



SIEMENS ADVANTA

# Dynamics shaping the **Dental Industry**

Helping dental players succeed

**SIEMENS**

# Executive Summary

## **The ecosystem is characterized by intense competition and interdependence among several players.**

Dental care is delivered via an ecosystem consisting of multiple players. Many a times, these players have overlapping products and capabilities which leads to competition for value across the chain. At the same time, many of these players are dependent upon each other to reach and deliver to their intended customers. The ecosystem has lot of push and pulls to say the least. Advances in dental technology, active investment by private investors, emergence of new service provider segments, regulatory shifts, changing demographics and associated demands of dental services is motivating players to either circumvent the traditional value chains or expand into adjacencies.

## **A deep understanding of ecosystem dynamics is vital for players to position themselves for success.**

Understanding ecosystem interactions helps players identify opportunities and threats, enabling them to adapt and succeed in a competitive landscape. Better understanding can help players to rejig their portfolios, develop new partnerships, tweak their go to market strategies, divest non-core assets or all of the above.

## **We have distilled and highlighted key vectors shaping dental ecosystem in US.**

We have uncovered 9 insights that we believe will shape the future of the dental care business in the US. Covering a wide range, from manufactures to service provides, these vectors are based on research and experience of Siemens Advanta team serving clients in dental ecosystem.

## Players and the play in dental care

**The dental care in the US is delivered through an intricate ecosystem. This ecosystem can be understood through a demand-supply construct.**

Demand is primarily driven by the size of the population requiring dental care (patients). Patient-provider interactions heavily dictates the demand - the type (services), the quality and the delivery modalities. Providers are enabled by supply side.

Supply side include Original equipment manufacturers (OEMs) developing equipment, materials and consumables and technology. In cases, product and services are taken to customers by distributors. Dental labs offer specialized services, mostly to providers.

Both demand and supply sides interact in an environment shaped by external influences



# Players and the play in dental care

## Demand side



**Patients:** Demography, dental health levels and access drives the demand for dental services



**Providers:** Mostly independent dentists, directly serve the patients. In instances, providers are affiliated with Dental Services Organizations (DSOs), point-of-need facilities, and other specialized facilities

## Supply side



**Manufacturers and technology vendors:** OEMs produce dental equipment and software, materials, and consumables



**Distributors:** Dental distributors work with OEMs to take products and services to the providers. Few big distributors are also OEMs with their private label products and solutions



**Dental labs:** Provide dental design and manufacturing services to providers for crowns, dentures and other indications

## External influences



**Private Equity/ Groups (PE/ PEGs):** Private investors/ private Equity group, invested in DSOs, product space and dental labs



**Insurers (Payers):** Insurers, public or private, provide coverage to patients in need of dental services



**Regulators:** Key government bodies such as food and drug administration, Department of Health and Human Services



**Technology:** Technological advances in Digital, cybersecurity, cloud, AI and dental equipment and materials

# Increasing competition and emerging channels

Siemens Advanta's perspective

**Increasing competition** among players in supplies manufacturing and distribution, but field services remain battleground of the few. **OEMs** strengthening '**Direct-to-X**' portfolio and channels.

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## Underlying trends<sup>1</sup>

- OEMs leveraging both direct and indirect channels depending on the portfolio. Few experimented with 'Direct-to-Customer'
- Top 3 dental distributors accounts for at least 3/4 of the distribution sales in US
- Private labels by distributors further intensifies the competition. In a case, up to 16% increase in private labels in last 5 year
- OEMs and big distributors recognize too much interdependence as risk; In cases, up to 40% of the OEM's revenues can flow via distributors/ partners
- Proliferation of dental supply platforms and marketplaces, especially for consumables and single use products, crowding supply side





# The rise of Dental Service Organizations (DSO)

Siemens Advanta's perspective

Growing **DSO segment** to exert **margin pressure** on suppliers, laboratories and payers alike. Expect big DSOs to rationalize their partner landscape and **in-source** design and field support **capabilities**.

