

## ROBOT REVOLUTION SWEEPS CHINA'S FACTORY FLOORS

**SHENZHEN:** In China's factories, the robots are rising. For decades, manufacturers employed waves of young migrant workers from China's countryside to work at countless factories in coastal provinces, churning out cheap toys, clothing and electronics that helped power the country's economic ascent. Now, factories are rapidly replacing those workers with automation, a pivot that's encouraged by rising wages and new official directives aimed at helping the country move away from low-cost manufacturing as the supply of young, pliant workers shrinks.

It's part of a broader overhaul of the economy as China seeks to vault into the ranks of wealthy nations. But it comes as the country's growth slows amid tepid global demand that's adding pressure on tens of thousands of manufacturers. With costs rising and profits shrinking, Chinese manufacturers "will all need to face the fact that only by successfully transitioning from the current labor-oriented mode to more automated manufacturing will they be able to survive in the next few years," said Jan Zhang, an automation expert at IHS Technology in Shanghai.

**A revolution**  
Shenzhen Rapoo Technology Co is among the companies at ground zero of this transformation. At its factory in the southern Chinese industrial boomtown of Shenzhen, orange robot arms work alongside human operators assembling computer mice and keyboards. "What we are doing here is a revolution" in Chinese manufacturing, said Pboll Deng, Rapoo's deputy general manager. The company began its push into automation five years ago. Rapoo installed 80 robots made by Sweden's ABB Ltd. to assemble mice, keyboards and their sub-components. The robots allowed the company to save \$1.6 million each year and trim its workforce to less than 1,000 from a peak of more than 3,000 in 2010.

Such upgrading underscores the grand plans China's communist leaders have for industrial robotics. President Xi Jinping called in a speech last year for a "robot revolution" in a nod to automation's vital role in raising productivity. Authorities have announced measures such as subsidies and tax incentives over the past three years to encourage industrial automation as well as development of a homegrown robotics industry. Some provinces have set up their own "Man for Machine" programs aimed at replacing workers with robots.

Guangdong, a manufacturing heartland in southern China, said in March it would invest 943 billion yuan (\$148 billion) to encourage nearly 2,000 large manufacturers to buy robots, the official Xinhua news agency reported. Guangzhou, the provincial capital, aims to have 80 percent of manufacturing automated by 2020. A relentless surge

in wages is adding impetus to the automation revolution. China relied on a seemingly endless supply of cheap labor for decades to power its economic expansion. That equation is changing as the country's working age population stops growing and more Chinese graduate from university, resulting in a dwindling supply of unskilled workers, annual double-digit percentage increases in the minimum wage and rising labor unrest.

Deng said Rapoo's wage bill rising 15-20 percent a year was one big factor driving its use of robots. "Frontline workers, their turnover rate is really high. More and people are unwilling to do repetitive jobs. So these two issues put the manufacturing industry in China under huge pressure," he said. China's auto industry was the trailblazer for automation, but other industries are rapidly adopting the technology as robots become smaller, cheaper and easier to use. It now only takes on average 1.3 years for an industrial robot in China to pay back its investment, down from 11.8 years in 2008, according to Goldman Sachs.

### Industrial robots

Companies such as electronics maker TCL Corp are using robots to produce higher-value goods. At one factory in Shenzhen, TCL uses 978 machines to produce flat screen TV panels. At another TCL plant in Hefei, near Shanghai, steel refrigerator frames are bent into shape before being plucked by a blue Yasakawa robot arm that stacks them in neat rows for further assembly. Fridges and big washing machines have heavy internal components, so "if you use automated robots to make them, they also let you cut your labor

intensity by a lot," said TCL Chairman Tomson Li. China held the title of world's biggest market for industrial robots for the second straight year in 2014, with sales rising by more than half to 56,000, out of a total of 224,000 sold globally, according to the International Federation of Robotics.

There's plenty more room for explosive sales growth. China has about 30 robots for every 10,000 factory workers compared with 437 in South Korea and 152 in the United States. The global average is 62. Beijing wants China's number to rise to 100 by 2020. The switch to robots has raised fears that it will contribute to slowing job though there are few signs that's happening yet. Deng said Rapoo hasn't had to resort to layoffs. Rather, the company is just not replacing workers who quit. "It's not simply replacing the operation of workers by robot. We do more than that. We are making a robot platform" in which humans and machines work together to make production more flexible, he said.

