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WEEKLY EDITION

Spring Festival Address

Moving Together into Brighter Days

It has only been a month since we entered 2022, and the world is still trying hard to come to terms with the many unprecedented challenges of the past year, affected by a devastating global pandemic.

However, every cloud has a silver lining.

After decades of hard work, China realized the eradication of extreme poverty and completed the first centenary goal of building a moderately prosperous society in all respects in 2021, which also contributed to poverty elimination all over the world. Without having to worry about their basic needs, Chinese people are now enjoying a much better quality of life.

We are also inspired by the sci-tech achievements made last year. Three of the notable were: China twice sending taikonauts to its own space station Tian-gong and conducting multiple space-walks; the successful development of the quantum computer prototypes "Jiuzhang 2.0" and "Zuchongzhi 2.1"; and Baihetan, the world's largest hydropower station under construction, beginning operation,



(PHOTO: VCG)

and contributing to the country's green development.

Along with the rest of the world, we have experienced the COVID-19 pandemic, which has been brought under control in China by the adoption of a dynamic zero-tolerance policy and more than 1.2 billion Chinese people being fully vaccinated to date. China has also offered two billion doses of COVID-19 vaccines to more than 120 countries and international organizations, playing an important role in the global response to the pandemic.

The shadow of COVID-19 is still there, along with many other challenges. But with what we have witnessed and the experience gained last year, we can look forward to building the future with confidence.

The Spring Festival is drawing closer and it will be the Year of the Tiger. In Chinese culture, a tiger is considered the symbol of bravery and strength. By "giving the tiger wings" we will survive through this bitter winter and conquer the severe challenges that lay ahead, including COVID-19, together, and with certainty.

As the renowned English poet Percy Bysshe Shelley said, "If Winter comes, can Spring be far behind?"

We wish you good health and a joyous Spring Festival.

The Editorial Office



2022 YEAR OF THE TIGER

(PHOTO: VCG)

China's Economy Drives Global Economic Growth

By Staff Reporters

Preliminary figures showed that China's 2021 GDP saw an increase of 8.1 percent compared with that of the previous year, reaching over 114 trillion RMB, said Ning Jizhe, Commissioner of the National Bureau of Statistics of China, at a press conference in Beijing on January 17.

Despite the ongoing impact of COVID-19, China's GDP growth exceeded the anticipated 6 percent. "In general, China's economy has been recovering continuously and stably in 2021, with major indexes meeting the anticipated targets," said Ning.

The uplift of China's economy also drove the growth of the world economy, with an estimated contribution rate of about 25 percent.

Increased opening up has led to new breakthroughs. In 2021, China's total volume of trade in goods surpassed 6 trillion USD for the first time, showing the highest growth rate since 2011. The import and export volumes with countries along the Belt and Road Initiative reached 11.6 trillion RMB. With 15,000

trips, the number of the China-Europe freight trains rose by 22 percent.

One of the contributing factors for the good performance of China's economy, according to Ning, was that the driving force of innovation was effectively strengthened. The total spending on research and development (R&D) went up by 14.2 percent, continuing the double-digit growth since the 13th Five-Year Plan period. The spending on R&D comprised 2.44 percent of China's GDP, and spending on basic research surged by 15.6 percent compared with that of last year, making up 6.09 percent of the total spending on R&D.

The high-quality development made in 2021 also played an important role. In particular, new achievements were made through development driven by innovation with the rapid development of the hi-tech industry. The added value of information transmission, software and the IT service industry climbed by 17.2 percent.

It was also worth noting that there was considerable progress made in energy saving and reducing energy consumption.



Located in Yanqing District, Beijing, the National Alpine Skiing Centre will hold Alpine skiing events during the 2022 Beijing Olympic and Paralympic Winter Games. (PHOTO: VCG) The inner photo shows a Chinese athlete in the ski and snowboard cross events of the 2021/22 FIS World Cup in Zhangjiakou, Hebei province. (PHOTO: XINHUA)

Editor's Pick

Meteorological Service to Safeguard Beijing 2022

By ZHANG Gailuo
TANG Zhexiao

Weather predictions are crucial in outdoor winter games. Accurate and reliable forecasts of wind speed, wind direction, temperature, humidity and visibility will affect event scheduling, athletic performance and safety.

