Implementation Strategies for Incorporating New Technologies Into the Dental Practice

FOROUD HAKIM, DDS, MBA, AND PARAG R. KACHALIA, DDS

ABSTRACT Staying ahead of the technology curve is an ongoing challenge for all dentists. Ignoring advancements in technology and the related improvements in diagnostics and delivery of care, as well as the impact technology may have on productivity in practice, is simply not an option for the modern clinician who aims to maintain a successful contemporary practice. This article delivers some insight into the challenges that arise when upgrades in technology and the related acquisition investment are considered.

All of us are aware of the relatively recent explosion in dental technologies. Of course, scientists, inventors, and manufacturers have been at it from the start and the profession has enjoyed a steady stream of technological advancements over the years. However, the scope and impact of these interjections has undoubtedly escalated over the last 15 years.

Recent technological advances impacting patient care with regard to efficiency, precision and quality have been at a magnitude that has driven awareness beyond the oral health care provider and to the consumer (patients). One would be hard pressed to find a doctor in contemporary private practice who has not periodically and increasingly fielded patient's questions or comments along the lines of "Doc, my friend just had a crown done by her dentist, all in one visit," "What can you tell me about the commercial I saw advertising laser dentistry without the use of a drill?" or "My previous dentist had a camera that allowed me to take a tour of my mouth magnified on a TV monitor. Do you have that?"

The old adage "If you're not moving forward, you're falling behind" has never been more true. When the propensity of practitioners to invest in technological upgrades is examined, dental professionals find themselves all over the map. There are those who define their practice by being on the cutting edge. These are the "gotta have it" doctors, the sales representative's dream. At the other end of the spectrum are some who may be extremely slow adopters, the "all those gadgets are just bells and whistles, not necessary to practice good old-fashioned, quality dentistry"
crowd. Most doctors know where they fall along this spectrum. However, they may not be positioned optimally along the technology continuum to maximize patient care, efficiency, and productivity.

Further, their rationale for underinvestment or even, overinvestment may be fundamentally flawed. The balance of this article will touch on some criteria that may offer some perspective for the pragmatic practitioner considering a significant investment in new technologies.

Patient Profile
When considering patients, two factors should impact the acquisition of new technology, existing patient profile, as well as the patient profile a practice may be targeting to market toward and draw into the practice pool. First, would a significant portion of current patients benefit from and appreciate the acquisition that is being considered? For example, a practice with an elderly patient profile (perhaps where periodontal therapies, prevention, removable prosthodontic, and direct restorations comprise a large portion of annual production) may not benefit enough from an in-office computer-aided design and computer-aided manufacturing, CAD/CAM, indirect restorative system to justify the related expenditure.

On the other hand, if a new owner or partner in the same practice aims to re-brand the practice and increase indirect restorative productivity while marketing to and drawing in a previously untapped population of patients, a new CAD/CAM system may in fact be an invaluable investment that will differentiate the practice from others in the area.

A useful mechanism for patient profile evaluation may be for doctors considering a purchase to simply survey their existing patient pool. Questions may be “What features of our practice are factors that weigh heavily on your decision to trust us with your oral health care?” or “What is your perception of our practice’s position relative to cutting-edge dental technology?”

Practice Culture
Practice culture refers to the characteristics of the doctor(s) and more importantly, the employees of a practice. The capability and willingness of staff members to embrace new technology and become proficient in its use is often the single most important determinant of implementation success. No matter how appropriate a new acquisition may be for a given practice, nothing can stall successful integration, or result in abandonment, than resistance from key personnel. Many issues may lay at the core of an employee’s reluctance or resistance. Complacency, perception of increased workload, comfort in the familiar and routine, or just plain lack of buy-in to the value of the new technology may be hurdles to overcome. In any case, the doctor who is more in tune with their practice culture and employee tendencies will have a better chance of anticipating potential resistance and address this prior to launch. In some scenarios, personnel changes may ultimately be necessary for complete success.

