

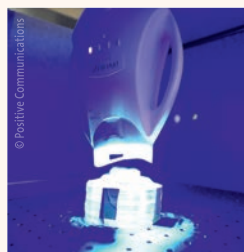
DENTAL TRIBUNE

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PHILIPS ZOOM

Dental Tribune visited Philips in Cambridge to find how research is used to deliver the ultimate tooth whitening experience.

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MANAGER VERSUS CLINICIAN

Practitioners' expectations of the kind of manager they want for their practice vary considerably in terms of experience and skills.

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ORTHO TRIBUNE

Read the latest news and clinical developments from the field of orthodontics in our specialty section included in this issue.

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Graduate premiums do not pay off debt, except for dentists and doctors

By DTI

LONDON, UK: Medicine and dentistry appear to be the only two professions in which graduates in the UK are currently able to cover their student debt. Evaluating the lifetime graduate premium, the financial bonus people expect from obtaining a higher education in any of a variety of disciplines, a report by the Intergenerational Foundation in London found that graduate salaries in the majority of professions are not sufficient to pay off tuition fees.

The report cites Sutton Trust research that found that medical and dental graduates have the highest starting salary, earning between £25,000 and £30,000 per year, while graduates in design, journalism or law often receive less than half of that amount.

Overall, the value of a degree was cut by up to a third in the five years leading up to 2014, despite a sharp rise in student tuition fees.

"Our research proves that the current £100,000 graduate earnings premium so often touted



equates to an 'annual bonus' of just £2,222 over 45 years of work, and is wiped out once National Insurance and Income Tax are taken into account," Angus Hanton, IF co-founder told *The Independent*. "Furthermore, the premium is simply not enough to cover the interest accruing on the average loan."

UK students who fall under the £9,000 regime already face the highest debt in the world, with an average of £44,000 owed once they graduate.

"Paying off these huge, unquantifiable and relatively unregulated debts will wipe out any graduate premium in all but the

highest-paid professions and for all but the most successful people in business and other fields," the report explains. "The need for a large graduate premium to justify student loans and the Willetts Tax may well lead students to study only vocational subjects directly linked to highly paid careers in order to pay off their debts," it further states.

Recent governments have sold intuition fees and expansion of higher education by publicly claiming that a university degree yielded a return between £100,000 and £400,000 in additional earnings over a lifetime, starting with higher education minister Margaret Hodge in 2002. This has led to an increasing number of graduates performing non-graduate work in order to repay their student debt.

Practice valuations continue to rise

By DTI

LONDON, UK: The latest quarterly report by the National Association of Specialist Dental Accountants and Lawyers (NASDAL) indicates that the average valuation for dental practices in the UK increased by another 13 per cent to 124 per cent goodwill last year, with mixed practices perceived as even more valuable than their NHS counterparts.

According to the report, mixed practices are now attracting an

average valuation of 155 per cent goodwill, ahead of NHS practices, which are currently attracting 142 per cent goodwill.

Sales of practices have also increased, by 11 per cent, compared with mid-2014, the report stated.

The figures relate to the quarter that ended in April this year. They were collated from accountant and lawyer members of NASDAL in order to give a useful guide to the practice sales market.

"The market is still very buoyant and there is huge demand for NHS practices," said Alan Suggett, specialist dental accountant and partner at UNW. "With 2018 being the earliest a new contract can begin and a more likely date of 2020 and beyond, many purchasers are happy to take the calculated risk."

Reflecting on the potential effects of the Brexit, Suggett said that "banks are certainly letting it be known that they currently see it as business as usual".

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“Class of 2016”



BDIA publishes post-Brexit manifesto

By DTI

LONDON, UK: The British Dental Industry Association (BDIA) has published a manifesto in response to the uncertainty after the Brexit vote in June. Six main priority areas are highlighted in the docu-

ment, including creating a favourable business environment, investing in the nation's oral health, working to protect patients, spending more on the NHS, generally building towards a better future and championing innovation. At the same time, the association has

encouraged dental professionals to attend the BDIA Dental Showcase in October to obtain more information about the Brexit outcomes.

