

Chinese Path to Modernization: International Features, Chinese Characteristics

Sci-tech Innovation to Be Important Guarantee

Policy

By LI Zhe & NIU Qin

According to the 20th CPC National Congress report, Chinese modernization is socialist modernization pursued under the leadership of the CPC. It is the modernization of a huge population, the modernization of common prosperity for all, the modernization of material and cultural-ethical advancement, the modernization of harmony between humanity and nature, and the modernization of peaceful development.

The report details the strategic direction the CPC will take to fulfill its mission in the new era.

As one of determining factors to realize Chinese modernization, a high level of science and technology self-reliance and self-strengthening is a major task and an important guarantee for the Chinese path to modernization.

The modernization of a huge population requires a comprehensive, systematic and diversified high-quality sci-tech supply. With a population of more than 1.4 billion people, China has the most diversified industrial, market, consumption and social needs structure.

Chinese modernization is in need of not only frontier technologies, but also other various sci-tech supply. While striving to address the issues of bottleneck technologies, China should also take measures to make sci-tech advancement more accessible and beneficial to ordinary people.

The modernization of common prosperity for all requires improving allocation mechanisms of innovation resources. Common prosperity is not the prosperity of a few people, nor is it uniform egalitarianism. In future public governance of sci-



The 20th National Congress of the Communist Party of China (CPC) was held during October 16-22 in Beijing. (PHOTO: VCG)

ence and technology, the issues of efficiency and equity should be reconsidered and re-positioned.

Gearing up for common prosperity, the improvement of a national innovation system should focus on allocation at three levels. For the primary allocation, the equity and accessibility of sci-tech elements should be improved. For the secondary allocation, the central and local government's roles and responsibilities in sci-tech innovation should be explored and improved. For

the tertiary allocation, social financing mechanisms should be improved and social sci-tech investment channels expanded.

The modernization of material and cultural-ethical advancement requires balancing sci-tech development and scientific spirit cultivation. Sci-tech innovation culture is an important component of developing socialist advanced culture, and inheriting excellent traditional Chinese culture. It is also a key factor to promote the all-

round enrichment of things and the all-round development of people.

To advance all-round innovation with sci-tech innovation as its core, new kinetic energy, new industries, and new business models should be explored, cultivated, and developed. Meanwhile, the self-confidence and self-strengthening of sci-tech innovation culture should be boosted, the scientist spirit should be promoted, and the public's scientific literacy should be continuously

improved.

The modernization of harmony between humanity and nature requires making resources and energy constraints as a prerequisite to choose a right technological path. Ecological environment and natural resources are an important factor to adjust sci-tech development, while resource conservation and environment friendly are inherent requirements of high-quality development.

Compared with the old path of "abatement after pollution" taken by earlier industrialized countries, China is actively advancing the construction of both material and spiritual civilization, and pursuing a model of sustainable development featuring increased production, higher living standards and healthy ecosystems.

The modernization of peaceful development requires China playing a greater role in global innovation governance. Compared with the old way of war, colonization, and plunder taken by some countries, Chinese modernization is dedicated to peace, development, cooperation, and mutual benefit. Striving to build a human community with a shared future, it attaches great importance to sci-tech innovation.

At present, the world is at a crossroad again, with significant changes taking place in global economic competition and cooperation. China needs to develop an open and innovative ecology with international competitiveness, advance an institutionalized opening up in sci-tech innovation, and make new breakthroughs in international cooperation.

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Hi-tech Zones

Digital Economy, HHZ's Darling Industry

By CHEN Chunyou & JIANG Yun

Hangzhou High-tech Zone (HHZ), covering about 0.1 percent of the land area of Zhejiang province, has created 2.8 percent of the province's GDP in the past decade, ranking in the first tier among 173 national high-tech zones.

HHZ has always regarded digital economy as its competitive industry. It has created a whole industry chain for the core digital industry, and proposed solutions to help the upgrade of traditional manufacturing industries.

To date, HHZ holds 24,148 invention patents, accounting for 25.4 percent of Hangzhou city, and winning 72 China Patent Awards. A total of 44 new "small giant" enterprises have been cultivated, and the number of high-tech enterprises has grown from 493 in 2012 to 1,928 in 2021.

Zhejiang Supcon Information Co., Ltd., a service provider in building smart cities, has developed a technology with its business partners, which solved the difficulties of linkage control and high real-time performance in rail transit, improving the efficiency of integrated management and control.

Now, HHZ has formed industrial clusters in fields of intelligent manufacturing and intelligent health, becoming a national hub for developing digital economy and intelligent manufacturing industries, said Zhang Dengfeng, secretary of the party committee of HHZ.

In 2021, the added value of the core industry of digital economy in HHZ reached 159.62 billion RMB.

This April, HHZ issued an action plan proposing to build a world leading science and technology park.

At the Xiaoshan Special Cooperation Park, the headquarters of Cloudnine Information Technologies Co., Ltd., is under construction, with an estimated annual output value of seven billion RMB. Yu Yingtao, CEO of H3C, said this park will enhance the digital economy manufacturing strength in Hangzhou, and enterprises in the region will gain more space for development.

It is expected that the main business income of the core industries in digital economy would reach 600 billion RMB by 2025, according to an action plan for building a digital economy powerhouse between 2022-2025, released by HHZ this year.



