Lab Study

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An Overview of Challenges and Opportunities Facing Dental Laboratories

By Andy Jacobson, Karwoski & Courage

A report issued by the American Dental Trade Association (ADTA) in 2000 provided favorable projections for U.S. spending on dentistry, including estimates such as $90 billion by 2005, and $360 billion by 2025. Today, despite a slowing economy and tight labor market, there remain various indicators of continued progress within the dental industry. For example, in recent years the dental laboratory industry has managed to streamline operations, develop stronger hiring practices, and improve service to dentists, as well as patients. This article, part one of a three-part series expounding on market research conducted by 3M ESPE, will feature a series of individuals who demonstrate this resilience.

Maximizing Results in an Economic Downturn

The multitude of research compiled on the baby boomer generation reflects their tendency to engage in elective and cosmetic dentistry, a trend considered certain to drive demand. Further, 3M ESPE market research conducted on dental laboratories details that esthetics has remained the top issue for both small and large laboratories. In the current marketplace, dental laboratory professionals are developing and implementing new strategies to meet these needs.

During a stronger economy, George Halverson, president of Excel Dental Studios, Inc., developed his business on referrals. Now, he conducts Continuing Education (CE) programs on a variety of subjects and follows up with attendees via direct mail pieces. Halverson targets dentists in the 33-50 year-old age range and seeks business in rural areas, as well as within the outlying Minneapolis/St. Paul suburbs where his laboratory is based. “There is a worthy target market that is doing business with just a mailbox,” he explains.

Mark Jackson, owner of Precision Ceramics of Montclair, Calif., consistently has run a 100 percent mail order business. Accordingly, the events of September 11, 2001, greatly impacted his laboratory, as he only received 60 out of 400 expected units the following Monday because of grounded cargo planes. Despite this setback, Jackson finished 2001 even with his projected sales goals, and this past December, posted his best month in two years. He credits his success with continuing to explore new technologies; namely, CAD/CAM systems for developing all-ceramic restorations. “It’s a dog-eat-dog marketplace,” says Jackson. “The only way to survive and then grow is to offer something your competitors don’t have.”

Greg Harris, an industry consultant and former director of marketing and sales for Dental Services Group, believes laboratories should use the slower economic climate as an opportunity to revisit business goals. He recommends not attempting to “second guess” the market or satisfy all customers. “A common mistake made by laboratories is equating volume with success,” explains Harris. “By appropriately positioning yourself within the marketplace, especially one that is being squeezed, you can demand a premium price and your need to produce units will go down.”

Colleagues of Halverson, Jackson and Harris, including David Lampert, owner of Freeport, N.Y.-based Town and Country Dental Laboratory and president of TEREC Lab Consortium, and Renny Challoner, currently a principal in N.E.W. Paradigm Advisors LLC of Green Bay, Wis., immediate past chairperson of the ADTA and former owner of Lord’s Dental Studios, both have
witnessed a shift to more traditional porcelain-fused-to-metal (PFM) materials and removable products caused by the economic downturn. Both men see dentists who often are reluctant to take advantage of some of the technological breakthroughs that have occurred in the industry. But, as will be demonstrated throughout the article series, a potential solution may involve introducing dental students to new and innovative products and materials during their schooling.

The current economic downturn has impacted dental manufacturers, in addition to laboratories. Because of their inherent structure, most manufacturers have chosen to face challenges on a macro level. “As most dental manufacturers are global in nature, an economic downturn affects you on all shores and accordingly, you must be prepared to weather global economic indicators,” explains Tim Kinsky, global brand manager, Lab Products, 3M ESPE.

Like laboratory owners, dental manufacturers see tremendous marketplace potential despite the current economic conditions. Kinsky points to 3M ESPE research that indicates a rise in demand for esthetic treatment options; for example, of approximately 50 million crown and bridge procedures performed in the United States in 2002, 20 percent were metal-free. However, during this same timeframe, there also has been a substantial decrease in the number of professional care providers, resulting in production constraints. As a result, laboratories must make a solid commitment to training existing employees and uncovering ways to essentially do more with less.

The Importance of Fostering Professional Development

Based on an ADTA-commissioned study in 2000, out of 275 million potential patients, there were 5.5 billion teeth, 38 million edentulous adults, 52 million with adult peri disease, 49 million with failing restorations, 58 million with untreated conditions and 40 million with sensitivity issues. Concurrently, all studies in recent years indicate that there has been a marked decline in the enrollment of dental lab students, with the National Association of Dental Laboratories listing 50 accredited dental technology education programs in the United States. In response to this divergent information, the group of dental laboratory professionals featured in this article series have emphasized quality over quantity, focusing on prospective patients over staff shortages, and successfully utilizing a tight labor market.