One of the most important steps toward gaining employee acceptance and giving employees a feeling of responsibility and empowerment is to have them fully participate in the initial training, which is often significant, as well as periodic continual education that goes hand in hand with complex new technologies. Too often, well-intentioned doctors, energized and motivated after a weekend training program for their new purchase, assume they will be the champion and trainer for the new product. The strongest corporations, fielding the most successful new technologies, are often successful not only because they have a good product, but also because they generally have the best training, support, and service arms. They are the first to tell perspective doctors, “Don’t try this on your own.”

Return on Investment
A favorite term of accountants, practice consultants, and sales representatives alike, return on investment (ROI) is a seemingly simple concept, too often reduced to a cliché. True attention to developing valid return forecasts or calculating accurate end returns is paramount. When considering ROI for new technology acquisition, returns may be subcategorized further into tangible and intangible returns.

Tangible returns refer to those that can be readily quantified for end measures or estimated for forecasted returns. These returns should directly be attributable to, and measured against, the acquisition investment, related debt service, and maintenance costs. A conventional approach to calculating tangible returns is to populate a simple Excel file with variables that accurately reflect productivity parameters within the practice and offset the income by the cost of ownership. A simplified example of such a calculation is presented in Table 1. In this example, the probability of improved productivity from the addition of an in-office CAD/CAM system
is evaluated. Logically, when immediate positive ROI is quantifiable, acquiring an expensive piece of equipment becomes much more enticing compared to when an investment recuperation lag is expected.

It is important for a perspective buyer to keep a few thoughts in mind when estimating potential ROI. First, be conservative. That is, do not allow a sales representative to be overly influential in choosing the estimated variables for one's practice. For example, rather than inserting the average number of crowns per month into the calculation of Table 1, insert the number of crowns typical of a slow month. Check for liabilities in a worst-case scenario. Second, rely on qualified counsel like a certified public accountant, CPA, versed in dental accounting and to help with ROI estimations. Finally, seek out comparable practices that have already integrated the same piece of technology and inquire if their actual ROI fell short of projections, and, if so, why?

Ultimately, when colleagues have had favorable outcomes, a qualified financial adviser supports acquisition and positive ROI is demonstrated with conservative estimations (i.e., self-sustainability in worst-case scenarios), a prospective doctor may invest with more confidence.

Intangible returns are a bit trickier to calculate. Here, the authors attempt to assign dollar figures to gains that cannot be directly assigned to a billable procedure completed by a piece of equipment. Intangibles may encompass more nebulous concepts like overall practice growth, which may loosely be attributed to the beneficial reputation enhancements that follow when a practice is perceived to be more modern or on the cutting edge. The "wow factor" is certainly a powerful marketing tool. Other intangibles require less imagination to appreciate but may have just as significant an impact as tangible returns.

The same CAD/CAM system used in the previous example may go beyond decreasing lab fees and saving on consumables like impression material. If, in fact, treatment time and total appointments are decreased, what dollar value should be assigned to the increased capacity (open treatment hours) and the likelihood this time would be well utilized? Another great example is digital radiology. The obvious outlays are sensor, software and hardware acquisition, and installation costs. The offsets include the decrease in time needed to complete radiographs, elimination of chemicals storage, and reduction in retake delays. But again, it is hard to assign a dollar value to a very real phenomenon like increased productivity due to diagnostic improvement, decrease in collection lag related to insurance billing, or improved patient acceptance as a result of visualization.

