

DENTAL TRIBUNE

The World's Dental Newspaper

STUDYCLUB ePAPER DISCUSSIONS BLOGS ONLINE ARCHIVE RSS NEWSLETTER PRINT ARCHIVE

SEARCH

OK

NEWS POLITICS **BUSINESS** SPECIALTIES EVENTS PRODUCTS & COMPANIES SOCIETIES & ASSOCIATIONS

International USA Europe Asia Pacific Latin America



The numbers from market analysts show that there will be greater demands on dental laboratories' production capacity for prosthetics and other restorations.

Aug 4, 2009 | USA

Dental CAD/CAM technology offers productivity increases worldwide

by Constantine Gart & Dr Kamran Zamanian

NEW YORK, NY, USA and VANCOUVER, BC, CANADA: CAD/CAM technology is undisputedly one of the most important developments in dentistry today. Especially on the lab side, CAD/CAM technology is expected to increase productivity, enabling labs to meet the growing demand for dental prosthetics and other restoratives.

This growth is a result of the aging population and the increasing demand for improved dental aesthetics. CAD/CAM technology has met challenges in satisfying dental laboratories' expectations of what this technology will bring to their businesses. However, the technology is evolving at a rapid pace, as new trends and technological capabilities are emerging, representing the potential to surpass what it had initially offered dental laboratories.

Zirconia drives CAD/CAM adoption

Zirconia is the primary driver of CAD/CAM adoption, as the material can be milled into a crown or bridge only through an automated device, most often a CAD/CAM system. Zirconia's biocompatibility and high aesthetic qualities have led to a rapid increase in its use for dental prosthetics.

For example, the number of all-ceramic dental prosthetic units is projected to grow at a CAGR of 10.8 per cent and 10.5 per cent in the United States and Europe, respectively, over the next five years. This is well above the growth rate of other materials, such as porcelain fused to metal (PFM), which will see relatively flat growth.

While a large and growing portion of dental technicians prefer to use all-ceramic over traditional materials, all-ceramic acceptance has been met with resistance from dentists. All-ceramic materials have had above-average failure rates, with limited long-term clinical data to validate their durability and reliability. As a result, conservative dentists have continued to rely on traditional material such as PFM. However, the use of zirconia has greatly improved the overall durability of all-ceramic material, as zirconia is a stronger material than porcelain.

Despite the initial resistance, it is expected that zirconia will continue to gain popularity as CAD/CAM manufacturers invest in research and development of zirconia for durability as well as to encourage its use

DENTAL STOCKS

Please choose company

Name	Last Trade	Change
Align Technology	11.20 USD	+0.09%
DANAHER CP	62.61 USD	+0.76%
DENTSPLY Internat	33.51 USD	-0.15%
Henry Schein, Inc	50.65 USD	-3.41%
NOBEL BIOCARE ORD	0.00 USD	0.00%
Patterson Compani	25.30 USD	-1.67%
Sirona Dental Sys	27.26 USD	-2.64%
Young Innovations	25.275 USD	-0.45%

Aug 04, 2009

Quotes delayed: 15-20 min.

Dental Tribune ePAPER



[Read all current editions as ePaper](#)

through the education of dentists and lab technicians.

CAD/CAM is a viable replacement for lab technicians

While zirconia has traditionally been the primary driver of CAD/CAM adoption, cost and production efficiencies are becoming more important factors. CAD/CAM technology is becoming more flexible in the type of services that it can offer dental laboratories. This is especially crucial as the number of dental technicians worldwide is projected to drastically decline in the future, due to the large number of older and retiring dental technicians.

In addition, there are fewer dental technicians entering this field due to insufficient monetary compensation. This reduction in work force numbers, coupled with the increasing demand for dental restorations brought on by the aging population, will create greater demands on dental laboratories' production capacity for prosthetics and other restorations. Dental laboratories in the United States and Europe are also under strain due to competition from countries with very low labor costs such as China, Morocco, Turkey and Costa Rica.

