



Benedetto Vigna

Group Vice President

General Manager, MEMS, Sensors and High Performance Analog Division

Analog, Power, MEMS Group

Industrial & Multisegment Sector

STMicroelectronics

Around the Human Body: New Frontiers in MEMS

After spending more than 20 years in the labs, MicroElectroMechanical Systems (MEMS) found their first high-volume applications in the automotive market, where the relatively high initial volumes that resulted from 1 sensor per car started MEMS down the accelerating volume curve that allows semiconductor manufacturers to leverage their high-reliability and -efficiency fabs to deliver better and less expensive MEMS devices. In addition to fueling the further adoption of MEMS into automotive applications--think multi-airbag systems, tire-pressure gauges, and stabilization systems--increasing production volumes fed the spiral of lower unit prices for more efficient MEMS that led to the consumerization of MEMS and its application to high-volume gaming systems and mobile applications. The spiral continues and the next wave for MEMS is its use in, around, or next to the almost 7 billion people on earth. Some of these personal and medical applications may be diagnostic--such as ST's Lab-on-Chip or the glaucoma-detecting contact lenses we just announced with Sensimed--while others suit drug delivery or monitoring, such as the MEMS insulin pump ST is working on with Debiotech or the remote heart-monitoring platform announced with Mayo Clinic late last year. Even beyond these applications are other invasive applications that sound like something from the movie *Fantastic Voyage*.