

## China defends VPN management measures

Chinese authorities Tuesday defended their management measures on virtual private networks (VPN), saying the measures will have no negative impact on law abiding businesses and individuals.

All businesses operating within China need to properly register with the authorities and every business with a website needs to obtain an Internet Content Provider license and display it at the bottom on their website.

“Our measures aim to better regulate the behavior of China’s VPN market and they will only target unregistered businesses and individuals providing VPN services for cross-border use,” Zhang Feng, chief engineer of the Ministry of Industry and Information Technology (MIIT), said at a press conference.

Authorities are aware that some foreign trade companies and transnational companies need to use a VPN for office work and they are allowed to have access to VPN service via registered providers, said Zhang.

The chief engineer noted that authorities have set different standards for various services including big data and cloud computing.

“Most of the registered VPN services are available in the cloud and are backed up by data centers. If the data centers [of unregistered providers] lack sufficient protection, there will be huge risks for enterprises,” he said.

While countries differ in their management of VPN services, it is a common practice for authorities to develop an registration system for these services, said Wen Ku, another official with the MIIT, adding there are similar systems for VPN providers based in the United States, European and other Asian countries.

“Chinese law prohibits the spread of harmful, violent and terrorist information,” said Wen.

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## VR panda ‘paradise’ coming to Chengdu



A Beijing firm that will provide VR technology for a new panda attraction also makes a panda app. [Photo/China Daily]

Giant panda fan Wan Yongqing will come close to fulfilling a long-held dream when the Chengdu Research Base of Giant Panda Breeding in Sichuan Province completes its latest attraction – a virtual reality “panda paradise”.

Wan wants to touch a panda, but since that’s prohibited, he’ll settle for the next-best thing, a fur-covered replica panda that looks like the real thing through a VR headset.

“Thanks to the construction of a virtual reality panda-themed paradise, visitors will be able to experience something very much like feeling a real panda,” said Wan, a photographer from Beijing.

Wan, a dedicated panda enthusiast, has visited Sichuan many times since 2012 to take photos of the animals.

“I have been to the Chengdu panda base and the Dujiangyan base, as well as to the three bases of the China Conservation and Research Center for the Giant Panda. But I have never had the privilege of feeling a panda,” he said.

The Chengdu center is preparing to turn the first and second floors of its museum into the VR panda-themed attraction. It is expected to open next year.

The center will work with a high-tech firm in Beijing to provide the VR technology for the experience, according to Chen Cheng, information officer at the center.

“In the paradise there will be pictures of different pandas and bamboo forests. When visitors put on VR eyeglasses, it will all seem real. Pandas will stand up, sit down, eat bamboo or wander in the forests. People will be

able to feel and hold the virtual pandas as they would in real life," she said.

The Chengdu panda center was set up in 1987 with six hungry, sick pandas rescued from different parts of Sichuan after their primary food source – bamboo – dwindled.

It used to be difficult for captive pandas to breed or for their cubs to survive. Thanks to Chinese researchers' painstaking efforts, those problems were solved.

As of the end of last year, the Chengdu base was home to 175 captive pandas, according to the latest counts.

The base has loaned pandas to zoos in Japan, Spain, France, Germany, the United States and Canada for joint research and breeding programs.

According to Chen, there are plans to build more VR panda-themed attractions at zoos in the six countries.

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## [China makes breakthrough in quantum communication](#)

Chinese scientists have made another breakthrough in quantum communication, demonstrating long-distance free-space quantum key distribution during daylight.

In the past, long-distance free-space quantum communication experiments could only be performed at night, because sunlight, or sunlight noise, prohibits quantum communication in transmission under conditions of high channel loss over long distances.

Therefore, the world's first quantum satellite, Quantum Experiments at Space Scale (QUESS) launched by China in 2016, can only send photons at night, and it takes at least three days for QUESS to cover all ground stations around the Earth.

A team from the University of Science and Technology of China led by Pan Jianwei, an academician with the Chinese Academy of Sciences, has overcome the sunlight noise issue and demonstrated free-space quantum key distribution over 53 km during the day.

