Science, Technology, Education and Health News from China

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Introduction

The story of the month covers China to promote sustainable development of startup investment. A Plan on transforming Beijing into a national scientific and technological innovation hub issued. China sent its second space laboratory, the Tiangong II, into orbit. The China National GeneBank officially opened. International education gains increased popularity in China. Ministry of Education issued a guideline to promote reform of the high school entrance exam. Chinese space engineers will join hands to develop a next-generation craft with enormous business potential for commercial launches and space tourism. Two-child China promises better maternity services. Role of ‘Internet Plus’ in modern agriculture emphasized.

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Story of the Month

Measures to promote sustainable development of startup investment

(The State Council, 20-9-2016)

The State Council issued a circular on Sept 20 on promoting the sustainable development of startup investment, as an effort to advance mass entrepreneurship and innovation in China.

The circular decided to encourage multiple investors to set up venture capital enterprises or pour money into startups. The investors include investment agencies that have rich resources in entrepreneurship and innovation, such as leading enterprises, business incubators and insurance asset management institutions.

Private investors with capital strength and management expertise are also welcomed to get involved in such investment. In addition, the circular encouraged efforts to set up market-based and specialized funds for startup investment.

It also called for initiatives to expand the group of angel investors, with efforts to promote their information exchanges and cooperation with venture capital enterprises. It also vowed to regulate online equity financing platforms, providing information and technology services for private investors.

The State Council also vowed to expand channels for investment capital, supporting investment agencies, including State-owned enterprises, insurance companies and university funds, to invest in venture capital enterprises or funds.

A long-term and market-oriented cooperation mechanism between venture capital enterprises and varied financial institutions will be established, in a bid to further lower the threshold of startup investment for commercial insurance capital, according to the circular.

Financial institutions are also encouraged to conduct mergers and acquisitions loans for startups.

The State Council aims to strengthen policy support for startup investment, such as conducting tax reduction for venture capital enterprises and mulling over pilot income tax policy for angel investors.

The advantage of government projects will be fully taken in the country’s high-tech and innovation bases, so as to guide venture capital to national science and technology programs.

Policy support, including the issuance of corporate bonds and market withdrawal, will be provided for venture capital enterprises undertaking long-term or value investment.

Meanwhile, the government has decided to optimize the investment environment, with efforts to work out more favorable measures and deepen reforms by streamlining administration, delegating powers, improving regulation and providing better services.

The government will also loosen market access and strengthen supervision over the venture capital industry, and improve information and risk disclosure, setting up an investment assessment mechanism to ensure real, valuable and long-term investment.

No regions or departments are allowed to adopt policies or measures that hinder the market access and development of venture capital enterprises and venture capital management enterprises, according to the circular.

(http://english.gov.cn/policies/latest_releases/2016/09/20/content_281475446836280.htm)
1. **China issues plan for Beijing tech innovation hub**

(China Daily, 19-9-2016)

The State Council, China's cabinet, has issued a plan on transforming Beijing into a national scientific and technological innovation hub.

According to the document, China aims to make the hub a world leader in innovation, a growth pole for the economy, and a pool for talent.

The innovation hub is expected to become a powerful engine to boost the country's innovation drive by 2030, the plan said.

The document stresses the key role of north Beijing's hi-tech zone Zhongguancun and neighboring regions of Tianjin Municipality and Hebei Province in supporting the technology innovation hub drive.

It also called for enhanced fundamental research in cutting-edge technology, improved personnel training and government services as well as a better policy environment for innovation.

Technological innovation in pivotal sectors should be strengthened and should benefit more people, and the capital city should become more open to international resources, it added.

(https://www.chinadaily.com.cn/china/2016-09/19/content_26824289.htm)

2. **China launches second space lab into orbit**

(China Daily, 15-9-2016)

China sent its second space laboratory, the Tiangong II, into orbit from the Jiuquan Satellite Launch Center in Northwest China's Gobi desert on September 15 at night.

The space lab lifted off atop a Long March 2F carrier rocket at 10:04 pm.

The lab is 10.4 meters high, 3.35 meters in diameter and weighs 8.6 metric tons. It is designed to stay two years in space, according to the Chinese space authority.

The space lab has two cabins with separate functions. The experiment cabin will be hermetically sealed and will act as the astronauts' living quarters, while the resource cabin will contain solar panels, storage batteries, propellant and engines.

During its mission, Tiangong II will receive visits by the Shenzhou XI manned spacecraft and Tianzhou 1 cargo spaceship.

The space lab's major tasks will be to accommodate astronauts' medium-length stay in it and test life-support technologies, to demonstrate in-orbit refueling and repair plans and to conduct experiments pertaining to space medicine and space sciences, as well as to examine technologies for a future manned space station, the China Manned Space Agency said.

