

## Comment

# Big data can solve big problems

The common problems that China and the United States confront together are larger and more dangerous than the divisive issues that threaten relations between the world's two largest economies. Consider global warming, transnational epidemics, energy resources and inefficiencies, environmental degradation, urbanization, healthcare, terrorism, organized crime — these are real problems that require focus and sophistication.



**Robert Lawrence Kuhn**

The global benefits of China and the US working together were reinforced recently at the second annual IT 2020 Big Data and Cloud Computing Summit, co-hosted by the Chinese Academy of Engineering and US-based National Academy of Engineering, and supported by EMC and VMware from the US, and Inspur and Lenovo from China. Founded by CAE and EMC, IT 2020 gathers American and Chinese experts to discuss how emerging information technologies, particularly big data, can shape economic and social development everywhere.

Over 500 professionals from academia, industry and government interacted with world-class experts from the CAE and the NAE to examine state-of-the-art structures and applications in cloud computing and

big data. Target industries support China's reforms and national needs as they affect people's lives according to the policy directives of the Third Plenum of the 18th CPC Central Committee.

CAE President Zhou Ji opened IT 2020 by stressing the centrality of science and technology for China's transformation and expressing appreciation for China-US collaboration. He highlighted the need for academic-industry partnerships, innovation and data security. CAE Vice-President Chen Zuoning hosted the event.

The NAE was represented by Foreign Secretary Venkatesh (Venky) Narayanamurti who noted long-term cooperation between the NAE and the CAE at the nexus of science, technology, and society, citing numerous "global challenges" from new forms of energy to reverse engineering the brain. These are exciting times, he said, because "knowledge knows no boundaries" and science and technology is the best "bridge" to transcend politics and elevate humanity. Narayanamurti encouraged more NAE-CAE activities, noting that CAE President Zhou was elected as a foreign member of NAE.

The IT 2020 Summit had two parts; macro topics in big data and cloud computing, and big data's impact on three of China's priority industries: healthcare, energy efficiency, and integrated transportation. Symbolizing the overarching relationship, American and Chinese speakers had parallel roles.

In the macro session, Pat Gelsing-

er, CEO of VMware, explained how cloud computing overcomes capital, scale, and geography. His speech, "Brave New IT for a Liquid World", focused on cloud (public, private, hybrid), mobile, apps and analytics, and he recognized China as a creative partner.

Wang Jian, chief technology officer of Alibaba, emphasized the transformation nature of "Internet, Data, Computing", describing how Internet sales are disrupting traditional retail sales and empowering small businesses to compete with giant corporations (for example, banking).

Joseph Salvo, director of the Industrial Internet Consortium, called the industrial Internet "revolutionary" such that GE is refashioning itself more as a software and analytics company than as an industrial company. The "democratization of information", he said, will unleash unprecedented creative power and change the world.

Wang Endong, chief scientist of Inspur, and Ying Huang, vice-president of Lenovo, described the astounding growth in big data and shared their observations of emerging IT trends.

For big data's impact on healthcare, Dr Hu Jianzhong, deputy president, Xiangya Hospital of Central South University, focused on how it is transforming China's healthcare management of the country's huge population, including a vision of personal, tailored services to patients. Dr Keith Dunleavy, CEO of US-based Inovalon, focused on data-driven

insights driving new thinking in healthcare, improving quality and financial performance. He cited a study refuting the concern that taking insulin for diabetes might cause gastrointestinal cancer. Remarkably, what would normally take years in a controlled study was completed, with data analytics, in just eight days. High-speed, low-cost retrospective analyses of massive datasets provide statistically viable alternatives to expensive and extremely lengthy clinical trials.

For big data's impact on energy efficiency, Luan Wenpeng, chief expert of China Electric Power Research Institute, described China's "smart grid", including the installation of 300 million smart meters. Thomas Overbye, professor of electrical and computer engineering at the University of Illinois, focused on optimizing electric power grid operations.

For big data's impact on integrated transportation, Guo Jifu, director of Beijing Transportation Research Center, detailed Beijing's data-based initiatives to ameliorate severe traffic congestion. Amelia Regan, professor of computer science and transportation systems engineering, University of California at Irvine, presented transformational technologies on the transportation horizon.

