Structo’s high throughput dental 3-D printers help lay foundation for dental chain to launch own brand of clear aligners

FDC Dental Group is a network of 21 clinics in Singapore with a history spanning more than 15 years. With a team of over 30 experienced clinicians, FDC covers a wide range of treatments, including orthodontics and restorative dentistry and paediatric dentistry. With the recent rise in popularity of clear aligners as an alternative treatment to conventional fixed orthodontic appliances, FDC has seen a significant increase in demand for these products and recognised the need to internalise its manufacturing process to optimize quality, turnaround time and costs.

“Lately, a lot of patients have been requesting clear aligners instead of traditional braces because of the aesthetic appeal and ease of use,” said Dr Nurul Aizat, CEO and group clinical director of FDC Dental Group. “Having previously relied on an external aligner manufacturer for our cases, we saw the opportunity to start managing the process ourselves in-house, to better control the quality of the aligners and reduce manufacturing cost. We commissioned Structo to assist us with their dental 3-D printers and to set up the entire production line in our facility,” Aizat added.

“The project with FDC was an exciting one from our perspective because it allowed us to take a holistic look at the entire digital process from scanning to manufacturing,” said Huub van Esbroeck, one of Structo’s founders. “The Structo OrthoForm’s high printing speed and throughput enables businesses like FDC to take control of their own manufacturing process, giving them an edge in the highly competitive orthodontics market.” By insourcing the manufacturing process, FDC has managed to achieve cost savings of up to 50 per cent per patient, which will be shared with the end user to make clear aligners more accessible to a broader demographic. Beside the cost, FDC managed to halve the manufacturing turnaround time from one month to only two weeks upon receiving a case. Faster delivery of aligners to the patient also contributes to AAA Aligners’ edge over its competitors.

“Structo’s mission is to empower businesses like FDC to deliver superior products with the help of digital dentistry and our application-specific solutions. We believe the speed of our printers will allow us to spearhead the widespread adoption of digital dentistry and we are glad we are able to help Dr Aizat and the entire team at FDC to realise the benefits of a full digital workflow,” added Huub.

With its unique application-based product development, Structo has brought two leading dental 3-D printers to the market. Developed using its proprietary technology, called Mask Stereolithography (MSLA), Structo’s printers are...
designed to be high throughput manufacturing machines.

The company’s biggest user, Glidewell Dental, runs three Structo OrthoForm printers round the clock in its production line enabling it to achieve a throughput of 180 arches per printer per day – more than any other 3-D printer in the same price category. The 3-D printer purchased by FDC Dental Group is the OrthoForm, an orthodontic 3-D printer capable of printing up to 30 arches in 1.5 hours. To date, the OrthoForm has helped Structo expand its global reach with an installation base in across four continents. “At Glidewell Dental, we run a high-volume facility with round-the-clock production of various models and appliances. When looking for a 3-D printer, I need something that not only prints accurately with reproducible results throughout the print platform but is also able to deliver the speed and throughput we require,” commented David Leeson, Director of Engineering at Glidewell Dental.

After running three Structo OrthoForm printers over the last year, Glidewell has decided to further integrate Structo’s MSLA technology printers to expand the company’s production capabilities. By being the launch customer and adding two of the newly released DentaForm 3-D printers, Glidewell Dental is now running five Structo 3-D printers at its production facilities. “Operating two of Structo’s new printers is not only sufficient to replace a number of our existing printers, but also allows us to increase capacity overall,” added Leeson, who mentioned that the company foresee

“Structo’s unique MSLA technology is just the type of innovation the industry needs.”
David Leeson, Director of Engineering of Glidewell Dental.
further expansion with more DentaForm printers in the second half of this year. Glidewell’s California-based dental laboratory has been a DentaForm beta user, providing valuable feedback to Structo before the printer was made available to the mass market. The DentaForm 3-D printer is designed to print die-fitting models for crowns and bridges fitting.

“Having one of the leading dental labs in the world place its trust in our technology shows that our solution is addressing a very critical need in digital dentistry. David and his team have been providing us with a lot of feedback that has contributed to new features and design elements of the DentaForm printer. We are really excited to continue this partnership with Glidewell to help them expand their capacity,” added Huub.

Structo believes its high throughput printers which give laboratory managers greater flexibility in how they manage their manufacturing process, will help accelerate the adoption of digital dentistry. Technicians will no longer have to wait 4–5 hours for a single print job to complete, an inherent challenge that used to be a roadblock that prevented most dental professionals from deploying 3-D printing on a large scale. To further encourage the adoption of CAD/CAM in dentistry, Structo recently launched a blog on all things digital dentistry (blog.structo3d.com).

BOILERPLATE

Structo is a Singapore-based dental 3-D printing solutions provider. It designs, develops and builds 3-D printers tailored for dental applications using its unique proprietary MSLA technology. With MSLA, Structo’s 3-D printers are able to achieve speeds much higher than that of conventional SLA printers, revolutionising the field of digital dentistry with higher throughput and lower costs, without compromising on print quality.

ORTHOFORM

With a large build platform and crisp printing resolution, the Structo OrthoForm 3-D printer is designed for the rapid manufacturing of dental moulds for use in secondary processes, such as vacuum forming. The adoption of digital dentistry is no longer a cause for concern with our unique proprietary MSLA technology which enables the Ortho Form to achieve record-breaking speeds (Up to 30 dental models in 90 minutes). The end result is higher throughput and lower costs, all without compromising on print quality.