On a recent tour of Rapoo's factory, Deng pointed out the efficiencies. As a conveyor belt carried circuit boards out of an industrial soldering machine, a robot arm removed them from metal jigs and placed them on another belt. Human workers typically do this job in other factories, Deng said, but turnover is high because of the heat and repetitiveness. In a glass-walled room, robots assembled receivers for wireless mice, tasks that were previously done by 26 people, Deng said. Now, one or two humans supervise as a laser automatically fuses shut metal USB plug housings, four at a time, while steps away, robot arms slide the plugs into plastic sleeves. —AP



**SHENZHEN:** A Chinese worker is seated next to orange robot arms at Rapoo Technology factory in southern Chinese industrial boomtown of Shenzhen. —AP

## APPLE'S HACK ATTACK EXPOSES FLAWS IN BUILDING APPS BEHIND 'GREAT FIREWALL'

EXPERTS POINT THE FINGER AT LAX SECURITY PROCEDURES

**BEIJING:** China's "Great Firewall" may have been partly to blame for the first major attack on Apple Inc's App Store, but experts also point the finger at lax security procedures of some big-name Chinese tech firms and how Apple itself supports developers in its second biggest market. A malicious program, dubbed XcodeGhost, hit hundreds - possibly thousands - of Apple iOS apps, including products from some

of China's most successful tech companies used by hundreds of millions of people. Palo Alto Networks, the US internet security company that spotted the problem, says the attacker could send commands to infected devices that could be used to steal personal information and, in theory, conduct phishing attacks. The hackers targeted the App Store via a counterfeit version of Apple's Xcode "toolkit" - the software used to build apps to run on its iOS operating system - which Chinese developers used because they could download it faster.



**NANJING:** Chinese customers visit a new Apple store in Nanjing, eastern China's Jiangsu province. Computing giant Apple said on September 21 it has removed software from its App Store, after reports said hundreds of apps including some of China's most popular were infected with malware. —AFP

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"I would use the phrase 'convergence of ignorance and complacence'

sees downloads patchy and slow. Companies affected by the XcodeGhost attack included Tencent Holdings Ltd, one of the world's biggest internet firms, and Uber Technologies Inc's biggest challenger, Didi Kuaidi, which just completed a \$3 billion private fundraising round. Tencent, whose WeChat messaging service is one of China's most popular apps, and Didi Kuaidi declined to comment, beyond saying that they had fixed the issue and users' data had not been compromised. NetEase Inc, whose music streaming app was also hit, issued a mea culpa on its official Weibo microblog, apologizing to users for negligence.

worked for Microsoft in China. "Supposedly, a security review is part of that. But they missed this repeatedly over dozens of different applications. A huge mistake on their part."

An Apple spokeswoman did not respond to questions about the app approval process and why developers in China were using unofficial Xcode, but a senior executive said on Tuesday the company would make it easier for Chinese developers to download its tools. Marketing chief Phil Schiller told Chinese news site Sina.com it would offer domestic downloads within China of its developer software. Some Chinese

By "unbundling" the device and the service, this opens up competition for both, according to Greengart. The new model creates challenges for wireless carriers, which until recently have been able to maintain their customer base by reserving the top-selling phones for con-

tract. The shift means "customers are more likely to upgrade more quickly," said Jan Dawson at Jackdaw Research. "They obviously will be coming to an Apple store, they won't go to a carrier store where they might be enticed to buying a Samsung or something else," he said.

This "could dramatically increase churn" for carriers because customers can switch whenever they like with no real penalty, Dawson said. Walter Piecyk at BTIG Research said big carriers like AT&T and Verizon "could face pressure to further enhance their programs if they don't want to risk losing even more control of the customer to Apple." Piecyk said more than two-thirds of iPhone sales in the US market currently come through carriers or third-party retailers and that "shifting that traffic to Apple Stores can help drive greater retail store traffic leading to higher accessory sales to Apple."

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### 'Huge mistake'

The App Store had previously been almost entirely free of malware, and it is unclear how the altered code withstood Apple's famously tough app approval process, in which developers often wait a week for reviews of updates to their apps. "These reviews are legendary for how particular Apple is," said Robert Walker, founder of mobile dating app Cuddli who

firms had said they were pushed to download Apple's developer toolkit from unofficial sources in China because of the slow internet speeds when connecting to international services.