During the 2022 Beijing Olympic and Paralympic Winter Games, Alpine skiing and sliding events will be held at the Haituo Mountain area in Yanqing district of Beijing. The Nordic skiing and ski-jumping events will take place in Zhangjiakou city of Hebei province.

To accurately forecast the weather during the upcoming Beijing 2022 is a great challenge, owing to the continental winter monsoon conditions and the scarcity of research, operational techniques and experience in winter meteorological forecasting in the two complex mountain areas of Yanqing and Zhangjiakou competition zones.

However, enhanced high technology will be used to support weather research and forecasts during the Games.

According to the Beijing Meteorological Service, 441 facilities have been set up for weather forecasts during Beijing 2022 in the three competition zones of Beijing and Zhangjiakou, enabling accurate weather forecasts by the minute for a range of 100 meters.

Building weather station from scratch
Accuracy of forecasting depends on acquisition of meteorological data.

The meteorological data of Haituo Mountain in Yanqing district was almost nonexistent before 2013, meaning, meteorologists had to start from scratch to obtain research data.

They decided to go to the mountains and become trailblazers, striving to build a comprehensive weather station network in the complex terrain of Haituo Mountain.

"There was no road, no water and

no electricity," said Zhang Man, deputy head of meteorological service team in Yanqing district, adding that heavy equipment and instruments were carried on mules, and precise instruments were carried on meteorologists' backs.

A monitoring point is the data generating and collection place. In order to find suitable monitoring points that meet the standards, they went deep into Haituo Mountain over and over again.

Biting wind, rock-hard bread and frozen water didn't stop these determined meteorologists. A comprehensive monitoring network of weather stations in Haituo Mountain was finally established after their hard work.

Cutting-edge meteorological technology at Beijing 2022

Numerical weather prediction (NWP) uses mathematical models of the atmosphere and oceans to predict the weather based on current weather conditions.

See page 2

Golden Year of Infrastructure Construction

By WANG Xiaoxia

As the first year of China's 14th Five-Year Plan period, 2021 has witnessed the country's leap forward in the field of infrastructure construction, including railways, power grid and water conservancy, injecting growth impetus to the Chinese and global economies.

To date, the length of China's high-speed railways in operation exceeds 40,000 kilometers, ranking first in the world, with the total length of railways in operation more than 150,000 kilometers, ranking second in the world, according to China Railway.

The first electrified railway in southwest China's Xizang Autonomous Region opened on June 25 of 2021, linking regional capital Lhasa with the city of Nyingchi. See page 2

WEEKLY REVIEW

New Record Set in Long-haul Quantum Distribution

Chinese scientists have implemented twin-field quantum key distribution through an 833-km optical fiber, setting a new world record in the relevant field. The experiment, led by researchers from the University of Science and Technology of China, is a solid step towards building reliable and efficient terrestrial quantum-secure networks over a scale of 1,000 km.

China Launches New Model of UAV

China's independently-developed Wing Loong large unmanned aerial vehicle (UAV) family has embraced a new model made of all-composite materials, the Aviation Industry Corporation of China (AVIC) announced on January 21. The Wing Loong-1E all-composite multipurpose large UAV successfully completed its maiden flight on January 18, said the AVIC.

Working Across Authorities for Low-carbon Development

The Ministry of Science and Technology and the Ministry of Housing and Urban-Rural Development signed strategic cooperation agreements to deepen cooperation in key areas such as green and low-carbon development in urban and rural areas.

A New Autism's Therapy Method Developed

A large-scale study of fecal microbiota transplants (FMTs) for children with autism is launched in China. More than a dozen hospitals across the country are participating in the research, recruiting volunteer families. Preliminary study has proved that a gut microbiota impairment could play a key role in the development of autism.

Lunar Spacecraft Gets a New Lease on Life

By WANG Xiaoxia

Since Chang'e-4 probe's lander and rover made the first-ever soft landing on the far side of the moon in January 2019, they have been hard at work on the lunar surface for more than three years. However, before the launch of Chang'e-4, the designed service time for the Yutu-2 rover was only 3 months. Fortunately, the efforts of scientists' making deliberate design and technological innovations have prolonged the rover's lifespan.

Firstly, the spacecrafts were designed for high performance at the outset of the project. Each component was selected to meet the high standards, to ensure a longevity and reliable performance, said Fu Qiang, chief designer of the Chang'e-4 mission ground applica-

tion system.