China launched its first space lab, Tiangong I, in September 2011. With a designated lifespan of two years, the Tiangong 1 was in service for four and a half years and conducted six automatic and astronaut-controlled dockings with the nation's Shenzhou VIII, Shenzhou IX and Shenzhou X spacecraft.

(https://www.chinadaily.com.cn/china/2016-09/15/content_26804622.htm)
3. National gene bank to improve health, preserve biodiversity

(Global Times, 23-9-2016)

The China National GeneBank (CNGB), located in Shenzhen, was officially opened on September 22, aiming to promote human health research and the conservation of global bio-diversity.

Initiated by China’s National Development and Reform Commission in 2011, the project was established by Shenzhen-based BGI, one of the world's leading genomics organizations.

Covering an area of over 47,500 square meters, the gene bank has saved more than 10 million bio-samples and established cooperation and research with over 100 organizations in areas such as human health, bio-diversity, and biological evolution.

BGI president Wang Jian said the mission of the CNGB is to "preserve the essence of a billion years of evolutionary history and deposit the life foundations of billions of people."

Mei Yonghong, director of the CNBG, said the gene bank was not only a database, but combined a bio-information bank, a bio-samples and genetic resources bank and a living resources bank of plant, animal and microbe species. It also includes a digitization platform and a synthesis and editing platform, he said.

"Generally speaking, we collect biological resources in the world, read the genetic data of living things with sequencers, use super computers to obtain the results and write the gene code on the synthesis and editing platform," Mei said.

Gene research is not only an effective way to prevent birth defects and discover genetic diseases in their early stages, but also of great significance in the treatment of diseases and protection of bio-diversity.

"Stored human cells may help cure many diseases in the future, with the improvement of medical technology," said Xu Xun, executive director of the CNGB. "For example, skin stem cells saved at a young age may be able to help people restore youthfulness by enabling skin reproduction. Immune cells stored at a good health stage may help restore people's immune systems later in life."

The CNGB also aims to create a network to foster global collaboration and communication, and to promote innovation in the community, he added.

The gene bank has established guidelines to enable the exchange and sharing of data and genetic resources with the world's major databases, such as NCBI, EMBL-EBI and DDBJ, and with biobanks including the Svalbard Global Seed Vault, Heidelberg University and the Smithsonian Institute.

The establishment of the CNGB has been applauded by the international community.

"Large collection of individuals in national cohort studies will allow us to better predict and eventually prevent the onset of diseases. The China National GeneBank will be essential to improving the life and health of future generations," said Irina Lehmann, department head of environmental immunology at the Helmholtz Centre for Environmental Research in Germany.

"The grand opening of the China National GeneBank is a major leap forward in China's ongoing effort to position itself at the very top of worldwide genomics," said Roland Eils, professor of Bioinformatics and Functional Genomics at Heidelberg University.

(http://www.globaltimes.cn/content/1007883.shtml)
4. **International education gains increased popularity in China**

*(China Daily, 13-9-2016)*

Top overseas schools are expanding their Chinese business as more Chinese parents are pursuing international education for their children, the Associated Press reports.

Nicholas Dwyer, the CEO of a renowned Australian school in China, said the booming demand is based on three things; the attraction of overseas universities, the possibility to speak fluent English and a different type of pedagogy from Chinese schools.

As Chinese parents become more affluent, international schools offer an alternative education for their children. Unlike traditional Chinese schools, international schools are considered by many Chinese parents as less stressful and not as exam focused.

As a result, many international schools are opening more campuses in China despite the high price.

Although they cost far more than traditional Chinese schools, more than 150,000 Chinese students have enrolled in international schools, and education monitors expect that number to grow.

A professor at Beijing Normal University, Zeng Xiaodong, said parents and students who choose international schools still make up a small percentage of the Chinese population, although an upward trend is inevitable and that is good for the Chinese educational system. "It is certainly a result of development that people have diverse preferences for their children's education," said Zeng.

*(http://www.chinadaily.com.cn/china/2016-09/13/content_26778838.htm)*

5. **Nation sets up pilot program for high school entrance exam reform**

*(China Daily, 21-9-2016)*

A pilot program will be set up to promote reform of the high school entrance exam, according to a guideline issued by the Ministry of Education (MOE) on September 15.

High schools should recruit students based on both their exam scores and a comprehensive assessment of their qualities, according to the pilot program, which will first be implemented in 2017 and then be expanded across the nation in 2020.

For years, China's education system has been criticized for its exam-driven curriculum, which focuses on memorizing textbooks and getting good test scores.

Zheng Fuzhi, a director with the basic education division of the MOE, said that high school enrollment will not only depend on exam scores, but also students' morality, mental and physical health, artistic tastes and social skills.

The exam will also reduce the focus on memorizing facts and emphasize analytical and problem-solving skills instead to encourage students to innovate, said Zheng.