The impact of the Brexit on the dental industry in the medium to long term will very much depend on the form a post-Brexit UK will take, the relationship that the UK chooses to have with the EU, and indeed the relationship that the EU is willing to accept. In the short term, business will be as usual for the dental industry, since EU law will continue to apply in the UK.

In response to the Brexit, the BDIA in July released a post-Brexit manifesto, *Shaping the future*, which sets out the industry's views on how government should positively influence the future for oral health, dentistry and the dental industry. Six main priority areas are highlighted: creating a favourable business environment, investment in the nation's oral health, protecting patients, investment in the NHS, building a better future and championing innovation.

The document can be obtained from the BDIA website.

BDIA Policy and Public Affairs Director Edmund Proffitt commented on the manifesto: "There is a window of opportunity for the dental industry to share its positive vision for the future with key politicians, civil servants and deci-

sion makers. If Government can build the right regulatory environment and provide targeted investment in oral health it can make a significant contribution to protecting the UK's oral health for years to come." The BDIA has encouraged all dental professionals to visit the BDIA Dental Showcase to learn more about the British industry.

More than 350 dental companies are expected to be at the trade fair, being held from 6 to 8 October at the ExCeL London exhibition and convention centre, this year. As the largest dental show in the UK, about 12,000 visitors attend to discover the very latest dental innovations. The Implant Zone will be back for 2016, as well as some new features, including the Networking and Meeting Zone and Go Digital! Zone. Also new this year are two education theatres offering 30- to 40-minute sessions on educational topics, with speakers selected by leading industry suppliers. Entrance to the exhibition is free for all registered visitors. A BDIA 2016 mobile app will soon be released, the exhibition organisers have announced.



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CLINICAL AND LABORATORY PRODUCTS

Kings collaborates with China's largest dental group

By DTI

LONDON, UK: King's College London Dental Institute is extending its international reach with the launch of a number of activities that will see the institute partner with BYBO Dental Group, one of China's largest dental providers, over the upcoming months.

The collaboration started this week with a distance learning programme that will offer BYBO staff across China training and information on the management of tooth wear and occlusal change.

In addition to the distance/blended learning programmes, face-to-face lectures by King's aca-

demics, including Profs. Raman Bedi, Martyn Cobourne and Francis Hughes, at various sites in China began in June and will continue until the end of the calendar year, the university said in a press release.

All information will be available to BYBO staff in both English and Mandarin.

In addition to continuing professional education, the partnership will include staff exchange, as well as the transfer of clinical expertise and protocols, over the next three years.

Estimated to be worth £3.6 million, the collaboration agreement was first announced at the end of 2015.

"King's Dental Institute's commitment to improving oral health knowledge and provision in practice around the world shines through in this collaboration," commented Prof. Dianne Rekow, Executive Dean of the Dental Institute, on the partnership. "Not only is it a fantastic opportunity to share our world-leading expertise with BYBO, but it also offers us a unique chance for us to learn from one of China's most renowned dental providers."

Founded in 1993, BYBO consists of 200 chain dental clinics with approximately 6,000 employees across China, according to its figures.

North-East law firm appoints Goodman exec to expand into dental industry

By DTI

LIVERPOOL, MANCHESTER & PRESTON, UK: Previous Goodman Grant Solicitors director Nicola Lomas has been appointed by law firm Brabners to help expand its health care practice into the dental market. With the step, the North East-based law firm aims to meet increasing demand for tailored legal services by both NHS and private dental practitioners.

Lomas has more than ten years' experience of working as a corporate lawyer in the dental industry, advising clients on a number of legal issues, including the buying and selling of dental practices, incorporations, expense sharing and partnership agreements, as well as associate contracts. In a comment on her appointment, she said that the market remains extremely active, with clear demand for

legal services as businesses expand and consolidate their operations.

"Areas such as cosmetic dentistry are also opening up new revenue streams, which has led to a number of larger businesses that offer both NHS and private dental care reviewing their options for further growth and expanding the services they provide," she said.

Lomas will add to Brabners' nationally recognised team of health care solicitors, some of whom have practical experience of working within the NHS and in private practice as health care professionals, the company said.

