L.E.K. INSIGHTS

Outlook for the US Dental Industry: Drilling into the Root of the Market

The U.S. dental market has seen meaningful evolution over the past several years that has implications for growth opportunities throughout the dental sector and across the value chain, from general dentistry to specialty practices, from product manufacturers to distributors and dental labs, as well as ancillary companies (e.g., dental continuing education providers). With approximately $152 billion per AP in total U.S. dental market expenditures in 2022, the industry rapidly bounced back from the disruption caused by COVID-19 and returned to its relatively steady growth trajectory. L.E.K. Consulting has discovered that behind that growth are five major trends shaping strategic imperatives across go-to-market strategies and investments in the market:

1. Growing prevalence of scaled general dentist practitioner (GP) and specialty platforms supported by significant private equity (PE) investment
2. Increasing utilization of digital dentistry
3. Heightened focus on aesthetics and smile improvement solutions (the "Zoom effect")
4. Democratization of care supply
5. Expansion of dental coverage via Medicare Advantage and dental wellness programs

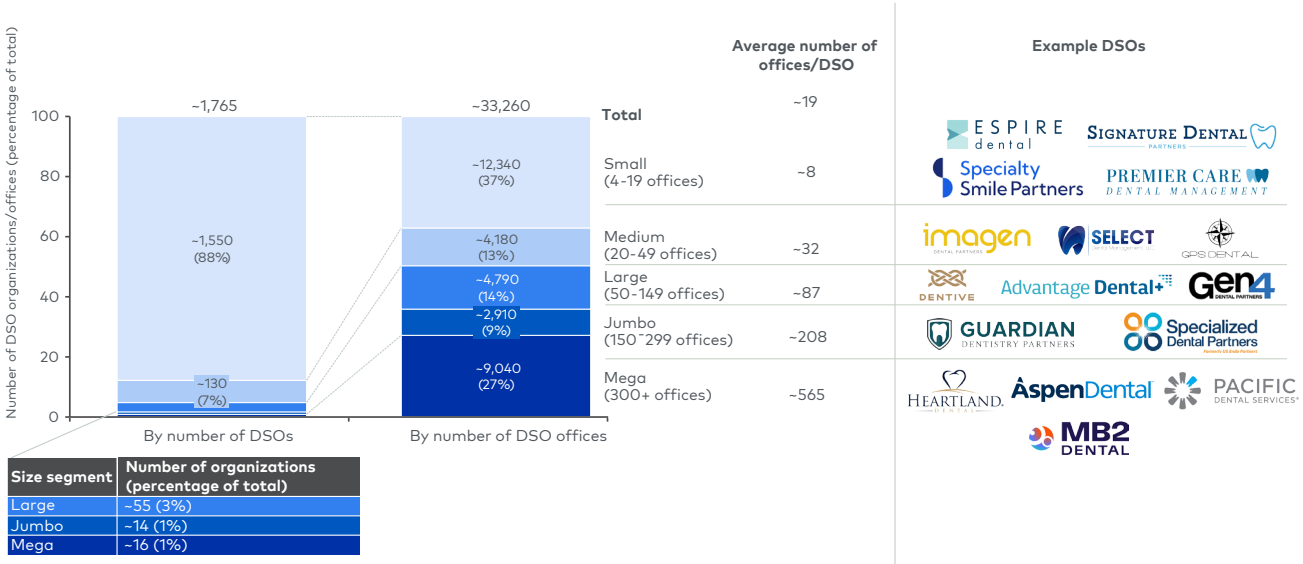
1. Growing prevalence of scaled GP and specialty platforms supported by significant PE investment

Dental Service Organizations (DSOs) have seen strong growth over the past five years or so, and their proliferation is expected to continue. While consolidation has traditionally been focused on GPs/GP-led practices, specialty-focused networks (e.g., oral and maxillofacial surgery (OMS), orthodontia) are in earlier stages of consolidation and appear to be following a similar trajectory to the consolidation observed among GP-led practices. PE interest and investment have supported the strong growth in dental scaled platforms and are expected to continue, given the sizable runway for growth and consolidation.