Secondly, the lander and rover were designed with enhanced radiation resistance. Due to the absence of a protective layer on the moon, many space particles can affect spacecraft on the lunar surface. Better radiation resistance can protect spacecraft from damage, which can not only prolong their service life, but also guarantee the accuracy of data collected.

Thirdly, scientists designed a "nap" mode and "dormant" mode for the spacecraft to better adapt to moon temperatures, which can range from -180°C to 160°C on the surface, with a temperature difference between day and night of more than 300 degrees.

Both vehicles must sleep when the sun is directly overhead to avoid overheating. They also power down during

the lunar night, when temperatures plummet to -173°C, to avoid damaging their instruments.

Lunar days and nights are both equivalent to 14 days on Earth. From January 15, Chang'e-4 probe's lander and rover were switched to the dormant mode during the lunar night. After a break, it will start to work for the 39th lunar day. After 38 lunar days' test, the work procedure of the spacecrafts was proved to be reasonable, said Fu.

Yutu-2 is exploring Von Karman crater, where an ancient lunar impact may have exposed the moon's mantle. By studying this region directly, scientists will learn more about the early solar system and the Earth. To date, Yutu-2 has traveled more than 1,000 meters and obtained more than 3,800 GB of data.



From Big Data to E-commerce New Roadmap Drawn Up to Boost Digital Economy

By LI Linxu

From big data to e-commerce, China is aiming to take its digital economy to a new level in the coming few years.

By 2025, 10 percent of its GDP is expected to come from the added value of core digital industries, up from 7.8 percent in 2020, according to a document released by the State Council on January 12.

The document, titled the *Outline of the 14th Five-Year Plan (2021-2025) for Digital Economy Development*, draws up the country's roadmap to build a digital powerhouse.

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

Today, China is the world's second largest digital economy in scale, and leads the world in many digital fields, such as 5G, industrial Internet and e-commerce.

The country is also the largest e-commerce market globally, generating almost 50 percent of the world's transactions. In 2021, China's e-commerce market is predicted to be larger than



Visitors walk past an exhibition stand featuring e-currency in China International Fair for Trade in Services 2021. (PHOTO: XINHUA)

the U.S., UK, Japan, Germany and France combined.

And its potential is still enormous. By 2025, China's e-commerce transaction scale is expected to rise to 46 trillion RMB from 37.2 trillion RMB in 2020, according to the outline.

The software and information tech-

nology service industry is also expected to grow from 8.16 trillion RMB in 2020 to 14 trillion RMB in 2025.

To achieve these goals, the outline puts forward a series of key tasks, including optimizing and upgrading digital infrastructure, bringing data element into full play, and accelerating digital in-

dustrialization.

Aiming to build a smart comprehensive digital information infrastructure, China will focus on areas such as gigabit broadband, 5G, and 6G.

It anticipates the users of gigabit broadband to increase from 6.4 million in 2020 to 60 million in 2025.

Meanwhile, the country will promote the commercial deployment and large-scale application of 5G.

Other key areas such as core technology innovation, elevating the digital level of public services and improving governance systems are greatly emphasized in the outline.

The outline also calls for expanding international cooperation on the digital economy, including cross-border data flow, cross-border e-commerce, and governance cooperation.

As digital technologies and industrial development are deeply intertwined, actively participating in international cooperation on the digital economy is essential to promote high-level opening-up, according to an article written by the National Development and Reform Commission, adding that China is building a "Digital Silk Road" to benefit people around the world.



A road cable-stayed bridge in Baoding city, Hebei province. The city is among the list to build innovative cities released by MOST. (PHOTO: VCG)

New Entrants to Build Innovative Cities Released

By LI Linxu

As part of China's innovation push, evaluation of the innovation capacity of cities has played an important role in implementing its strategy going forward.

A new batch of 25 cities, including Baoding, Wenzhou, Bengbu, Xinxiang, Liuzhou and Yingkou, are selected to build innovative cities, according to a notification released by the Ministry of Science and Technology on January 6.

Among them, there are 12 cities located in Eastern China, nine cities in Central China, three cities in Western China and one city in Northeast China.

In 2008, Shenzhen became the first pilot innovative city in China. Two

years later, another 16 cities, including Dalian, Shenyang and Qingdao, were also selected as pilot innovative cities.

