

# Europe's competitive edge in the microelectronics industry, today and in the future

MEDEA+ is an industry-initiated pan-European programme for advanced cooperative research and development in microelectronics, set up as a EUREKA Cluster in 2001. With 77 projects focusing on system innovation on silicon for the e-economy, MEDEA+ partners include major microelectronics manufacturers, systems houses, SMEs, universities and institutes. Outgoing Chairman of the Board Arthur van der Poel, former CEO of Philips Semiconductors talks about Europe's competitive edge in the microelectronics industry. Incoming Chairman of the Board Jozef Cornu, former COO of Alcatel, offers his views on the sector today and in the future.

### *What are the challenges facing the industry today and tomorrow?*

**Arthur van der Poel:** Industry and public authorities must avoid self-fulfilling prophecies, such as everything is moving east and that it is just a matter of time before Europe will no longer be competitive in advanced R&D. If we are passive and pessimistic, that is exactly what will happen. I do not believe this. Competition in our industry is not based on the lowest cost or wages. In today's high-tech world, competition is based on competences and technical skills. In Europe, we have learned to tap into resources from various organisations and use cross border skills. This 'open innovation' is what MEDEA+ is all about.

**Jozef Cornu:** IT is key to developing our society. The challenge is to make good use of IT to meet our societal needs. Consider the health sector, with Europe's aging population. We must deal with the issues of increasing productivity, because of Europe's demographics, and the cost of providing healthcare. There are equally big challenges in transportation and energy. IT is essential to meet these challenges, yet the EU spends about 95% of its budget on regional development, investing in 20th century technologies such as roads and other infrastructure. It spends just 5% on IT. This must be changed. When the

economy grows by 2%, microelectronics markets grow 8% to 10%.

### *How is R&D under MEDEA+ helping to meet these challenges?*

**Arthur van der Poel:** Work done in MEDEA+ and the EUREKA initiative is a living example of 'open innovation'. Some people believe such collaboration is a naïve way to give your knowledge away, but others believe in cooperation. It is simple: the IP (intellectual property) I develop in the project is mine, yours is yours and what we develop together is ours. These public-private partnerships will continue to be key as we move from hollow words to action to be more competitive. Innovation in our industry has climbed high on the political agenda because of the results of these partnerships.

**Jozef Cornu:** MEDEA+ and its successor will be at the core of technology

development for our evolving information society. In the world of microelectronics and nanotechnology, there is new technology generation every 18 months. Just look at the history of EUREKA and why it was created. One of the founding principles, besides fostering cross-border research and development cooperation, is the speed of decision-making for projects. EUREKA and MEDEA+ projects are more capable of keeping pace with today's technology.

### *What makes MEDEA+ different from other European research programmes?*

**Arthur van der Poel:** Different programmes have different roles. Projects led by the European Commission generally tend to be for advanced research and development. National projects can even focus on production. MEDEA+ and EUREKA projects are R&D projects, but

Europe, we have learned to tap into resources from various organisations and use cross border skills. This 'open innovation' is what MEDEA+ is all about.

Arthur van der Poel



## > Viewpoint



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generally more development oriented than research oriented. They are transnational and involve a mixed set of partners. For example, there is ample room for MEDEA+ and ENIAC to survive healthily side by side. [ENIAC is the European Commission's Technology Platform on Nanoelectronics.]

**Jozef Cornu:** Both EUREKA and MEDEA+ are unique in that they recognise if certain players with the right competencies are well positioned to work together to innovate, they can do so without having to bring 27 countries together to agree. The structure is more flexible and there are far fewer procedures. Most European programmes take a lot of time to be launched. Today's technologies cannot wait for complicated procedures. History has proved this. I am convinced that without MEDEA+ and its predecessor JESSI, we probably would not have a European semi-conductor industry at all. [JESSI was EUREKA's Joint European Submicron Silicon Initiative.]

**What is the value added for companies to cooperate under the MEDEA+ Cluster?**

**Arthur van der Poel:** The industry is undergoing an important evolution I call 'de-verticalisation', which means that in the past, every company would do everything themselves. With the maturing of the industry, the tasks in the entire semiconductor chain have become highly specialised. This means a stronger role for MEDEA+ in the future as specialised companies can benefit from cooperating to create value in the sector.

**Jozef Cornu:** Nanotechnologies are really at the core of the Information Society. Practically all of the progress to date has been fuelled by progress in nanotechnologies or microelectronics. This trend is continuing. Over time, the added value of applications is increasing, products are becoming more complex and the software component is rising. Companies participating in MEDEA+ can benefit from being in an environment where they can cooperate in this evolution.

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