digital camera kits. The vendors

90% of U.S. dental practices have computer hardware for the front desk, while **33%** have computer hardware for the operatory, according to a *Dental Products Report* Equipment Survey conducted in September.

have helped to grow the trend toward digital camera use. (See "Lens, lighting, software," in DPR's "Applying New Technologies" section on page 26, for an overview of Lester A. Dine's digital SLR system for dental photography.)

As a result of such kits and other enhancements to dental digital cameras, dentists now use cameras far more now than they did in the past.

For which applications do general practitioners use cameras (both digital and 35-mm)? Respondents who regularly do clinical photography said they use cameras in the following situations: patient education (97%), cosmetic case presentations (95%), documentation/insurance (94%), documentation/patient records (93%), lab communications (87%), and marketing (67%), according to DPR's August 2003 Clinical Photography Survey. (For more details on this survey and on changing camera trends, see the survey, "How workhorse systems are faring," on page 70.)

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Dr. Emmott on technology trends

Dr. Emmott cites the following high-tech dental trends:

Continuing trends

- Computers moving to treatment rooms
- Growing use of digital cameras

Industry trends

- Industry consolidation
- Greater interoperability

New trends

- Growing use of Internet-based services
- Growing use of wireless systems

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Industry trends

■ **Trend: Industry consolidation**

A behind-the-scenes, but significant trend in the dental high-tech industry has been the ongoing consolidation of many small or regional vendors into large national companies.

For example, at one time, vendors had more than 400 dental practice management software programs available on the U.S. market. Today, the number of such programs has fallen to about 100.

In addition, three major companies dominate the market. These companies have been successful in the dental market for

years with a variety of products, and they have transferred their past successes into sizeable offerings in the technology field.

The big three and examples of their software companies are as follows:

1. **Henry Schein Co.:** Dentrrix Dental Systems Inc. (www.dentrrix.com), and Easy Dental Systems Inc. (www.easydental.com).

2. **Patterson Dental Supply Inc.:** EagleSoft (www.eaglesoft.net).

3. **Eastman Kodak Co.:** PracticeWorks Inc. (www.practiceworks.com), and SoftDent (www.practiceworks.com/Dental_pages/SoftDentHome.asp). *Note:* PracticeWorks has many other software titles under its umbrella.

In October, the Eastman Kodak Co. (www.kodak.com/go/dental) moved into the growing software and technology business when it completed its acquisition of PracticeWorks Inc., an Atlanta-based provider of dental practice management software, including PracticeWorks Office. With the purchase, Kodak also acquired PracticeWorks' subsidiary Trophy Radiologie S.A., the French digital-radiography manufacturer.

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Southern Dental Industries
Standard Page

■ **47%** of U.S. dental practices are currently equipped with a digital camera, while **13%** said they plan to purchase one in the next 12 months, according to a DPR Equipment Survey conducted in September.

The big three not only have consolidated the management software market, but they also have brought into their product lines additional technology to support their core software products. For example, all three offer image-management and digital-radiography options.

The trend toward consolidation is continuing. Major companies that service the dental field are strengthening their product offerings to include many other ancillary products such as cameras, diagnostics, Internet communications, hardware, and more. What industry consolidation means is that dentists can go to one source for many of their high-tech needs. Further, the products they buy from the same company will be compatible, and they will have one source for sales, service, support, and updates.

■ **Trend: Greater interoperability**

A related trend has been greater interoperability. Interoperability is the ability of different products from different vendors to work together. The opposite of interoperability is proprietary.

Proprietary products only work with components from the same company. This greatly limits the dentists' choices, holds the dentists captive to a single product, and reduces competition, which raises prices.

A good example of this trend is digital radiography. Early systems were completely proprietary; users with Brand X had

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to use X sensors, with X capture devices, and X software. There was no way to use a Y sensor with the X software. In fact, there was no way to transfer an X image to Y software.

That has changed significantly. Now many systems offer varying degrees of

interoperability. For example, System X software now can accept images from X, Y, and even Z sensors. Interoperability reduces the risk to the dentist when buying a high-tech product.

For this trend to continue, dentists must push the market by demanding and buying products that offer greater interoperability.

New trends

■ **Trend: Growing use of Internet-based services**

New technology creates new trends. One rapidly growing trend in dentistry is the use of a variety of Internet-based services.

Fifty-eight percent of responding den-

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■ **More than 60% of dentists currently submit insurance claims electronically, a dramatic jump from the 6% who filed e-claims just six years ago, according to data provided by National Information Services, a clearing house that processes claims for Easy Dental and Dentrix practice management software.**

tal offices indicated that they have Internet access, according to the March 2001 *Dental Products Report/Dental Practice Report* Dental Technology Census Survey.¹ In addition, 95% of doctors responding to that survey said they personally access the Internet from their home computer. As for those dental practices not yet using the Internet, many of them probably are planning to connect in the near future.

Some Internet-based services for dentists already are booming, such as e-claims.

More than 60% of dentists currently submit insurance claims electronically, a dramatic jump from the 6% who filed e-claims just six years ago, according to

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IN THIS ISSUE:

3 DPR high-tech surveys/reports

Learn more about high-tech trends and equipment. Check out the following features in this issue:

Equipment for the 21st century

A DPR survey of 50 big-ticket dental items that GPs own or might purchase in the new two years; items range from air abrasion to digital and panoramic x-ray systems. (Sept. 2003 DPR survey)

Page 17

How workhorse systems are faring

A look at DPR's 2003 surveys in three areas: clinical photography, dental handpieces, and lasers. (Jan., Feb., and Aug. 2003 surveys)

Page 70

Lens, lighting, software

An overview of Lester A. Dine's digital SLR system for dental photography.

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data provided by National Information Services, a clearing house that processes claims for Easy Dental and Dentrix practice management software.

As more dentists go online, and as staff members become more comfortable with using the Internet, the infrastructure is in

place to support a host of new Internet applications.

These include the following Internet services for dental practices: buying supplies, data backup, patient financing, office Web sites, Web-based appointment reminders, insurance benefits and eligibility checks, accessing medical infor-

mation such as drug interactions or disease symptoms, specialty referrals with diagnostics sent via the Web—and so many others, it is hard to imagine.

Some of these applications are already in use, some are just getting started, and others will be coming soon. The dot-com economy is clearly on the rebound, and the

online trend is likely to continue.

Trend: Growing use of wireless systems

Another trend based on new technology is the growing use of wireless systems. Wireless networks are now fast, reliable, and secure. This means dentists can carry a mobile device, such as a tablet or PDA (personal digital assistant) from one room to another in the office and do everything they did with a static desktop computer, including entering or retrieving patient chart information or even going online.

Pervasive growth

The pervasive growth of high tech is a trend in itself. Technology is not only changing our dental practices; it is changing our personal lives and even the entire world we live in. Where will this trend take us in the future? I'm not sure, but I do know this: 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.learn.digital.net.

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Reference

1. Questionnaires focusing on computer and Internet usage by doctors were issued to 3,000 general practitioners by the editorial and research departments of Dental Products Report and Dental Practice Report in March 2001. Survey (B) results were tabulated from the 467 questionnaires returned, representing a response rate of 15.6%.

What's online




Index of Dr. Emmott's columns: You can read more columns by Dr. Larry Emmott by going to our Web site: www.dentalproducts.net. On our home page, position your mouse over the **DPR@ctive** tab, then scroll down to and click on, "Consult the Experts." On the "experts" page, click on "Emmott on Technology." Then click on "view columns" to found of the of the featured columns written by Dr. Emmott.

