THE **TAKE-AWAYS**

- If technology can improve the quality of care you can provide, it's a worthwhile investment.
- The rate of adoption of technology in dentistry is likely to continue to increase.

TECH EXPERTS CHART A DIGITAL PATH

The 2010 DPR Tech Census shows continuing shifts in what is considered state of the art, while the Pride Institute Best of Class Technology Awards highlight the products driving those changes as well as the technologies set to shape the future of the industry.

by NOAH LEVINE, SENIOR EDITOR

✴ WEB EXCLUSIVE
Find out the technologies the Pride Technology Awards selection panel thinks will make the biggest impact on dentistry's future at **dentalproductsreport.com.**

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58%

of dentists own digital x-ray systems or digital sensors, while an additional **21%** plan to purchase.

Source: August 2010 DPR Technology Census

Getty Images / James Hardy

THE DIVIDE BETWEEN DENTISTRY'S TECHNOLOGY ENTHUSIASTS AND THE GENERAL DENTAL POPULATION IS USUALLY QUITE WIDE, BUT THAT GAP APPEARS TO BE SHRINKING AS DIGITAL DENTAL TECHNOLOGIES ARE PICKING UP MOMENTUM AND GAINING WIDER ADOPTION AND ACCEPTANCE.→

Evidence of this trend is clearly visible in both the results of the 2010 *Dental Products Report* Tech Census (see "About this survey" p.74), and the products and categories honored as recipients of the second annual Pride Institute Best of Class Technology Awards (see "The winners are" below). In many cases, product categories showing increased adoption or on the wishlists of Tech Census respondents matched up with the categories and products honored with the Technology Awards, which were selected by an expert panel. The panel members selected the winners based on what they believe will have the greatest impact on the dental industry.

"Some of them are one-of-a-kind products, and some of them are products that have competitors but certainly are the best in that particular class," said DPR Technology Editor Dr. John Flucke, who served on the selection panel (see "The experts" p.56). "I think we did a good job of highlighting things that were so new they had no competition, and others that provide a great slant on an established idea."

Panel proceedings

To choose the winners, the panel of seven dental technology experts met via conference call and had what several members described as a passionate discussion and debate over both what products are making a difference and what makes one of those products stand out from others in the same category.

"The fact that the winners were chosen by majority vote and none of them were a unanimous selection from the entire panel is a testament to the large number of high-quality technology products making inroads into the dental industry," said Dr. Lou Shuman, President of the Pride Institute.

Dr. Shuman said he created the Technology Awards last year to help provide the dental community with a resource to turn to when exploring new technologies. He hopes the awards themselves bring attention to worthy products that can help dentists improve the care they provide, while the accompanying Technology Expo at the ADA Annual Session meeting will give dentists hands-on experience with the

THE **WINNERS** ARE

PRIDE INSTITUTE
"Best of Class"
TECHNOLOGY AWARD

FOUNDATIONAL

- ◉ Henry Schein Practice Solutions | Dentrix G4
- ◉ DEXIS Platinum digital sensor
- ◉ Apteryx imaging software

DIAGNOSTIC

- ◉ Tekscan Inc. | T-Scan computerized occlusal analysis system
- ◉ Aribex | Nomad handheld x-ray
- ◉ Air Techniques | Spectra caries detection device
- ◉ Gendex | GXCB-500 HD cone beam system
- ◉ Sirona Dental Systems | CEREC AC for digital impressions
- ◉ Sirona Dental Systems | CEREC for CAD/CAM

THERAPEUTIC

- ◉ Discus Dental | NV Laser

EMERGING

- ◉ Curve Dental | Hero Web-based practice management software
- ◉ ProDrive upgrade turbine
- ◉ Milestone Scientific | STA computer-controlled local anesthetic delivery

DEXIS® PLATINUM
DIGITAL SENSOR

Category: Foundational

This is the second year DEXIS has been chosen as the only intraoral digital radiography system to win the Pride Institute's Technology, Best Product in Class category. DEXIS is an established leader in the digital radiography industry. As a result of its innovation of digital x-ray and digital imaging software, the company's products have garnered numerous awards for their ability to improve diagnosis, facilitate patient education, respect the environment, and to better the work-lives of practicing clinicians.