“Our responsibility to grow business comes from our ability to train,” says Lampert, who, along with his colleagues, has put extensive internal staff training systems in place. Although research points that the average age of ceramists is currently 45, most of the laboratory owners profiled in this series typically employ younger workers. Believing that employees bring varying corporate cultures and skill sets to a new job, Lampert utilizes the P.T.C. System from Blue Dolphin both with entry-level and advanced workers. He credits his high levels of staff retention with initiatives such as offering good benefits, paying employees on time, and treating them respectfully.

While also providing a competitive benefits package, Jackson has established an incentive program for his employees in which various tasks are assigned different skill levels that coincide with a varying pay structure. He believes this system provides not only more opportunities to improve salaries but also a way to ensure his employees constantly strive to sharpen their professional skills. Jackson also considers employees when developing his marketing plans and recommends aggressive recruiting as a response to a tight labor market. He maintains a booth every year at Lab Day West, but as he recalls, “I’m the only lab who’s there to recruit employees.”

Approximately two years ago, Halverson supplemented his training and retention efforts by opening The Dental Learning Center three miles from his office. Open to new and veteran Excel Dental Studios employees as well as workers from other laboratories and manufacturers, the
Center features instruction on procedures like implant restorations and how to use multiple porcelains. However, before attending classes at the Center, Halverson’s employees first must pass through a rigorous screening process, comprised of tests on manual dexterity, depth perception, mechanical aptitude and personality indicators.

With the technicians in Challoner’s laboratory typically ranging in age from 25-30, he tends to offer the more complex cases to those with advanced skill levels, yet still provides a distinct career path for all his workers. He utilizes both in-house and outsourced trainers and offers a team environment where opinions are sought and offered. “We want to ensure all our employees believe they are part of the process,” he explains.

Harris concurs with his colleagues’ approaches, emphasizing that the decline in graduation rates means laboratories must be diligent regarding recruitment, training and retention. As with the current economic situation, he equates labor shortages with opportunities to revise pricing accordingly. Believing laboratory owners should focus on “aptitude and attitude” and “nurturing and managing” when dealing with employees, he also suggests raising technicians’ salaries, and in turn, the prices of restorations. “Remember that, unlike a dentist, a laboratory technician doesn’t get to see what’s inside the patient’s mouth,” he says. “That’s why as an industry we need to make an extra effort to provide a sense of job satisfaction.”

Regardless of which method ultimately is used to energize employees, growth opportunities exist for laboratories willing to take the initiative. According to 3M ESPE research, for example, only 2-4 percent of restorations today are being developed utilizing CAD/CAM technology – a percentage expected to be significantly higher in the years to come. At the same time, a current drive toward more-esthetic, non-metal materials coincides with a shortage of professional care providers, presenting laboratories with a challenge. “Those laboratories being proactive are the ones who are going to capitalize on esthetic trends in dentistry,” says Kinsky. “Their efforts will ultimately shape the course of the future.”

This is the first in a three-article series featuring research compiled by 3M ESPE and testimonials from industry leaders on the challenges and opportunities facing the dental laboratory industry. Look to next month’s article for a view of how these professionals are reconciling innovative technological advances with a reluctance to change among their peers.

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Straightening Out the Learning Curve

Reconciling Advances in Product Technology with a Reluctance to Change

By Andy Jacobson, Karwoski & Courage

This is the second in a three-article series featuring research compiled by 3M ESPE and testimonials from industry leaders on the challenges and opportunities facing the dental laboratory industry. Last month’s article offered an overview of how industry professionals are streamlining their business operations and training and retention efforts amid a softening economy.

The past few years have seen a literal revolution in the development of all-ceramic dental materials, with manufacturers creating products that offer improved strength and esthetics as well as biocompatibility. Further, advances in technology have enabled dental laboratories to begin developing a restoration with the touch of a computer button and end with a product pleasing to both dentists and patients alike. At the same time, research indicates that dentists have yet to move away from their comfort zone — opting, in many cases, to witness progress from a distance. It’s no wonder then, that the responsibility now largely falls to the dental laboratory industry to help these individuals become active participants.