The reform will also require students to participate more in sports as physical education scores will be considered in enrollment, Zheng added.

Zhang Zhiyong, deputy director of the Shandong Provincial Education Department, said that the reform will provide diverse roads and fairer opportunities for students to succeed.

*(http://www.chinadaily.com.cn/china/2016-09/21/content_26850855.htm)*
6. Space plane taking shape

(China Daily, 21-9-2016)

New concept opens range of possibilities for high-speed commercial travel, tourism

Chinese space engineers will join hands to develop a next-generation craft with enormous business potential for commercial launches and space tourism, according to an industry conference.

As competition in the international aerospace field becomes increasingly fierce, Chinese space engineers have reached a consensus that the new craft is of great importance to China's aviation and space sectors, a statement released after the First China Combined-Cycle Aerospace Vehicle Development Forum in Beijing said on September 15.

The cutting-edge craft will have many opportunities in the government-backed space and business sectors, so Chinese researchers have decided to work together to develop the technology, it said.

More than 300 officials, business leaders and experts took part in the event hosted by the China Academy of Launch Vehicle Technology.

A combined-cycle aerospace vehicle is propelled by a combination of turbine, ramjet and rocket engines, space experts said.

The craft uses turbine engines, like those installed on jetliners, or rocket-based combined-cycle engines, when it takes off from a conventional runway.

After it reaches a certain speed, the ramjet will be activated to thrust the spacecraft into the stratosphere or to the next layer of the Earth's atmosphere, the mesosphere. At this point, rocket engines will be used to put the vehicle into orbit.

Engineers at the China Institute of Combined-Cycle Aerospace Vehicle Technology have started preliminary research on a reusable, combined-cycle space plane. Currently, they are working on key technologies for such craft, according to the China Academy of Launch Vehicle Technology, which administers the institute.

A senior researcher at the institute, who wished to be identified only as Liu, said that the United States and Britain have studied combined-cycle propulsion for a long time and are working toward reusable space planes for commercial payload launches as well as space tourism.

"This kind of craft has several advantages - it has a low operational cost and high reliability, can conduct takeoffs and landings using a conventional airport and is suitable for performing scheduled flights as a passenger space plane," he said.

"The rapid growth in commercial satellite launch services and space tourism offers a promising market for the combined-cycle space plane," Liu said.

"Moreover, it can realize the aspiration of ultrafast air travel. Passengers will be able to get to anyplace on the globe within only several hours in the future."

(http://www.chinadaily.com.cn/china/2016-09/21/content_26849562.htm)

7. Two-child China promises better maternity services

(Xinhua, 27-9-2016)

China will offer more maternity beds and train more professionals to meet the growing demand for maternity resources, the health authority announced on September 27.

According to a teleconference hosted by the National Health and Family Planning Commission (NHFPC), China will have 89,000 more beds as well as 140,000 more obstetricians and midwives by 2020.
Since the two-child policy was implemented at the beginning of the year, the country has been facing growing challenges in the quantity and quality of its maternal and child health resources, said Ma Xiaowei, deputy head of the NHFPC.

The NHFPC also called for better pre- and post-natal services and more emergency centers for maternal and pediatric treatment.


8. Role of ‘Internet Plus’ in modern agriculture emphasized

(State Council, 13-9-2016)

A working conference, held by the Ministry of Agriculture last week, focused on “Internet Plus” modern agriculture, in an effort to further integrate the internet with traditional agriculture and fuel economic growth.

“Internet Plus” modern agriculture is combining new technologies with the whole industrial chain of modern agriculture.

Information technology has been greatly promoted in the new demonstration zones to upgrade traditional agriculture under the accurate “calculation” of big data, leading to optimal allocation of agricultural resources.

“Since 2015, the Ministry of Agriculture has established demonstration zones in eight provinces to promote Internet of Things in agriculture, through which 426 technologies, products and application models have been introduced,” said Wang Xiaobing, deputy director of market department under the Ministry of Agriculture.

A comprehensive information system has also been established in rural area to further increase farmers’ income and narrow the gap between rural and urban areas.

“At present, the number of netizens in rural area has reached 195 million, and farmers are no longer just traditional producers of agricultural products, but also know how to run a business,” said Zhuang Rongwen, deputy director of the Office of the Central Leading Group for Cyberspace Affairs.

According to the Ministry of Agriculture, as of the end of May, 19,316 information agencies that provide online agricultural knowledge and trading opportunities have been established in rural areas. They provided public service for more than 92 million people and reached an online trade volume of 1.15 billion yuan.

(http://english.gov.cn/state_council/ministries/2016/09/13/content_281475441194339.htm)

Collaboration Opportunities

All Swiss Schools & University Alumni Gathering 2016
21st October 2016
Beijing
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