"We offer a range of legal services tailored to the healthcare sector and Nicola's impressive understanding of the challenges facing the dental profession, along-

side her unrivalled expertise in this area, ensures we're well-placed to support our dental sector clients," Brabners head of health care Richard Hough explained.

Active in a number of commercial sectors, Brabners offers a complete law service to health care professionals in the UK. The company operates via subsidiaries in Liverpool, Manchester and Preston.

Mouthrinse reduces caries in children

By DTI

LONDON, UK: In order to determine the effectiveness and safety of fluoride mouthrinses in preventing dental caries in the younger population, researchers have conducted an extensive review of studies published on the topic over four decades. They were able to confirm that regular use of a fluoride mouthrinse by

children and adolescents is associated with a large reduction in caries increment in permanent teeth.

In the study, researchers at the Queen Mary University of London reviewed 37 trials published between 1965 and 2005 that tested supervised use of fluoride mouthrinses in schools and at home. Overall, the studies

involved 15,813 children and adolescents aged 6 to 14. The children were treated with a fluoride mouthrinse mostly formulated with sodium fluoride or a placebo on a daily or weekly basis or received no treatment.

The analysis confirmed that supervised regular use of a fluoride mouthrinse could help reduce tooth decay in children and

adolescents. On average, children treated with a mouthrinse showed a 27 per cent reduction in decayed, missing and filled tooth surfaces in permanent teeth compared with participants in the placebo group or those who did not use a mouthrinse.

According to the researchers, this benefit is likely to be present even if children use fluoride

toothpaste or live in water-fluoridated areas. They also found little information about potential adverse effects and acceptability.

The review, titled "Fluoride mouthrinses for preventing dental caries in children and adolescents", was published online on 29 July in the Cochrane Database of Systematic Reviews.

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Amalgam phase-out discussed at London meeting

By DTI

LONDON, UK: Limiting the use of amalgam in dentistry is a task that needs a combined effort by various actors in and outside of the health care sector, the organisers of a meeting of 50 senior oral leaders in London have agreed. However, by phasing down the material, the profession will have a rare opportunity for more prevention-focused oral health care in the future, they said.

"I was very impressed by the commitment of the major dental community stakeholder to a measurable, equitable and sustainable phase-down of dental amalgam use, as well as the recognition that 'dentistry can't do this alone'. This will need the engagement of other actors such as other health professions, the industry and most importantly civil society," commented Julian Fisher, resource person for the United Nations Environment Programme Global Mercury Partnership Area on Waste Management.

At the meeting, senior oral health leaders from around the globe came together to discuss pathways for reducing the use of amalgam not only in the UK but also on an international level. The conference took place in mid-July at King's College London Dental Institute in cooperation with Newcastle University's School of Dental Sciences and the University of Leeds's School of Dentistry. In addition to presentations on phase-down case studies, such as the UNEP-WHO East Africa project, the multi-day event provided an overview of minimally invasive dentistry programmes. A particular focus was on improved and newly developed materials and the impact the transition to these materials could have on the dental profession in the long run.

"The complexity of something seemingly as simple as changing a material is remarkable," said the Dental Institute's Executive Dean, Prof. Dianne Rekow. "Indeed, this 'simple' change has ripple effects that change the philosophy and practice of dentistry, as well as the economies of health care."

"One of the most impressive features of the symposium was the willingness of the participants to explore the implications and interdependencies of the ripples and assertively work toward finding ways to improve both the environment and health," she stated further.

Various initiatives have been implemented worldwide since representatives of over 190 coun-

tries signed the Minamata Convention on Mercury in Japan three years ago, which agreed on a mercury ban in a variety of products, as well as a phase-out of amalgam.

While its use in developing countries is declining, the mercury-containing restorative remains the material of choice in developing countries around the world.



Over 50 dental stakeholders attended the meeting in London.

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*6% Whitening Gel Efficacy Test, US, 2013.

**85% of 26 participants agreed they had no or minimal sensitivity during an in office treatment, 6% Whitening Gel Efficacy Test, US, 2013

The flossing debate and what to make of it

By DTI

LONDON, UK/LEIPZIG, Germany: Last month, a story by the Associated Press (AP) claiming that the benefits of flossing have never been properly researched went viral. The resulting extensive media reports have taken one message from this: flossing is overrated. Is it really that simple though? This article attempts to summarise recent reporting on the topic and reactions by the dental community around the globe.

