

**Huawei Technologies**

## **'We have survived!': China's Huawei goes local in response to US sanctions**



Tech group is trying to lead way for Chinese companies eager to reduce reliance on western technology

**Qianer Liu** in Seoul YESTERDAY

In Huawei’s head office last month, staff gathered to celebrate the in-house development of software to replace a US system that, thanks to Washington’s export controls, the Chinese technology company was no longer able to purchase.

“Three years ago, we were cut off from the old ERP [enterprise resource planning] system,” said Tao Jingwen, a [Huawei](#) board member and president of its quality, business process and IT management department. “Today we are proud to announce that we have broken through that blockade. We have survived!”

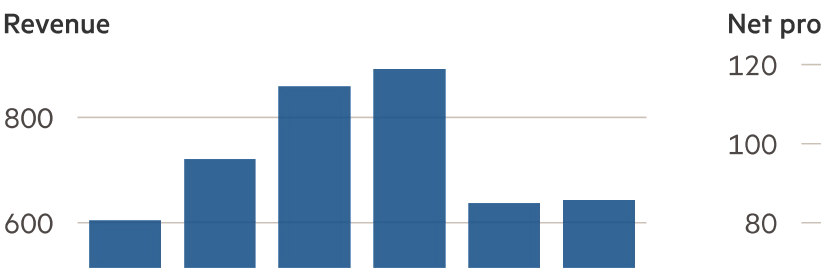
Tao was speaking at the Huawei campus in the southern city of Dongguan, on a stage decorated with banners proclaiming the “heroes fighting to cross the Dadu River”, a reference to a gruelling march by the ultimately victorious Communist army in [China](#)’s civil war.

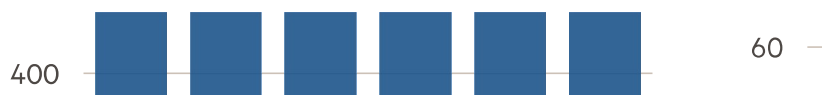
This latest declaration of progress offers a glimpse into how Huawei, helped by government grants and funding from Beijing, has tried to lead the way for Chinese companies eager to reduce their reliance on western technology as geopolitical tensions rise.

Since 2019, Washington — which claims Huawei is a security risk and fears it might facilitate Chinese spying — has barred American suppliers from selling to Huawei without export licences and prevented the company from using any US technology for chip design and manufacturing.

**Huawei's earnings squeezed by western sanctions**

Revenue and net profit (Rmb bn)





Huawei's sales, profit and market share plunged after the controls were introduced. Its mobile phone business, once the world's biggest by unit sales, has been decimated. Lack of access to chips meant it was forced to stop making 5G phones, a situation a company official described as a "joke". In 2021 its revenue plunged by a third, though its profit was buoyed by the sale of Honor, a smartphone brand. Last year, the company said it was back to "business as usual", forecasting a return to annual revenue growth this year.

Central to the Huawei strategy has been the desire to supplant established western technologies with local products, a long-term aim of Beijing that has proven costly and difficult.

With this in mind, China awarded Huawei government grants worth Rmb6.55bn (\$948mn) in 2022, double the amount from the previous year. The company also received conditional funding tied to specific research projects of Rmb5.58bn, triple that of 2021, according to its annual report. In a statement, Huawei said: "Government support for high-tech research programs is par for the course in most countries. Huawei is no different from other companies in the industry that apply for this kind of support. For Huawei, this type of support accounts for an extremely minute portion of our total R&D spend." It added that it spent a quarter of its revenue last year on research and development.



## Chinese government subsidies for Huawei more than doubled last year

Government subsidies (Rmb mn, left) and their share of net profit (% , right)

Unconditional

Conditional

Share of net profit



The company has claimed some success. In March, Huawei's rotating chair Eric Xu said the group and its industrial partners had made breakthroughs in electronic design automation tools for chips at and above the 14-nanometre node, an area dominated by US companies though a few generations behind leading-edge technology.

In February Ren Zhengfei, Huawei's founder, said the company had located domestic alternatives for more than 13,000 components and redesigned more than 4,000 circuit boards following the imposition of US sanctions.