Ultimately, a doctor who makes a decision to invest in a new technology solely based on concrete and tangible ROI criterion may in fact, be missing a key opportunity. Ignoring less tangible ROI forecasts is a naïve approach that often stifles true practice potential and growth. To develop a viable and contemporary practice, there are instances when investment in new technology becomes critical, even when the ROI calculations don't seem to support the cost/benefit equation. This point is best driven home by the following example. Surprisingly, there are still a large number of practices operating in urban settings that do not employ any form of robust practice software system, that is, they may use some rudimentary software to maintain accounts receivables and patient ledgers, but that is all. Now pretend such a practice has attracted a new patient (a head of a household of four) in his early 30s who has moved to the area due to a job transfer and works in the technology sector. Upon completion of the new patient exam, the doctor turns over the patient to the receptionist sitting with the traditional bound appointment book open to the following week's calendar ready to schedule the patient for the recommended treatment. Meanwhile, the patient
TABLE 2

<table>
<thead>
<tr>
<th>History of Section 179</th>
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<tbody>
<tr>
<td><strong>Year</strong></td>
</tr>
<tr>
<td>2002 (old law)</td>
</tr>
<tr>
<td>2003</td>
</tr>
<tr>
<td>2006 (adjusted for inflation)</td>
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<tr>
<td>2007</td>
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<tr>
<td>2008</td>
</tr>
<tr>
<td>2009</td>
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<tr>
<td>2010 (scheduled to go back to)</td>
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<tr>
<td>2011</td>
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*Since the time of this writing, the updated figure for 2009 is $134,000.

On March 18, 2010, President Obama signed into law The Hiring Incentives to Restore Employment (HIRE) Act (HR 2847) extending section 179 expensing to $250,000 for another year.

stands at the counter with his iPhone in hand and the scheduling application open. Imagine the conversation that may follow:

Receptionist: "Ok, let’s see... The doctor has next Wednesday from 10:30-11:30 a.m. to start your crown. Does that work?"

Patient: "Oh no. I’m lucky if I have time to get a bite to eat on Wednesdays, they are the worst days at our company, but, I don’t have to be at work till 9 a.m. Friday. Can the doctor see me at 8 a.m.?”

Receptionist: "No, hmm..."

Patient: "Never mind, this tooth is not hurting me, let’s look at next month. On some Tuesday afternoons I get off early. Do you have any Tuesdays next month?”

Receptionist (frantically flipping pages): "Let’s see, I don’t see any next month but I will probably find some Tuesdays if I go two months out. I do have a lot of Thursday mornings next month; will any work?”

Patient: "No, and I don’t have my work travel schedule set yet for two months out. I would hate to set something up and cancel on you. You know it’s funny, the scheduling coordinator at my previous dental office would just enter my appointment criterion into the computer and a few good options would just pop up on their appointment.

TABLE 3

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<tr>
<th>Depreciation</th>
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<tbody>
<tr>
<td><strong>Software</strong></td>
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<tr>
<td><strong>Dental equipment</strong></td>
</tr>
<tr>
<td><strong>Furniture and fixtures</strong></td>
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<tr>
<td><strong>Leasehold improvements</strong></td>
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<tr>
<td><strong>Commercial property</strong></td>
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</tbody>
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software. One of those usually worked out for me. Your job is tough!”

Receptionist (laughing): "Oh dear, it's not that bad! I've been doing it for years and we generally get you in one way or another."

Patient: "I know what, I will have my administrative assistant, log onto your Web site and as long as your schedule is available online, I'll have him choose an appointment for me once my Outlook calendar for the month after next is populated.”

The receptionist sits speechless, deer in headlights stare.

Anyone can quickly surmise that this patient is highly unlikely to ever get an appointment, much less a seris of appointments, booked with the new office. The naive doctor will chalk it up as a lost new patient who was "high maintenance" when it came to booking appointments. The true loss is four new patients at the very least (remember, head of household), not counting an untold potential number of referrals of friends, extended family, or co-workers. Certainly, the departure was not the result of the patient being high maintenance, rather, because proper software systems were not in place to appoint what was really a relatively easy patient to convert.

Capital Outlay

Once the value of a new technology is ascertained, there is still the matter of paying for it. Numerous acquisition strategies exist and no matter how beneficial the new product may be, a purchase is always more palatable when relative savings are maximized.