"There's no solid evidence that flossing actually works"—this statement by his son's orthodontist gave US reporter Jeff Donn the impetus that started the entire debate. Investigating this issue further, the AP national writer found out that since 1979 the US federal government has recommended flossing, first in a surgeon general's report and later in the *Dietary Guidelines for Americans* issued every five years. "A combined



approach of reducing the amount of time sugars and starches are in the mouth, drinking fluoridated water, and brushing and flossing teeth, is the most effective way to reduce dental caries," the 2010 guidelines state.

Because these national recommendations must be based on scien-

tific evidence under the law, Donn asked the US departments of Health and Human Services and Agriculture for their evidence under the Freedom of Information Act. In their response to the AP, the government acknowledged that the effectiveness of flossing had never been sufficiently researched. The flossing recommendations were consequently excluded

from the 2015–2020 dietary guidelines. However, the same applies to the advice to drink fluoridated water and brush one's teeth, which were both removed from the latest guidelines—yet nobody has concluded from this that toothbrushing is a negligible part of oral hygiene.

To be objective, existing research about the effects of flossing is weak, of low quality or has a moderate to large potential for bias (having been conducted mainly on behalf of companies that manufacture floss), several review studies have found. As one of the many dental professionals commenting on this fact, Dr Wayne Aldredge, President of the American Academy of Periodontology, acknowledged the weak scientific evidence and the brief duration of many studies. However, he still urged his patients to continue to floss in order to help avoid periodontal disease. "It's like building a house and not painting two sides of it," he explained in an interview. "Ultimately those two sides are going to rot away quicker."

Just like Aldredge, dentists and dental associations around the globe have issued statements—for the most part vigorously defending flossing as an effective way to help remove plaque and food build-up between the teeth and thereby lower the risk of developing gingivitis, periodontitis and tooth decay. For example, the American Dental Association (ADA) stated that "a lack of strong evidence doesn't equate to a lack of effectiveness". Moreover, the ADA stressed that the Department of Health and Human Services reaffirmed the importance of flossing in a statement to the ADA on 4 August, stating that "professional cleaning, tooth brushing, and cleaning between teeth (flossing and the use of other tools such as interdental brushes) have been shown to disrupt and remove plaque".

The German Dental Association stated that flossing remains an important means of cleaning interdental spaces, especially the narrow spaces of the anterior teeth. According to the organisation, current studies have neither demonstrated nor disproved the effectiveness of flossing. Nevertheless, patients should not conclude that less thorough dental care is advised.

Dr Øyvind Asmyhr, head of the Norwegian Dental Association, acknowledged in his statement: "There is much we do in medicine and dentistry that is not evidence-based, but that does not mean it does not work. All sense and clinical experience suggests that daily brushing combined with flossing helps to reduce the amount of biofilm (bacteria coating) on all tooth surfaces, which prevents the development of caries, gum problems and bad breath." Moreover, Asmyhr remarked that until research conducted over longer periods proves the contrary, the dental association will continue to recommend flossing and sees no reason for people to change their oral health routine.

Commenting on the debate as well, the British Society of Periodontology emphasised that the evidence supports the use of small interdental brushes for cleaning between the teeth, where there is space to do so, in preference to flossing. In addition, the organisation referred to the official recommendation to patients agreed on during the 11th European Workshop in Periodontology on the prevention of periodontal disease in 2015: "Daily cleaning between your teeth using special interdental brushes is essential for treating and preventing gum disease. Floss is of little value unless the spaces between your teeth are too tight for the interdental brushes to fit without hurting or causing harm."

Taking all these opinions into account, what is it that patients and dentists can take away from the current discussion? Regardless of deficient study designs, inconclusive results or media sensationalism that picked up on only a tiny part of the underlying facts, there are at least two statements regarding flossing that can be acknowledged universally: First, flossing can cause harm if performed incorrectly. For example, careless flossing can damage the gingivae, teeth and dental work. Moreover, there is evidence that floss can dislodge bacteria that may invade the bloodstream and cause dangerous infections, which is especially of concern in people with a weak immune system. Second, common sense suggests that common oral problems such as caries and inflammation in the interdental spaces can be avoided solely by removing debris between the teeth, which makes flossing beneficial for one's oral health regardless.

