
Intel Corp

Inside Intel's big bet to save US chipmaking – and itself

Claims of a breakthrough at the chips company's new Arizona facility will be tested by sceptical Big Tech customers

Michael Acton in Chandler, Arizona

Published YESTERDAY

At Intel's new 700-acre factory in the Arizona desert, the company has started large-scale production on the most advanced chips it has ever manufactured in the US.

[Intel](#) claims to have cracked long-standing technical barriers in a new manufacturing process, after years of effort — producing faster and more efficient chips that will start appearing in laptops and data centres next year.

Its two state-of-the-art Arizona factories, which cost \$32bn, represent a crucial gamble to show sceptical Big Tech customers that Intel's latest process can compete with its dominant Taiwan-based rival TSMC — and to prove that advanced chipmaking in the US is still possible.

“It is the most advanced [semiconductor](#) technology in production today on planet earth,” said Kevin O'Buckley, senior vice-president of Intel's foundry business. “But we know we have a long way to go to deliver trust for our customers.”

These big claims will be carefully tested by prospective clients such as Nvidia, Apple and Qualcomm before they decide to entrust their future chipmaking to Intel.

“I think the timeline is 6 to 8 months,” said Ben Bjarin, chief executive and principal analyst at consultancy Creative Strategies.

The “18A” manufacturing process on display in Arizona must convince customers to place advanced orders for Intel’s next-generation “14A” chipmaking technology.

If it fails to impress, it could deal the final blow to Intel’s multibillion-dollar bet on US leading-edge chipmaking, tipping the company back into crisis.

“There comes a point in time where they have to make a call on whether they can do it or not,” Bjarin said.

RESUME

Intel's 700-acre chip manufacturing campus in the middle of the Arizona desert © Intel

The pressure on Intel is intense. The Trump administration, which recently took a [10 per cent stake in the company](#), is determined to reduce America’s dependence on vulnerable tech supply chains overseas.

The scale of Intel’s financial bet is also difficult to overstate. Completing the Chandler, Arizona, facility near Phoenix will cost the company well over half its 2024 revenue.

Intel’s losses on its foundry have run into the billions of dollars every quarter for nearly two years as its revenues have declined, with little to show for it so far.

“It’s hard to attribute much value to a foundry business losing over \$10bn per year” with an uncertain path to profitability and encumbered by Intel’s roughly \$20bn in net debt, Morgan Stanley analysts wrote.

The Arizona campus is a dense network of hulking factory and office buildings, solar panels, pylons and dusty vacant lots. The new factory, called Fab 52, used twice as much concrete as the Burj Khalifa in Dubai.

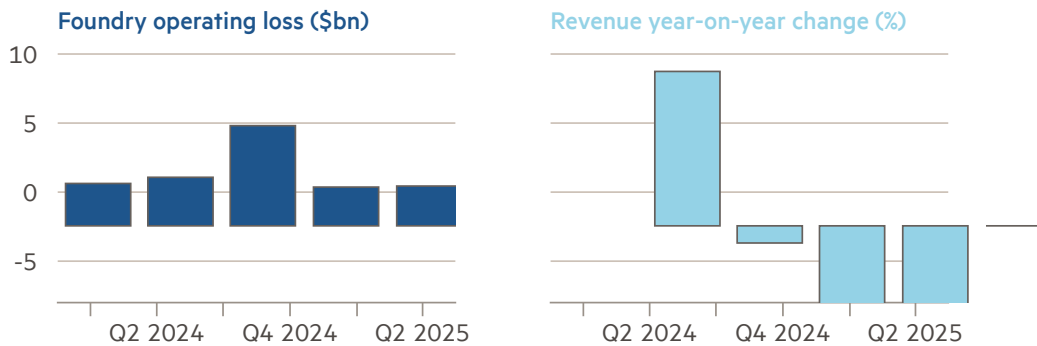
The shell of the second facility, Fab 62, is also complete. But it sits empty, a testament to the US chipmaker's turbulent recent history.

Former chief executive Pat Gelsinger broke ground in Arizona in September 2021, as part of his push to regain manufacturing leadership.

The goal was to start making chips for other companies, capturing a bigger share of the high-margin global foundry business. That market hit \$138bn in 2024 and continues to grow as demand for AI chips surges, according to research group Gartner.

Intel's revenue has declined as foundry costs net billions in losses

Quarterly foundry operating losses (\$bn) and year-on-year change in revenue (%)



Source: Intel
FT graphic: Eva Xiao

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TSMC produces more than 90 per cent of the world's most advanced chips for the likes of Nvidia, Apple, Google, Qualcomm and Broadcom.

Under Gelsinger, Intel largely failed to lure in these customers. The company also missed the opportunity to develop a product to rival Nvidia's AI chips, which have propelled it past a \$4tn valuation.

The revenues Gelsinger promised would sustain huge investments in manufacturing failed to materialise, and he was [ousted by Intel's board](#) last year.