The country's censorship architecture, dubbed the Great Firewall, does not block app developers from downloading the official version of Xcode, but the controls, along with low investment in infrastructure for international connections, make using services based outside China a painful process. The world's second-largest economy has average internet speeds more than three times slower than those in the United States, according to online content delivery firm Akamai's latest State of the Internet report. Slow internet connections, along with government censorship, have long been a top concern among foreign businesses in China. The issue has been exacerbated in recent months by crackdowns on tools used to circumvent the Great Firewall, such as Virtual Private Networks.

### Local support

China is a huge market for Apple, which earned around \$13 billion in Greater China in the last financial quarter and in January 2014 said Chinese developers had launched 130,000 apps for its mobile devices and personal computers. The size of that contribution to the tech giant's bottom line has fuelled resentment among some of the Chinese firms who are making those apps, who complain of lack of support. If Apple had provided a local, quick source for the official Xcode software sooner it could have avoided the problem, said software developer Feng Dahui.

"Apple doesn't care enough about Chinese developers, nor does it value Chinese users," said Feng. But regardless of the challenges facing them in China, many app developers and security experts said the tech firms themselves bear the most responsibility for the attack, which has affected mostly Chinese companies and users so far. Eswar Priyadarshan, CEO of Tasteful, which creates food and dietary apps, noted that he does not know any US developers who use third-party Xcode. "It's like buying a Toyota and getting a third-party engine installed - it's going to break," he said. —Reuters



## THURAYA DOUBLES THE CHOICE WITH NEW SATSLEEVE+, SATSLEEVE HOTSPOT

**KUWAIT:** Leading Mobile Satellite Services (MSS) operator Thuraya Telecommunications today unveiled a new generation of SatSleeve models, offering greater choice, improved quality and a new hotspot option. When SatSleeve was launched in 2013 it pioneered the "bring your own device" (BYOD) concept in the satellite industry. Now Thuraya goes further with two new models, and has identified a clear consumer target market for the range, running alongside core government, media, energy, and NGO sectors.

SatSleeve+ and SatSleeve Hotspot will appeal to travellers, adventurers and outdoor sportspeople, or simply to consumers who want the assurance that their smartphone will connect even when terrestrial networks are unavailable or damaged. Thuraya will market SatSleeve+ and SatSleeve Hotspot through existing distribution partners; innovative agreements it has developed with mobile network operators (MNOs) in key markets; and new channels generated through online retailer Expansys.

Thuraya's Chief Executive Officer, Samer Halawi, said: "Thuraya continues to innovate, improve its range and widen its appeal. SatSleeve+ and SatSleeve Hotspot offer double the choice, and demonstrate triple innovation: the models themselves are new; the way we're selling them online across Europe is groundbreaking; and agreements with new MNOs in key geographies will bring us into direct contact with important customer markets. Thuraya's purpose is to save and improve lives, and these products will allow more people to be connected when and where they need it."

SatSleeve+ features a new voice routing system that improves on the sound quality, and can be used with a wider range of smartphone models than before. It comes with a universal smartphone adaptor, broadening its appeal to a larger number of smartphone owners than was previously possible. The adaptor also allows users to switch between handsets, so owners of more than one smartphone do not need to buy additional kit.

SatSleeve Hotspot's stand creates a portable satellite Wi-Fi hotspot, giving people satellite connectivity without physically docking their smartphone to a unit, and freedom to move indoors. A SatSleeve Hotspot user can leave the stand outside, stay indoors or in their vehicle, and use their smartphone

in satellite mode inside. The SatSleeve Hotspot is the smallest, lightest, and most capable in the industry. Both models let you make calls, use messaging applications, update your social network, send and receive email and SMS, and access apps. They also come with an additional safety feature - a programmable SOS button that works even if your smartphone isn't connected. This convenient function lets customers call a predefined number of their choice.

