

Policy Measures to Bolster Digital Economy

Policy

By LI Linxu

In its latest moves to leverage the rapid development of digital technologies, China has unveiled a set of policy measures to bolster the development of the digital economy.

China will strengthen policy-making and institutional building, take moderately forward-looking steps in building digital infrastructure, and make a big push for the innovation and development of digital industries, according to the National Development and Reform Commission (NDRC).

Meanwhile, the country will also speed up digital transformation of industries, continuously upgrade digital public services, and deepen international cooperation.

The policy measures are a follow-up to the 20th CPC National Congress report, which vowed to accelerate the development of the digital economy, fur-



The photo shows a view inside the exhibition venue of the 6th Digital China Summit, which was held during April 27 to 28 in Fuzhou, Fujian province. (PHOTO: XINHUA)

ther integrate it with the real economy, and build internationally competitive digital industry clusters.

The digital economy is rapidly developing across all sectors, and has far-reaching effects on the way people live and work, said Sun Wei, a person in

charge of the Department of Innovation and High-Tech Development of NDRC, adding that the country will accelerate the commercial deployment and scale use of 5G, and cultivate internationally competitive digital industry clusters.

By the end of 2022, the number of

5G stations and 5G users had reached 2.312 million and 561 million respectively, both accounting for more than 60 percent of the world's total, according to the latest statistics.

In recent years, the digital economy has been thriving in China, with significant progress made in information infrastructure, digital transformation of industries, and new business modes.

The country's digital economy reached 50.2 trillion RMB in 2022, accounting for 41.5 percent of the GDP, according to a report recently released by the Cyberspace Administration of China (CAC) at the 6th Digital China Summit.

China now leads the world in many digital fields, including digital infrastructure, industrial Internet and e-commerce.

China's digital economy has become one of the main drivers of economic growth, said Cao Shumin, vice minister of CAC, noting that the country will strive to build an inclusive and convenient digital society, optimize the environment for digital development, and promote international cooperation in digital fields.

Push for IPv6 Technology Evolution

By ZHONG Jianli

A document promoting the evolution of IPv6 technology has been issued by the Ministry of Industry and Information Technology and seven other departments, with an aim to give full play to the potential and technical advantages of IPv6 protocol and better meet the high requirements for 5G networks, industrial Internet, Internet of Things and other emerging technologies.

IPv6 is the next-generation Internet protocol version developed by the Internet Engineering Task Force (IETF), an in-

ternational standardization organization for the Internet, to deal with the long-anticipated issues of IPv4 address exhaustion. Currently, the number of active IPv6 users exceeds 740 million in China, and the country has been fully equipped with the capability of IPv6 services for network and application infrastructure.

The document states that by the end of 2025, notable progress should be made in the evolution of IPv6 technology and its application innovation, the ability of network technology innovation be significantly enhanced, the application of innovative technolo-

gies such as "IPv6 +" be further expanded, and the level of integrated application of "IPv6 +" in key industries be greatly improved.

A total of 15 key tasks are laid out in five aspects in the document — building an IPv6 evolution technology system, strengthening the industrial foundation of IPv6 evolution innovation, accelerating the evolution and development of IPv6 infrastructure, deepening the integrated application of "IPv6 +" industries, and improving security assurance capabilities.

To enhance the IPv6 infrastruc-

ture, the document proposes that basic networks such as backbone networks, metropolitan area networks and 5G should be further upgraded and evolved based on IPv6.

In terms of building the IPv6 evolution technology system, the document requires promoting the integration and innovation of IPv6, 5G, AI, cloud computing and other technologies, stepping up the formulation and implementation of relevant national and industrial standards for IPv6 application, and contributing to the formation of international standards.

Western Science City Under Construction

By CHEN Chunyou

Chengdu of Sichuan province and Chongqing municipality will speed up the construction of a western science city and a science and technology innovation hub with national influence, according to a document, jointly issued by the Ministry of Science and Technology, and 11 other departments, along with Sichuan and Chongqing.

In order to drive the coordinated development of the two regions, the sci-

ence city will be built based on the existing sci-tech parks in the cities of Chengdu, Chongqing and Mianyang, and efforts will be made to accelerate cluster development and create a cooperative innovation network, according to the document released on April 12.

The document outlines key objectives of building the science city, which include establishing a number of globally influential innovation platforms and research bases, as well as gathering a batch of renowned uni-

versities, institutes and innovative enterprises by 2025. They will be tasked with achieving breakthroughs in innovative research in basic disciplines, such as material science and nuclear science.

In addition, the science city is encouraged to invest more than five percent of regional GDP in total R&D spending, and produce high-value patents in excess of 80 per 10,000 people, while it is expected to establish a high-tech industrial cluster, with more inbound high-

tech enterprises, and increased turnovers of technology contracts.

To enhance the competitive edge of strategic industries, Sichuan and Chongqing will set up a joint research fund, to support research in key and core technologies, according to the document.

Of particular note, it also vows to build a national pilot zone for future industries, and a Chengdu-Chongqing hub of a national integrated computing network.

Qinghai's Hainan Prefecture: National Innovation Demo Zone

Case Study

By CHEN Chunyou & ZHANG Yun

Hainan Tibetan Autonomous Prefecture (Hainan Prefecture) in northwest China's Qinghai province has been designated as a national innovation demonstration zone for sustainable development in 2022, which is seen as a significant achievement and a new calling card for the prefecture.

The construction of the innovation demonstration zone is China's concrete action in implementing the 2030 Agenda for Sustainable Development, proposed by the UN in 2015. Over the years, Hainan Prefecture has made remarkable progress in new energy industry and ecological protection.

