

Production

State-of-the-art production with cutting-edge technology

Flexible production capacities

Clear technological edge

Efficient expansion of production

Infineon's flexible production capacities proved themselves during the semiconductor market's recovery phase. To meet rising demand for logic products and to satisfy our customers' needs, we were, for instance, able to convert DRAM production capacities into logic chip production at short notice. This flexibility gives us a substantial edge over our competitors. Infineon is not only able to make use of its own production facilities, but has access to a broad network of partners and contract manufacturers. Thus, by skillful combination of Infineon's own facilities and external manufacturing sources, we are in a position to react to shifts in the market. Infineon relies on these foundries for both the manufacturing of memory and logic products.

Smaller structures – higher productivity

Infineon has also been building on its strong position in production technology. Infineon has, for example, substantially completed a major hurdle in the race towards ever smaller and better integrated memory chips and can now produce with feature sizes of only 110 nanometers. At the end of the 2004 financial year, over 80 percent of our memory chips were being produced using the new technology. The yield of the 110-nanometer technology is now already comparable to the yield previously reached in 140-nanometer technology – which, at 40 percent more chips per wafer, results in a considerable increase in productivity.

Expansion of production capacities for memories

In view of the increased demand and the continuous shift from memory to logic capacities, Infineon has resumed projects that had been on hold over the past few years because of the market stagnation. Our semiconductor facility in Richmond, Virginia, for example, is currently being expanded to increase capacity. A state-of-the-art production module for the production of 300-millimeter wafers is under construction there, with production scheduled to begin in

the second half of 2005. The site will then be able to produce twice as many memory chips as it did before.

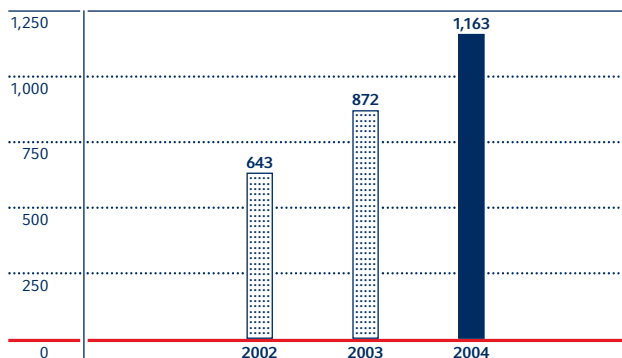
Memory chips in the 110-nanometer technology are already in production at Inotera, our Taiwanese joint venture founded together with Nanya Technology Corporation. Inotera is currently one of the world's largest and most modern 300-millimeter production sites and will help to improve Infineon's competitive edge even further.

We are investing 230 million euros in the expansion of our assembly and testing capacities at our production site in Porto, Portugal, which will provide the necessary back-end facilities for our increased wafer production. In Porto, wafers produced in Dresden and Richmond are processed into components and modules, and then tested. By mid-2006, the facility will have capacities for up to 600 million additional chips to be assembled and tested each year – twice as many as before.

The growing markets and comparatively low wage costs in China provide Infineon with a number of promising opportunities. For this reason, we have founded a joint venture in Suzhou for the back-end production of memory components, thereby considerably improving our competitiveness in China. ... Global presence, p. 30

Infineon's capital expenditure in the past financial year amounted to 1.2 billion euros. In comparison to the 2003 financial year, this represents an increase of 33 percent.

Capital expenditure € in million



Strong partner in logic chip development and production

By entering into appropriate partnerships, we are also securing our position on the advanced logic technologies market. Infineon is producing products using 130-nanometer technology – jointly developed with IBM and UMC – at our plants in Dresden, at Altis, our joint venture with IBM in Essonnes near Paris, and with UMC in Taiwan and Singapore. We are now also producing the first prototypes using our cutting-edge 90-nanometer logic technology.

Infineon is on a clear-cut path toward ever smaller feature sizes, thereby, reducing the cost for each integrated function. In a U.S.-based project together with Chartered, Samsung and IBM, we are developing the next generations of logic technology, featuring 65 and 45-nanometer structure widths. In an effort to exploit the full potential of these technologies, we are also planning production using 300-millimeter wafers. ... [Innovation, p. 24](#)

Infineon has a particularly good, competitive position in the field of power semiconductors. At our Power Logic Cluster, comprising the three plants in Villach, Regensburg and Perlach, we primarily manufacture products for Automotive & Industrial. In this market segment, Infineon enjoys outstanding production expertise and manufactures the most innovative products. We are thus in a leading position in this market segment. ... [Automotive & Industrial, p. 20](#)

Flexibility provides cost advantages

Infineon is able to derive considerable cost advantages from cascading, a reuse strategy, which entails the possibility to use the same production facility to produce memory, logic, and eventually power semiconductor technologies successively. The very same equipment required to manufacture the latest generations of memory and logic products can be reused to produce power technologies. This reuse concept increases Infineon’s profitability by reducing the investment costs in the area of power logic. Producing state-of-the-art memory and logic technologies at the same time provides yet another decisive advantage. Just as we can quickly convert capacities from memory to logic to keep up with demand, we can also act vice versa. Should demand for logic products decrease, Infineon is able to use those facilities for memory production in order to avoid idle capacity. This flexible-use plan, complemented by our development and production partnerships, is one of Infineon’s most decisive advantages.

In the 2004 financial year, Infineon again outpaced the market in growth. Our leading position in production technology has remained a key to our success, increasing Infineon’s appeal as a partner and allowing us to develop and manufacture products at lower cost. Infineon will continue to pursue this path, in order to remain a strong partner for our customers in attractive growth markets.