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Editorial

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Moonshot thinking in periodontology

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Digital technology is changing every aspect of dental clinics, as well as daily life—although this fact is no longer major news. Cone-beam computed tomography (CBCT) was introduced in the early 2000s in dental clinics, and thereafter it has become routine to perform treatment planning, diagnosis and 3-dimensional (3D) reconstruction with the help of CBCT technologies. Likewise, 3D digital imaging technology, in combination with static and dynamic navigation, is supporting dental surgeons to place dental implants in more accurate and ideal positions. Desktop and handheld digital scanners are routinely used in the dental implant field, and this innovative technology is now being used to revisit conventional periodontal studies [1]. Artificial intelligence and deep learning technologies are now starting to enter the spotlight as the next major innovations in the field [2].

The abovementioned innovative tools are all part of the digital transformation that we face every day in dentistry. However, one cannot think of digital transformations in general without referring to Google, a giant technology company. In 1998, Larry Page and Sergey Brin, two young PhD students at Stanford University, started a company that has changed our life significantly. Initially, they started to improve the way we search for information on the web, and then they scanned 98% of human habitations to upload on Google Maps. They then built the ultimate video sharing platform, known as YouTube, which is now the second biggest search engine in the world, offering the opportunity to search for basically everything that one would want to know or learn.

Soon enough, Google moved on to tackle many other problems facing humanity. To address the lack of an internet connection in some underdeveloped areas, Google sends up balloons and delivers internet signals from the balloons. This is known as the Loon project. To provide affordable, clean, and abundant energy storage, Google builds large tanks of high-temperature molten salt to store energy and discharge electricity when energy demand is high. This is the Malta project. To save the ocean and keep fishing sustainable, Google has started monitoring fish behavior using underwater cameras and what it calls “machine perception tools,” which can detect and interpret fish behaviors invisible to the human eye. This is the Tidal project.

Why is this giant tech company tackling these problems, even though they do not relate to its core business, and also are not directly profitable for the company? This is probably because the founders of Google are believers in moonshot thinking, which refers to pursuing ambitious, long-term, cutting-edge goals. For instance, when everyone is developing

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telescopes to see the moon better, you might suddenly stop and ask yourself why you are developing telescopes too—instead, you could build rockets to go to the moon. Going to the moon and seeing it in person is actually the best way to see the moon. Although building rockets is not as easy as it sounds, Google would point out that it could be actually much easier because entirely new innovations are not bound by old concepts, conventional technology, or other old system. What could be our moonshot thinking in periodontology? Would it be virtual reality, augmented reality, artificial intelligence, robotics, or some other innovative thing we have never heard of? Maybe it is high time for us to stop and ask why we are doing research and carrying out treatment in the current way. Perhaps there could be a clearly better way to do it. Then, in no time, we might find ourselves standing strong on the moon looking for another planet to pioneer.

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