Maybe the entire debate is best summarised with the words of Dr Tim Iafolla from the US National Institutes of Health, who said that, if the highest standards of science were applied in keeping with the flossing reviews of the past decade, then it would be appropriate to drop the flossing guidelines. However, he continued: "It's low risk, low cost. We know there's a possibility that it works, so we feel comfortable telling people to go ahead and do it."

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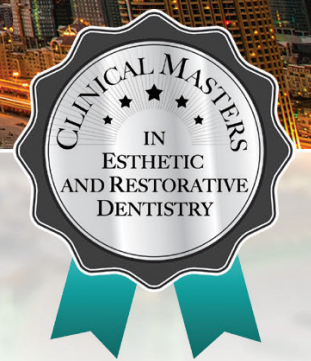
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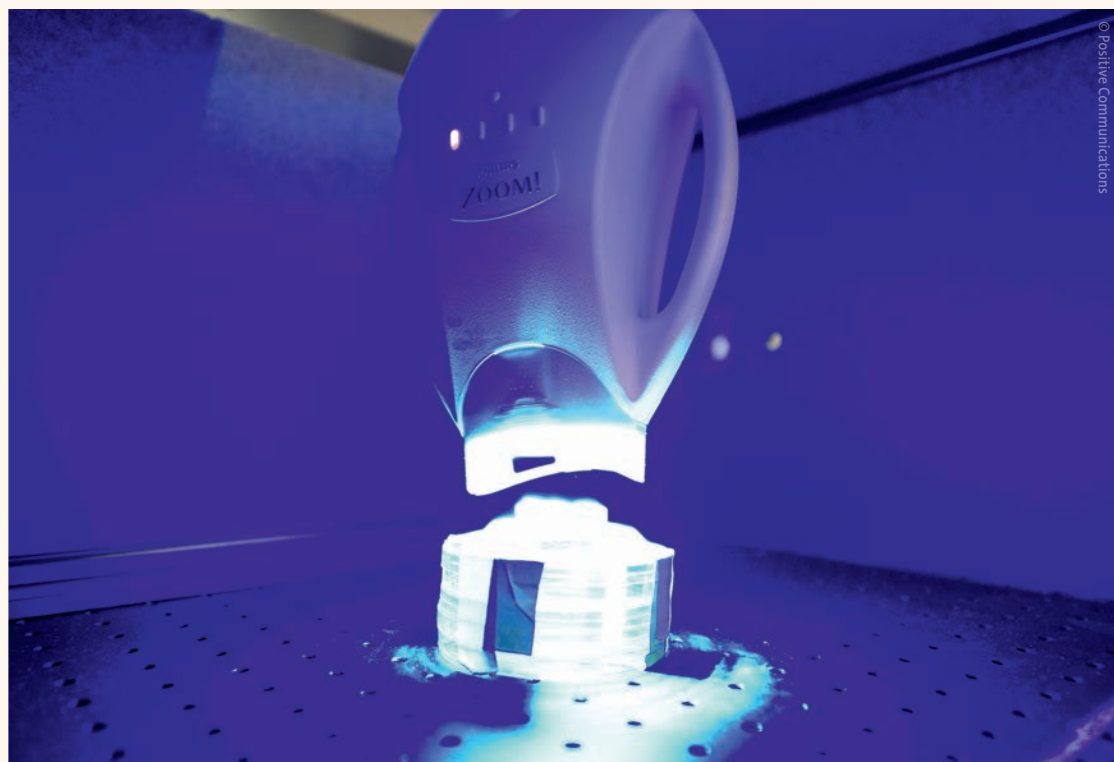
Philips Zoom—Delivering the ultimate tooth whitening experience

BY DTI

CAMBRIDGE & LONDON, UK:

Philips has come a long way since introducing its first patent for a light bulb with an extended burning time in 1905. Over more than 100 years, the Dutch company has continued to pave the way with groundbreaking products, such as medical X-ray tubes, radios, electric shavers and toothbrushes—innovations that made a small company from a town of fewer than 50,000 residents in the south of the Netherlands a household name around the globe.

Active in the field of health care since the 1990s, the company began a new chapter several years ago with the acquisition of Discus Dental and its Zoom tooth whitening technology in 2010. According to then Philips Consumer Lifestyle CEO Pieter Nota, the company took this step in order to complement its existing Sonicare portfolio of health care products, as well as strengthen its position as a leading oral health care brand and generate growth in the cosmetic dentistry segment. Today, according to Philips, ten million people have been treated worldwide with Zoom tooth whitening technology. Recent studies have shown that, compared with other solutions on the market, its 6 % hydrogen peroxide whitening gel, in combination with light-activated technology, achieves excel-



Light activation with the Philips Zoom WhiteSpeed Whitening LED Accelerator in the laboratory.

lent results and overall patient satisfaction with minimal to no sensitivity.

Almost everything concerning Zoom is currently being researched and further developed at the Philips research site at the Cambridge Science Park, which is both the oldest such space in Britain and where major industry competitors like Toshiba and ARM Holdings have been conducting cutting-edge research for

years. In this exclusive neighbourhood, established in the early 1970s, more than 30 Philips employees from around the globe are working on solutions that will soon benefit millions of patients around the world. One of the five major research centres in Europe, the site is closely linked not only to Philips's High Tech Campus in the Netherlands but also to over 80 research institutions in Britain and worldwide, including universities in Cambridge, Southampton and London. Overall, it adds to a network of more than 1,200 scientists conducting research on behalf of Philips all around the world. In addition to its focus on tooth whitening, the company performs research on microbiology and in- and outdoor location technologies at the science park.

In the Zoom laboratories, Philips scientists and research engineers are constantly at work to learn more about the processes behind the complex mix of chemistry and physics that help to whiten teeth. In *in vitro* studies, parameters are optimised before being tested on stained bovine models and finally validated on extracted human teeth. The results are continually measured after whitening, as well as for a further seven and 30 days in solution for hydration, which can affect the colour of the teeth. Through testing, among other things, engineers have been able to debunk a number of tooth whitening myths of the recent past, such as the assumption that using heat accelerates the whitening process. Instead they found that the hydrogen peroxide was rapidly converted into water and oxygen even before it was able

to penetrate the dentine to have an effect.

In addition to its 6 % hydrogen peroxide whitening gel, which breaks the molecular bonds of stains in and on the teeth, Zoom

of the whitening gel comes with amorphous calcium phosphate, also known as "artificial enamel", that is applied through a dual-barrel syringe to reduce sensitivity by reducing fluid flow in the teeth.

Patients who want to whiten their teeth at home can do so using the Philips Zoom DayWhite and Zoom NiteWhite kits, which both promise maximum results within one or two weeks. However, dental professionals recommend a combined approach. "What I say to patients is that the Zoom procedure is a 'kick start' to their whitening journey," explained Zoom user Dr Zaki Kanaan, a well-known dentist from Fulham in London. "You will notice a visible difference immediately upon completion of your Zoom and you will need to follow up the procedure with a few days of home whitening, rather than the 14+ days of home whitening alone. Quite often patients go for the combination approach and some will of course opt for the take-home whitening alone."

"Whichever option patients go for and even if this is predominantly take-home whitening in



Philips Research Engineer Carolina Florez conducting tests. The Zoom has proven to be 40 per cent more effective than non-light activated systems.



Dr Zaki Kanaan

therefore uses light-activated technology, which is similar to curing lights in restorative dentistry, through its chairside Philips Zoom WhiteSpeed Whitening LED Accelerator, to speed up the process and achieve better results. The system has proven to be 40 per cent more effective than non-light-activated systems and to whiten teeth by up to six shades in an hour. The latest generation

your practice, one thing's for sure, professionally applied whitening is a 'must have' option for patients. There is a large segment of the population who will always want the quick route to what they want and if you don't offer it, they will find someone who does," he added.

Further information on Zoom can be found at www.philips.co.uk.