DSOs

DSOs are practice management organizations that contract with dental practices to support critical business functions. DSOs can be segmented based on the number of practices in their organization, geographic reach, and the various branding models and entity-supporting structures that they employ. The DSO market is relatively fragmented, comprising roughly 20 large DSOs with 150+ dental practices, and a relatively long tail of medium and small DSOs (see Figure 1).

Figure 1
Overview of DSO landscape in the US



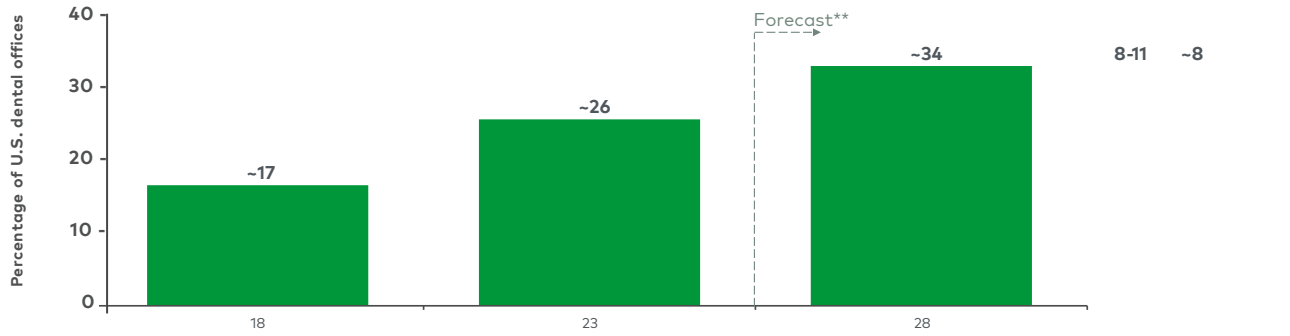
Size segment	Number of organizations (percentage of total)
Large	~55 (3%)
Jumbo	~14 (1%)
Mega	~16 (1%)

Note: DSO=dental service organization
Source: Interview feedback; LinkedIn; Webscraping of JoinDSO.com; L.E.K. research and analysis

Dentists are disproportionately choosing to sell their practices to DSOs for a wide variety of reasons, including to reduce administrative burdens, increase financial support, and achieve cost savings and scale advantages. Three primary DSO models have emerged: 1) standardized/nationally branded DSOs (e.g., Aspen, Great Expressions), 2) corporate/invisible DSOs (Heartland, DCA), and 3) joint venture (JV) partnership DSOs (e.g., MB2). Each DSO model has a distinct value proposition and target clinician/ownership profile. Relatively newer JV partnership models tend to be more attractive to dental practice owners who are looking for a partner to grow their business, while more traditional DSO models are often more appealing to dental practice owners looking to sell their practices and gradually transition out of the profession.

The proportion of dentist offices affiliated with a DSO was estimated at approximately 23% in 2022 and is forecast to grow to around 39% by 2026. The proportion of total dental expenditures associated with DSOs is higher relative to their size, as DSOs operate at scale and have higher Hyphenate revenue (see Figure 2).

Figure 2
DSO penetration of dental offices in the US (2016, 2022E, 2026F)



Note: DSO=dental service organization
Source: ADA; Becker's Dental; Dental Transitions; Dentistry Today; Group Dentistry Now; U.S. Census Bureau Statistics of U.S. Businesses; William Blair; L.E.K. research and analysis

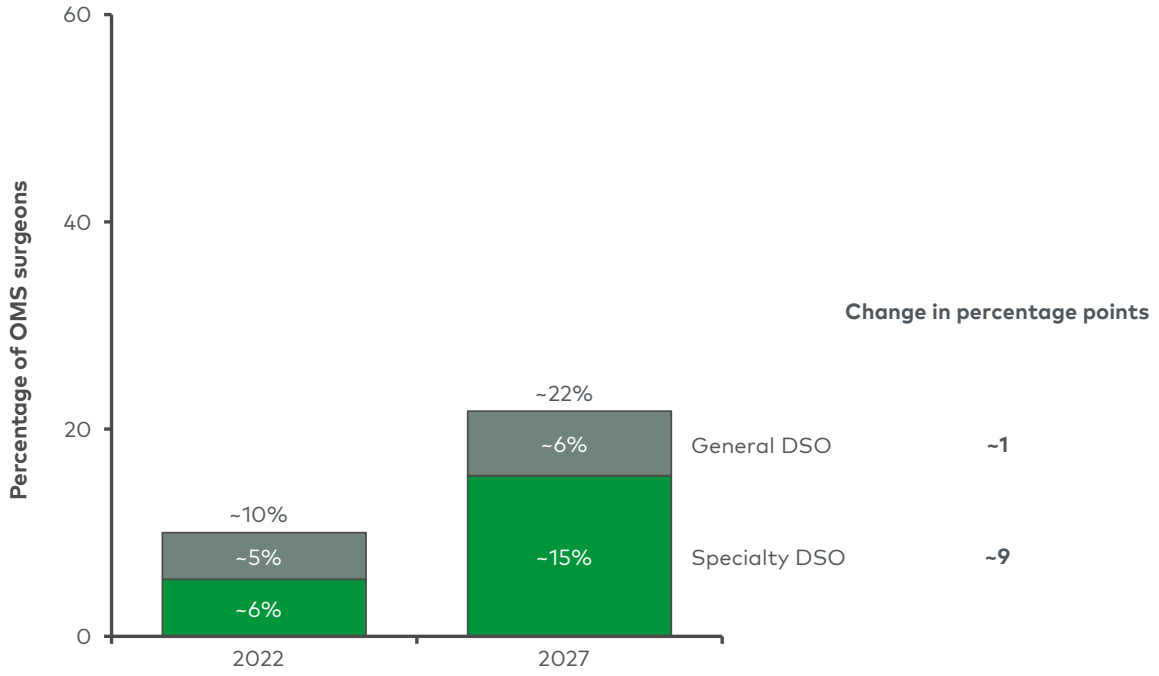
The COVID-19 pandemic accelerated DSO penetration, as these groups typically have more capital to withstand closures, invest in new capital infrastructure and continue to attract patients with synergistic marketing efforts. Many independent practices that faced furloughs and reduced patient volumes during 2020 were motivated to join DSOs to receive support.

Specialty-focused DSOs

Specialty-focused DSOs for oral surgery and other dental specialties (e.g., pediatrics, orthodontics) have also seen consolidation. These specialty-focused platforms offer scale benefits (e.g., increased bargaining power and operational efficiencies) similar to GP-focused DSOs, while also providing the expertise to maximize the benefits in the specialty setting (e.g., by expanding referral networks).

Although specialty-focused platforms are more nascent relative to traditional DSOs, with approximately 10% of OMS surgeons being part of a specialty-focused group in 2022, consolidation in the space is expected to mirror the path seen in general dentistry. The proportion of OMS surgeons affiliated with a DSO is expected to reach roughly 22% in 2027, with specialty-focused DSOs growing at a faster rate than specialty dentist affiliation with GP-led/general DSOs (see Figure 3).

Figure 3
OMS surgeons in the US, by practice affiliation (2022, 2027F)



Note: OMS=oral and maxillofacial surgery; DSO=dental service organization
Source: Company websites; L.E.K. interviews, research and analysis

2. Increasing utilization of digital dentistry

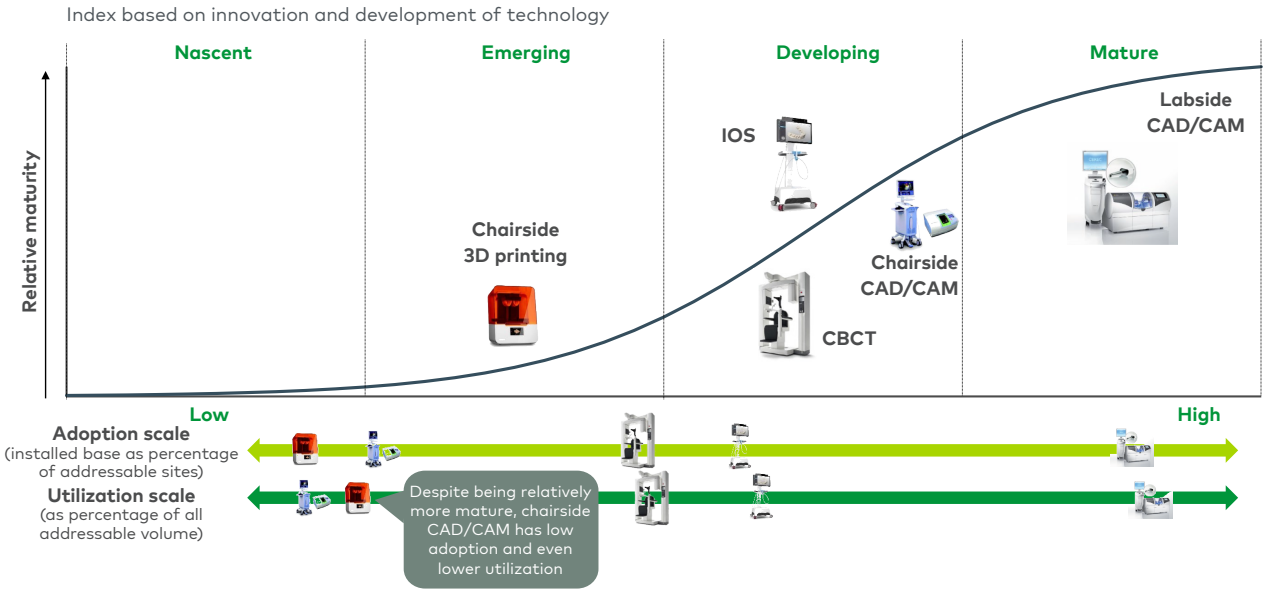
In recent years, there has been continued growth in the adoption of digital solutions in the dental market. We've witnessed an increase in the adoption of teledentistry and remote dental monitoring tools, driving patient engagement and collaboration with dentists, as well as a focus on the aggregation of dental data and attempts to utilize it for clinical/financial/operational improvements. Market participants are continuously attempting to integrate various systems and workflows into the dental clinic and broader ecosystem.

Digital technologies have also significantly altered the clinical approach to dentistry, broadening diagnostic, treatment and operative procedures across different branches of the practice. Digital advancements have been adopted both in dentist offices and dental labs, streamlining and shaping workflows. Key dental technologies include:

- **Intraoral scanners (IOSs)** – Devices that capture direct optical impressions of the dental arch using sensors and software to create a virtual three-dimensional (3D) surface model
- **Cone-beam computed tomography systems (CBCT)** – Systems that are a variation of traditional computed tomography (CT) systems; CBCT systems used by dental professionals rotate around the patient, capturing data using a cone-shaped X-ray beam to reconstruct a 3D image of the following regions of the patient's anatomy: dental (teeth), oral and maxillofacial region (mouth, jaw and neck), and ears, nose and throat to aid with dental implant planning, visualization of abnormal teeth, evaluation of the jaw and face, cleft palate assessment, diagnosis of dental caries (cavities), endodontic (root canal) diagnosis, and diagnosis of dental trauma
- **Lab-side CAD/CAM** – Laboratory systems comprising scanners, software and prosthesis processing equipment; computer-aided design (CAD) assists in the drawing and technical drafting of dental products based on either physical or digital impressions; computer-aided manufacturing (CAM) then creates physical prosthetics in a subtractive milling process (i.e., by removing material from a block)
- **3D printing** – Devices that enable digital production of a wide range of dental products (e.g., orthodontic models, crown and bridge models, surgical guides, restorations, aligners, retainers, long-term biocompatible dental products like splints or dentures); some 3D printers work only with proprietary materials, which means options are limited to the offerings of the printer manufacturer
- **Chairside CAD/CAM** – CAD/CAM technology and capabilities for the dentist's office to allow for the fabrication of crowns, bridges, veneers, inlays and onlays, and implant surgical guides with faster processing times and same-day treatment options