Stand-alone scanning units offer a cost effective solution

The vast majority of dental laboratories around the world employ less than five dental technicians. Many of these laboratories hardly have enough volume to warrant the purchase of an expensive CAD/CAM system with in-house milling capabilities. To reach the smaller players in the market, CAD/CAM manufacturers such as [3M ESPE](#), [DENTSPLY](#) and [Nobel Biocare](#) have offered scanning units to dental laboratories, enabling the labs to scan and outsource the digital restoration to be milled at other locations (either a centralized milling facility or dental laboratories with in-house milling capability).

This purchasing option allows large dental laboratories that generate sufficient volume and revenue to invest in a full CAD/CAM system with in-house milling capability, whereas small to medium sized dental labs have the option of investing in a lower cost scanning unit, simultaneously eliminating the continuing production costs of dental copings and frameworks.

Full CAD/CAM systems typically involve one scanner unit and one milling unit in-house. A Standalone Scanner CAD/CAM system consists of only a scanner unit, which sends the digital impression to either a centralized milling facility, or a dental lab with milling capability. The growing popularity of the two purchasing options is evident in the U.S. and European markets, as there is an approximate ratio of one full CAD/CAM system to two standalone scanners in the total installed base.

Prices for CAD/CAM systems continue to drop

CAD/CAM systems are becoming increasingly more affordable to dental laboratories as their prices continue to drop. For example, in the U.S. market, the average selling prices (ASPs) of full systems and scanners are expected to drop at CAGRs of 4.9 per cent and 4.3 per cent, respectively.

Manufacturers and distributors are offering financing programs to help laboratories acquire the systems and, in some cases, are giving the system away for free on the condition that the labs manufacture a certain number of proprietary prosthetics.

Likewise, the cost of the copings and frameworks milled by CAD/CAM systems are rapidly dropping; this, coupled with rising gold prices, has reduced the price of a zirconia crown almost to par with a gold crown. This has made zirconia milled framework a strong alternative to the traditional gold crown.

CAD/CAM capabilities increase

There are many dentists that only use PFM restorations and abstain from zirconia. To address this issue, CAD/CAM technology is expanding beyond its initial capability of milling only zirconia material and dental devices, to include other materials, such as: non-precious alloys, titanium, acrylic, resin, and even final abutments. This technological capability gives labs greater versatility in meeting customer needs by offering a greater breadth of materials and dental restorations.

The acceptance and integration of CAD/CAM technology into dental laboratories appears to be inevitable. Despite the many challenges that this technology has faced, ranging from uncertainty regarding the viability of zirconia material for dental prosthetics, to the technology's economical feasibility, CAD/CAM technology has progressed and continues to adapt in order to offer greater versatility in services to both small and large dental laboratories.

Additional information is available

Constantine Gart, BBA, is a research analyst at iData Research. He has disclosed that he holds no interest or securities in any company mentioned herein. Dr Kamran Zamanian is the head of research at iData Research. He has disclosed that he holds no interest or securities in any company mentioned herein. iData Research is an international market research and consulting group focused on providing market intelligence for the medical device, dental and pharmaceutical industries.

The information contained in this article is taken from a detailed and comprehensive global series on the "Markets for Dental Prosthetics and CAD/CAM Devices 2009," which is available for purchase from iData Research and includes coverage on the United States, 16 countries in Europe, and three countries in the Asia Pacific region.

For more information about this and other reports on the dental industry, please call +1 866 964 3282, email info@idataresearch.net or visit their www.idataresearch.net.

(Edited by Fred Michmershuizen, DTA)

[back to overview](#)

[Send to a friend](#)

[Print this site](#)

[NEWS](#) | [POLITICS](#) | [BUSINESS](#) | [SPECIALTIES](#) | [EVENTS](#) | [PRODUCTS & COMPANIES](#) | [SOCIETIES & ASSOCIATIONS](#)
[STUDYCLUB](#) | [ePAPER](#) | [DISCUSSIONS](#) | [BLOGS](#) | [ONLINE ARCHIVE](#) | [RSS](#) | [NEWSLETTER](#) | [PRINT ARCHIVE](#)



[Home](#) [Publisher](#) [Advertising on dti](#) [Terms & Conditions](#) [Contact](#) [Imprint](#)

© 2009 - All rights reserved - Dental Tribune International

Official Media Partner of:

