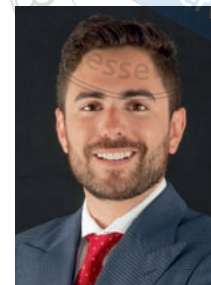# EDITORIAL

Embracing digital innovation

In an era of constantly changing landscapes, digital transformation emerges as the engine shaping the future. The pandemic has demonstrated the need for companies and businesses to adapt and to accelerate their adoption of new technologies. The old-fashioned business models anchored in the old guard have failed to adapt, and many risk being left behind.

It is indeed complicated to predict which trends are ephemeral and will vanish, and which will stick around and shape the future of digital transformation. Forbes suggests the following four trends as the probable lighthouses in digitalization: cloud-based platforms, artificial intelligence (AI) and machine learning (ML), the hybrid work model, and blockchain technology. These global trends may also exert a clear influence on the way we perform dentistry and care for our patients, so let us explore what they imply.

Cloud computing technology has been around for years but is now starting to take off. The idea is to have on-demand availability of computer services such as storage, servers, and networking over the internet ('the cloud') as opposed to on-premise data centers. This allows for faster innovation and flexible resources. In dentistry, this implies being able to access any relevant patient information from anywhere. Communication between dentist, patient, and dental laboratory can take place everywhere, conveniently through almost any device, making any treatment step such as planning, guided surgery, restorative–orthodontic decisions, and follow-ups more efficient, accessible, and flexible.

AI and ML are no longer a dream of the future. Daily tasks such as retail shopping, security surveillance, image analysis, and job applications have developed algorithms to provide high-performance and accurate systems that work more efficiently. In healthcare and dental medicine, AI is empowering machines to analyze images and to diagnose, to monitor patients' health and conditions, and to even suggest possible treatment plans. Radiographs can be automatically analyzed to find caries and periodontal disease as well as to recognize different implant systems and reconstructive materials. By providing earlier preventive treatments, the chances of a pathology being missed are reduced. In addition, experimental robots are being designed and

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Why a palm leaf on the cover?
The fronds of fan palms have multiple functions: For one, the folds of the leaves cause the leaves to fold back up in times of severe drought. This reduces evaporation losses via the leaf surface.
A palm leaf is also stiffened by the fan-like folding. It gains the ability to better withstand wind and other weather conditions. Folded constructions from nature are a model for technology, for instance, in the development of packaging materials such as corrugated cardboard or in the construction of buildings and bridges.

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utilized to place implants and prepare teeth based on digital planning, thereby reducing intraoperative complications and thus improving accuracy.

The pandemic circumstances greatly accelerated the hybrid work model. The idea of a hybrid workforce where employees can choose to work from home or the office at their convenience is on the rise. In fact, many employees prefer to split their working time between the home and office, since it provides more flexibility and, in many cases, increased productivity and higher satisfaction. In dentistry, this idea sounds far-fetched since we associate our time with working on the patient. However, with digital technologies, we spend more time planning and less time executing dentistry. This means that the dentist and the dental team require valuable computer time for treatment planning, organization of recalls, and remote patient consultation that can be performed through a hybrid model too. Work-life balance may be one step closer to reality in dentistry if such a concept can be employed.

Finally, the controversial but absolutely groundbreaking trend: blockchain technology. People associate the blockchain with cryptocurrencies such as Ethereum and Bitcoin. However, its applications run far deeper, for instance, personal finance (money transfers and lending), music royalties, art (non-fungible tokens or NFTs), and secure

sharing of medical data. The greatest advantage of this technology is its enhanced security through its immutable records chained together in blocks. This provides a secure, efficient, and tamper-proof way to exchange information, money or assets within minutes. In dentistry, this means that vital patient information can be safely stored in the blockchain and accessed anywhere by patients and dental personnel alike, who have unprecedented control over the information. On the other hand, dental devices such as implants, restorations or aligners could be 'tokenized' and become NFTs, so patients could always carry and access information relevant to their dental device such as brand, dimensions, material, and dental provider. In the future, blockchain technology may even be able to track patients' health and stability, giving warnings through medical devices when pathology is starting to develop. The possibilities are endless.

The landscape in dentistry is becoming increasingly complex and is evolving at an astonishing speed. For dentists and dental technicians to be successful and remain competitive, embracing digital innovation is key. It is not technology that is transforming, it is us who are being transformed by technology. Let us embrace it and be transformed.

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