

Dentrix Dental Systems, Inc.

The year was 1989, and Larry Gibson, president and founder of Dentrix Dental Systems had several important decisions to make. His company had developed what seemed to be a superior, leading-edge technology software system to serve the dental industry. The software was designed to offer the dentist a complete practice management solution. It was also the first dental system to be designed for a Windows®-based platform. Windows 3.0® was going to be released concurrently with the DENTRIX™ system that year.

Larry was confident that his software was not only the most complete system available, but designed on a superior Windows® platform as well. That confidence was backed by several years of exhaustive market research and his extensive background in computer systems. However, he had some concerns. New technology was always a difficult sell. Those dentists that had computerized office systems were mostly DOS-based. Windows was a new and untested platform. He recognized that the Windows® platform offered a graphical user interface, which would be much easier to use than the previous operating systems. He also knew ease-of-use in a practice management software package was a critical issue to the dentist.

Several questions surfaced in his mind. Would the mostly technology-adverse dentists be convinced to spend thousands of dollars to automate their offices? Would those that already had computerized systems be convinced that they should convert their systems to an unfamiliar and new operating system that was new enough to not have all the bugs worked out? Would they be willing to learn a new computer office program? Could they be convinced of the benefits of his superior, fully integrated solution? Larry knew his work was cut out for him. His next step was to work with his marketing team to design a marketing strategy that would address some of these issues. Specifically, how could he get the product to the dentists in a cost-effective manner? Would the product rollout start local and grow region by region, or should it be a national rollout from the beginning?

Company Background

Larry Gibson had an extensive background in computer science. In the mid 1980's, he was the successful owner of a government software contracting organization. Previous to that he had had a successful career as the Director of Computer Services over systems research and development for Hoffman-LaRoche. In light of his expertise in computer systems and his background in the healthcare industry, he was constantly approached by friends and relatives in various health care professions, for help in automating their offices.

He obliged, and word-of-mouth created such a demand that a small team was set aside and dedicated to specifically focus on dentistry. As the group continued, the team

came to realize that the installed systems were good, but that the products were not ideal for the dental industry. With the intent of discovering the "ideal system", the team bought more than 100 different dental software systems and painstakingly analyzed each of them. Most systems were accounting products that had been converted to dental or medical uses and altered slightly to function in a dental office. None of the systems provided the ease-of-use and completeness that matched the needs of the dental environment.

The company was originally called Microdimensions and focused on reselling software. Most software companies get an idea and start programming immediately. Little advanced planning and design go into such a product. Larry Gibson chose a different strategy in what became the DENTRIX™ clinical and practice management system. Much in the same way that government contracts were developed, Larry had the software completely outlined and designed before any programming began. Months were spent in analysis and design. With his company in the capacity of a reseller of software, team members were able to spend nearly two years doing exhaustive consultation with and observation of dental professionals in their own environment - the dental office. During this same time period, Microsoft announced the development of its new Windows operating system, which would be completely graphical. Mr. Gibson had experience with graphical user interfaces and felt that Windows would be the best environment for this type of software. Microsoft® was contacted, and DENTRIX™ became one of the Microsoft's original beta test sites for Windows®.

At this point, it was decided that Microdimensions would change from being a reseller of software to a software research and development company. Larry Gibson compiled the results of two years of market research and came up with a goal to develop a software package with several characteristics based on market needs:

- 1) **User-friendly environment.** Dentists were not interested in learning a difficult or cumbersome computer system to run their office. Many still did everything manually, although PC's were becoming more common. Larry concluded that a graphic-user interface would provide an easy-to-use environment that was needed.
- 2) **Off-the-shelf hardware.** Previous dental software packages typically required proprietary software and hardware that was very expensive to buy and maintain. Larry Gibson wanted his system to utilize hardware that could be bought off-the-shelf, so the dentists themselves could dictate the price they wanted to spend and use the hardware they bought for other applications. The disadvantage would be in having to support numerous different hardware configurations.
- 3) **Clinically-based.** As the market research team observed dentists in their offices they noticed that significant amounts of data were being lost, as information was hand-carried from the operator to the front desk, resulting in thousands of dollars lost in revenues. As a result, Larry decided it was critical to develop a system that would capture the information at the source in the operator, and eliminate the need for double entry at the front desk.

