D4D Technologies is dedicated to providing dental professionals with the most innovative, patented technologies for proven health-care performance. It all started with a dream when Mark and Henley Quadling were in graduate school. The dream evolved over the years as they started to design commercial software applications and took on the challenge posed by dental scanning. With Basil Haymann, they brought together a team of gifted engineers to develop the hardware and software that was to become the E4D system, which is now being delivered to dental professionals around the world.

_Dream_

In the early 1990s, Mark and Henley Quadling graduated in South Africa and moved to the United States to join the graduate school at the University of Minnesota (UMN). Mark worked in artificial intelligence in the computer science department, and Henley entered the high-energy theoretical physics program. In 1993, Mark came across an intriguing job posting for 3-D digital dentistry at the bio-materials lab in the UMN Dental School, and that was the beginning. In 1997, while finishing his dissertation in quantum chromodynamics, Henley joined Mark in the 3-D dentistry project. In 1998, Mark and Henley started a business to produce software to operate 3-D scanners and motion systems and manipulate 3-D data for many diverse applications. The most difficult of all the applications was dental scanning. In particular, intra-oral scanning was deemed by most observers to be practically impossible, and existing solutions at the time were not being embraced by the industry or considered successful. Intra-oral 3-D scanning requires that a medically safe device operate in a very small confined space, working in a high-stress environment with severe time constraints and scanning partially translucent materials. In addition, the accuracy requirements were extreme, with 25-micron marginal accuracy being the ultimate goal.

_Design_

In 2000, the Quadlings started a new business called Q3D, which worked on 3-D and automation projects in multiple fields, including dentistry and orthodontics. One project involved the development of a laser-based 3-D bench-top scanner and a full suite of 3-D CAD/CAM software for digital dentistry for which Q3D produced a successful prototype by 2002. A longtime friend and professor at UMN suggested that they visit his childhood friend, a successful businessman and entrepreneur, during a business trip to Texas. They met Basil Haymann to pitch their ideas and to gather some feedback and guidance. A couple hours later, after a demonstration of the prototype software and the digitized data, Basil shocked Mark and Henley by suddenly exclaiming (much to his wife’s horror) that he would fund the entire project from this point on and would be moving them down to Dallas. Mark and Henley agreed to this chance of a lifetime, and two months later, D3D was formed.

_Develop_

For the next year, D3D remained very small, with three employees, and produced a more refined high-speed multi-line laser scanner prototype, along with the dental design software and tool path generation for a CNC milling machine. Once the high-speed laser-scanning concept was proven and demonstrated to industry experts on behalf of Henry Schein, D3D entered into an exclusive distribution agreement with Schein, and the momentum snowballed. At this time, for trademark reasons, the name of the company was changed to D4D Technologies.

By the end of 2003, the first intra-oral prototype with a touch-screen monitor and no keyboard had been designed along with a small portable in-office CNC milling machine. This prototype system was first shown in private demonstrations at the Chicago Midwinter Meeting in February 2004 to collect feedback from dental professionals.

In response to the feedback in Chicago, the engineering team redesigned and enlarged the milling machine. They were able to produce optimum parameters for the milling process for each material type in close cooperation with the material compa-
EXPERIENCE THE DIFFERENCE

LEARN
E4D University offers basic training as well as intermediate and advanced classes to assist all dental professionals to get the most out of their investment while at the same time perfecting their techniques and gaining new skills.

SUPPORT
Exclusive Support-on-Sight™ (SOS) provides remote clinical and technical support to E4D operators as they develop their skills. SOS can also perform remote system diagnostics on the cart or the mill.

PROVIDE
D4D takes care of your education and support needs so that you and your team can take better care of your patients - empowering your auxiliaries to participate in the restorative process and providing the best possible dentistry to your patients.

The E4D Dentist chairside CAD CAM system offers improved profitability, complete restorative control, and enhanced patient convenience using powder-free laser based scanning, intuitive design and precision milling – all in your office.