In addition, a smaller IT 2020 Workshop enabled big data experts in healthcare, transportation, and electric grid to explore current research, seeking joint US-China projects. There was intense discussion around the sharing of data for

disease and treatment, the human genome being essentially the same globally. One suggestion was a big data analysis of traditional Chinese medicine, both to discover new treatments for illness and to debunk folk remedies that do not work. Throughout, everyone concurred that patient privacy must be protected.

EMC Vice-Chairman Bill Teuber concluded IT 2020 by stating "it's a privilege for EMC and VMware to be China's long-term partner in using cloud and big data to tackle the big problems of modern economies and societies".

"What we do here matters," Teuber stated. "We are an example of how organizations from different cultures can cooperate to improve not only their own countries but also the entire world."

All agreed that China and the US, working together, have the solemn responsibility of shaping the future of IT and thus changing the world. Moreover, the more China and the US seek to solve common problems, the less threatening divisive issues become.

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# The need for a stable yuan

WITH THE USE OF CHINA'S CURRENCY SPREADING GLOBALLY, THE YUAN SHOULD HOLD ITS GROUND

By **LUO JIEXIN** and **XUE HE**

The yuan is moving in two distinctive ways this year. In terms of value, the currency's appreciation is no longer apparent. In the middle of November, the value of the Chinese currency against the US dollar remained lower than it was at the end of last year. It's very possible that the yuan will end the year with its value flat or slightly higher. This will represent the slowest pace of growth, if there is any, following the global financial crisis.

But in terms of fluctuation, the yuan has moved radically. Its sharp depreciation around February stunned the market, shattering the myth that the yuan always moves up. Since then, the yuan appreciated for several months before a marked depreciation in June. In daily trading, the yuan has also undergone a great deal of fluctuation.

These movements in the yuan are indicative of a few things. A halt in

the yuan's stable appreciation this year mostly likely shows that policymakers are convinced that the Chinese currency has come to, or is very close to, an equilibrium. Over the past three years, China's current-account surplus has accounted for less than 3 percent of GDP, which could be even lower this year because China's trade surplus grew more slowly than the overall economy. Internationally, when the ratio is lower than 4 percent, the country's foreign exchange rate is believed to be balanced and reasonable. In this sense, China's yuan is not undervalued.

Entering the third quarter, China experienced capital outflows. Its capital and financial account had a deficit of \$81.6 billion. With capital continuing to leave, normally a weaker yuan is needed to reverse the outflow.

China still needs some growth in exports to keep economic growth in a reasonable range. In the third quarter, net exports bolstered GDP growth. But since exports growth

was achieved with a lower yuan, the central bank has less wiggle room to increase the value of the currency. Globally, the European Union and Japan have kept their currencies at low rates. As China follows the principle of pinning its foreign exchange rate to a basket of foreign currencies, the yuan has no reason to appreciate.

But there are two factors that create the need for a stronger yuan.

First, the rising US dollar. China looks at the greenback to decide the value of the yuan. Since the United States has pulled back from its quantitative easing policy and is expected to increase interest rates sometime next year, the US dollar will return to an upward trajectory. Because the yuan follows the dollar in curbing speculative funds, there will be appreciation pressures.

The other factor is the continued globalization of the yuan, which depends on a strong yuan value. Recently, China appointed a currency clearing bank in Canada, the first in North America. The country

also established such a bank in Kuala Lumpur. In the near future, China will initiate a program that allows individual Hong Kong investors to use the yuan in investments on the mainland's stock market. Globalization of the yuan is obviously a major priority and the yuan should maintain its value to continue to be attractive.

As upward and downward pressures on the yuan offset each other, the best scenario is to keep the yuan's value stable and we believe the yuan's value will stay stable next year.

But the currency's short-term fluctuations will increase, with policymakers intending to create some volatility to punish speculators who bet on one-way, upward movement of the yuan. Depreciation will also become an integral part of the yuan.

*The authors are financial analysts in Shanghai. The views do not necessarily reflect those of China Daily.*



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