

# Industrials

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## Robot makers turn to technology industry as next world to conquer

By Chris Bryant in Frankfurt



Robot executives paid close attention when Chia Day, a softly spoken senior vice-president at Foxconn, visited the Automatica trade show in Munich last week.

Mr Day has been given the task of fulfilling the Taiwanese contract manufacturer's dramatic vision of building a **1m-strong** robot army to transform the productivity of its labour-intensive electronics factories, which serve clients including [Apple](#).

### Industrial robots in manufacturing



by country

He is therefore an important potential customer for robot makers [Fanuc](#) and [Yaskawa](#) of Japan, Switzerland's ABB and Germany's [Kuka](#), which aim to tap markets beyond the automotive sector – for decades the foundation of the industry.

“Today there are 6m people working in the 3c [computer, communication and consumer electronic] industry; that's a market that has a relatively low degree of automation today. We see huge potential, comparable maybe to automotive 40 years ago,” says Till Reuter, chief executive of Kuka.

The four big industrial robots makers are easy to tell apart on the trade show floor: Kuka's machines are orange, ABB's graphite white, Fanuc's yellow and Yaskawa's are blue and white.

For years these four companies have dominated the market, controlling more than 60 per cent of industrial robot sales. But now their competitive environment is in flux.

New Chinese entrants such as Siasun and Estun are driving down the cost of robots, obliging some incumbents to lower prices too.

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## [Google](#) and [Amazon](#)'s recent robot company

[acquisitions](#) signalled that Silicon Valley is preparing to

barge into the market, and newcomers Universal Robots and Rethink Robotics have won plaudits for their lightweight, collaborative robots.

"We see Google, Universal and Rethink as a clear confirmation of the robotic trend, and they will help us open more markets," Mr Reuter told analysts in March.

"We come from the mechanical angle, we know how to build the robot arm, we put on top the software and the IT world . . . [IT providers] build an android system, then go into mechanics. We will meet at one point in time."

Most executives agree new competition need not spell hardship for incumbents, because of fast growth in emerging markets and a range of new applications in areas such as electronics, healthcare, logistics and the food industry.

Per Vegard Nersteth, head of robotics at ABB, believes the industry is experiencing a "second wave" of growth.

"We are seeing new markets starting to adopt and move into robotics . . . The expectation for the whole industry is that this rapid growth will continue to go on," he says.

A big chunk of ABB and Kuka's revenues come from systems integration, whereas Fanuc and Yaskawa use partners with specific industry knowledge to advise on the set-up at the plant.

Kuka and ABB are also making a big push into collaborative robots which can work alongside workers without a cage – once thought impossible because of the risk that workers would be injured.

### Big data gateway



"Manufacturing has always been producing a lot of data – but generally it hasn't been used," Keith Nosbusch, chief executive of Rockwell Automation, tells Neil Munshi in *Milwaukee*. But the data can be incredibly useful. Rockwell does not build robots, but it uses software and hardware to allow industry to remotely monitor assembly lines and better maintain round-the-clock production.

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James Stettler at Barclays said: "I think the innovation here is really coming from Kuka and ABB; the Japanese seem happy mostly to watch for now."

But both these European companies are currently at a disadvantage because of the sharp depreciation of the yen, which lowers the cost of Japanese rivals' exports.

Kuka lowered its 2014 operating margin forecast in robotics to between 9.5 per cent and 10 per cent (compared with over 10 per cent last year) because of currency issues.

China, which last year became the world's largest buyer of industrial robots, remains a big focus for the industry; ABB, Kuka and Yaskawa have set up local production sites there in recent years.

Kuka has benefited in particular as German premium carmakers have opened more plants there, but it has also begun to win business from domestic Chinese carmakers, such as Great Wall.

Fanuc, by far the world's biggest manufacturer of industrial robots by sales, has no plans to follow its rivals by opening a plant in China. Although a listed company, it is famously guarded about revealing the secret to its high margins. It manufactures all its robots at a massive complex amid the scenic lakes and forests at the foot of Mount Fuji.

### Silicon Valley embrace



Some of the best-known internet companies have suddenly acquired a taste for robotics, triggering a series of unlikely acquisitions of promising start-ups, writes *Richard Waters in San Francisco*. The flurry of interest from such prominent groups as Google represents a new departure for Silicon Valley, which has not historically been at the forefront of the field

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“We have three times more robots in our production than humans. That’s the difference – we are able to provide high-quality sophisticated robots beyond automotive and general industry for the same price level that the others do when they produce in China,” says Olaf Kramm, head of Fanuc’s Germany business. He proudly wears a sports jacket in the company’s bright-yellow colours.

For a look at how robotics is transforming the service industry

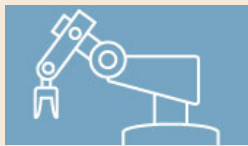
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Wang Jiegao, vice general manager at China’s Estun Robotics, says: “Labour costs are rising [in China] so there are a large number of enterprises that need automation. The challenge is to do that for small and medium-sized enterprises . . . as they have limited money for investment.”

That is a big reason why robot companies are focused particularly on making robots easier to programme, operate and maintain.

FT series

[Robots at Work](#)



The FT analyses the growth in the use of robots in the workplace

“In the past you had to be an expert to programme robots. Our challenge to our developers is this: is it possible for a guy who is 80 years old to programme a robot?” says Mr Reuter at Kuka. The company has switched to a Java-based programming language to encourage a wider community to build apps for its new range of lightweight robots.

Manfred Stern, president of Yaskawa Europe, believes this usability factor will be important if robot makers are to tap new customers “If you bring a robot to experienced people in the biomedical industry they don’t know how to programme it,” he says.

User-friendly robots could also be a help for Mr Day as he automates Foxconn’s factories. “We have 1.2m workers right now – that’s too many,” he says.

To keep costs down he is busy building Foxconn’s own brand of robots, dubbed “Foxbots”, but Mr Day declined to be drawn on how long it will take to reach the 1m robots target.

*Additional reporting by Tanya Powley in London*

*This is the third instalment of a four-part series on robots in the workplace.*

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