

■ Market segment dynamics

Since the beginning of the 1990s, the semiconductor industry in France has benefited from significant investments and partnership programs between industrial companies and public laboratories which have enabled anchoring around international technology clusters. This approach has created a coherent network of expertise in France, based around large players and laboratories such as STMicroelectronics, CEA LETI, etc. Several international players have entered the picture, benefiting from the presence of strong skills and significant markets (telecommunications - automotive - health). These sites, some of which are already well established, are still developing: NXP Caen, Atmel Rousset and Freescale Toulouse, are involved in large European programs.

In France, the network is organized around the FIEN and its professional trade unions and is specialized in the high-tech sectors (automotive, medical, and communication systems).

The French semiconductor market is estimated at 3.07 billion euros for 2005.

■ France's attractiveness

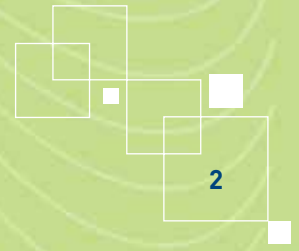
Technological and industrial advantages, with the already significant presence of foreign players who have chosen France to establish their industrial or research activities (NXP, Atmel, Freescale, Philips, Motorola, Nortel, etc.).

An important market with several major clients of the microelectronic industry which are very well established on an international level: telephone companies (France Telecom), constructors and equipment manufacturers (Alcatel, Sagem), component manufacturers (ST Microelectronics) and smart cards (Gemalto, Oberthur, ASK), audiovisual companies (Thomson Multimédia) and aeronautics, space and automotive companies.

Scientific (public research centers) and intellectual (engineering schools and universities) advantages: the integration laboratory, CEA/LETI, possesses these technologies and has acquired a strong practice of development and transfer of this type of activity to industry. Domestic R&D capacity is complemented by the existence of first-rate academic laboratories - LAAS, FEMTO, IEMN -, linked with LETI within the network of large technology centers.

Excellence clusters with a worldwide visibility based around public and private research centers, companies that are technology leaders, innovative small and mid-sized companies and training centers. The MINALOGIC cluster of Grenoble based around Minatec, CEA-LETI and the Alliance Crolles II, is one of the three large clusters in the field of nanoelectronics. There is also the PACA "Secure Communications Solutions" cluster, the System@tic cluster for complex systems in Ile de France, the Embedded Electronics cluster in the South-West of France, etc. In total, 19 of the 66 competitiveness clusters are involved in skills in the field of electronics.

The strategic nature of R&D and innovation in this sector has led France to strengthen its support policies and implement ambitious programs whose purpose is to encourage cooperation between industrial companies and public research laboratories. In addition to the support of the Agency for Industrial Innovation or tax measures such as the CIR (Corporate Tax Credit for Research Expenses), several domestic programs are designed to support the development of such collaborations: competitiveness clusters/FCE, strategic R&D, EUREKA MEDEA + and CAP'TRONIC.



■ International players in France

- French Success Story: Soitec: spun off from CEA LETI in 1992 to develop its SOI (silicon on insulator) technology, Soitec now is a well-known leader in terms of technology, responsiveness, industrial capacity, and the quality of its products. Driven by an average growth of 60% per year since 1998, Soitec invests between 6 and 8% of its turnover in R&D.
- Foreign Success Story: NXP (formerly Philips Semiconductors) in Caen has invested 200 million euros over a period of five years (2004 through 2008) into a R&D unit project regarding innovative techniques of passive component integration on a silicon substrate, to meet the market needs for communication via high-frequency waves. At the end of 2006, NXP announced two new projects in Caen: the creation of a research unit for future lighting, Solid State Lighting, electroluminescent diode-based lamps whose technology uses semiconductors. This center in Caen will employ about forty researchers starting in 2007. The second project concerns the creation of an industrial innovation cluster, open to small and mid-sized companies and supported by NXP, public laboratories and those of large companies. Estimated investment for this project: 100 million euros for this cluster.

Another example: Atmel Rousset

Sources: Sitelesc, SEMI, JEMI, Electronique International,
[http://fig-st-die.education.fr/actes/actes_2005/
daviet/article.htm](http://fig-st-die.education.fr/actes/actes_2005/daviet/article.htm)