



Intel's European Plan to Expand Its Global Manufacturing Network

By Jean S. Bozman

Intel Corp. is working hard to grow its R&D and manufacturing capacity in Europe. Its European plans are part of Intel's strategy to address what it sees as a geographic imbalance in the world's chipmaking capacity – with 80% of worldwide capacity based in Asia/Pacific, including China and Taiwan.

Overall, Intel plans to make near-term European investments of 33 Billion Euros, growing to a total of 80 Billion Euros in the decade from 2022-2032. It is a substantial investment, made in partnership with the European Union (E.U.) and with European technology firms like IMEC.

The European investments are part of a broader plan to create a more distributed network of Intel manufacturing sites around the world. This network of manufacturing fabs and Intel R&D centers is intended to reduce future supply-chain delays -- and to shorten delivery time within geographic regions. The full plan is slated to begin in the first half of 2023, and for the manufacturing plants to become operational in 2027.

The European Strategy

On March 15, 2022, [Intel announced its plans](#) to build two large fabs in Magdeburg, Germany, generating 3,000 jobs in Magdeburg, and 7,000 construction jobs over the course of the building project; to build a new research headquarters near Paris, France, generating 1,500 jobs there; and to negotiate with Italy for a further manufacturing investment of 4.5 Billion Euros.

It's entirely possible that Intel's March 15 announcement that it will boost its R&D and production capacity in Europe (EMEA) was overshadowed by U.S.-based news about Intel's investments in fabs being built in Arizona and Ohio.

The [Ohio announcements](#) got strong coverage in the U.S., because they will bring manufacturing capacity and thousands of new jobs to the industrial heartland of Ohio – far from Intel's largest plants in the West, which are located in Arizona, New Mexico, Oregon, and California.

Expansion of European Operations

The focus of U.S. media on semiconductor manufacturing in Asia continued to make headlines in the U.S., while the European announcements were rarely mentioned in the U.S. in recent months.



Following Intel's March 15 announcements about its European plans, there were articles about Intel's European strategy in major U.S. newspapers, including the New York Times and the Wall Street Journal. But the overall discussion about the world's semiconductor chips quickly re-focused on semiconductor manufacturing plants in Taiwan, China, Japan, Korea and Malaysia.

Now, with yesterday's signing of the CHIPS and Science Act in the Rose Garden of the U.S. White House on Aug. 9, another wave of articles about the worldwide semiconductor industry can be expected to be published online and in print this week. [Intel CEO Pat Gelsinger was in attendance](#) at the White House event, as were the CEOs of IBM, Micron, Marvell, and other semiconductor providers.

In recent weeks, the European Union made clear that it will launch its own program to expand semiconductor manufacturing. The [European Chips Act](#), championed by European Commission President Ursula von der Leyen since 2021, is being prepared to be signed. If adopted, the goal is to increase Europe's share of the worldwide semiconductor capacity to 20%, rising from less than 10% in 2022.

E.U. President Von der Leyen recorded a video for Intel's announcement of European investments, making the case for stronger E.U. presence in the worldwide semiconductor marketplace – and for increased E.U. support for global manufacturers who choose to build or expand their fabs in Europe.

Intel's U.S. Fabs for Semiconductors and Its Foundry Business

Intel's high-profile \$20 Billion project to build two new fabs in Ohio – and to expand Intel's manufacturing capacity in its Arizona and New Mexico fabs have been grabbing the U.S. headlines in July and August. At that time, the news dynamic contrasted the U.S. manufacturing versus that of Asia – and those news stories made little mention of the European announcements in March.

Last year (2021), Intel announced its plans to launch a worldwide foundry business, expanding Intel's chip-making business by making semiconductors under contract worldwide. This new business inside Intel, called Intel Foundry Services (IFS), will manufacture semiconductors that are designed by Intel's new foundry customers – and then manufactured by Intel for the use of those outside customers. Now, that foundry model will be applied to the European manufacturing sites.