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## Underlying trends<sup>1</sup>

- DSO affiliation is growing. Affiliation increased by nearly 50% in 2017-22. Affiliation is higher with young dentists
- Private practice ownership has declined by nearly 16% over the last two decades
- DSOs are expected to account for 40% of total dental spend by 2030
- DSOs negotiate competitive prices and higher service levels from labs.
- Nearly 1/10 of all dental labs' revenue is now tied to DSOs
- At least 3 out of 10 biggest DSOs have "formularies guidance" and increasingly more DSOs may issue such guidance



# Moving beyond financial consolidations

Siemens Advanta's perspective

For **PE/ PEGs**, the ability to drive performance at dental practices, without impugning upon **treatment decisions** and **quality**, will determine success. Financial consolidation without **deep operational improvements** won't be enough.

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## Underlying trends<sup>1</sup>

- At least 8 of 10 biggest DSO are backed by private equity or investment firm
- Dental Industry in US saw 140+ deals by PEs in 2023. The deal count is ~3X the deals in Biotech or Pharma
- More than 80% of deals in 2023 were "Add-on" highlighting the traction in platform-based acquisition. General dentistry account for highest PE deal count
- High interest rates impacting capital availability. Effective federal fund rate around 5% in Q1, 2024
- PE backed healthcare firms has reportedly seen highest levels of bankruptcies in 2023 since 2019



# Consolidation in dental laboratory space

Siemens Advanta's perspective

**Consolidation in dental laboratory** space continues in a challenging environment. Expect survivors to focus on **complex indications, expand portfolios**, and develop new market approaches.

## Underlying trends<sup>1</sup>

- Number of dental labs has nearly reduced by 50% in last two decades. More severe drop-in labs with sole proprietorships
- As per estimates, top 4 biggest laboratories account for less than 20% of the market share
- Major labs expanded their portfolios (CAD/CAM, 3D printers, implants, etc.), directly challenging traditional OEMs and manufactures
- Big labs investing in automation/ digitalization and business model (priority on digital impression, free scanners-based contract etc.)
- Embrace of chairside restoration production (~20% practices in 2023) and outsourcing of design services impacting labs' business





# Demographic shifts are transforming demand

Siemens Advanta's perspective

**Demand** for pediatric dentistry to stabilize, while **aging population** with improving coverage and income levels to drive demand for **geriatric dentistry**. Changes in **public dental coverage** will sway overall demand.

## Underlying trends<sup>1</sup>

- Low penetration of dental care vis-a-vis health care; individuals without dental insurance is nearly 3X the ones without health insurance
- Higher share of aging population – ratio of 65+ age group 25-65+ age group to increase by nearly 33% by 2053
- More than 66% of 65+ age group is expected to have gum disease, 1 in 5 is suffering from edentulism. Adults represent the most uninsured group
- More than 90% of children (0 - 18 years) are covered by insurance. Reach of public insurance has increased over the last few years
- Economic factors determines adoption of treatment especially in disadvantaged groups. In situations, services offered vary with patient's cover



# Increasing margin compression

Siemens Advanta's perspective

Practices are **fighting margin compression**. **Staffing** continues to be a challenge. Practice to push for higher billings and **reimbursement** rates, optimized **treatment mix**, higher case acceptance and experiment with **in-house plans**.

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## Underlying trends<sup>1</sup>

- 16 to 22% dip in median net income (2010 to 2023) for general practitioner in a private practice; Expenses increasing faster than revenues
- Preventive and diagnostics procedures account for more than 75% of all procedures. Higher procedure billing not equivalent to higher margin
- Staffing costs can account for more than 40% of the total operating costs; supplies and lab costs account for additional 25%
- For typical practice, case acceptance percentages vary from lower 30s to lower 70s and can impact practice revenues
- Practices continue to face issues related to reimbursement. One of biggest retail chain in US closed (in Q2, 24) dental care business, highlighting reimbursement challenges