Since then, significant achievements have been made in the building of innovative cities. Shenzhen-Hong Kong-Guangzhou ranks second in the TOP100 Global S&T Clusters, and Dalian, Shenyang and Qingdao recorded the biggest increases in ranking, according to Global Innovation Index 2021.

Currently, more than 100 cities have been included on the list. They will further deepen reform and opening-up, optimize the ecology of innovation and entrepreneurship, promote the transformation of sci-tech achievements, and expand international cooperation, according to the notification.

Enhancing R&D Ability of High-tech SMEs

By ZHONG Jianli

China will further support high-tech small and medium-sized enterprises (SMEs) to enhance their R&D capabilities, and more than 200,000 new high-tech SMEs will be cultivated by the end of 2025, according to a notice recently issued by the Ministry of Science and Technology.

The country will, in particular, boost the development of innovative sci-tech SMEs featuring key technologies, research personnel, high-value intellectual property rights, and high research

input, according to the notice.

To support the R&D of high-tech SMEs, the notice calls for efforts to further implement related policies in terms of finance and taxation.

For example, in optimizing the model for funding the R&D of high-tech SMEs, the notice pointed out that for special projects of the national key R&D plan, an amount of dedicated budget can be reallocated to high-tech SMEs to subsidize their R&D activities.

In addition, the evaluation system for the national sci-tech achievement transformation guidance fund should

be improved to support high-tech SMEs to make breakthroughs in key core technologies.

The notice also encourages high-tech SMEs to hire international talent, including high-level foreign experts, by optimizing procedures for handling their work permits and improving visa and children's enrollment services for their families. Such foreign experts in high-tech SMEs are encouraged to undertake various kinds of projects. Those who have obtained permanent residence in China can take the lead in carrying out sci-tech projects.

It's worth mentioning that the notice proposes measures to promote the application of research scenarios of high-tech SMEs.

The national innovative cities and national independent innovation demonstration zones should open application scenarios such as smart cities for high-tech SMEs. Industrial parks should explore new management models that are in favor of R&D of high-tech SMEs, such as including the support of high-tech SMEs into the performance evaluation index system of high-tech zones administration.

Sci-tech Facilitates Spring Festival Travel

During this year's Spring Festival travel season, many Chinese people will travel to meet their families for the Chinese Lunar New Year.

Picture (Right) shows a bullet train passes by Beijing.

Picture (Below) shows a disinfection robot is at work at Hefei South Railway Station. (PHOTO: XINHUA)



Golden Year of Infrastructure Construction

From page 1

Since Fuxing bullet trains entered official operation on the plateau region, the trains have covered all 31 provinces, autonomous regions and municipalities.

In 2021, investment in power grid infrastructure totaled 402.48 billion RMB. AC transmission projects, stretching over 44,000 km, were put into operation for electricity of 110 kV or above. More than 2,800 km of DC electricity projects were put into operation.

Baihetan hydropower station, on the Jinsha River, an upper stretch of the Yangtze River in southwest China, with a total installed capacity of 16 million kilowatts, was officially put into use. It transmits rich power resources in the

west to energy-consuming regions in east China, a major step in the country's utilization of clean energy.

The first phase of a power supply project for the Sichuan-Xizang Railway was completed ahead of schedule. The second phase projects were completed to ensure the power supply for border defense and for the 2022 Winter Olympics.

In 2021, China made solid progress in water conservancy infrastructure construction, investing more than 750 billion RMB. Ninety-four percent of the first phase of the eastern and middle routes of the South-to-North Water Diversion Project was completed.

In terms of flood control and drought relief projects, 11,000 km of

small and medium sized rivers were harnessed in 2021. In rural areas, 99,000 projects were repaired and maintained to ensure water supply for 42.63 million people, and a record-high 84 percent of rural residents got access to tap water.

In the past year, China has cooperated with other countries in infrastructure construction, contributing to global connectivity and economic recovery.

The China-Laos Railway, a flagship project of the Belt and Road Initiative (BRI), started operation on December 3 of 2021. The new record of 15,000 China-Europe freight train trips were made in 2021, up 22 percent from 2020.

Statistics from China International

Development Cooperation Agency show that up to 140 partner countries and 32 international organizations have signed documents with China under the BRI framework by November 2021.