All aspects of a DEXIS system, including the Platinum sensor released in July 2009, join to create a technological blend of assets for the dental practice that touches all members of the dental team. While direct USB connectivity facilitates maximum portability, TrueComfort™ design allows for quick, precise placement and optimum patient comfort, and affords the opportunity to take vertical and horizontal bitewings and all periapicals with a single sensor. All of these attributes reduce the time it takes to capture an FMX by as much as 20 minutes.

Research shows digital x-ray, one of the most important aspects of the dental experience, facilitates treatment planning, increases patient education and boosts case acceptance. Because this process starts with the radiograph appearing on the screen, success depends primarily on image quality; DEXIS has this covered. Platinum's PureImage™ technology—a combination of highly sophisticated software and premium-quality hardware components—results in 2.2-megapixel images that show in maximum clarity and remain crisp when enlarged.

The easy-to-use DEXIS software also offers easy integration with practice management programs, digital pans and cameras—creating a complete and convenient Imaging Hub. From research and development to in-office implementation, enhancing the imaging process has always been a major focus of the DEXIS team. This latest Pride Award is yet another acknowledgment of the company's achievement. For more information visit: **dexis.com**

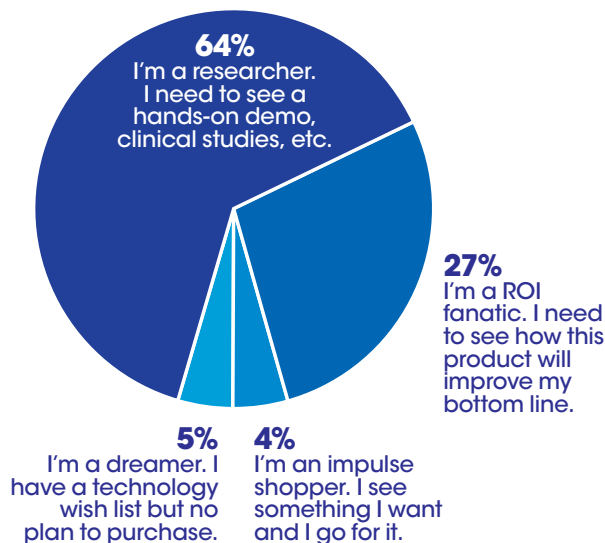technologies in an environment free of sales pressure.

"The introduction of technologies into our space is exploding," he said. "Because of both the amount of new technologies being introduced and the cost of some of these technologies, I felt there needed to be guidance that the dental community could trust and have faith in."

Having a mix of writers, speakers, researchers and educators bringing different perspectives and clinical experiences with technology to the panel was a positive part of the process, said Dr. Titus Schleyer, who teaches at the University of Pittsburgh's School of Dental Medicine.

The debate divided technologies into four categories—Foundational, Diagnostic, Therapeutic and Emerging—and the discussion did not begin or end with a set number of awards to hand out or even a set number or type of products to honor within each category. Dr. Shuman said the fact that only four of last year's winners repeated this year speaks to the pace of innovation in the industry, and the six panel members interviewed for this article all said they are pleased with the final outcome of their efforts.

"That gives you an idea of the amount of introduction of new technologies, as well as the existing technologies focusing very hard to improve on an annual basis," Dr. Shuman said. "The panel was very

Sirona Dental Systems
CEREC® CAD/CAM

Category: Diagnostic

This complete chairside CAD/CAM solution allows users to view, manipulate and verify all aspects of the restoration design, and make adjustments down to a single micron before it is milled. The system can design inlays, onlays, crowns and veneers.

cereconline.com

IN GENERAL, HOW WOULD YOU DESCRIBE YOURSELF IN TERMS OF INCORPORATING NEW TECHNOLOGIES INTO YOUR PRACTICE?

64%
I'm a researcher. I need to see a hands-on demo, clinical studies, etc.

27%
I'm a ROI fanatic. I need to see how this product will improve my bottom line.

5%
I'm a dreamer. I have a technology wish list but no plan to purchase.

4%
I'm an impulse shopper. I see something I want and I go for it.

Source: August 2010 DPR Technology Census

tough on the technologies. There was significant debate before they were chosen."

The value of recognition

Panel member and dental technology writer and speaker Dr. Larry Emmott said creating and handing out awards such as this is about more than just highlighting what a small group of people feel is the best of the best. Instead, he said

the real purpose is to help drive the industry forward by educating and inspiring clinicians while encouraging quality and innovation from manufacturers.