More challenging is the attempt to replicate sophisticated chipmaking tools such as lithography, a market dominated globally by Dutch company ASML.

Huawei is working with Shanghai Micro Electronics Equipment, according to two people with direct knowledge of the matter. SMEE, on which the US imposed sanctions last year, has for more than a decade tried to produce homegrown lithography but with limited success. In December, Huawei filed a patent in one of the most advanced facets of lithography technology, according to China's patent office. SMEE did not respond to requests for comment.

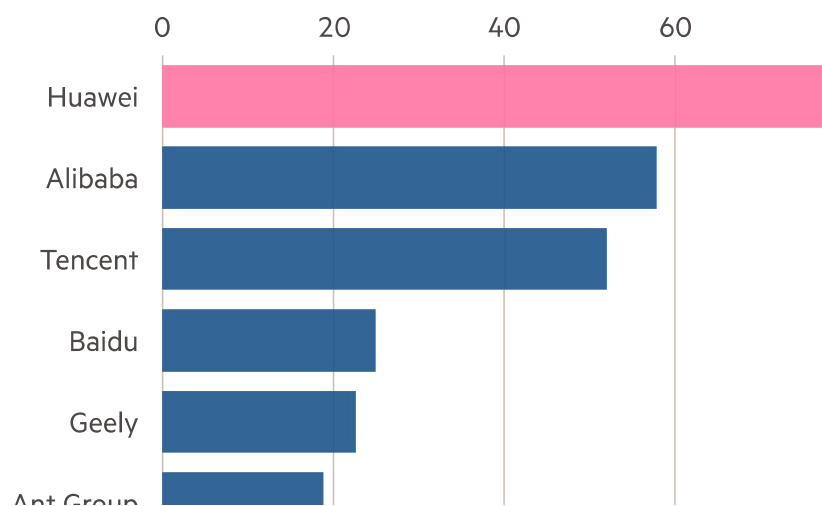
“In China, maybe only Huawei has the experience and capability to help SMEE to build lithography machines that are free from US interference,” said one person briefed on the situation, estimating it would take Huawei and SMEE more than three years to produce equipment capable of replacing products from ASML.

“The biggest problem is that some core components used to be imported from the US and are not available any more due to the updated export controls. Huawei, SMEE and other Chinese companies involved in the lithography research must also work on replacing those components as soon as possible,” the person said.

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## Huawei spent more on R&D than Alibaba, Baidu and Tencent combined

Research and development expenditure in 2021 of leading Chinese tech groups (Rmb bn)



A China-based analyst who requested anonymity due to the sensitivity of chip supply issues said: “Hardware components that used to be sourced from foreign companies, such as chips-related technology still remain a core element in almost all companies’

such as chips-related technology, still remain a core element in almost all companies' businesses, so Huawei must invest in developing hardware alternatives on all fronts."

Overall, Huawei's development of replacements for western technology means it offers a wider range of products, which should help it access what research group IDC says is a \$2.38tn market in China for digital transformation products and services from 2022 to 2026.

Over the past two years, local governments in more than 20 cities in China have built artificial-intelligence computing centres and mostly chosen to deploy chips from domestic companies, with 79 per cent of them using Huawei's AI chips, according to a report by Citic Securities in February.

Aside from chips, the company has increased research and development spending in areas such as software. "The disruption in developing chip-related technology forced Huawei to increase its R&D efforts in the software further, aiming to achieve product upgrades despite restricted hardware," said Charlie Dai, research director at consultancy Forrester.

The company, whose 2022 profit of Rmb35.6bn is still substantially lower than its Rmb62.7bn profit in 2019, "will keep investing in domains like connectivity, computing, storage and cloud", said Meng Wanzhou, the company's rotating chair and daughter of founder Ren Zhengfei, at the Huawei Global Analyst Summit last month.

Meng also appeared at the ceremony in Dongguan, in front of a campus built to echo the dreaming spires of the UK's Oxford university. "Innovation is only possible with an open mind," she said, "and thriving is only possible when we work together."