Chinese enterprises have built more than 6,000 BRI projects around the world, and invested 34 billion USD in economic and trade cooperation zones in participating countries, paid over three billion USD in taxes and created over 330,000 jobs.

The digital economy is playing an increasingly important role in economic growth, and the carbon neutrality goal is pushing green industrial upgrade. China is focusing on infrastructure related to advanced technologies, such as 5G, big data, AI, Internet of Things and clean energy, to tilt infrastructure investment toward green and low-carbon development.

Meteorological Service to Safeguard Beijing 2022

From page 1

The 100 meter-range grid refers to an observation and calculation point setting every 100 meters. During the previous Winter Olympics, the weather forecast was mostly based on a kilometer-range grid, and the update frequency was 30 to 60 minutes. For Beijing 2022, the grid range can narrow down to 67 meters, updating weather forecasts in 10 minutes.

The first meteorological report will be issued at 5 AM every day during the Games, and updates will be issued every hour. Also, the weather forecast for the next one to 10 days will be provided every day during the Games, according to Yan Hongliang, deputy director of Yanqing's meteorological service.

To improve accuracy, the technical

team also developed an artificial intelligence correction model. This is the first time in history that artificial intelligence forecast technology has been applied to the Winter Olympics weather service.

With the wide application of new technologies such as artificial intelligence and NWP in mountainous areas, a comprehensive meteorological forecast system of the Beijing Winter Olympics meteorological services has been established.

In the future, the high-precision forecasting technology developed for Beijing 2022 will also be used in more daily scenarios such as the guarantee of major national events, the safe operation of large cities, as well as the early warning of extreme weather.

Heads of State Keen to Attend Beijing 2022

Voice of the World

Edited by QI Liming

With the Beijing Winter Olympics approaching, United Nations (UN) Secretary-General António Guterres and some heads of state have announced their attendance and sent their best wishes to Beijing 2022.

Antonio Guterres conveying the message of peace

Antonio Guterres said that he would attend the opening of the Beijing Winter Olympics in February with the message that the event "must be an instrument of peace in the world."

"The Olympic Games is an extremely important event, and it's an event that symbolizes the role of sports in bringing people together and in promoting peace," Guterres told reporters. "It is in this strict context and without any political dimension that I intend to be present at the opening - with this message that the Olympic Games must be an instrument for peace in the world," he said.

IOC operations director praising the closed loop

During the Games, participants will be subject to daily health monitoring and testing and will have no contact with the general public.

Pierre Ducrey, Olympic Games operations director for the International Olympic Committee (IOC), has spoken highly of the closed loop management. "The loop is very safe. It's a place that I



UN Secretary-General António Guterres calls for Olympic Truce to build "culture of peace" through sport. (PHOTO: XINHUA)

would say is very difficult to compare with any other place in the world at this point in time, because we have here a fully vaccinated, often boosted population that is being tested daily with a polymerase chain reaction (PCR) and living in a closed loop," he told reporters.

Ducrey added, "It is called a closed loop for that very reason. It means there will be no contact between people outside the loop and inside the loop. It has been built to protect the population inside, and also the population outside."

Returning a confirmed positive test will mean participants cannot compete or continue their role in the Games; those who are symptomatic will stay at a designated hospital for treatment, while those who are asymptomatic will be transferred to an isolation facility.

Pakistan bolstering all-weather bilateral ties

Prime Minister Imran Khan will attend the opening ceremony of Winter

Olympics, bolster the all-weather bilateral ties and seek more investments in various projects under the ambitious China - Pakistan Economic Corridor (CPEC), the Pakistani Foreign Office announced.

"The premier will be embarking on a three-day visit to Beijing from February 3 at the invitation of the Chinese leadership," the Foreign Office Spokesperson Asim Iftikhar said during his weekly news briefing.

Projects pertaining to CPEC will be key to the talks between the two sides. Iftikhar said Khan's visit would help promote international cooperation required to overcome the challenges faced due to the ongoing pandemic and open up avenues of collaboration with other developing countries.

Poland's President to attend the Beijing Winter Olympics

Poland's President Andrzej Duda will attend the Beijing Winter Olympics and meet Chinese President Xi Jinping,

according to Polish state news agency PAP.

"Unless the epidemic or the security situation changes at our borders, the president plans to take part in the opening of the Olympic Games in China and support Poland's athletes in this way," the president's foreign affairs advisor Jakub Kumoch told PAP.