"Part of the idea for this is to help the dental profession use technology effectively," he said. "By focusing on both individual products and categories, the idea is to guide the development of new products in those areas, and to reward excellence."

While not every product brought to the table for consideration was honored, Dr. Parag Kachalia, who teaches restorative dentistry at University of the Pacific, said the end results found a good balance between recognizing well-established categories and brands while bringing attention to smaller innovations that are capable of making a big impact on the industry.

"I think there's a little bit of a misconception that any piece of technology needs to be a $10,000 item to really make an impact, and that's just not the case," he said.

Still, many of the biggest companies and most-popular

51%

of dentists say it is somewhat important to have high-tech offerings to compete with other practices in the area.

Source: August 2010 DPR Technology Census

brands in the industry were presented with the awards, which is something Dr. Emmott said reflects the fact that while, "the industry leader isn't always the best, it often is. People have chosen it for a reason." Dr. Schleyer added that panels selecting the Technology Awards in the future have a great opportunity to put a spotlight on the innovations coming from smaller companies with great ideas but limited marketing and exposure.

For Dr. Flucke, the entire process was a great and validating experience. Based on participation guidelines, he was not allowed to vote in the category that included the Gendex GXCB-500 HD cone beam system he promotes, so he was excited to see it was selected as best of class along with other digital technologies he felt were important to recognize, and most importantly, he feels he now has more allies in his efforts to promote wider adoption of technology in dentistry.

"It's an entire choir of voices out there saying how important these technologies are," he said.

Survey says

According to the results of the 2010 Tech Census, that message is starting to make real headway in the industry. Viewed as a whole, the survey shows a picture of relatively widespread adoption of core digital technologies, increasing numbers of dentists using bigger-ticket and specialized technologies, and many of the product categories spotlighted by the Pride Awards topping dentists' wish lists.

In the Foundational category, the panel focused on core items that fit into every practice such as practice management software where Dentrix G4 was chosen, and digital radiography where the DEXIS Platinum digital sensor was honored. While not every practice has adopted those products or technolo-

gies, calling them "foundational" is no longer a stretch, as 87% of survey respondents said they own practice management software, while 58% own digital radiography systems with an additional 21% planning to purchase the technology (see "What you have, what you want" p.70).

Writer and speaker Dr. Marty Jablow said he feels honoring those technologies as foundational makes a lot of sense because they have the potential to change the way dentists practice on an everyday basis. Switching to digital radiography may require new training and infrastructure investments, but the benefits will quickly be realized and noticed throughout the practice.

"The investment is well worth the time because there are savings in various areas that continue on in personnel time, and it's also greener," Dr. Jablow said. "Most dentists don't understand the benefits of some of these efficiencies."

Dr. Schleyer agreed that those technologies truly are foundations for a practice, and said, "I cannot imagine how you can run a practice without that." However, he cautioned that every technology will not be a fit for every practice, or for every patient who comes into a practice using the technology. Learning how and when to best use a technology is the key to getting the most from the investment.

The technologies honored in the Diagnostic category are some of the areas seeing the greatest growth with cone beam and CAD/CAM the two technologies most often cited when respondents were asked to name what technology they would add if money were not an issue.

According to the survey results, chairside CAD/CAM is now in 18% of practices, up from 15% in last year's Tech Census. An additional 11% of respondents said they plan to adopt the technology, and Dr. Kachalia said this is good for the industry because the technology continues to expand in scope.

"We're headed to a point where in-office CAD/CAM is going beyond simple single-unit restorations," he said. "We're thinking about it in much broader terms and treatment planning approaches."

Caries detection technologies, such as the Best of Class Spectra from Air Technologies, also made significant

headway in terms of adoption throughout the industry. Currently 42% of respondents say they have some kind of caries detection in their practice and if the 12% who plan to purchase follow through, the technology will be in place in more than half of American dental practices.

"The days of the explorer are gone. This technology is going to change the way we practice dentistry for the benefit of the patient and the practice," Dr. Shuman said when discuss-

ing the potential of caries detection technologies.