Maturity and adoption of these digital technologies vary (see Figure 4). Although there has been innovation over time, the pace has increased in recent years.

Figure 4
Relative maturity of dental lab product technology



Note: IOS=intraoral scanners; CAD/CAM=computer-aided-design and computer-aided-manufacturing; CBCT=cone-beam computed tomography
Source: L.E.K. interviews, research and analysis

Penetration of dental digital technologies is expected to increase, albeit to varying degrees:

IOS

- Around 55% of dental practices have an IOS; penetration among dental practices is currently growing and is expected to continue as IOS significantly improves efficiency, turnaround times, accuracy and cost-effectiveness when compared to traditional methods like molding

CBCT

- CBCT systems have been sold in the U.S. since the early 2000s and have enjoyed high growth; penetration of CBCT systems is expected to increase as dental professionals continue to leverage the systems for various clinical applications such as endodontic treatments and implant planning

Labside CAD/CAM

- Labside CAD/CAM adoption is relatively mature at around 65%-75% but is expected to continue to increase as labs consolidate and there is additional capital to invest in CAD/CAM technology
- Dentists increasingly expect dental labs to have CAD/CAM technology, especially those dentists who have adopted IOS and digital scanner technologies; dentists indicate a preference for CAD/CAM-produced products due to improved manufacturing accuracy and decreased turnaround times, rework rates and costs

3D printing

- 3D printing is still a nascent technological development in the dental market, with most current and future adoption expected primarily at dental labs, given existing technological limitations related to strength and aesthetics
- As the technology and economics improve, labs are interested in potentially increasing efficiencies with 3D printing

Chairside CAD/CAM

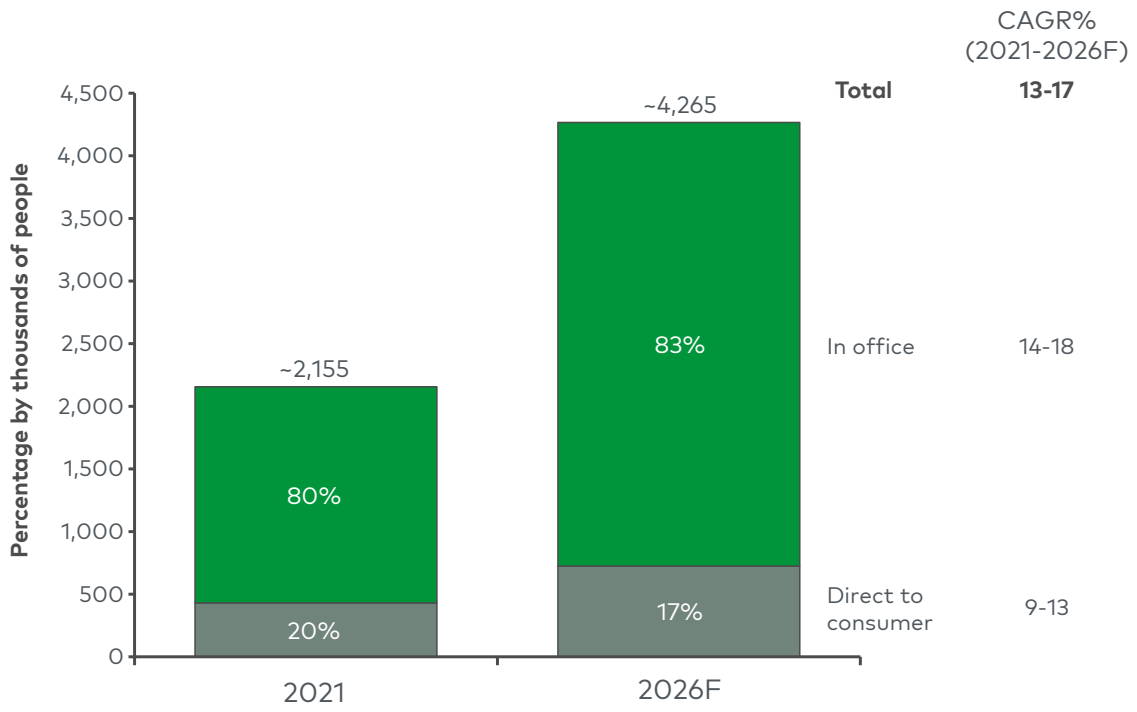
- No significant near-term shifts are expected in the penetration of chairside CAD/CAM from current levels of approximately 10%-20% unless original equipment manufacturers (OEMs) are able to reduce upfront costs and training requirements for dentists; although dentists see the benefits of chairside milling (e.g., quick turnaround time, Hyphenate appointments), upfront costs and training requirements often remain prohibitively high and operationally burdensome for widespread adoption
- Most dentists (including some dentists who have acquired chairside mills) prefer to work closely with dental labs due to the service and assistance they receive, particularly for products that require greater precision (e.g., front tooth implants), reducing the in-office labor burden

3. Heightened focus on aesthetics and smile improvement solutions (the 'Zoom effect')

The dental market has historically seen a steady increase in demand for products and services, driven by a growing and aging population requiring more, and more complex, dental procedures. Over the past several years, demand has been further augmented by an increasing focus on aesthetics and smile improvement solutions, given more time spent "on camera" (e.g., via Zoom meetings, video calls) and social media. As a result, there is a growing awareness and acceptance of advanced specialty procedures and services, including aligners, implants and other cosmetic procedures (teeth whitening, veneers, etc.).

The number of patients with malocclusion opting for in-office aligner treatments such as Invisalign versus traditional braces has risen rapidly. Direct-to-consumer aligner channels, supported by digital technologies such as teledentistry platforms, have also emerged more recently and are expanding the aligner market further, primarily for milder cases of malocclusion. The number of both in-office and direct-to-consumer aligner cases is expected to continue its fast growth trajectory going forward (see Figure 5).

Figure 5
Market penetration of clear aligners by type in the US (2021, 2026F)



Note: CAGR=compound annual growth rate
Source: BCC Research; Mordor Intelligence; Align Technology 10K; Statista; L.E.K. interviews, research and analysis

Implants have emerged as the standard-of-care alternative to crowns as well as dentures to support implant-retained partial or full-mouth rehab. Implants provide improved functionality (e.g., better durability, bite strength), bone health and aesthetics, driving strong U.S. dental implant growth of high single to low double digits annually through 2028F. Growth and expansion of the implant market is also supported by the emergence of implants at varied price points (i.e., premium vs. value implants) and the democratization of care supply.

4. Democratization of care supply

A growing number of GPs have started to offer specialized services and advanced procedures like implants, extractions and orthodontics — once reserved solely for specialists — especially in patients with less complicated cases. This shift has resulted from advances in dental technology (i.e., increased utilization of digital dentistry discussed above) as well as training on more advanced procedures offered in dental schools as part of the core curriculum and within clinician networks. Going forward, the dental market is set to expand further, given the greater patient reach enabled by "super GPs." Patients who seek specialized services and advanced procedures from GPs tend to be more price sensitive (potentially reluctant to seek the services of specialist dentists), and are often influenced by direct-to-consumer marketing and social media advertising of aesthetic smile improvement solutions.

5. Expansion of dental coverage via Medicare Advantage and dental wellness programs

Dental coverage has seen some expansion recently with the growth of Medicare Advantage. While original Medicare largely does not cover routine dental care, many Medicare Advantage plans offer relatively broad dental coverage (e.g., Hyphenate restorations and implants) with low patient out-of-pocket costs to attract new members. The number of lives covered by Medicare Advantage is expected to continue to increase, driving parallel dental coverage expansion. Moreover, dental wellness programs (e.g., Delta Dental Wellness Plan) are also becoming more prevalent, with the goals of prevention and cost savings. Some dental wellness programs are employing targeted interventions for high-risk patient populations to support oral care.

In the context of these dental trends, there are various implications that dental market stakeholders across the value chain should consider as they shape their go-to-market strategies and identify areas for investment.

Overall, the dental space is a sizable market growing healthily, driven by established, developing trends (e.g., growing prevalence of DSOs, continued adoption of digital technologies) as well as newer, emerging phenomena (e.g., increased utilization of teledentistry, the "Zoom effect," expanded coverage via Medicare Advantage), providing opportunities for market stakeholders.

Dental scaled platforms such as DSOs have ample runway for continued growth. While an upward limit likely exists for the proliferation of these platforms, we are far from that limit, as independent dental practices continue to make up a sizable segment in the overall landscape of dental providers.

- DSOs looking to scale should acquire/partner with dental practices in metropolitan statistical areas with attractive supply (e.g., high concentrations of GP dentists or specialists) and demand (e.g., older populations, high numbers of lives covered through commercial insurance and/or Medicare Advantage) dynamics, as well as a favorable competitive landscape (i.e., low relative DSO penetration). As DSOs continue to acquire/partner with dental practices, it is increasingly important to differentiate the platforms (e.g., by offering various JV models or levels of collaborative decision-making) to continue to attract practice owners.

Dental OEMs, dental labs and ancillary dental providers (e.g., providers of continuing dental education) should align their commercial efforts to service the two key customer segments (DSOs and independent dental practices) which have differing needs and expectations.

- For example, when it comes to purchasing dental lab products, independent dental practices generally value quality, relationships and service, while DSOs predominantly place a higher emphasis on price and scale
- It is also essential to consider differing needs across dental scaled platform sub-segments (e.g., large, standardized nationally branded DSOs vs. small regional DSOs that essentially operate as independents) to further tailor offerings and sales approaches
- What's more — across dental scaled platforms — dental OEMs, dental labs and ancillary dental providers should not only maintain strong relationships at the corporate platform level but also continue to expand support and touchpoints with dentists at the contracted practices

As dental OEMs, dental labs and ancillary dental providers focus on dentists, they should continue to specifically evolve their strategies and sales teams to cater to the growing number of GPs providing specialized services and their more price-sensitive patients. Since not all GPs are created equal, expanding reach to target GPs should involve careful segmentation and robust analysis along key dimensions such as current use of digital dentistry, age, patient volume and DSO affiliation. Super GPs will continue to look for easy-to-use, digitally enabled technologies as well as readily available product training to support such solutions.

Dental digital technologies have expanded the clinical scenario of restorative possibilities, and there is no going back; dentists, patients and dental labs (as consumers) alike continue to look for and expect innovative, cutting-edge developments to drive improved patient outcomes and efficiency.

For the more nascent technologies (e.g., 3D printing), there is still a need to drive penetration, focusing on placement and being at the cusp of technological advancements.

For the more established technologies (e.g., labside CAD/CAM), there is an appetite among dentists for solutions that can improve characteristics such as throughput speed and capacity.

The current ceiling around chairside CAD/CAM penetration may be lifted if dental OEMs can design systems that address some of the widespread utilization barriers, including operational burdens. To date, nothing has moved the needle on chairside CAD/CAM adoption and use.

For more of L.E.K.'s insights into dental market dynamics, please reach out to **lifesciences@lek.com**.

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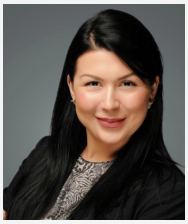

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