Call 1-877-293-4945 or go to www.e4d.com/cadcam to see how E4D can make a difference for you.

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In 2004, the company moved to its current location, occupying two of what would become a three-building campus in Richardson, Texas, a Dallas suburb. The manufacturing facility was laid out efficiently from receiving/inventory to production and testing to shipping the finished product. Research and development, administrative, support and training areas were also built out and equipped, long before the arrival of the first customer.

D4D started organizing the key customer support and training functions, and user testing became more intense with the addition of more clinical testers who not only provided product feedback but also helped in fine-tuning the support and training protocols. In 2006, Henry Schein, Ivoclar Vivadent and 3M ESPE affirmed their commitment to chairside CAD/CAM by investing in D4D Technologies. The Design Center software took leaps forward with improved tooth proposals and an easy-to-use user interface.

In the summer of 2007, Henry Schein started inviting its customers to “previews” of the E4D system at D4D’s state-of-the-art, 9,200-square-foot training facility. By late 2007, the system software and hardware refinements and specially trained Henry Schein technicians were in place, the first sales were made and the first customers arrived at E4D University for training.

Early in 2008, the E4D Dentist system was fully launched. All customers come for training (which is included in the package for two people) at D4D. D4D also became a global company that year, shipping to customers in Canada, South Africa and Australia.

D4D was honored to be a gold recipient in the Medical Design Excellence Awards for 2008, the only dental product manufacturer to receive the award that year. D4D participated in all of the major U.S. dental meetings in Henry Schein booths and created marketing programs to educate the dental profession about the system as well as to support clients’ patient marketing activities.

The Schein previews became weekly events for dental professionals to try out the system and produce a restoration. Basic training classes were held twice a week, and intermediate classes were soon in demand to help E4D operators take their skills to the next level. A new CAD/CAM Dental Designer (CDD) self-paced certification program was developed for auxiliaries. D4D’s education program received continuing education authorization from ADA CERP, the Dental Assisting National Board and the National Association of Dental Laboratories, where all classes provide C.E. hours from at least one of these bodies.

Throughout the year, the support and technician teams expanded as new customer installations came on stream. New versions of the software were released, and systems were updated at no additional charge. The owners of D4D made the decision early on that restorative software updates would be included with the product warranty.

In 2009, D4D introduced the system at the International Dental Show in Cologne, Germany, and made the first shipments to New Zealand. Later, a distributor was appointed for the Nordic countries. A new software update was released and installed at no charge under warranty. Advanced courses were introduced for multiple posterior and smile design.

Leading dental professionals and organizations, such as Clinicians Report and Dental Advisors, continued to be involved with E4D system evaluations throughout the year, and many presented their findings at CADapalooza 2009 in Miami Beach. D4D extended the training program so that the standard system package included one day of in-office clinical integration with an experienced dental assistant who was also a CDD.

D4D also expanded its presence in dental schools in the United States and other countries, and large E4D installations at several schools ramped up for pre-clinical instruction as well as clinical.

The Metroplex Technology Business Council, the largest technology trade organization in Texas, named D4D the 2010 winner of the Tech Titan Award. The company also received ISO 13485 certification, indicating that the company had established and maintained a quality management system that meets worldwide standards for medical devices.

D4D formed its own district sales force to work with Schein’s digital technology specialists and field sales consultants in promoting D4D products. Another major change in the organization occurred at the end of the year when Haymann, one of D4D’s founders, resigned as CEO to pursue other business interests. He remains an investor and board member.

CADapalooza ‘10 was held at the new Cowboys Stadium in Dallas to focus on how chairside CAD/CAM is rapidly changing the dental office in many ways — from the financials to empowerment of the dental team. D4D also expanded into new markets with military and government installations in the United States and globally in Mexico and the Middle East. Regional “previews” were scheduled around the United States in dozens of locations. New software capabilities and enhancements were introduced with another software update, and the 100th CDD to achieve certification.

2011 promises to be another banner year with the introduction of new products and capabilities that build on the current system as well as take the company into new areas of dentistry.