Dr. Flucke agreed, and said while the systems will continue to improve, the technology is not something from the future, but a key tool for dentists today. Along with diode lasers, he believes caries detection systems can have some of the biggest impact on the care dentists can provide to patients and they are not devices coming in the future, but technologies ready for widespread use.

WHEN CONSIDERING WHAT NEW TECHNOLOGY TO PURCHASE, HOW IMPORTANT IS INTEGRATION — THE PRODUCT'S ABILITY TO INTERACT WITH YOUR EXISTING COMPUTER SYSTEM, IMAGING SOFTWARE, PRACTICE MANAGEMENT SET-UP, ETC.?*

- 4% Not important at all
- 15% Somewhat important
- 19% Important
- 63% Very important
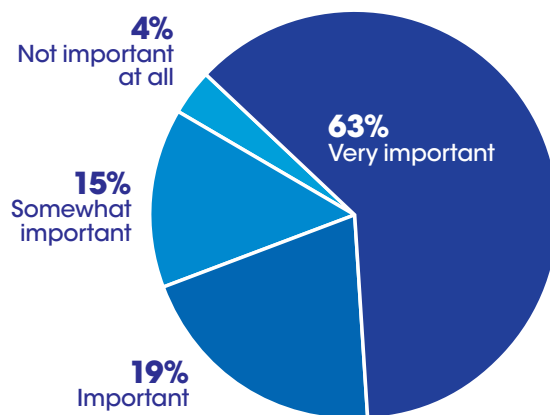
Source: August 2010 DPR Technology Census
*Totals do not equal 100% due to rounding.

THE EXPERTS

A panel of leading technology experts* helped select the winners, and shared their thoughts on where technology fits within the dental industry.

- **Lou Shuman, DMD, CAGS** — President of Pride Institute
- **John Flucke, DDS** — writer, speaker and Technology Editor for Dental Products Report
- **Paul L. Child, Jr., DMD, CDT** — CEO of Clinicians Report
- **Titus Schleyer, DMD, PhD** — Associate Professor and Director, Center for Dental Informatics at the University of Pittsburgh, School of

Dental Medicine
- **Marty Jablow, DMD** — writer and speaker
- **Parag Kachalia, DDS** — Assistant Professor of Restorative Dentistry at the University of the Pacific, Arthur A. Dugoni School of Dentistry
- **Larry Emmott, DDS** — writer, speaker and dental marketing consultant

* Each expert divulged any relationship with manufacturers which prevented them from voting in any related categories.
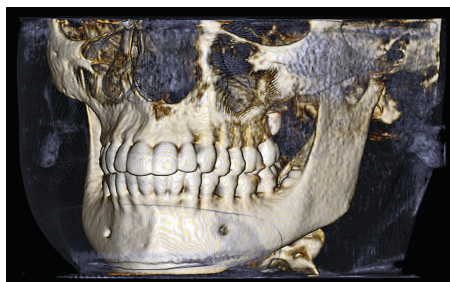
GENDEX GXCB-500 HD™
CONE BEAM SYSTEM

Category: Diagnostic

Gendex has a long and well-respected history in the dental world. In February 2010, the company launched the GXCB-500 HD™ Cone Beam system that, along with High Definition imaging, touts scan size flexibility, fast workflow, and integration capabilities.

The i-CAT®-powered system uses proprietary and patented technologies of a single-sensor design and capture processes to deliver both detailed, precise 3D scans and high-quality 2D panoramic radiographs.

To facilitate its use in a myriad of procedures such as TMJ assessment, implants and endo, the GXCB-500 HD has adjustable scan sizes. Starting with two diameters of 8 cm and 14 cm, the height for both can be raised or lowered from 8 cm to 2 cm and anywhere in between. The radiation output becomes less as the height is lowered.

One feature that is particularly important in the dental professional's overall radiographic protocol is the ability of the GXCB-500 HD to capture a traditional 2D panoramic image. This gives the dentist an option of the lower-dose 2D radiograph, rather than relying solely on pans built from 3D scans—or 'reconstructed' pans. Additionally, having a 2-in-1 system with multiple 3D scan sizes and a 2D pan function makes for a better investment and saves valuable office space.

Not only does it save space, the GXCB-500 HD saves time. The scanning process is quick, and the scan data easily transfers into a variety of 3D planning software programs. This means clinicians can scan and reconstruct in as little as 30 seconds—then start planning immediately.

