Digitalised dental products, whether produced by additive or subtractive technologies, are expected to disrupt the US dental prosthetic market for the foreseeable future, according to a report by international market research and consulting company iData Research. This will be especially true in the denture market. With increasing innovations, emerging competitors, and Food and Drug Administration (FDA) approvals, the digital market is expected to grow substantially over the next several years. As digital products are offered at higher prices, their growth will drive the total dental prosthetic market at a compound annual growth rate (CAGR) of 1.4 per cent.

“The digital dentistry market had an estimated value of nearly $650 million in 2017 and is expected to grow at a CAGR of 5.6 per cent through 2024.”

The report highlighted recent milestones in digitalisation of the US dental prosthetic market (which encompasses crowns, bridges, inlays, onlays, veneers and dentures) beginning in 2015, when DENTCA received FDA approval for the first resin material used to 3-D print parts of dentures. Later in 2017, EnvisionTEC received FDA approval to sell its E-Denture material, providing both dental laboratories and offices with the ability to fabricate pink denture bases. Currently, AvaDent holds the majority of the nontraditional complete denture market, as it is the only company with a fully digitalised denture product. AvaDent has a proprietary method of milling both the pink base and white teeth from a single puck, whereas other competitors mill out the pink denture base only and it is then integrated with teeth by a technician in the laboratory.

In their overview of the digital dental industry, consisting of CAD/CAM systems, CAD/CAM materials and rapid prototyping systems, report authors iData Research analysts Salma Mashkoor and Jeffrey Wong said they are expecting that market growth will result from innovative product applications, such as the increasing user base of intraoral scanners or even new indications for innovative rapid prototyping systems. Unfortunately, competitive price cuts and inexpensive solutions are reducing potential market growth. This is especially true for rapid prototyping systems, which have an unsaturated market relative to that of CAD/CAM materials and systems. The digital dentistry market had an estimated value of nearly $650 million in 2017 and is expected to grow at a CAGR of 5.6 per cent through 2024.

Since the rapid prototyping system market is relatively new in comparison with the other digital dentistry markets, new indications for printers will continue to emerge, such as 3-D temporary prostheses. Stratasys recently received FDA approval for its VeroGlaze material, which can be used in the mouth on a temporary basis for up to 24 hours. Its biocompatible PolyJet photopolymer has also been medically approved for temporary in-mouth placement. Printers are currently too costly for an in-office setting and the technology is still advancing in this regard. Once these barriers are overcome and the necessary FDA approvals are acquired, the use of 3-D temporary prostheses will grow, stimulating sales of in-office printer units.

CAD/CAM systems too are experiencing an uptick of new applications, as demonstrated by intraoral scanners, Mashkoor and Wong noted. In the past, the intraoral scanner market was entirely reflective of use by general practitioners. However, in recent years, the user base has expanded to include orthodontists and other specialists, a trend that is expected to continue in the future. Orthodontists and dental surgeons are quickly adopting the technology, as general practitioners are now sharing scanners in multipractice organisations.

As the user base for intraoral scanners expands, unit sales will increase, thereby encouraging growth of the total CAD/CAM system market. Similarly, the increasing applications of rapid prototyping systems will boost both laboratory and clinical sales.
According to the report, the factor most limiting growth of the US digital dentistry market is the emergence of relatively inexpensive products that create more competition and threaten market growth on a national basis. Low-cost foreign brands have penetrated the CAD/CAM zirconia material market in the US, driving the overall average selling price (ASP) downward. In addition, a number of generic brands produced in the US have captured a sizeable portion of the market through promotional strategies, further resulting in ASP declines. These subpremium solutions have been especially effective in reducing the ASP of zirconia discs, as the ASP for zirconia blocks had already declined rapidly in the past. Inexpensive products have facilitated ASP cuts and competitive pricing in the rapid prototyping system market too.

In 2017, Formlabs engaged in aggressive marketing and educational initiatives regarding its technology and the affordability of its products, attracting a large customer base. As its machines are relatively inexpensive, many potential clients are willing to try them out, thereby decreasing the overall ASP for rapid prototyping systems. As with Formlabs, additional companies are entering the market with affordable solutions, further depreciating the ASP. Furthermore, the competitive landscape is becoming more saturated, encouraging competitive price cuts as a result. Rapid prototyping systems are still gaining acceptance, especially in the clinical setting. Once these systems are widely accepted by various users in the dental industry, the corresponding ASPs will continue to rapidly decline.

With regard to CAD/CAM systems, ASPs for both CAD/CAM mills and chairside systems are declining with the competitiveness of the market too. Amann Girrbach and Roland DGA are examples of companies that are introducing new products on to the CAD/CAM mill market alongside printer products. Chairside units, such as the closed milling systems offered by Dentsply Sirona and E4D Technologies, command a premium price over other CAD/CAM systems. It is more feasible for dental offices to purchase a scanner and then outsource or run a separate open-source mill. As a result, pricing, largely set by Dentsply Sirona owing to its market share, has been decreasing in order to remain competitive.

Dentsply Sirona led the total digital dentistry market in 2017 as a result of product successes in the CAD/CAM system and material markets. This was largely due to the diversity of mills offered by the company. Dentsply Sirona continued to dominate the closed chairside milling system market in 2017 through sales of its CEREC chairside CAD/CAM system.