A panoramic view of Hangzhou High-tech Zone. (PHOTO: VCG)

First Int'l Standard on Automated Driving Led by China

By Staff Reporters

The first China-led international standard for autonomous driving test scenarios, titled ISO 34501: 2022 Road Vehicles—Test Scenarios for Automated Driving Systems—Vocabulary, was released this October, co-formulated by experts from more than 20 countries, including the U.S., Germany and Japan.

ISO 34501 defined concepts in autonomous driving tests in a standardized language, and specified the safety assessment framework and scenario classifications.

According to Wang Zhao, director of the institute of standardization of China Automotive Technology and Research Center Co. Ltd., ISO 34501 lays a foundation for the establishment of automatic driving test evaluation in future.

With the popularity of autonomous driving, the traditional test and evaluation methods cannot meet the needs of autonomous driving vehicle tests and evaluation. It is necessary to establish a new test and evaluation system based on complex test scenarios.

In 2018, China submitted a proposal

to the road vehicle committee of the International Organization for Standardization to develop an international standard for autonomous driving, and was approved to form a working group.

As an important basic standard for the definition of terms in the field of autonomous driving, ISO 34501 can meet the needs of different countries to use standardized language to describe test scenarios when carrying out autonomous driving test evaluation, said Sun Hang, head of a department of the institute.

The terms cover the entire process from scenario acquisition and analysis

to application. Sun said it will improve the internal communication efficiency of the industrial chain of automatic driving, and help relevant parties, including the scene technology product developers, users and managers, to establish a unified understanding.

The standard will be widely used in the R&D, testing and management of autonomous driving technology of the intelligent connected vehicles across the world, and provide support for various autonomous driving applications in fields of smart travel, regional transfer and road transport, said Sun.

Sci-tech Commissioners: Vital for Rural Revitalization

By CHEN Chunyou

Sci-tech commissioners have contributed much to rural development over the last decade. Their research achievements have been transformed into real grass root projects on the ground, and helped to solve actual difficulties of people at grassroots level.

According to the report to the 20th National Congress of the Communist Party of China, China will continue advancing rural revitalization in an all-round way, giving priority to the development of agriculture and rural areas, and allowing sci-tech commissioners to have more opportunities to use their expertise.

At the "delegates' passage" of the CPC National Congress, Lin Zhanxi, chief scientist of China National Engineering Research Center of Juncao Technology, and Zhu Youyong, academician of the

Chinese Academy of Engineering, answered questions from the press, relating their stories as sci-tech commissioners.

Juncao, a term that literally means "mushroom" and "grass", is a perennial plant in tropical and subtropical regions, but it is difficult to grow in the desert.

In the spring of 2013, Lin, at the age of 70, came to Ulan Buh Desert where the annual rainfall is less than 160 millimeters, and strong winds all year round make grass seedlings almost impossible to flourish. Despite this challenge, Lin made many trips to the desert with his team to conduct experiments, aiming to develop a variety of Juncao that can survive in the desert.

Over the last ten years, Lin's team has introduced 20 different varieties of Juncao, finally adapting two varieties suitable for growth in the desert, which yields up to 12 tons of Juncao per mu (one

mu approximates 666.7 square meters).

In order to better promote Juncao technology, Lin and his colleagues engineered this technology based on local conditions, so that people could easily understand the planting process.

Now, Juncao technology is widely used for the production of mushrooms, animal feed and biomass fuel. It has become a major industry for poverty alleviation in Ningxia's Xihaigu, helping lift more than 17,500 farmers out of poverty.

Another success story comes from Lancang county, which is located in southwest China's Yunnan province. It was previously an impoverished area of China, and declared its victory over absolute poverty in November 2021.

The dry land in Lancang's Haozhiba village is unsuitable for planting rice. In order to increase the varieties of food and increase grain production, Zhu moved

his lab to the village in 2015, where he led his team to develop a technology that enables rice to grow in dry soil.

The technology was well-received by local farmers, who became experts at rice production. This year, 50,000 mu of land was planted with this variety of rice in Yunnan province, among which 405 mu was produced by Haozhiba village, with the total yield reaching 280,000 kg.

There are 277 people in Haozhiba, and now the per capita output of rice is more than 1,000 kg, offering an abundant supply for local people, said Zhu, adding that after being removed from the poverty list, the staple food of the locals changed from coarse grains to rice.

In addition to this progress, the team also helped farmers to plant radix notoginseng, winter potatoes and vegetables, which all have grown to be important industries for the locals.

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Xi pledged to improve the people's well being and raise quality of life. "This country is its people; the people are the country," he said.

Bringing benefit to the people is the fundamental principle of governance, Xi said, noting that working for the people's well being is an essential part of the Party's com-

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mitment to serving the public good and exercising governance for the people.

Xi noted that we must strive to realize, safeguard, and advance the fundamental interests of all our people. To this end, we must do everything within

our capacity to resolve the most practical problems that are of the greatest and most direct concern to the people. We will continue to improve the system of income distribution, implement the employment-first strategy, improve the social security system, and advance the

Healthy China Initiative.

The CPC will work hard to resolve the pressing difficulties and problems that concern the people most, improve the basic public service system to raise public service standards and make public services more balanced and accessible, so as to achieve solid progress in promoting common prosperity, according to Xi.