As shown in DPR surveys, there is an increasing demand for high-tech treatment applications. Suitably, the GXCB-500 HD integrates with specialized restoration, digital impression, and CAD/CAM planning programs, such as those that create surgical guides, to efficiently gain more precise, reliable treatment results. For more information visit: **gendex.com**

"These are things that are now. I'm using these devices everyday," he said. "People need to avail themselves of these technologies and use them now, because they're game changers."

For diode lasers it seems the general dental population is starting to catch on in a big way. In last year's Tech Census, 17% of respondents said they owned a diode laser. This year, that number jumped to 30%, with an additional 18% of respondents saying they plan to purchase a laser for soft-tissue applications.

Every member of the panel said the recent drop in price for diode lasers is a big reason for greater adoption. While Dr. Kachalia said he thinks the prices have reached a point where the technology can become commonplace throughout the industry, Dr. Jablow said dentists still need to dedicate themselves to learning to use their technology investments.

"I think the price drop in diode lasers was a big deal," he said. "I think the price drop has seen many more lasers come into the hands of dentists. But there is one caution.

The training on these lasers has not caught up."

Of course, not every technology is on the rise. While cone beam technology tops people's wish lists, and the Technology Awards panel members all strongly believe in the diagnostic benefits of the detailed 3D images cone beam CT can provide, just 7% of survey respondents said they had already invested in a cone beam system.

Price is still the biggest hurdle to greater adoption of cone beam systems, and even if prices come down, not every general prac-

TEKSCAN INC. T-SCAN® III COMPUTERIZED OCCLUSAL ANALYSIS SYSTEM

Category: Diagnostic

The only system available to digitally measure dental occlusal forces and quantify how well-balanced a patient's occlusion is, the T-Scan III makes accurate occlusion measurement as simple as having a patient bite down on the ultra-thin sensor while the computer analyzes and displays the data.

Because the T-Scan can measure force over time, it is an indispensable tool for appraising the sequential relationships of a mandibular excursion. It allows users to view a patient sliding from MIP or CR position into a lateral excursion, which can be instrumental in locating occlusal interferences, determining the relative force on each interference, and evaluating the potential for trauma caused by the occlusal interferences. The data is especially useful on a long-span fixed prosthesis built upon implants, or any dental case where occlusion plays a role.

T-Scan's digital occlusion movies can be stored and retrieved as needed, and the vivid, full-color graphics can be transferred into other documents for patient records or insurance reports. These same images can be used as impressive patient education movies that allow patients to see for themselves the improvements made to their bite. For more information visit: **tekscan.com**
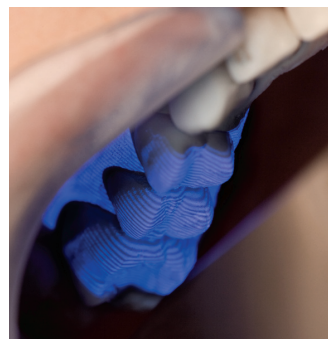
Sirona Dental Systems CEREC® AC
digital impressions

Category: Diagnostic

Designed to provide a balance of speed, ease of use, and precision for digital impressions for use with CEREC Connect labs nationwide, the system's Bluecam technology can capture half-arch impressions in 40 seconds and full-arch impressions in 2 minutes.

cereconline.com

DISCUS DENTAL NV MICROLASER

Category: Therapeutic

Packing the full power of a desktop soft-tissue laser into a cordless, pen-sized package, the NV Microslaser provides freedom in the office and other operatory.

Built from sturdy aluminum and weighing just 1.9 ounces, the laser is designed to hold up to all-day use while remaining comfortable for the clinicians using it. The 2W laser works in continuous and pulsed modes and comes programmed with eight pre-set procedures. With tips available in both 5- and 7-mm sizes, the system is ready to handle all soft-tissue applications.

The disposable tips are ready to use right out of the box, and they attach magnetically for a secure connection and optimal alignment. The NV Microlaser system comes with two rechargeable batteries that provide more than 8 hours of standby time when fully charged. For more information visit: **discusdental.com**

64%

own an intraoral video camera, a technology that was among the most frequently cited by survey respondents asked to name the technology that provides the best return on investment.

Source: August 2010 DPR Technology Census

titioner will have a regular need for cone beam imaging. Dr. Flucke said he believes dentists are very aware of the technology, but are still not fully grasping the potential of what it can do for their practice. However, Dr. Jablow said that will eventually change because the imaging benefits from cone beam are, "something that stands above everything else."

"It just gives more information, and allows the dentists to have all the information when they're talking about implants or surgical procedures, and in many cases, to be able to perform those procedures less traumatically," he said. "More information allows you to be a better dentist."

Technology matters

Improving dentistry is really the point behind adopting new technologies and the reason for creating and presenting the Technology Awards. Dr. Shuman said part of the panel's discussions focused on not just what technologies are brand new and exciting, but on which of these technologies will have the longevity needed to provide lasting benefit to the dentists who adopt them.

Publicizing awarded technologies has the potential to impact buying habits, Dr. Shuman said. So as the Technology Awards establishes itself as an annual assessment of the state of the art in the industry and an informational resource for the dental community, he wants to make sure the selection panel looks at the technologies from a variety of perspectives, including the company and training behind the products, so the

program can help improve the overall quality of care being provided.

"When you start to look at choosing technologies, those companies that train the best, service the best and plan upgradability will have significant impact on decision making," he said.

To Dr. Flucke, that impact on the patient experience is the driving force behind his personal adoption of new technologies and his efforts to promote technology throughout the industry. He said providing the best care to his patients is always his goal, and technol-

ogy is a vehicle that allows him to do just that.

"My determining factors on technology are if it allows me to provide better care, or the same level of care but provide it either faster or with less discomfort for the patient, that's all I need to know to make a purchasing decision," he said. "If you really have your patients' best interests at heart, you're going to embrace technology because that's the engine that drives the world."

A key factor that ties many of the technologies honored by the awards together is the ability to provide dentists with more detailed information about their patients. Dr. Jablow said better information at the start of a procedure can mean better outcomes and less invasive treatments for the patient.

So while every dentist doesn't need to adopt every single new technological development, they should be aware of industry trends and staying within the middle ground in terms of adoption. Staying informed, researching new developments and moving to adopt the technologies that fit an individual practice will lead to an overall higher quality of dental care, Dr. Jablow added.

That is a message that seems to be getting across as 64% of Tech Census respondents describe their approach to

technology as "a researcher" who looks for data and hands-on experience before purchasing. An additional 27% said a proven record of return on investment is the key factor triggering their technology purchases. Dr. Kachalia said those are the right approaches because not every technology will work for every practice, and having trusted sources for finding out about new technologies is critical so clinicians can truly understand the impact of their technology investments.

"At the end of the day, it doesn't matter what technology you have if the patient's experience or the doctor's experience is not improving," Dr. Kachalia said. "If there's not an end clinical outcome change, efficiency change or greater patient comfort, it's great to have but it's not needed."

Setting the stage

Just knowing about the benefits of a new technology often is not enough to make an investment really pay off for a practice and its patients. Dentists need to have a good foundation of core technologies to maximize use, and Dr. Emmott said a big part of this is realizing computers are more than just business machines for the front office, and should be fully integrated through-

HENRY SCHEIN PRACTICE SOLUTIONS DENTRIX G4 PRACTICE MANAGEMENT SOFTWARE

Category: Foundational

Dentrix Mobile keeps you in touch with your practice. Anytime. Anywhere.

Now when you leave the office, you can be just seconds away from seeing the information that drives your practice.

Dentrix Mobile gives you secure access to the important patient and schedule information you use to manage your practice—all from your smartphone or mobile device. With Dentrix Mobile, you can quickly see patient details, such as medical alerts and prescriptions, as well as appointments. Designed for Dentrix G4, the leading dental practice management system, Dentrix Mobile runs on the most popular smartphones and mobile devices. Because no Dentrix data is stored on your mobile device, no one can access your information if you ever misplace it. Best of all, Dentrix Mobile is included with your Dentrix Customer Service Plan at no additional cost.