"Poland is a sovereign nation and decides its own politics towards China ... Poland is an ally of the U.S., but Poland also has a very friendly relationship with China," said Kumoch.

Mongolian PM opposing politicizing sports

Mongolian Prime Minister L. Oyun-Erdene said he will attend relevant activities of the Beijing 2022 Olympic Winter Games in February. At a meeting of Mongolia's State Great Khural, the Prime Minister said sports should not be politicized. Three Mongolian athletes will compete in the Winter Olympics.

Opinion

China's Tech Benefits the World

By YU Haoyuan

Vince Cable, a British politician who was the former Leader of the Liberal Democrats, recently issued a public statement saying he was repeatedly assured by the intelligence community that the official dealing with China's Huawei was totally safe, and that China and 5G had "nothing to do with British national security." According to Cable, the only reason the UK government abandoned Huawei was that the U.S. told them to. He said that the ban would increase the cost of 5G deployment in the country by 9-29 percent over the next 10 years.

Huawei's ban is only the tip of the iceberg of the West slandering Chinese technology. The country's technology has nothing to do with other countries' security, as claimed by the U.S. and its success, such as leading 5G technology development, speaks for itself worldwide. No matter how the West attempts to defame China, it is China's decision to use science and technology to build a community with a shared future for mankind and will never waver.

In the past 20 years since joining the WTO, China has focused on developing its own technology and introduced these advanced technologies to the international community.

Providing technologies and products for the world

China has always been committed to conducting basic technological cooperation with other countries. From the 2021 world's most popular APP Tiktok, to rice - planting in Africa, people can see Chinese tech and cooperation in almost every field and every continent.



Chinese agriculture expert (second from right) instructs local workers to use a drone to spray herbicide at an agricultural park in Mozambique. (PHOTO: XINHUA)

Since the outbreak of the pandemic, equitable distribution of COVID-19 vaccines is always mentioned by the WHO, and China is taking the lead in helping achieve this goal. According to Foreign Ministry Spokesperson Zhao Lijian on January 19, one in every two shots administered globally is made in China, and China has already provided over 2 billion doses of COVID-19 vaccines to more than 120 countries and international organizations.

Jeffrey Sachs, an American economist who has been working in Africa for years, said, "I have watched China's anti - malarial medicine, artemisinin, save the lives of vast numbers in Africa...[It is] a Noble prize-winning innovation from China with huge global benefit." He also mentioned that many low-cost production systems for

technologies, such as photovoltaic and 5G that China introduced have already benefited many countries.

Scientific development with impartial dedication

China has also taken a long-term view by putting great efforts into large global science projects, and never takes the technology blockade strategy. Instead, many scientific invitations have been sent to the world impartially.

China's Five-hundred-meter Aperture Spherical radio Telescope (FAST) approved 27 international projects for global research, and opened up to scientists from 14 countries in 2021, becoming an instrument of truth for all humankind. In the same year, China also selected nine international scientific projects from 17 countries to be welcomed onto its space station free of

charge, covering a wide range of research fields.

The purpose of such achievements and behavior is not to replace anyone, nor to surpass anyone, but a reflection of promoting a community with a shared future. Chinese people believe that science should have no boundaries, and a brighter future should be created by all of humanity, especially those with specific expertise and knowledge.

Promote economic growth with tech development

China's international cooperation introduces high-level tech development to other countries and comes with infrastructure construction and economic growth.

In the field of agriculture, China is actively conducting research and demonstrations with locals in South Asia, Africa, and other Belt and Road Initiative countries, such as Kazakhstan, and Uzbekistan. In the field of 5G transmission, Huawei, ZTE, and other Chinese companies have built thousands of base stations in Europe, Asia, and Africa. Moreover, China's tech, such as long - distance power transmission is also benefiting other countries.

According to the Ministry of Commerce, China's non-financial direct investment in countries along the Belt and Road Initiative reached 20.3 billion USD, up 14.1 percent year on year. In the process 560 project contracts worth more than 100 million USD were signed, mainly in transportation and other infrastructure sectors, which will further promote connectivity. In addition, this cooperation has created 392,000 local jobs.

Davos Forum: Commit to Boosting Economic Recovery

Comment

Edited by QI Liming

We're heading towards the third year of the COVID-19 pandemic, which has disrupted lives and livelihoods across the planet and led to at least 5.5 million deaths around the world.