- 4) **On the leading edge of technology.** The system had to stay on the leading edge of the rapidly changing dental industry. It had to be able to integrate everything from x-rays, treatments and imaging, to financials and patient education. A system designed for Windows rather than converted from a DOS-based program would give them an edge over the competition.
- 5) **Reasonably-priced.** That did not mean cheap. Larry Gibson wanted to ensure that the system was an excellent price for the value offered. He figured the system would be priced in the mid to high-end system range.

Based on his own experience in the software industry, Larry also thought it would be important to include a few other features. First, the product had to be developed with maintenance in mind. Maintenance was normally a major cost for software products. He also determined that the product had to have a means of on-going development. This meant there had to be a residual income stream based on the product.

In all, the original DENTRIX™ was more than two years in the making, during which time Microsoft progressed with its Window product to newer versions. The plan was that DENTRIX™ would be officially released to the public concurrently with the release of Windows 3.0 in 1989. Hopefully, this would beat WordPerfect and Lotus to the Windows market by a couple of years, and beat any other dental software by at least four or five years.

The DENTRIX™ Product

The DENTRIX™ dental practice management system was designed to automate as many of the functions within the dental office as possible, to enable a dentist to focus on his specialty-practicing dentistry. Existing dental systems were typically clinically based only, which would handle things like patient clinical and perio charts, or they were accounting systems, which would handle the office management functions. DENTRIX™ had a goal to become a comprehensive, integrated system which would combine all the functions a dental practice would need, including the capability to integrate future technologies.

Some of the primary features developed in the DENTRIX™ system include:

- **Office Management.** Could handle all the front-office needs including billing, electronic claims submission and tracking for faster insurance reimbursement, accounts receivable, financial reports and practice analysis.
- **Productivity Scheduling.** A scheduling program could replace traditional appointment books and tracks broken appointments, unscheduled appointments and continuing care.
- **Referral Tracking.** Could automatically track "who" or "what" is generating productive referrals.

- **ASAP Lists.** Could help a dentist fill an open chair whenever an appointment is canceled.
- **Patient Education.** CD slide show and image annotation tool could help dentists educate patients regarding certain procedures.
- **Patient records.** Could keep detailed records on all patients including demographic information, medical alerts, employer and insurance information, account balances etc.
- **Marketing.** Could offer 50 customized letters in Microsoft Word to send in batch to targeted patients.
- **Clinical Charting.** Could allow entry of graphical tooth charts and treatment planning from the chairside in the operatory.
- **Perio Chart.** Could let the dentist record individual patient information such as probing depths, bleeding, bone loss, and plaque (see **Exhibit A** for sample clinical and perio charts from the DENTRIX™ system).
- **Image Management.** Could allow the dentist to store, catalog and present actual images captured by intraoral cameras with the patient files.
- **Blood Pressure Monitor.** Could allow a dentist to monitor the patient's blood pressure constantly while in the operatory and integrate the information into the patient's record.
- **Voice Activation.** Could allow the dentist to enter clinical and perio chart information in the operatory hands-free.

The DENTRIX™ system would be made available in both a network-ready and a single-user configuration. The multi-user license could be bought for about \$1,000 extra, up to 10 workstation (see **Exhibit B** for estimated prices on the DENTRIX™ software and add-ons). It was also decided that an office version of the DENTRIX™ system would be offered in addition to the complete DENTRIX™ system, which would include all management functions, but without the clinical charting. It could be upgraded to the full system for a low upgrade fee.

Larry Gibson was also determined to offer superior customer service and support for the software, which was not typical in the industry. However, the customer would have to buy an annual maintenance contract if he wished to receive unlimited toll-free support and free upgrades. They estimated that a certified trainer could have a typical dentist office up and running with two days of training, which the dentist would have to pay for separately.

Dental Industry and Practice Management Software Market

The American Dental Association Survey Center conducts surveys periodically to determine the distribution of dentists in the United States and by region and State. In 1987, the year of the last survey, the number of professionally active dentists in the

United States was 137,816.¹ Approximately 91% of those professionally active dentists are active private practitioners (those whose primary or secondary occupation is private practice). Below is a table that charts historical data and projections to 1995 of the number of professionally active dentists in the United States:

Table 1: Number of Professionally Active Dentists in the U.S.

Number of Dentists	Year
126,823	1982
137,816	1987
150,762	1991
153,346	1995

Source: ADA Survey Center

The ADA census data also showed the distribution of dentists within the United States. The Mid-Atlantic region (New York, New Jersey and Pennsylvania) had the largest percentage (18.2 percent) distribution of professionally active dentists with the Pacific region (Alaska, California, Hawaii, Oregon and Washington) coming in close second at 17.8 percent. The smallest percentage (5 percent) distribution was in the East South Central region which includes Alabama, Kentucky, Mississippi and Tennessee. Some 5.4 percent of professionally active dentists were located in the Mountain region -- Arizona, Utah, Colorado, Idaho, Nevada, Montana, Wyoming and New Mexico.

Internationally, the dental industry is less prolific. In the English-speaking countries of Canada and Australia, it is estimated that there are an additional 35,000 practicing dentists.² International markets are often avoided by software companies due to piracy issues and the difficulty in maintaining the integrity of licensing agreements. Bad repayment history by dentists and the practice of socialized medicine in many countries are yet other deterrents to entering international markets.

Within the United States, the dental practice management industry can be broken down into three price-sensitive categories: (1) the high-end, comprehensive, integrated system with a price range of \$8,000 and above; (2) the mid-range system with various features with a price range of \$1,000 to \$8,000; and (3) the low-end system used for simple accounting functions such as bill payment, with a price range under \$1,000. An estimated 80-87% of the dental practices in the United States will be computerized by 1998. The market size for practice management software is estimated to grow to \$150 million by 1998

The software industry for dentists is also highly fragmented. The DENTRIX™ practice management software competes against hundreds of other software packages

¹ The report defines professionally active dentists as those whose primary or secondary occupation is one of the following: private practice; dental school faculty or staff member; armed forces; other federal service; state or local government employee; hospital staff dentist; graduate student; intern or resident; or other health organization staff member.

² Estimates given by Andy Jensen, Marketing Director of Dentrix

across all the segments of the dental industry. However, three of the bigger players are Softdent™, with an estimated installed base of 10,000 dental offices; Practiceworks™, with an estimated base of 8,000; and Eaglesoft, with a base of approximately 10,000.³

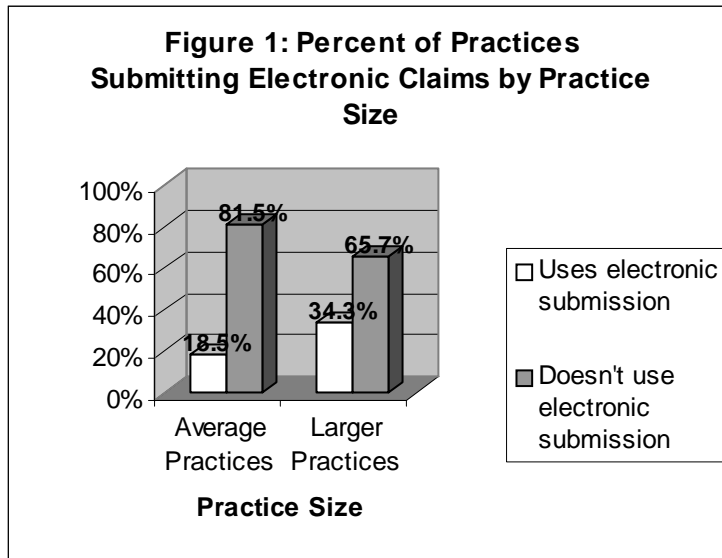
The American Dental Association (ADA) also conducts a "Membership Needs and Opinions Survey" periodically to its membership. Dentists rated several challenges facing their industry as critical to their practices. Among them were, "dealing with the cost of running my practice" (38%) and "educating my patients about the need for good oral hygiene, including regular dental visits" (37%). The Survey also revealed that some of the challenges rated as not significant by the greatest percentage of ADA members were "deciding whether to computerize my office (51%) and "deciding whether to advertise to attract new patients" (40%).

