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The Power of Deeptech: A Tale of Bits, Molecules and Ecosystems

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Abstract
Today, we are at the dawn of the 5th disruptive innovation wave. This emerging fifth wave, the deeptech wave, builds on the convergence of technologies such as AI, material science, biology, semiconductors … to disrupt virtually every aspect of the physical world we live in. Semiconductors will be the core of many deeptech innovations thanks to their massive integration power, accessible mass production and low cost. To enable these deeptech innovations, Moore's law will have to continue to address insatiable demands for more computation and more storage. We will realize Moore's law by a multitude of approaches: continue traditional scaling, new devices, new switches, leverage the use of the third dimension, and paradigm shifts on how to build future systems. The challenges to bring these innovations to the market are huge. Therefore, we will have to approach this evolution through a major ecosystem, bringing together the right companies, the right R&D resources, perform this in leading-edge infrastructure, with the right funding and government support.

Biography
Luc Van den hove is President and CEO of imec since Juli 1, 2009. Before he was executive vice president and chief operating officer. He joined imec in 1984, starting his research career in the field of silicide and interconnect technologies.
In 1988, he became manager of imec's micro-patterning group (lithography, dry etching); in 1996, department director of unit process step R&D; and in 1998, vice president of the silicon process and device technology division. In January 2007, he was appointed as imec's EVP & COO. Luc Van den hove received his PhD in electrical engineering from the KU Leuven, Belgium.
He has authored or co-authored more than 200 publications and conference contributions.