As the Omicron COVID-19 variant surges in many countries, the pandemic has been front of mind for many at the Davos Forum, whose leaders have prioritized finding ways to create a more resilient, inclusive and sustainable future post-COVID-19.

UN: COVID-19 pandemic stalling global economic recovery

The UN's key report on the global economy, released on January 13, shows that the rapid spread of the Omicron COVID-19 variant has put the brakes on a rapid recovery, counteracting signs of solid growth at the end of last year.

The report, themed the 2022 World Economic Situation and Prospects, produced by the UN Department of Economic and Social Affairs, cites a cocktail of problems that are slowing down the economy, namely new waves of COVID-19 infections, persistent labor market and lingering supply-chain challenges, and rising inflationary pressures.

The slowdown is expected to carry on into the next two years. After an encouraging expansion of 5.5 percent in 2021, which was driven by strong consumer spending and some uptake in investment, with trade in goods surpassing pre-pandemic levels, global output is projected to grow by only 4.0 percent in 2022 and 3.5 percent in 2023.

UN Secretary-General: not leaving anyone behind

UN Secretary - General Antonio Guterres urged international business leaders and economists to do their part to make post-COVID-19 economic recovery equitable across the globe.

"At this critical moment, we are setting in stone a lopsided recovery," he told the World Economic Forum.

The UN chief said recovery remains "fragile and uneven" as the pandemic lingers, and poorer countries are seeing their slowest growth in a generation and need debt relief and financing. He urged reforms to the global financial system so it works for all countries.

"The last two years has demonstrated a simple but brutal truth, if we leave anyone behind, in the end we leave everyone behind," he said.

GlobalData: the overall business outlook remains positive

Gargi Rao, Economic Research Ana-

lyst at GlobalData said, "The rapid spread of Omicron in more than 100 countries, along with rising global inflation rates, energy crisis stemming from coal shortages, political tensions and a slowdown in manufacturing output amid a chips shortage, remain the major downside risks to global growth in 2022."

He also believes that despite the risks and the expected slowdown in economic growth, India and China are expected to drive the global growth in 2022.

"On the other hand, the Federal Reserve is expected to tighten monetary policy measures to tame high inflation levels, this may result in capital outflows from emerging nations," he said.

As we progress to 2022, supply chain bottlenecks are expected to ease with production picking up. "The risk to global economic recovery in 2022 seems balanced. Globally, households have accumulated huge savings, which once invested will drive up economic activity. Moreover, countries like China and India are investing in green energy, which could attract more investments from the West. The approval of The Regional Comprehensive Economic Partnership deal is expected to bolster trade opportunities in the Asia-Pacific region," said Rao.

Consensus: calling for cooperation between China and the U.S.

World leaders gathered virtually to urge a reconciliation between China and the U.S. on important global issues.

Speaking at the "Beyond Differences, Towards Cooperation" forum hosted by the China-U.S. Exchange Foundation (CUSEF) and the China Center for International Economic Exchanges, speakers including former President of Ireland Mary Robinson and former Prime Minister of Singapore Goh Chok Tong, emphasized the need for China and the U.S. to work towards tackling key areas of cooperation such as climate change, economic recovery, and trade. Former Prime Minister of Canada Jean Chretien and former Prime Minister of Japan Yasuo Fukuda also stressed the importance of U.S. and China cooperation.

Dr. Victor Fung, Vice Chairman of CUSEF, identified two immediate priorities for bilateral cooperation, namely global economic recovery, and improving systems for sustainable trade and investment.

President of the National Committee on U.S.- China Relations Steve Orlins, emphasized that instead of a tit for tat approach, the two countries need to create "habits of cooperation" in the short term, such as the immediate removal of trade tariffs and agreeing on the definition of national security, so that both sides can continue to do business and restart scientific cooperation.

Robots, a Highlight of Beijing Winter Olympics

Hi! Tech

By Staff Reporters

At the closing ceremony of the Pyeongchang Winter Olympics 2018, the audience was not aware that 24 unseen robots took part in the dazzling show put on by Chinese performers. Fast forward to the Beijing 2022 Winter Olympics, and there is no doubt that robots are going to be much more widely used throughout the games.