Stay on top of your practice's financial health

In any economic climate, being efficient and keeping on top of your practice's financial health is imperative. Dentrix Advisor helps dental practices analyze key performance indicators to gain a better understanding of strengths, weaknesses and opportunities. Practices are able to leverage this data to make adjustments in key areas to reach their potential. Developed with input from The Pride Institute, Jameson Management Consulting and other practice management experts, the Dentrix Practice Advisor provides an effective way to instantly transform your available data into actionable information that will help your practice become more efficient and profitable. The Dentrix Practice Advisor compiles reports that offer comprehensive practice analysis, provides a snapshot of your practice's health and carefully monitors office production so you can see what adjustments need to be made. For more information visit: **dentrix.com**
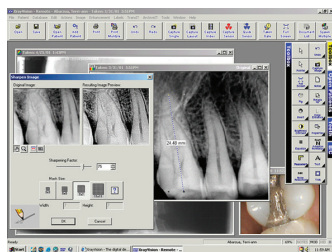
Aribex NOMAD
handheld x-ray

Category: Diagnostic

Powered by a rechargeable battery, the portable, handheld NOMAD x-ray is an economical option that adds flexibility to a practice's workflow. Easy-to-use, it features an external backscatter shield and internal radiation shielding to protect the operator from radiation exposure.

aribex.com

Apteryx
imaging software

Category: Foundational

Apteryx's XrayVision® and XVlite™ imaging software suites capture, enhance and display x-rays from most digital sensors and other radiograph sources, as well as full-color images from intra- and extraoral cameras. The images are organized into a patient database that can be integrated with practice management software.

apteryxware.com/dental

Milestone Scientific STA™
computer-controlled local anesthetic delivery

Category: Emerging

This computer-controlled local anesthesia delivery (CCLAD) system enhances the injection process for both the dentist and the patient. Audio and visual confirmations make injections more accurate and less stressful.

stais4u.com

Air Techniques
Spectra™ caries detection device

Category: Diagnostic

Operating using fluorescence technology, this ergonomic handheld digital imaging instrument aids in detecting caries visually. The non-invasive digital imaging enables dentists to identify the exact location of potential carious lesions on tooth surfaces.

airtechniques.com

out the practice with a presence in the operatories.

This set-up can help a practice make the move to a chartless or completely paperless environment and more fully integrate digital technologies on the clinical side of the practice. Dr. Emmott said that eventually will lead to greater use of the Internet for clinical purposes along with the front office uses, such as billing and patient communications, that are already being successfully integrated into the workflows of numerous practices. The key to everything will be solid computer network software systems that can communicate with each other.

"If you don't have a good foundation of technology, adding on the advanced stuff very rarely works well. If you have good basics, adding on the next level is relatively easy and relatively efficient," he said. "It's not just having the technology, but it's using it effectively."

Once again, this message seems to be gaining widespread acceptance in the industry with 63% of survey respondents saying integration with existing systems is very important and an additional 19% designating it somewhat important.

Curve Dental Hero
Web-based practice management software

Category: Emerging

An alternative to traditional server-based applications, this full-featured practice management suite is Web-based and HIPAA-compliant. Patient data is stored off-site at redundant and secure data centers providing protection and continuity for practices.

curvedental.com

"We are, whether we want it or not, in the process of digitizing the world," Dr. Schleyer said. "It's a trend that you can't put your head in the sand and say you're not going to do this, because it means you'll go the way of the buggy whip 100 years ago. The way we handle information affects the core work of clinicians, and we will not be able to do things down the road without these digital technologies, and that's why we need to make sure we stay on top of them." This is why research in dental informatics, a discipline in which Dr. Schleyer is an international leader, is needed to inform how best new technologies can help support clinicians and patients. "Without it, it is like trying to build a house without an architect," he added.

Generation next

But staying on top of the technologies does not mean rushing in if you're falling behind the state of the art. Dr. Jablow said change is coming, but more like a glacier than a wave so there is always time to plot a path to integration and return on the technology investment.

Even as prices for some technologies begin to fall, it is important to research

ProDrive Systems
upgrade turbine

Category: Emerging

Providing smoother cutting and enhanced precision, this turbine upgrade for a variety of handpiece models features a proprietary engaged turbine and triangular bur system lock together for improved cut performance with less vibration and heat for a more comfortable procedure for both patient and clinician.

prodrivesystems.com

and spend time evaluating any technology investment. Proper training should be part of that planning. Staff involvement also is key.

"It would be a daunting task to integrate all of these things at once, and in fact in most cases that would end up in a failure," Dr. Jablow said. "What you want to do with any of these technologies is set up a plan. Give yourself enough time to integrate it in, and in most cases you'll never go backwards."

