Intel's Chipmaking Empire Under Pressure

Idea In Short

Intel spent three decades as the default supplier of the chip inside nearly every personal computer, a position built on manufacturing leadership and the Intel Inside marketing campaign that made a component brand recognizable to ordinary shoppers. That position has eroded. AMD took server and desktop share, Nvidia became the chip industry's most valuable company on the back of Artificial Intelligence demand and TSMC now manufactures chips for most of Intel's own rivals at a scale Intel struggled to match. The result was a 2024 leadership change, mass layoffs, a dividend suspension and, in 2025, an unusual arrangement in which the US government took a direct equity stake in the company. Intel still sells the processors that run most laptops and servers worldwide. It also now runs a foundry business, manufacturing chips for outside customers while trying to prove its factories can compete with TSMC's.

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From Fairchild Renegades to Microprocessor Pioneer

Gordon Moore and Robert Noyce left Fairchild Semiconductor in 1968 to start Intel in Mountain View, California, betting that integrated circuits would replace magnetic-core memory. Andy Grove joined as the company's third employee and later ran the company as chief executive, driving the operational discipline that shaped Intel's culture for decades. The company built its first commercial microprocessor, the Intel 4004, in 1971, then pivoted from memory chips toward processors as Japanese competitors undercut Intel on DRAM pricing in the 1980s.1 That pivot, forced by a market Intel was losing, became the foundation of the company's next 30 years.

The x86 Empire and Wintel Dominance

Intel's partnership with Microsoft, often called Wintel, made the x86 processor architecture the standard for personal computers through the 1990s and 2000s. The "Intel Inside"

campaign turned a component that most buyers never saw into a brand people asked for by name, a marketing feat few chipmakers have matched since. Pricing power followed:

> Intel could charge a premium for Pentium and later Core processors because switching to a rival meant rewriting software compatibility, not just swapping a part

> Intel didn't just sell chips. It sold the assurance that whatever software ran, it would run on Intel silicon

That assurance built decades of margin, but it also meant Intel's fortunes stayed tied to the PC cycle even as computing moved toward phones and data centers.

Losing the Manufacturing Edge

Intel's 10-nanometer manufacturing process, originally targeted for 2015, did not reach volume production until 2019 and the delay let Taiwan Semiconductor Manufacturing Company catch up and then pull ahead on process technology. AMD used that opening, launching its Ryzen and EPYC processors on TSMC's more advanced nodes and taking desktop, laptop and server share that Intel had held for a generation. By the early 2020s, AMD held roughly a fifth of the x86 processor market, a share it had not approached in over a decade.

Missing Mobile and the AI Wave

Intel tried and failed to win a meaningful position in smartphone chips during the 2010s, ceding that market to Qualcomm, MediaTek and Apple's own silicon. A more costly miss came later: Nvidia's graphics processors, originally built for gaming, turned out to be the preferred hardware for training large AI models and Nvidia's market value surged past Intel's by a wide margin as data centers rushed to buy its chips. Intel's own AI accelerator efforts, including the Gaudi line, gained limited traction against Nvidia's dominant software

ecosystem.

The 2024 Reckoning

Intel's board ousted chief executive Pat Gelsinger on December 1, 2024, following what board members described as frustration with the pace and results of his turnaround plan.2 The company had already cut 15% of its workforce, about 15,000 jobs, in October 2024 and suspended its dividend for the first time in decades as losses mounted in the foundry business. David Zinsner and Michelle Johnston Holthaus ran the company as interim co-chief executives until the board named Lip-Bu Tan, a former Cadence Design Systems chief executive, as permanent chief executive in March 2025. Tan moved quickly, selling a 51% stake in the Altera programmable-chip unit to Silver Lake for $4.46 billion and cutting additional management layers to push the company toward what he called an engineering-led culture.3

A Government Lifeline and New Alliances

In August 2025, the US government converted $8.9 billion in CHIPS Act grants and Secure Enclave program funding into an equity stake, buying 433.3 million shares of Intel common stock and becoming one of the company's largest shareholders.4 The shares are non-voting, so the arrangement funds Intel's factory buildout without handing Washington board control, though it does carry a warrant tied to Intel keeping majority ownership of its foundry business. SoftBank followed with a $2 billion investment weeks later and Nvidia, once purely a rival, agreed to invest $5 billion and co-develop data center and PC chips with Intel, a deal that closed in December 2025.5 Together, the three deals gave Intel roughly $16 billion in fresh capital without requiring it to sell additional business units.

Betting the Company on Foundry

Intel's long-term strategy rests on its 18A manufacturing process, which entered high-volume production in late 2025 with Panther Lake, Intel's first laptop chip built on the node, now shipping. The process uses RibbonFET transistors and backside power delivery, technology Intel says closes much of the gap with TSMC's most advanced offerings.6 Success depends on Intel Foundry winning orders from customers beyond Intel's own product teams, something the company has not historically had to do. Microsoft and Amazon Web Services have signed on as early foundry customers, but TSMC still holds

close to two-thirds of global foundry revenue, leaving Intel to prove its factories can compete on cost and yield at a scale that justifies the billions already spent building them.