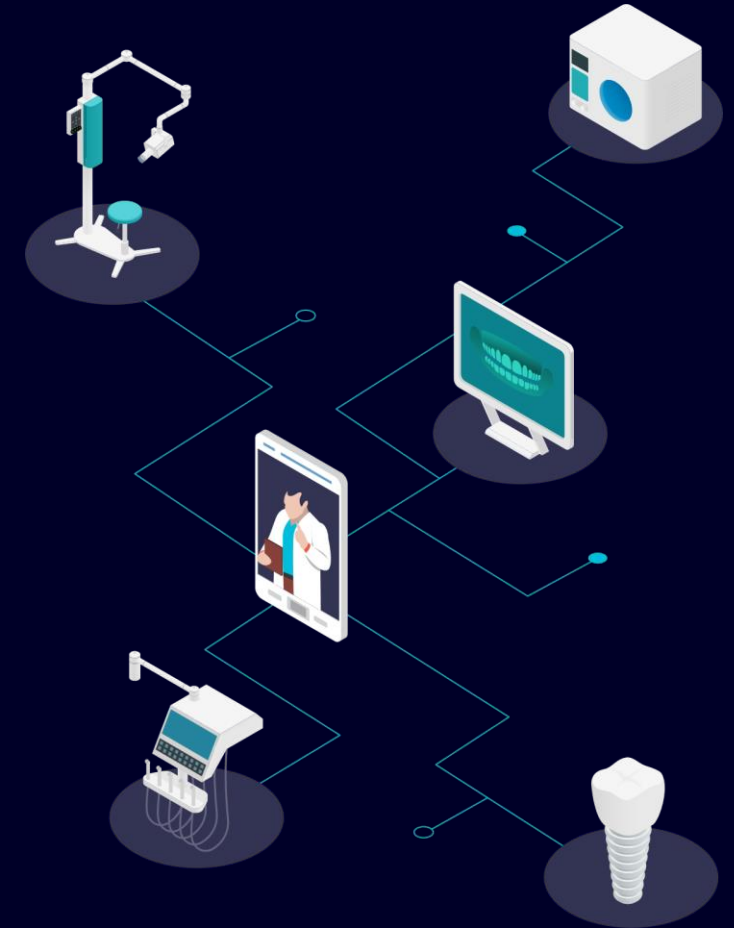
# Increasing footprint of digital technologies

Siemens Advanta's perspective

**Headroom for digital technologies** in clinical workflows in push for single-visit dentistry and throughput. Increasing availability of technology **with alternative Go-to-market approaches**. Expect proliferation of **hardware-agnostic** open platforms.

## Underlying trends<sup>1</sup>

- Increasing adoption with ~16% increase in the use of digital impressions and a 3X growth in digital lab orders in recent years (2019-2021)
- Increasing adoption leading to increased competition in equipment (supply side) space
- Increasing affordability. IO scanner prices range from 1X to 4X; Options such as leasing or subscription-basis lowering adoption barriers
- Less than 20% penetration for 3D printers, with most adoption in last two years. Penetration limited by application type as well
- Top OEMs and suppliers expanding portfolios with digital offerings and 3rd party interoperability