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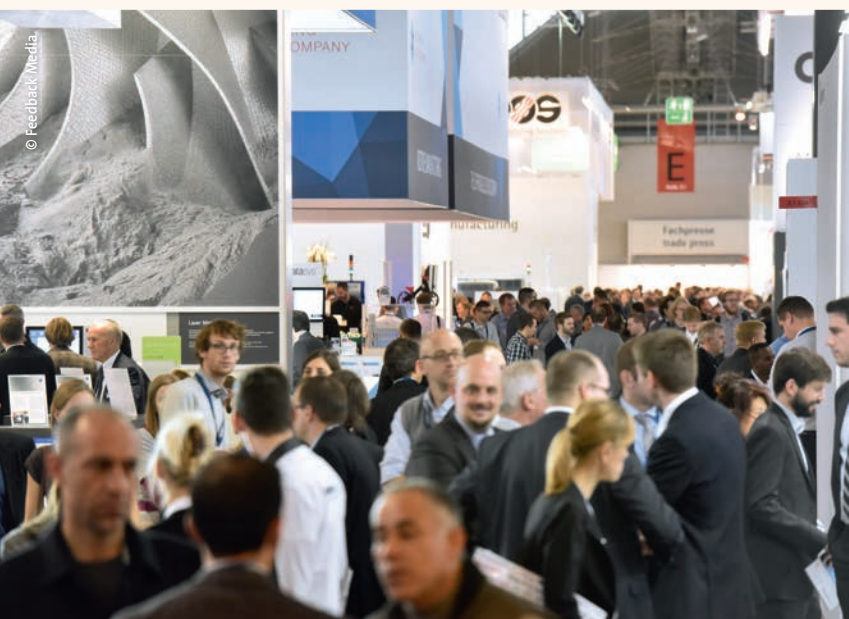
Formnext powered by tct 2016 has already significantly exceeded last year's exhibition space

After its successful debut in 2015, formnext is already busy writing the next chapter of its success story. Around three months before the 2016 event (to be held from 15 to 18 November in Frankfurt/Main in Germany) is set to begin, exhibition space amounting to 150 per cent of last year's total area has already been booked. This impressive expansion has been driven by the more than 120 new exhibitors and the many returning companies interested in reserving even more space based on their excellent results at the 2015 event.

IKOffice and MachineWorks (Polygonica) exhibiting. For the first time, Siemens will be showcasing its offering too.

International newcomers

Exhibitors who will be attending formnext for the first time this year are from a wide range of industries and countries. Those from China, France, Germany, Italy, the Netherlands and the US primarily offer services, hardware



All the global market leaders in one location

The list of those exhibiting reads like a who's who of the additive manufacturing industry: 3-D Systems, Additive Industries, Alphacam, ARBURG, Arcam, citim, Concept Laser, DSM (Somas), EnvisionTec, EOS, FIT, KEYENCE, HP, Materialise, Prodways, Realizer, Renishaw, Ricoh, Sisma, SLM Solutions, Stratasys, TRUMPF, voxeljet and XJet.

Other areas of industry will be represented too. In mechanical engineering, leading companies participating will include GF, Hermle and the DMG subsidiary SAUER. Along with companies boasting long traditions in conventional technologies (including Antonius Köster, BIKAR-METALLE, Heraeus, Käfer Werkzeugbau, Kegelmann, Knarr, Lamy, Listemann and Werth Messtechnik), the software industry too will have a strong presence, with Altair, Autodesk, Dassault Systèmes,

and software, systems and components, machines and related installations, as well as prototypes. The list includes newcomers from the fields of materials, engineering services and tool-making too. The event is thus already proving attractive to virtually every area along the entire process chain in intelligent industrial production.

In serving as a platform for new developments, technologies and manufacturing solutions, formnext 2016 will seek to surpass the extraordinarily high level of innovation that impressed experts last year.

"This year, plenty of market leaders will once again be unveiling their new products for the first time at formnext," reported Sascha F. Wenzler, head of organisation for formnext at Mesago Messe Frankfurt/Main, the company staging the event. "We also have a number of highly innovative start-ups on board that will be presenting their own promising creations."

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