Pan's team chose a wavelength of 1,550 nanometers and developed free-space single-mode fibre-coupling technology and ultra-low-noise upconversion single-photon detectors to achieve the daytime distribution.

The new technology was announced on Monday in the journal of Nature

Photonics.

“Our experiment has proved the feasibility of satellite-based quantum in daylight, and laid a foundation for a satellite-constellation-based global quantum network,” said Pan.

Quantum communication is ultra-secure as a quantum photon can neither be separated nor duplicated. Accordingly, it is impossible to wiretap, intercept or crack information it transmits.

China is striving to set up the first-ever global quantum communication network by around 2030, through linking a satellite constellation consisting of dozens of quantum satellites and ground-based quantum communication networks.

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## More graduates choosing to work in 2nd-tier cities



Graduates participate in a job fair at a vocational college in the Qianxinan Bouyei and Miao autonomous prefecture in Guizhou province in June.

[Photo/China Daily]

After graduating from Tsinghua University this summer, Xu Yingqiang left

Beijing to work for a chemical trading company in Chengdu, Sichuan Province.

“In cities like Chengdu, I can still pursue my dreams – but without all the struggling,” the 24-year-old graduate said.

This year, the number of college graduates in China is expected to reach 7.95 million, an increase of 300,000 over last year, according to the Ministry of Education.

Other than swarming into megacities such as Beijing, Shanghai and Guangzhou, more students want to start their careers in second-tier cities, including provincial capitals and coastal cities, according to a recent survey.

The survey, which was conducted by Zhaopin.com, one of China’s leading recruitment websites, found that 37.5 percent of new college graduates this year wanted to work in second-tier cities, while 29.9 percent preferred top-tier cities.

“A few years ago, only a couple of students graduating from universities outside Chongqing came for a job interview,” said Huang Zuge, a human resources official at an internet company in Chongqing. “But this year we have a long line of people with master’s and doctoral degrees from Beijing, Shanghai and Guangzhou.”

National Bureau of Statistics figures show that besides Beijing, Shanghai, Guangzhou and Shenzhen, eight smaller metropolises stepped into China’s 1-trillion-yuan (US\$148 billion) GDP club in 2016. They include Chongqing, Chengdu, Wuhan, Suzhou and Hangzhou.

The rapid economic development of second-tier cities is the main factor that attracts fresh graduates, said Su Hainan, vice-president of the China Association for Labor Studies.

Hangzhou, Zhejiang Province, a host city of the 2016 G20 Summit, set a record with double-digit GDP growth for seven consecutive quarters in 2015 and 2016.

Chengdu is home to the offices of 278 Fortune Global 500 companies, and is also a key city in China’s Belt and Road Initiative. More than 7,000 new companies have registered in Chengdu during the past three months.

Besides economic growth, favorable employment policies in these cities appeal to new college graduates.

Changsha, Hunan Province, provides housing and living subsidies of 6,000 to 15,000 yuan per year for many graduates. Those with doctoral degrees can get 60,000 yuan in subsidies when they purchase their first residence in the city.

Liu Xuezhi, an analyst at the Bank of Communications, said adopting favorable employment policies meets the need for innovative development in second-tier cities.

High-quality human resources are becoming a strong driver of the industrial

transformation and upgrading of mid-level cities, said Liu Yuanchun, an economist and vice-president of Renmin University of China.

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## China contributes 1/5 of world's computer science papers

Papers written by Chinese academics account for 23 percent of the world's total, according to figures released at a Chinese computer summit Tuesday.

Over 100 academics and entrepreneurs gathered to exchange views on undergraduate computer science education at the Future Computer Education Summit 2017, held by China Computer Federation (CCF).

Due to the country's investment and individuals' passions for computer research and development, the number of papers written by Chinese academics has increased greatly from just 2 percent on the world total in 1997, according to the CCF.

"Despite the increase, China's undergraduate computer science education still lags behind top-ranking international colleges," said Gao Wen, chairman of the CCF.

Zhou Aoying, vice president of East China Normal University suggested at the summit that colleges and universities should increase the numbers of computer science teachers, and cooperate with companies to develop more talent.