# Advancing AI adoption

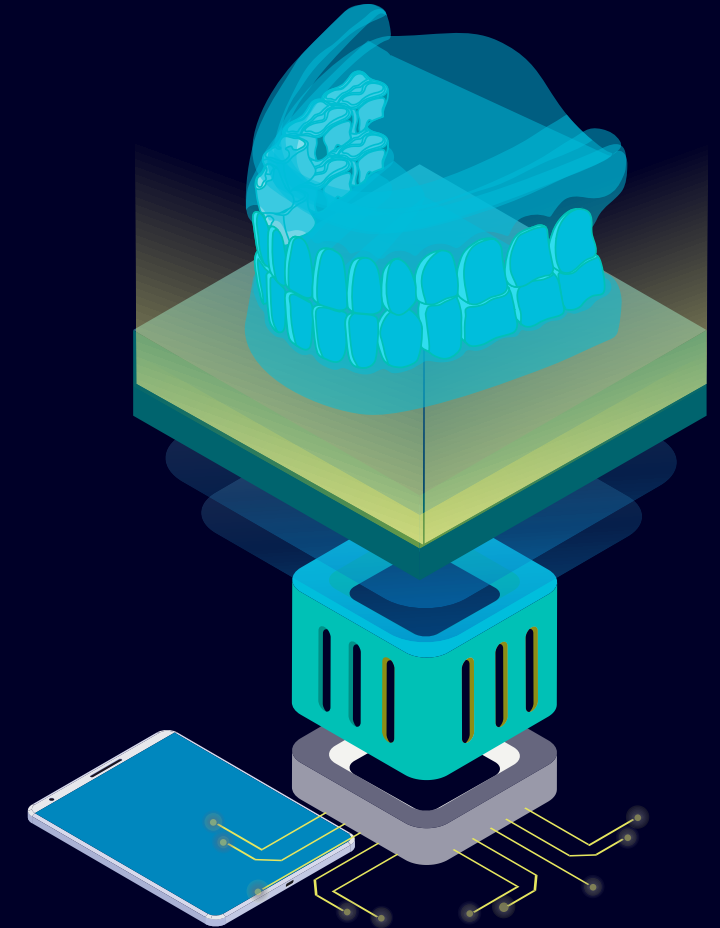
Siemens Advanta's perspective

**AI adoption to go beyond** non-clinical, and basic clinical workflows in practices; **Dentist-in-the-loop approaches** to stay to avoid misdiagnosis and over/under treatment. Expect emergence of holistic, patient-specific **AI-based mouth models**.

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## Underlying trends<sup>1</sup>

- 6X increase in the number of research publications on AI in dentistry since 2019
- At least 8 AI/ML-enabled dental products have been reviewed and authorized by FDA in the last two years
- 5 out of 10 top DSOs in the US have either invested in AI or have partnered with suppliers providing AI-enabled solutions
- Comprehensive AI adoption across workflows incl. administrative tasks, pathology detection (highest adoption), treatment planning and patient communication
- New bills are being introduced by both federal and state govt. to pacify public concerns and regulate AI adoption
- highlighting reimbursement challenges



# Increasing need for cybersecurity

Siemens Advanta's perspective

Increased cyberattacks, privacy concerns and stringent regulations are driving investment in **enterprise and product security**. Small **practices** and **laboratories** with limited awareness, capital and weak security posture are **at risk**. Expect such entities to adopt '**no-regrets**' measures such as cyber liability insurance and staff education.

## Underlying trends<sup>1</sup>

- Of the 16 critical infrastructure sectors, healthcare faced highest (20% of all) number of ransomware attacks
- Average cost of healthcare data breach at more than USD 10M is highest across industries
- In past couple of years, nearly all – distributors, DSOs, insurers, suppliers and individual dentists – have faced cyberattacks
- In 2023, at least 9 dentalcare providers have "reported" breach notifications. In 2022, nearly 1/3 of all HIPAA resolutions featured dentists
- Cloud- based solutions and IoMT has improved data management and productivity; nonetheless, both can contribute to increased surface area for cyberattacks.



# Closing remarks

## **We have just scratched the surface**

There are many other areas which require deep-dives to better paint the picture. These areas include anticipated changes in regulatory landscape, insurances and reimbursement rates, increase in specific services areas such as cosmetic dentistry, among others. Depending on who you are and where you play, few vectors can be more relevant to you than others.

## **Expect more changes and disruptions**

Healthcare has always been a dynamic space and same is true for dental industry in many ways. A wide of range of internal and external factors will continue shaping the industry. Private investment, emergence of DSOs, Digital dentistry, AI and dental laboratory space are expected to bring more entropy to the system

## **Stay informed and take charge**

Keeping abreast of new players, products and platforms and developing effective competitive intelligence is a must. Taking a strategic view of the landscape and scenario planning can help leaders to invest in right capabilities and resources. Keeping dentists and patients at the center of all decisions is a good north star.



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