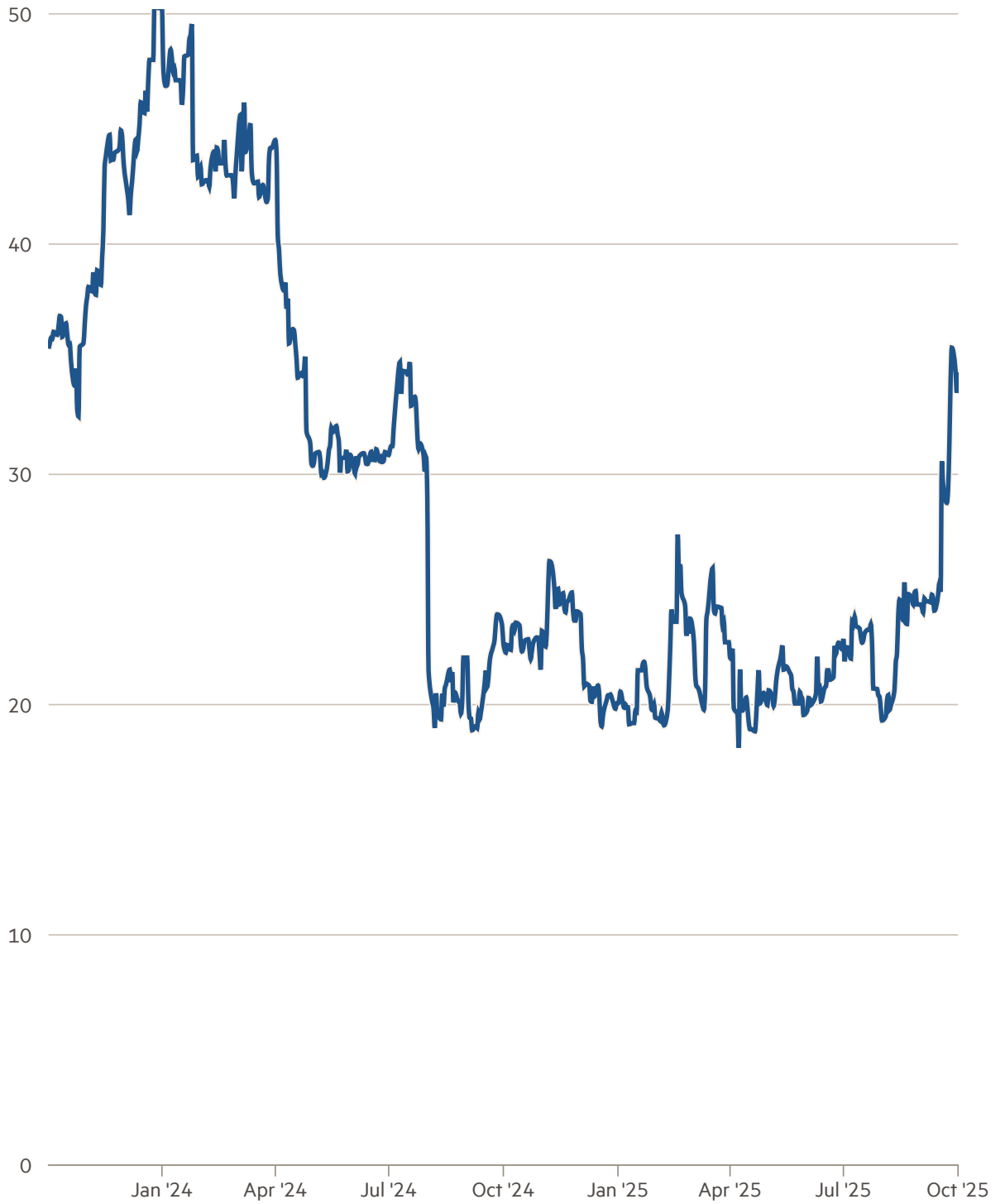
Some analysts expected his successor, Lip-Bu Tan, would sell the struggling manufacturing division altogether.

But that option has been hemmed in by pressure from the Trump administration — which is concerned about so much critical chipmaking capacity remaining in Taiwan, within striking distance of China.

The US government in August converted billions of dollars of planned manufacturing subsidies into equity, securing a 10 per cent stake in Intel.

Investments by Nvidia and SoftBank followed, buoying Intel's shares, which are up about 52 per cent in the past month.

Intel's share price is recovering after a year of decline



Source: LSEG
FT graphic: Eva Xiao

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The US stake means Intel “went from too big to save, to too big to fail”, said Dan Hutcheson, vice-chair of consultancy TechInsights.

Trump’s influence could now help the Arizona facility secure customers.

The president has used the threats of tariffs and political pressure to cajole Big Tech groups such as Apple into line with his policy of boosting American manufacturing.

“All of these [big US chip customers] are now terrorised by the Trump administration,” said Hutcheson. “I’d be surprised if someone doesn’t come in.”