Waiting for prices to drop before adopting is not always a wise move. Dr. Emmott said that while prices on consumer electronics almost always drop significantly after a time, dental technology prices do not always drop to the same degree because of the relatively small size of the industry.

Still, while adoption of technologies such as cone beam remains slow, the pace is likely to increase as a younger generation of dentists raised on computers and the Internet continues to enter the industry. Both Drs. Schleyer and Kachalia said their students are being trained on technologies such as CAD/CAM, cone beam and lasers.

Dr. Schleyer said the current generation of students are used to being in a paperless environment and are likely to question working in a practice that continues to keep paper records. He said the next generation of dentists could be change agents for the profession and

industry as they believe strongly in using technology to provide the best possible patient care.

"I do see it as our job to expose students to the best technologies for which there is evidence that they actually do help improve care," Dr. Schleyer said. "Technology—and the rate of change of technology, more importantly—is something that's completely normal for them. The newer generation of students and practitioners, I think they're much more likely to adopt new paradigms."
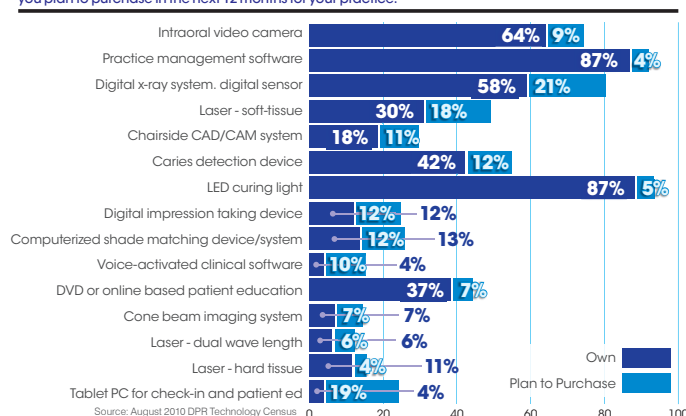
Dr. Kachalia said he thinks the current generation in dental school has an easier time with technology because they've grown up in a world with iPods and e-mail. Instant access to information is almost a given to them, so while they are certainly being taught the same fundamental principles of dentistry, they have an easier time fitting technologies into their model of providing care.

"All the fundamentals are there, but they're able to see things in a 3D graphic world better," he said. "That's what they can adapt to, that's what they like better. To some degree they're pushing education to really look at these new realms that are out there."

But learning about new technologies is not just something for new students, and Dr. Kachalia said there is no reason dentists should be practicing the exact same dentistry at the end of their careers

WHAT YOU HAVE, WHAT YOU WANT

Indicate which technologies you currently own, and which technologies you plan to purchase in the next 12 months for your practice.

Technology	Own	Plan to Purchase
Intraoral video camera	64%	9%
Practice management software	87%	4%
Digital x-ray system, digital sensor	58%	21%
Laser - soft-tissue	30%	18%
Chairside CAD/CAM system	18%	11%
Caries detection device	42%	12%
LED curing light	87%	5%
Digital impression taking device	12%	12%
Computerized shade matching device/system	12%	13%
Voice-activated clinical software	10%	4%
DVD or online based patient education	37%	7%
Cone beam imaging system	7%	7%
Laser - dual wave length	6%	6%
Laser - hard tissue	4%	11%
Tablet PC for check-in and patient ed	19%	4%

Source: August 2010 DPR Technology Census

as they did when they first began seeing patients. Instead, he said the industry needs to do a better job of providing lifelong education that keeps the entire industry up to date on the best available technologies and techniques for providing patient care.

Dr. Shuman said this upcoming generation of dentists who are so comfortable with technology provide one more reason for practices to keep up to date. Young dentists are going to be looking for practices to take over, and they're going to be far more attracted to a practice with technology than a practice that is barely wired. But regardless of the way technology can impact a practice's value, Dr. Shuman said technology should be a

serious consideration because of how it can impact patients.

"We feel very strongly that even at the end of your career you should be passionate about looking at new technologies," he said. "At the end of the day, no matter if you're at the beginning of your career, the middle or the end, our passion as practitioners, and our goal as practitioners, is to provide the very best care we can."

ABOUT THIS SURVEY