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Manuel Stanescu / Protec Dental Laboratories

Protec Dental Lab's Stratasys Eden500V™ 3D printer in action.

CASE STUDY

The Catalyst for Growth

PURPOSEFUL INNOVATION THROUGH 3D PRINTING DRIVES PROTEC DENTAL LABORATORIES' SUCCESS

Successful companies are the ones whose leaders ask “Is there a better way?” Pursuit of the answers is usually the key to success and growth. That approach to business has been the underlying theme for Protec Dental Laboratories, one of Canada's largest dental labs. Protec, located in Vancouver, is a full-service lab providing orthodontic, restorative, and fixed and removable prosthetics and implants. Since its start, Protec has made innovation and a healthy curiosity for new technology the bedrock of its own success and growth, with 3D printing at the heart of it all.

An Evolutionary Approach

Protec's journey to 3D printing started with the introduction to digital scanning technology. Scanners are used to create a digital representation of dental models that are the basis for constructing dental appliances. Initially, Protec's objective was to digitize the models to alleviate the need for physical storage. But as Jeff Player, Managing Partner of Orthodontics realized, "If we're digitizing models then we should be able to print them, so we can make an appliance on the model." That realization spurred the purchase of Protec's 3D printers and the company hasn't looked back since.

But simply owning and using 3D printers isn't the end goal. Protec's primary motivation for 3D printing is to maintain a competitive advantage and grow the business. Prior to 3D printing, Protec relied on the tried-and-true, but painstakingly slow, process of using stone models to make dental appliances. But now, instead of one technician making one stone model at a time, the 3D printers can produce dozens of models simultaneously, dramatically increasing productivity. This frees up time for technicians to produce orthodontic appliances and work on other high-value activities.

What's more, 3D printing provides a much more accurate model than what's capable with traditional alginate impressions. According to Player, when Protec prototypes a night guard and turns the 3D printed model into an actual product, they know it will be more accurate than if it was produced by hand. "Consistency and accuracy are key terms we'd use to describe the benefits of 3D printing," said Player.

Leveraging Technology for Business Growth

For Protec, the benefits of 3D printing aren't limited to just making more models in less time. The digital nature of the technology lets Protec leverage its capabilities to grow the business. With the ability to print models from digitally generated intra-oral scanners, Protec sets itself apart from other dental labs, which provides a significant competitive advantage. By positioning the company as a go-to partner for the growing number of dentists adopting digital dentistry, Protec has made itself a magnet for increased business. As Manuel Stanescu, Protec CAD manufacturing supervisor put it, "3D printing definitely offered us a huge advantage over other labs when it comes to being able to print models from intra-oral scanners." The technology allows Protec to do more business volume, with fewer people involved. Case in point: Within the last one to two years Protec's digital workflow from intra-oral scans has increased 100%, from approximately 10% of their business to 20%. "It definitely brought us new customers," said Stanescu.

This capability also allows Protec to broaden its geographic reach through the expediency of electronic files. Instead of shipping physical dental impressions to Protec, practitioners of digital dentistry transmit their files electronically. Since Protec can process and 3D print these files simultaneously for multiple customers, they're able to service more of them, regardless of whether they're down the street or across the country.



Checking the results on the build tray.



Jeff Player and Manny Stanescu review the digital design of a splint.



A view of the lab at Protec Dental.

As a result of this success, Protec has consistently grown its Stratasys 3D printing capabilities, adding a new PolyJet™ 3D Printer each year for the last four years. The capability, reliability and capacity of PolyJet technology has enabled Protec to scale up its clear aligner business, maximizing production while maintaining precision.

Because Protec is always looking for what's ahead in 3D printing technology, the company expects to grow its 3D printing capability. According to Player, Protec is constantly researching technology that, "allows us to do things faster, better and more accurately."



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