Despite all the recent advances in materials, market research details the largest percentage of dental laboratory output continues to involve porcelain-fused-to-metal (PFM) restorations. For example, most crowns developed today are utilized to place failing restorations, and as the insurance industry still bases reimbursement on PFM, it is what dentists typically prescribe. However, according to 3M ESPE research, between 1999 and 2002, the percentage of crowns and bridges developed without metal has increased from 12 to 22 percent. Further, the research indicates that dentists with 13 or fewer years of experience are more likely to prescribe esthetic crown and bridge treatment options. Change clearly is in the making.

In the first article, we met a series of dental laboratory professionals who are streamlining their operations and strengthening employee morale amid a slow economy and declining enrollment in technical schools. Here they discuss how they believe change can come through word of mouth, and successfully benefit all interested parties.

Be True to Your School

Just as he did when building his business during tough economic times, George Halverson, president of Excel Dental Studios, Inc., conducts Continuing Education (CE) classes with the aim of bringing dental industry professionals outside their comfort zones. Halverson thinks a key hurdle to overcome is helping people understand the limitations and preparations required for newly developed materials, such as number of indications and bonding procedures and structures. While he formats his courses to include these items, he additionally believes manufacturers can help make life easier and credits companies such as 3M ESPE for developing “universal” products that can be used for a wide range of bonding needs.

Halverson is energized by the large number of young people entering the profession, citing a recent CE class his Blaine, Minn.-based laboratory held, where 37 percent of the attendees were aged 32 and younger. As Halverson sees it, these individuals will help foster much-needed change and openness to new ideas. “The young ones coming out of school today are driven by idealism and curiosity, excited by new technology and understand the advantages of CAD/CAM,” he says. “They’re ready to move beyond the traditions.”
When talking to his own customers, David Lampert, owner of Town and Country Dental Laboratory of Freeport, N.Y., and president of TEREC Lab Consortium, often encounters the “If it ain’t broke, don’t fix it” attitude with regard to moving away from PFM materials. Like Halverson, he believes that true revolutionary change can best be fostered through education, following the logic that if dental students learn about innovative materials during their training, they will be more likely to use them upon graduation.

In addition to using education as an agent of change, Lampert touts what he refers to as “podium power” – the ability of recognized industry experts, or opinion leaders (OLs), to influence both new and veteran dentists. “There are a lot of people out there who already have seen the advantages of all-ceramic restorations,” he explains. “And if we can get them visible, and offering one centralized message, we’ll eventually see changes in attitudes.”

Tim Kinsky, global brand manager, Lab Products, 3M ESPE, concurs with Lampert, yet emphasizes the importance of strong product performance. “OLs typically have very strongly-held opinions,” he explains. “If you win them over, it’s because they like the product.”

While admitting that “PFM materials remain the yardstick against which everything else has been measured,” Mark Jackson, owner of Precision Ceramics, Montclair, Calif., has remained on the forefront of CAD/CAM technology since the beginning, utilizing all-ceramic systems from a wide variety of manufacturers. Today, 50 percent of his business consists of all-ceramic restorations. “I’m a firm believer that you continually have to add new products in order to grow your business,” he explains. “And many of the recent advances have occurred in all-ceramic restorations.”

While also acknowledging the importance of PFM materials in that their quality has improved through the years, Renny Challoner, principal in N.E.W. Paradigm Advisors LLC of Green Bay, Wis., immediate past chairperson of the American Dental Trade Association (ADTA) and former owner of Lord’s Dental Studios, believes that the biocompatibility offered by all-ceramic materials is reason enough to make the switch. Challoner cites studies that claim roughly 25 percent of women and 5 percent of men are sensitive to metal in their mouths. As many patients are unfamiliar with this type of information, Challoner advocates implementing a pull-through strategy of directly communicating with patients, who, logic dictates, would inquire as to material biocompatibility at their next dentist visit.

**Maximizing Turnaround**

Dental materials are no different from most other products in that they’re best enjoyed, and appreciated, if delivered on time. As we explore the advantages of all-ceramic materials, not to mention the hurdles in overcoming long-held purchasing habits, it’s crucial to remember that turnaround is an important, and unfortunately, often overlooked step in developing both high quality products and important business relationships. “We are now seeing a shift in the expectations of production timelines as outsourcing all-ceramic restorations becomes more prevalent,” says Kinsky. “As the complexities of the manufacturing increases; so do the timelines.”

As Greg Harris, an industry consultant and former director of marketing and sales for Dental Services Group explains, “Inability to manage turnaround is the inability to manage customers.” Observing that most laboratories compete on price and speed as opposed to value, he believes it is imperative to find an appropriate balance without sacrificing quality for profits. He advocates placing the emphasis on focus, stating that laboratories must establish their core competencies and whatever else they do, remain consistent in their practices.

