

Public funding is secret of microelectronics' success

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The microelectronics industry has flourished when it has attracted public funding but has withered without it.

That was the underlying message of Forum 2003 organised by the pan-European microelectronics R&D programme MEDEA+, held in Berlin last week.

Twenty years ago Europe was ready to abandon microelectronics. "In the early 1980s, in the boardrooms of Europe, the discussions were 'should we give up?'," Pasquale Pistorio, CEO of STMicroelectronics and a MEDEA+ board member, told the Forum.

"At that time the US was supporting its microelectronics industry, Japan, through MITI, was supporting its industry, and Taiwan was backing its microelectronics industry strongly, but we Europeans were not doing very much," added Pistorio.

At the time, Philips was the only European company in the world top ten, Siemens Semiconductors (forerunner of Infineon Technologies) was seven years behind the leading edge in process technology and SGS-Ates (forerunner of ST) was a loss-making, \$100m a year revenue firm.

Then, in the mid-80s, publicly funded R&D initiatives were introduced, starting with the Megaproject between Philips and Siemens, and continuing with JESSI, MEDEA and now MEDEA+.

Today Europe has three companies in the world top ten, STMicroelectronics, Philips and Infineon, and has some notable related successes such as ASML, the world's biggest manufacturer of lithography tools for making ICs.

"It was thanks to programmes like JESSI and MEDEA that ASML is the number one lithography firm despite having two formidable competitors in Japan," said Doug Dunn, CEO of ASML who is also a MEDEA+ board member.

However, now there is concern that stepped-up funding initiatives by the US, Japan, Taiwan and mainland China could swamp Europe's more modest support efforts.

"The US has just announced a \$3.7bn government investment in R&D for nanotechnology and Taiwan has announced a \$30bn investment, one third of which is for microelectronics R&D. Europe is way short of what the US and Taiwan are investing," said Dunn.

"If Europe abandons R&D it will not have jobs," said Pistorio, "the only way to compete is to move up the value chain with higher intellectual content for its product. That's what MEDEA is about."

MEDEA+ office director Gerard Matheron pointed out that the level of European public authority funding for microelectronics in Europe has stayed the same for 15 years, (about €140m annually), while the R&D expenses of European companies have risen six times in that period.

Supporting high technology initiatives is not a waste of money, according to the German government's highest official responsible for microelectronics R&D, Dr Manfred Dietrich. "We have recovered all the money we have invested in microelectronics R&D in Dresden in terms of taxes and other related income from the industry there," Dietrich told the Forum.