Statistics collected through *The Survey of Dental Practice*, conducted by the ADA Survey Center, the U.S. Department of Health and Human Services, and the U.S. Department of Labor reveal other pertinent data on the dental industry:

- Among dentists out of dental school less than four years, about 42 percent own their own practice; by six years after graduation, this figure increases to 53 percent.
- Approximately 69 percent of the nation's private practitioners were working in a practice with no other dentists; 19 percent were working in a practice with one other dentist; and 12 percent worked with two or more dentists.
- On average, dentists work with and supervise about four staff members (two full-time and two part-time). Approximately 98 percent of all dentists employed at least one staff member, 14 percent employed one or two and 52 percent employed three to six people.
- The number of first-year students in dental schools has decreased over time from a high of 6,301 in 1978 to an estimated 4,255 in 1996.

Other data from an ADA study shows that over one-quarter of respondents submitted payment claims to third parties electronically. It showed that average sized practices (composed of one dentist, one or no hygienists, and up to four employees) were less likely to use electronic claims submission compared to larger practices, 18.5% to 34.3% respectively. This is shown graphically below in Figure 1:

³ Estimates given by Andy Jensen, Marketing Director of Dentrix



Practices can submit claims electronically to three types of processors. Among practices that did submit claims electronically, 77.6% submitted them to clearinghouses, 31.4% to payers, and 28.2% to management vendors. DENTRIX™ system users file claims to a clearinghouse. The average cost per submission to clearinghouses was 45 cents; payers, 19 cents; and management vendors, 54 cents. This data is shown below in Table 2:

Table 2: Percentage and Cost of Claims Electronically Submitted

Processor Type	Percent Submitted	Cost (in cents)
Clearinghouses	77.6	45
Payers	31.4	19
Management Vendors	28.2	54

Source: ADA Survey Center

Dentrix Marketing

Promotion. Dentrix had several avenues to promote its product. Trade shows occurred around the nation several times a year and typically provided the greatest exposure opportunity to the dental industry. The cost to promote through a trade show would typically run around \$15 per square foot (the average space was 100 square feet per show), plus travel expenses and time to staff a kiosk with a couple of certified technicians and sales people. Another possibility was to advertise through trade magazines. A jr. page bleed in a trade magazine with national or international exposure might cost \$6,500 per issue. Other promotion opportunities would come through the distribution channel(s) they chose to use and any public relations they could attract.

Distribution Channels. Three channels were often used in the dental industry to sell software programs similar to the DENTRIX™ system. A direct sales force would allow Dentrix to control the quality of service and its product, but was costly: a salaried sales employee would be paid \$40,000 annual salary plus a bonus tied to production, travel expenses, benefits and taxes. Those costs might easily surpass 30% of the annual salary.

Another very common approach in the industry was to use value-added resellers (VAR). They functioned as independent agents, not employees of the manufacturer. A VAR would normally train office staff, install the software, and possibly provide management consulting services to the dentists in his/her area. Commission paid to a VAR was around 30%, though it ranged from about 25% to 45% in some areas. VARs had the advantage of local market expertise and industry knowledge; however, loss of control of service quality was a concern. A VAR would have to become a certified trainer for DENTRIX™.

Lastly, Dentrix could create a telemarketing sales team to make initial contacts with dentists. Dentrix did not plan on sending a working demonstration disk through the mail to prospective clients, but felt the product needed to be demonstrated in the dentist's office with a certified technician and sales person. They did plan to send information brochures or possibly even videotapes highlighting features and pricing information via mail to prospective leads. The management was concerned that sales without personal contact would be ineffective, though the cost would be significantly lower than other methods. Another possibility would be to train the technical support operators to handle incoming sales inquiries as well. Some additional training would be necessary, however the technicians would already be very familiar with the product and its features.

Testimonials were always a critical element of high-end software marketing, particularly so with a new technology. Every doctor who would look at the DENTRIX™ system would certainly ask two questions: "Who else do I know who is using the DENTRIX™ system?" and "Why should I computerize my office or convert from my current system?" A \$10,000 price tag for a the entire system with add-ons, plus nearly \$1,000 per year for unlimited technical support and upgrades was not out of line for a high-end, integrated system, but it was not an automatic sale either. Dentrix, as is the case with most start-up ventures, had limited resources and the distribution method they chose would have to support itself. All of these factors had to be considered in choosing the distribution channel(s) and roll-out marketing strategy that would ultimately be employed.