When the decision to acquire is made, a buyer’s first dilemma is often whether to finance or to purchase outright. Realistically, many buyers may not have the capital available to purchase an expensive piece of technology outright. When capital is available for outright purchase, the key decision points are fairly simple. These usually revolve around true dollar cost versus opportunity cost. True cost simply refers to...

TABLE 4

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<th>After-Tax Cost of Equipment Purchase of $350,000</th>
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<tbody>
<tr>
<td><strong>Acquisition cost</strong></td>
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<tr>
<td>Section 179</td>
</tr>
<tr>
<td>Bonus depreciation</td>
</tr>
<tr>
<td>(50% of remaining cost)</td>
</tr>
<tr>
<td>Regular depreciation</td>
</tr>
<tr>
<td>(50% of remaining cost)</td>
</tr>
<tr>
<td>Total first-year depreciation</td>
</tr>
<tr>
<td>Tax saved at 40% ($310,000x40%)</td>
</tr>
<tr>
<td>Net first-year true cost</td>
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*Assumes income available to offset
to the price tag for the new technology, minus the tax benefit associated with the capital purchase as it relates to Section 179 of the Internal Revenue Service tax code as displayed in Table 2. Section 179 allows for business depreciation. The Economic Stimulus Act of 2008 restated the law to provide for temporary increased incentives for 2008 and 2009 as well as to revive bonus first-year depreciation to 50 percent for certain property acquired and placed into service between Jan. 1, 2008, and Dec. 31, 2009 (Table 3). True cost for an outright purchase is illustrated in a simplified example in Table 4. On the other hand, opportunity cost refers to the lost business, savings or earnings resulting from diverting dollars slated for purchase away from a competing opportunity.

In other words, could the $350,000 spent on equipment acquisition in Table 4 have been more wisely utilized to pay down a less desirable high-interest loan, deposited in a retirement plan, or perhaps invested in real estate? When capital is not available to purchase a high price tag item outright, or when the decision is made that competing dollars are better spent elsewhere, financing remains the most common vehicle for acquisition. The most obvious advantage to financing is the ability to acquire without immediate capital outlay. Even so, Section 179 incentives can be realized to full capacity as in an outright purchase scenario. Said another way, the entire qualifying tax savings related to a capital purchase can be realized in the acquisition year while the pay-off is spread over the financing life cycle. Furthermore, the interest related to the debt services is also deducted in the subsequent years of repayment.

When financing options are weighed, several considerations arise. First, can financing be secured? What was rarely an issue historically has become more challenging in the recent economic climate. What interest rate and loan specifications are available? Finally, does the income basis exist to fully realize the Section 179 tax incentives? In the event the income basis is not high enough to maximize Section 179 tax savings, the unrealized amount can be carried forward to subsequent tax years. A loss

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however, cannot be taken. A further complication is that "basis" is defined differently in the three typical practice business models (sole proprietorships, C-corporations, and S-corporations).

Conclusion

Dental technologies are advancing at faster rates than ever before. A contemporary practice that does not strive to keep abreast of technological advancements and new product entries may find itself out of date and struggling to make up lost ground if reinvestment lag extends too long.

The challenge for practitioners is twofold. Not only do they have to differentiate between, and select the right technologies to invest in to optimize their practice, they also have to discover the best acquisition strategies.

The latter challenge is often territory where typical doctors may not be well-qualified to navigate. It is highly recommended that any significant capital purchase considered be scrutinized with respect to considerations like adoption, ROI, and tax planning. The Academy of Dental Certified Public Accountants, www.adcpa.org, is an excellent resource for recommendations toward a CPA firm that specializes in dental accounting, tax, and advisory services.

REFERENCES


TO REQUEST A PRINTED COPY OF THIS ARTICLE, PLEASE CONTACT Foroud Hakim, DDS, MBA, Arthur A. Degoni School of Dentistry, 2155 Webster St, Room 522, San Francisco, Calif, 94115.