Key Partners

Intel's manufacturing and product roadmap now depends on a widening circle of outside partners, a departure from its historically self-contained approach. Nvidia and SoftBank hold equity stakes tied to product and manufacturing collaboration, while Microsoft and Amazon Web Services are early customers for Intel Foundry's advanced nodes. The US government functions as both a regulator and a shareholder through its CHIPS Act-derived equity position. Distributors, computer makers such as Dell and HP and equipment suppliers like ASML remain essential to getting Intel's chips designed into products and its fabs equipped to build them.

Key Activities

Intel's core activities split between chip design and semiconductor manufacturing, two functions the company is now managing as increasingly separate businesses. Intel Products teams design processors, graphics chips and networking silicon for PCs, servers and edge devices, while Intel Foundry operates fabrication plants that manufacture chips for both internal product teams and external customers. Research and development remains heavily weighted toward advancing process nodes like 18A and its successors, since Intel's foundry ambitions depend on matching or beating TSMC's manufacturing capability. Restructuring activities, including layoffs, divestitures and cost cuts, have themselves become an ongoing operational focus since 2024.

Key Resources

Intel's most valuable resource is its network of wafer fabrication plants in Arizona, Oregon, New Mexico, Ohio and overseas, representing tens of billions of dollars in capital investment. Its patent portfolio and decades of process engineering knowledge, though diminished relative to TSMC, still underpin its chip designs and manufacturing know-how. The company's engineering workforce, reduced through repeated layoffs but still numbering in the tens of thousands and its relationships with equipment makers like ASML for extreme ultraviolet lithography tools round out its core resources. Fresh capital from the government, SoftBank and Nvidia now also functions as a resource funding the foundry

buildout.

Value Propositions

For PC and server makers, Intel offers x86 compatibility with the enormous existing base of software written for that architecture, reducing switching risk for customers who have built products around it for decades. For foundry customers, Intel is pitching domestic, US-based advanced manufacturing capacity at a moment when governments and companies want alternatives to Taiwan-concentrated chip production. For data center customers, Intel offers processors and, increasingly, AI infrastructure components positioned as complements to Nvidia's GPUs rather than direct replacements. Across segments, Intel's pitch increasingly leans on national-security and supply-chain resilience arguments that did not feature in its marketing a decade ago.

Customer Relationships

Intel maintains long-standing engineering relationships with major computer makers, cloud providers and device manufacturers, often collaborating years in advance on chip roadmaps tied to those customers' own product cycles. Foundry relationships are newer and more transactional, built around proving manufacturing reliability and yield to companies that have alternatives in TSMC and Samsung. The company also relies on developer and enterprise IT support channels, including documentation, community forums and direct technical support, to keep its processors embedded in software ecosystems. Investor relationships have grown more prominent given the government, Nvidia and SoftBank stakes, each of which comes with its own reporting and governance expectations.

Channels

Intel sells the large majority of its processors indirectly, through computer makers such as Dell, HP and Lenovo that integrate its chips into finished PCs and servers rather than through direct retail sales. A network of authorized distributors and resellers handles smaller-volume and regional sales, particularly for enterprise and embedded customers. Intel's website, investor relations portal and developer resources serve as direct channels for technical documentation, order management and foundry customer engagement. Trade shows and industry events remain important for foundry customer acquisition, where Intel needs to demonstrate manufacturing credibility to skeptical potential clients.

Customer Segments

Intel's traditional customer base consists of original equipment manufacturers like Dell and HP that build Intel chips into consumer and business computers, plus cloud and enterprise data center operators buying server processors. Its newer foundry business targets fabless chip designers who need advanced manufacturing capacity, a segment that includes both other technology companies and government-adjacent customers seeking domestic production. Automotive and industrial customers, served largely through the majority-owned Mobileye unit, represent a smaller but growing segment tied to advanced driver-assistance systems. Government and defense customers add a segment where domestic manufacturing and supply-chain security carry weight beyond pure cost or performance.

Cost Structure

Intel's cost structure is dominated by capital expenditure on semiconductor fabrication plants, which run into the tens of billions of dollars for a single advanced facility and take years to become productive. Research and development spending on process technology and chip design remains a major fixed cost, compounded since 2024 by restructuring charges tied to layoffs, the Altera divestiture and other portfolio changes. Manufacturing costs, including materials, equipment maintenance and specialized labor, scale with output but carry high fixed components tied to keeping fabs running at capacity.

Revenue Streams

Intel now reports revenue primarily through Intel Products, covering Client Computing, Data Center and AI and Network and Edge chip sales and Intel Foundry, which sells manufacturing capacity to both internal and external customers. A smaller "All Other" category includes Mobileye's automotive chip and software revenue and Intel's remaining 49% stake in Altera following the 2025 sale to Silver Lake.7

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Summary

Intel's business now runs on two tracks that used to be one. Intel Products still designs and sells the processors that go into PCs, servers and networking gear, generating steady if pressured revenue. Intel Foundry is the newer bet, a manufacturing arm trying to attract external customers while absorbing the capital cost of building advanced fabs in Arizona, Ohio and elsewhere. The government's equity stake, Nvidia's investment and SoftBank's capital injection buy time and reduce the risk that Intel cannot fund its factory roadmap, but they do not guarantee that outside customers choose Intel over TSMC once 18A production ramps. Chief executive Lip-Bu Tan has cut jobs and management layers to make the company leaner. Whether that translates into regained market share in PCs, servers and eventually AI chips will determine if Intel's turnaround becomes a durable business model or a prolonged, subsidized decline.