Pan-European Investments in France, Germany, and Italy

On March 15, Intel's press release provided specifics about the firm's European investments, including specifics about the following:



- **European investment plan:** Intel announced its intention to spend 80 billion Euros in the European Union (E.U.) over the next decade (2022-2032). These investments will be made across the “entire semiconductor value chain”, including R&D, manufacturing, and “state-of-the-art” packaging technologies.
- **Germany:** Intel plans to invest 17 Billion Euros to build a semiconductor fab “mega-site” in Magdeburg, Germany. The project will launch in 2023, with production at the Magdeburg manufacturing sites starting in 2027.
- **Italy:** Intel is in talks to invest 4.5 Billion Euros in Italy for manufacturing, according to a Reuters news report published in early August. The deal is still being negotiated.
- **France:** Intel is planning to build a new R&D and design hub in Plateau de Saclay, France – a tech research area that is about 20 km south of Paris.
- **Ireland:** Intel plans to expand its manufacturing operations in Ireland including introduction of the Intel 4 Process technology. The company plans to nearly double its chip-making capacity in Ireland.
- **Poland and Spain:** Rounding out the announced plans for Europe will be expanded Intel investments in Gdansk, Poland, for software development in AI and cloud computing, and a broadened partnership with the Barcelona Supercomputing Center in Spain for high performance computing (HPC) applications and AI technology.

Cloud Architects Analysis

In terms of technology consumption, the European region (EMEA) often is the region that generates the second-highest revenue for many types of technology products worldwide (e.g., servers, infrastructure software, storage).

Global technology companies like Intel often prefer to make their products as close as possible to their customer base – as would be the case for large automotive companies and consumer electronics. That’s why BMW has a large manufacturing facility in South Carolina, where it makes SUVs for the U.S. market, and why Ford has relied on its European factories to make products for the customer base it has in Europe and EMEA (Europe, the Middle East and Africa).

Cost Reductions for Shipping and Energy

The presence of Intel semiconductor manufacturing in Europe will bring benefits to its European enterprise, commercial, consumer and IoT (Internet of Things) customers. Production schedules for semiconductors can be customized to meet the demand in specific industries and specific companies (e.g., automotive production rates of European companies).

At the same time, these European companies should see more semiconductor supply, and faster delivery of semiconductors within Europe than is the case now with the current system of long-distance shipments from the U.S. and from Asia.



Further, Intel's foundry business will feature customized semiconductor components, leveraging "chiplet" designs that provide specific feature/functions for specific use-cases (e.g., automotive, electric power supplies and batteries, medical equipment, and consumer goods for the home).

The Supply Chain and Delivery Delays

Worldwide supply-chain issues are causing semiconductor shortages and delays in the delivery of semiconductors used by the automotive, transportation, health-care and consumer markets. The supply-chain delays began during the COVID-19 pandemic, as the pace of business changed, affecting transportation schedules.

Delays related to the supply-chain issues show no sign of abating soon. Further, (JIT) manufacturing, which became a mainstay of assembling automotive and computer products in the 1980s and 1990s, was deeply impacted by the supply-chain shortages of 2020, 2021 and 2022 – causing lengthy delays worldwide in the manufacturing and shipping of semiconductors, causing chip shortages worldwide.

Companies and governments around the world realize that they must adjust the patterns for manufacturing and shipping their products – and do so immediately. In short, the worldwide "web" of R&D, manufacturing and shipping will never be the same as it was before the COVID-19 pandemic revealed these manufacturing and distribution issues.

The ability to map R&D, manufacturing, and shipments to each major geographic region of the world has become vital in the New Normal world taking shape due to the worldwide pandemic (2019-2022).

Intel's corporate experience has demonstrated that the investments it makes now, during an economically challenging time, will pay off in the long run. For decades now, Intel has been a strong supporter of investing during economic downturns and challenging times, in preparation for better times ahead.

The same can be said of other global companies, including Intel's semiconductor competitors (e.g., Samsung, AMD, Marvell, IBM, and others). They must also stay current with the emerging technologies to meet an anticipated growth in customer demand in the years 2025-2030.

Summing Up

Intel's vision for an expanded presence, and increased manufacturing capacity, in Europe are coming into focus in a world that is worried about tangled supply chains and delayed semiconductor shipments. If Intel implements its announced plans for Europe by 2025, it stands



to broaden its customer base in the E.U. – and to shorten its supply-chain distribution to key customers in that region.

Clearly, the world's attention is on the connection between semiconductor design and manufacturing – and the economic future of countries around the world. Intel's plans, if executed on its announced timetable, should help the company to meet its customers' product schedules – and to grow its revenues and profits as it competes with the world's other semiconductor giants.

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