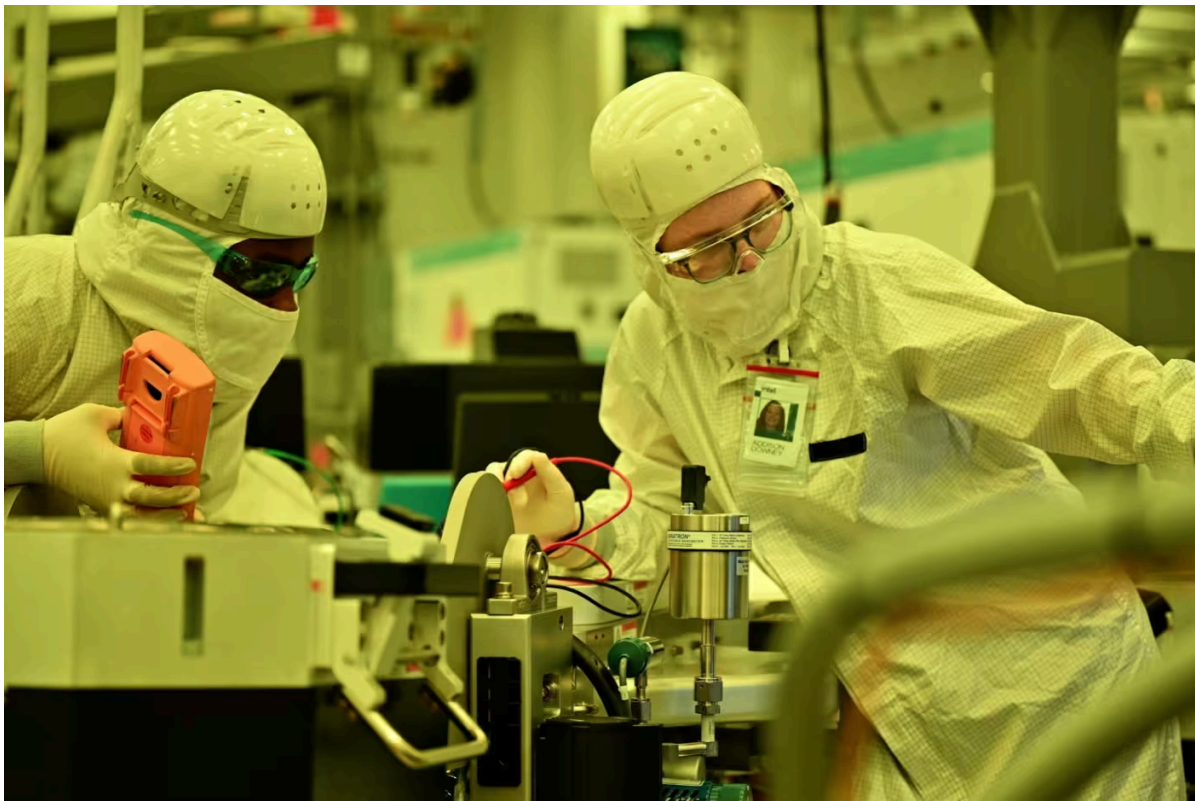
Developments at Fab 52 are under the microscope from these prospective customers. “Everyone who needs leading-edge foundry is undoubtedly continually evaluating [Intel],” Bernstein analysts said.

Tan is walking a line between reining in capital expenditures while demonstrating Intel has the capacity to be a serious competitor to TSMC.

He has promised to curb excessive spending, slashing Intel’s workforce, canning manufacturing projects in Germany and Poland, and slowing construction of another thousand-acre campus outside Columbus, Ohio.

But Intel is still spending to prove that the 18A system at Fab 52 can reverse a trend that began in the late 2010s, when TSMC overtook Intel in offering superior manufacturing “nodes” — the processes involved in producing smaller, more complex and efficient chip designs.

TSMC gained such a technological lead that Intel had started to use TSMC to produce its most sophisticated chips.



Engineers work at an Intel wafer lab in Arizona. The US government converted billions of dollars of planned manufacturing subsidies into equity, securing a 10% stake in the group © Intel

Intel's fab will now churn out two new Intel products, a personal computer chip named Panther Lake and a server chip called Clearwater Forest.

Returning Intel's own chips to its in-house fabs was "a big help", Hutcheson said. The commitment showed it was "betting that Intel Foundry is still going to be here in two to three years", he added.

Initial problems with the "yield" in the process — the percentage of working chips that come out the other side — had been resolved, said Jim Johnson, Intel's senior vice-president of client computing. The formal launch of these new chips early next year was going to "change the narrative" around Intel, he predicted.

Central to Intel's new manufacturing technology is a process known as EUV lithography. The technology allows patterns to be drawn on silicon wafers that are nanometres thick.

The hulking white EUV machines in Fab 52, made by Dutch company ASML, are the size of a Winnebago. Each cost Intel "hundreds of millions of dollars," said engineering manager Jason Smith.

The investment Intel has made in showcasing 18A by making its own chips in Arizona now needs to pay off with customer traction for its 14A tech, which would go into production by 2028. Intel has warned it will give up on 14A if it does not win customers.

Fab 52 has only a small window to prove its viability. Bjarin said: "If the chips are good, that's a positive signal to start taking Intel foundry much more seriously."

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