With this in mind, both Lampert and Challoner are disciplined in maintaining quick turnaround in their respective laboratories. Lampert and his employees adhere to a timesheet, shared with cus-
tomers, that details how many working days are needed to complete a project. Meanwhile, Challoner guarantees either a five-day, or 24-hour timeframe depending on both the urgency of the request and type of material used.

For several years, Halverson based his laboratory’s turnaround on which particular material or system was utilized to develop the restoration: for example, PFM materials traditionally took five days. At the same time, Halverson sent more complex work to be developed off site using the Procera® System (Nobel Biocare) and found himself vulnerable to the timing of UPS. All this changed with the purchase of an on-site CAD/CAM system, which Halverson considers well worth the initial up-front investment. “It’s really given us a competitive edge in the marketplace,” he explains. “We’re now able to offer a high quality restoration while keeping our labor costs in line.”

Jackson recalls that when he first opened his laboratory in 1980, the average turnaround was 14 days; today it is between four-to-six. Besides utilizing the latest technology, such as bar codes, to track cases as they progress throughout the laboratory, Jackson keeps his business open 12 hours a day, which ensures 60 hours work will be completed within a five-day work week. He remains mindful that faster turnaround times mean fewer post-operative complications, explaining that teeth are not static but rather suspended in sockets by a periodontal ligament that he likens to elastic on a turtleneck. Therefore, a proper fit becomes even more crucial. In addition, he also understands how turnaround directly affects dentists’ potential revenue. “The dentist doesn’t get paid until he submits the proper paperwork to the insurance company,” says Jackson. “And this can only happen if we do our part by getting him the finished product in a timely manner without sacrificing quality.”

As we see from the information above, despite their best efforts, laboratories alone cannot straighten out the existing learning curve regarding embracing new technology. While laboratories must remain committed to educating employees and customers alike, dental schools can play a crucial role in introducing students to esthetic crown and bridge treatment options during their training. And manufacturers can go on doing their part through continued product development and remaining focused on the future. Over time, the comfort zone can only be eroded through teamwork.

Look to next month’s article for an overview of how the industry can best utilize CAD/CAM technology.

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A Glimpse at the Future Face of CAD/CAM Technology

Hint: It looks a lot younger

By Andy Jacobson, Karwoski & Courage

This is the third in a three-article series featuring research compiled by 3M ESPE and testimonials from industry leaders on the challenges and opportunities facing the dental laboratory industry. Previous articles offered an overview of how to thrive within a soft economy and overcome resistance to change among professional peers.

Pick up a dental industry trade publication or clinical journal and you’ll likely find an article on the use of CAD/CAM technology within the dental industry. And while most of them rightfully claim how various systems are changing the way laboratories and dentists operate, few seem to focus on how innovations in materials are permanently altering the dental landscape. With all the talk about CAD/CAM technology, it would appear as though laboratories and dentists would be eager to embrace this innovative way of developing materials. But that isn’t always the case.

Throughout this article series, you’ve been introduced to a group of dental laboratory professionals who are not simply coping, but thriving amid change taking place in their profession. Yet, whether streamlining their operations, developing better recruitment, training and retention initiatives or maximizing turnaround, each is quick to acknowledge that progress will come slowly, and, in some cases, not without resistance. In this, the last article of the series, we’ll approach CAD/CAM technology not from a standpoint of where it’s been, but where, with the right mix of continued product development and training, it could be.

The Material World of CAD/CAM Technology

Before examining CAD/CAM technology itself, we’ve asked the industry professionals featured in this article series to comment on the finished product – all-ceramic restorations. Their feedback is crucial to understanding the challenges, as well as the future opportunities that can be realized by utilizing CAD/CAM technology.

We’ve all heard about coping with less, but the expression takes on a new meaning when developing restorations with all-ceramic materials. George Halverson, president of Excel Dental Studios, Inc. of Blaine, Minn., explains that all-ceramic copings can support no more than a 2 mm porcelain overlay; otherwise, one runs the risk of breakage. Despite this limitation, Halverson readily acknowledges that all-ceramic restorations can best match natural dentition, helping meet both the dentist and patient’s need for esthetically pleasing results.

While also recognizing the technique sensitivity of all-ceramic materials, Mark Jackson, owner of Precision Ceramics, Montclair, Calif., remains more concerned with keeping the prices of restorations down. While personally utilizing a series of CAD/CAM all-ceramic systems at his own laboratory, he believes that technology alone is not the answer to increased efficiency and stresses the importance of closely monitoring production expenses. “The key is finding the balance between keeping your labor costs low without your material costs going up,” he says.