Taking advantage of energy resources

Due to its strong light radiation and

long periods of sunshine, Hainan Prefecture is rich in new energy resources, especially wind and solar energies.

In Gonghe county of Hainan Prefecture stands a 10 million kilowatts photovoltaic generation park, which has received an investment of 137.5 billion RMB. The installed capacity of clean energy was 43.14 million kW, and that of the grid-connected system was 20.94 million kW, accounting for 51 percent of Qinghai province.

The park has become the world's largest concentrated development demonstration park in terms of installed capacity, with its business scope covering photovoltaics, wind power, equipment manufacturing and intelligent operation and maintenance of power infrastructure.

The park also aids in controlling desertification. A vast expanse of solar panels brought by the concentrated photovoltaic projects shadows the surface of the semi-desert region, which helps lower wind speed and reduce evaporation,

thereby increasing vegetation coverage, and turning the semi-desert green.

In addition, Hainan Prefecture is also abundant with water resources, which have been transformed into momentum for development.

Taking advantage of the water resources in the dam area, Hainan Prefecture established an intelligent large-scale salmon breeding base and achieved an output value of 560 million RMB in 2022.

Resorting to external help

Despite facing challenges due to its geological location, such as lacking universities and institutes, and having a relatively weak foundation for technological innovation, Hainan Prefecture actively seeks help from experts all over the country to solve technological challenges.

Xie Kangyong, director of Hainan Prefectural Science and Technology Bureau, said an expert advisory committee composed of 60 academicians has been set up to provide technical services and

decision-making consultation for major industrial projects.

"We are cooperating with the Northwest Institute of Plateau Biology of the Chinese Academy of Sciences to set up an experimental base, aiming to establish a technological chain centering around ecological governance and the commercialization of research results from agricultural and livestock industry," added Xie.

Su Haihong, deputy director-general of Qinghai Science and Technology Department (QSTD), said the construction of the innovation demonstration zone has ushered in significant strategic opportunities for the region's development.

QSTD will accelerate the application of green and low-carbon technologies in the zone, and promote the integrated development of photovoltaic industry, ecological protection, and agricultural and livestock products, to enrich the innovation and industrial chains.

Youth on Tech

Editor's Notes:
Youth on Tech is a series of programs produced by Science and Technology Daily. In this episode, we invite young scientists from around the world to discuss AI related topics, with the aim to promote understanding among youth worldwide and work together to make our planet a better place.

Will AI Surpass Human Intelligence?

By LIN Yuchen

Weeks ago on April 11, the Cyberspace Administration of China unveiled draft regulations for products and services that use generative artificial intelligence. This software structure, like the one behind ChatGPT, is upgrading the content creation of AI, making it analogous to a human being even more than in any other historical time.

Despite the early endeavor to regulate AI, there are debates on the level of capabilities it has reached.

ChatGPT — can it be counted as a technological revolution?

In the second episode of *Youth on Tech*, a digital program produced by *Science and Technology Daily*, we discuss what ChatGPT-like AI can and cannot do. We start with the fundamental principles current hyped-up AI chatbots stick to, pointing out their edges and also existing problems.

Muhammad Arif Mughal, an AI specialist from the University of Science and Technology Beijing, suggests that ChatGPT is revolutionary only in the way that it learns from a large amount of text. Echoing this idea is Li Zhinan, doctoral student in computer-aided design and computer graphics at Zhejiang University, who indicates that ChatGPT's advantage lies in only its unparalleled large scale and effectiveness compared to before, with its fundamental techniques and algorithms created a long time ago.

Liu Xiuyun, professor of biomedical engineering from Tianjin University, discusses the current usage and potential of AI in the field of medicine. She also cites a survey conducted by the University of Oxford, which suggests that approximately half of all traditional, repetitive jobs may be replaced by AI in the next 20 years.

Social impacts and ethical concerns

Despite positive effects, current AI still has limitations. Concerning trustworthiness, we examine the concept of AI hallucination. According to AI associate professor Cam Tu Nguyen, Vietnamese at Nanjing University, the content generated by a ChatGPT-like chatbot may be readily conceived as correct because of its fluency. Over time, this accumulated subtle misinformation could lead to negative social impacts on a large scale.

When Open AI released ChatGPT last November, its website acknowledged that ChatGPT sometimes generates plausible-sounding but incorrect or nonsensical responses. Fixing this issue is challenging due to the nature of training data and training methods.

Students who are banned from using ChatGPT will find ways to access it, Cam Tu suggests, adding that it is therefore plausible to design a different testing system by contrasting answers provided respectively by students and AI in order to realize educational goals.



Small City Witnesses Broad Sino-German Cooperation

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Deep integration

To meet the increasing demand of advanced manufacturing industry for more capable workforce, Taicang has explored the dual system for vocational education, covering the whole system of secondary vocational schools, higher vocational colleges and undergraduate students.

"Germany has a special system for the education of the technicians and can share its experience with China through the dual education system. Apart from theoretical education in the school, the trainees can learn skills in the company. After three years, they really have a good knowledge about their job and then can start as a full-time employee," said Christian Kalkbrenner, CFO of ZAPP in Taicang, a German company that plays a leading role in the technology of high-performance materials and

high-precision cold forming.

Since the first German enterprise technician training center in China was settled in Taicang, to date, Taicang has become the largest "German vocational qualification" examination and training base in China and founded the first AHK college and dual-system research institute.

As the "hometown of German enterprises," Taicang integrates German elements into urban development and construction. It has held 17 consecutive "Oktoberfest," sports activities such as Sino-German table tennis friendly match, football league and New Year concert every year. There are German-style bars and bakeries, Sino-German friendship kindergarten and FC Bayern Football School. The Rothenburg Water-Front, a German style street, has become a popular destination for people to spend their leisure time.