Thuraya SatSleeve+ and SatSleeve Hotspot offer fast, simple connectivity on the move, in remote areas normally beyond the reach of smartphones, or in urban areas where terrestrial networks have become unavailable or unreliable. Connection is easy, gaining access to Thuraya's vast coverage area spanning Europe, Africa, the Middle East, Asia and Australia. SatSleeve+ and SatSleeve Hotspot work either with a Thuraya SIM card or with a GSM SIM card from more than 360 Thuraya roaming partners worldwide.

Thuraya continues to add new partners and extend existing partnerships as it takes the new SatSleeve models to market. Halawi said: "MNOs around the world can offer their customers a first-of-a-kind service that delivers constant 100% geographical coverage. This sets the MNO apart from their competitors, and generates a higher average revenue per user (ARPU). Retailers can for the first time offer an exciting product that complements their smartphone offerings."

### About Thuraya

Thuraya Telecommunications Company is an industry leading MSS operator and a global telecommunications provider offering innovative communications solutions to a variety of sectors including energy, broadcast media, maritime, military and humanitarian NGO. Thuraya's superior network enables clear communications and uninterrupted coverage across two thirds of the globe by satellite and across the whole planet through its unique GSM roaming capabilities. The company's diverse range of technologically superior and highly reliable mobile satellite handsets and broadband devices provide ease of use, value, quality and efficiency. Thuraya remains committed to serving humanity through delivering the essential tools for optimal connectivity, never leaving anyone out of reach.

## WITH IPHONE LAUNCH, APPLE EYES A BETTER CUSTOMER CONNECTION

**WASHINGTON:** It's not just another iPhone launch. This time, Apple is pushing not only a new device, but what it says is a new relationship with its customers. By offering for the first time monthly installment payments on direct sales and a new lease option for US customers, Apple is moving to help break the stranglehold of mobile carriers as it launches its new iPhones tomorrow. The program comes with US carriers largely moving away from the model in which the smartphone is offered at a subsidized price in exchange for a two-year contract, unlike most markets around the world where consumers pay upfront for a device. This means the price of the iPhone - \$650 and up-is no longer hidden in monthly service fees, creating a challenge for the maker of the high-end smartphone.

Apple is meeting the challenge head-on by

offering to finance the phone for as little as \$27 per month, or allow customers to lease on an annual basis to upgrade to a new phone each year. It was not known if Apple would expand the program to non-US customers. The bold move by Apple, which begins selling its new iPhone 6S and 6S Plus on Friday, gives the company a new connection with customers, while allowing an easier switch of carriers. "Apple is trying to have a more direct relationship with its customers, it always has," said Avi Greengart, who follows mobile technology for the research firm Current Analysis.

By "unbundling" the device and the service, this opens up competition for both, according to Greengart. The new model creates challenges for wireless carriers, which until recently have been able to maintain their customer base by reserving the top-selling phones for con-

tracts. The shift means "customers are more likely to upgrade more quickly," said Jan Dawson at Jackdaw Research. "They obviously will be coming to an Apple store, they won't go to a carrier store where they might be enticed to buying a Samsung or something else," he said.

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### Shortening the cycle

Some analysts say Apple's moves may boost sales by shortening the upgrade cycle-allowing customers to get a new iPhone each year on relatively easy terms. The program "helps bolster share gains, increase customer stickiness to Apple and enable a more competitive pricing environment for iPhones," said Daryanani at RBC Capital Markets. The program "seems appealing, since it provides customers unlocked phones with device protection while allowing them to upgrade annually," says a report by the research firm Trefis.

"A back of the envelope calculation says that the deal will work well for Apple," Katy Huberty at Morgan Stanley said in a note to clients that the deal could boost iPhone shipments by 6.5 million in 2017. It has the added advantage of getting pre-owned iPhones out to more customers who can't

afford a new one. "Apple can potentially leverage partners (Brightstar in the United States and Foxconn in China) to resell the one-year old iPhones in the second-hand market, which helps address price points the new iPhones cannot," she said.

Bob O'Donnell of the research and consulting group Technalysis said Apple is seeking to spark new sales in a global smartphone market that is close to saturation, and that a better customer relationship can boost sales of other products and services. "We are facing a slowdown in the smartphone business, and I think we will see Apple focus more on services," he said. While some carriers may see a hit from the Apple program, IDC analyst Ramon Llamas said it frees them to focus on service. "If you're a carrier, you want that traffic and voice and data revenue," Llamas said. —AFP