Like his colleagues, David Lampert, owner of the Freeport, N.Y.-based Town and Country Dental Laboratory and president of the TEREC Lab Consortium, understands that using all-ceramic materials sometimes involves altering preparation techniques. He says that a shoulder chamfer, as opposed to a shoulder bevel preparation, is required and ultimately leads to better patient out-
come. Besides the esthetic advantages of all-ceramic restorations, Lampert touts that removing metal from a patient’s mouth will mean less gum sensitivity and better long-term tissue management.

While also acknowledging the technical challenges associated with all-ceramic materials, Renny Challoner, principal in N.E.W. Paradigm Advisors LLC of Green Bay, Wis., immediate past chairperson of the American Dental Trade Association (ADTA) as well as former owner of Lord’s Dental Studios, believes the real issue to overcome is lack of appropriate training. He believes that dental and technical schools have been slow to grasp some of the recent advances in the industry. As a result, Challoner sees young dental and laboratory professionals entering the field without an appropriate knowledge base regarding the full range of products available. “There are now three to five times the number of products that were available 10 years ago,” he explains. “But if the schools don’t communicate this to their students, and give them hands-on experience, they’ll have graduates entering the workforce who are lacking in some very crucial skill areas.”

“The issue is not so much all-ceramic materials,” says Greg Harris, an industry consultant and former director of marketing and sales for Dental Services Group. “It’s a question of how to shape these materials esthetically to meet patient demands and profitably to meet the business needs of the laboratory.” He credits both the Procera® System (Nobel Biocare) and the Lava™ All-Ceramic System (3M ESPE Dental Products) as two examples of dental manufacturers offering ways to effectively utilize CAD/CAM technology. Now, he believes, it’s up to laboratory owners to determine how to best incorporate this technology into their respective businesses.

**Investing in the Future Through Word of Mouth**

In last month’s article, Halverson explained how investing in CAD/CAM technology, has helped give his business a competitive edge in the marketplace. However, he readily acknowledges that much work still needs to be done with regard to educating not only his professional peers, but also dentists and their patients. For starters, he believes an often-overlooked method is the traditional word of mouth. “Labs can do a much better job telling dentists about the features and benefits of restorations developed using CAD/CAM technology,” he says. “Dental practices are built by word of mouth, and if we can talk about how they can have satisfied patients who will in turn refer others, we’ll really be speaking their language.”

Having utilized CAD/CAM systems for all-ceramic restorations practically since their inception, Jackson agrees with the sentiments expressed by Halverson. He believes that the only way to capitalize on the new technology is by spreading the word. “Dental manufacturers have created the demand for CAD/CAM technology,” says Jackson. “All I have to do is let my customers know I have it.”

Lampert differs with both Halverson and Jackson in terms of how best to utilize CAD/CAM technology, choosing outsourcing work over purchasing his own equipment. He believes this helps enable his laboratory to pass on the material benefits to dentists and their patients without an up-front financial investment or time spent training his staff on a new system. While acknowledging that CAD/CAM technology will continue to play a major role in his profession, he agrees with Halverson that attitudes can and must be changed and again emphasizes that this is best accomplished through altering the curriculum in schools. “The only way to achieve radical change is to change the mentality of our schools,” he explains. “They truly have the ability to control the future of our industry.”

Like his colleagues, Challoner recognizes the long-term benefits of CAD/CAM technology – namely, providing stronger, safer and esthetically pleasing restorations. He also credits recently
introduced systems with “taking the labor out of the laboratory.” However, to best utilize the technology, Challoner stresses the importance of knowing, as well as targeting, the right customer. “There are plenty of dentists out there who would really appreciate CAD/CAM technology, but aren’t too familiar with it,” he says. “It’s up to us to reach them.”

Harris agrees with the sentiment expressed by Challoner, stating that laboratories in general can do a better job of effectively marketing their services. “Laboratories have a tendency to concentrate on existing clientele and don’t go after new customers,” he explains. “But the only way they’re going to see growth is by truly defining what they can offer, and that includes very appealing products made possible by CAD/CAM technology.”

Looking ahead at the future of CAD/CAM technology, all involved agree that change will only come through teamwork, continued innovation and attention to building relationships. For starters, manufacturers such as 3M ESPE already have taken a partnership role with laboratories, helping spread the word and actually get existing technology into the hands of dentists. The next step involves building and maintaining credibility and trust at the dentist level. As Kinsky says, “The relationship is just as important as the technology.”

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