Integrating robots into the torch relay will be one of the highlights of Beijing 2022. On the afternoon of February 2, amphibious robots and underwater robots will participate in the torch relay in Beijing Winter Olympic Park (along the Yongding River), which will be the first time in Olympics history that a torch relay will be carried out in this way.

A skiing robot, designed and developed by Shanghai Jiao Tong University, is also used for the training process. It has completed the test experiments successfully on ski tracks for primary and intermediate skiers, along with human.

The test showed that the robot performs well in multiple aspects of stability control, intelligence perception, planning and decision-making. The robot is equipped with two boards beneath its feet, and it can ski at high speed, decide on the optimized route by itself, and also control the direction when encountering obstacles by using its strong independent perception and planning ability.

Apart from the robots used for training, performance, or competition, many robots will also be used for pandemic prevention and control, providing services such as petrol, food delivery, guidance, elimination and waste removal. It seems that Beijing 2022 will become the first Olympics to make such extensive use of robots.



Skiing Robots prepared for Beijing 2022. (PHOTO: Shanghai Jiao Tong University)

International Cooperation Needs Sincerity

By LONG Yun

Chuah Hean Teik, a Malaysian scholar, has been promoting international exchanges in the educational and technical sectors for decades. He is currently a Consultant Professor at Northwestern Polytechnical University (NPU) in Xi'an as well as an Emeritus Professor at Universiti Tunku Abdul Rahman (UTAR) in Malaysia.

Chuah received the Chinese Government Friendship Award in 2021 for his contributions to China's social development. He told *Science and Technology Daily*, "Every award is a recognition, and in a way, it illustrates and recognizes the close relationship between China and Malaysia."

Education as a family tradition

Chuah is proud of his identity as an educator, having spent 33 years searching for the essence of what it means to be a good educator. He succeeded in achieving that goal, and his students refer to him as "a rare gem and a true-blue educator."

When discussing the origins of his dream, he attributed it to the influence of his family. His parents valued education and provided equal opportunities for their daughters and sons, although for many families the son had been more privileged in years gone by.

"We believe education is the most important asset that people can leave behind," he said, adding that it is important to pass the baton on to others to ensure continued progress.

The AAP Accord as a major milestone

Chuah, an eminent educator, serves significant decision-making and mentoring positions in many engineering organizations. He has played a leading role in advancing signing of the Afri-



Professor Chuah Hean Teik (Right) is appointed as consultant professor to NPU. (COURTESY PHOTO)

ca, Asia, and Pacific Accord (AAP Accord) in 2021.

The signing of the agreement was a significant milestone for engineers worldwide, in which the member countries agreed to promote quality engineering education, training, and practice, as well as mobility, leading to a larger market for their services.

His previous working experiences taught him that the world is becoming smaller due to new technologies. "It is time to establish an international standard to facilitate global mobility among engineers," he said, further noting that this brings tangible benefits for countries and engineers.

In order to further implement the agreement, Chuah and his Chinese counterparts established a NPU-FEAP Belt & Road Engineering Education

Training Centre at NPU, which serves as a platform for training academic staff, policy makers and industry players from all the member economies, not just those from China, but also those from Asia, the Pacific and Africa.

High-quality cooperation

Chuah has a strong belief in the role of international cooperation and has highlighted ways to increase high-quality people-to-people exchanges based on his years of experience.

Human networking is essential for demonstrating sincerity in cooperation. For example, he once assisted Myanmar in establishing an engineering accreditation system without expecting any reward. "Ignore politics. What we are doing is for our profession and for humanity," he said.

He is also an advocate of open sci-

ence. He cited the examples of sharing data, research results, and vaccines to combat COVID-19, adding that these measures could gradually overcome potential political conflicts.

Chuah is thrilled to introduce the newly coined term Cultural Intelligence, which he thinks is a way to promote mutual respect and cooperation among various regions and countries. "There is no such thing as one civilization or religion being superior to another. We must recognize that we value differences and embrace diversity," he said.

His story in China

Chuah is a scholar who is passionate about sharing his professional knowledge. "I am just giving whatever advice [I could] and giving free training and seminars as far as possible to our engineering colleagues," he said.

"I first visited China in 1995. Every time I come to China, I see new development," he said, especially noting China's technical advancement and the miracle of poverty alleviation.

He spoke highly of the Belt and Road Initiative and believes that helping others is an opportunity for self-improvement. From his perspective, multilingual education should be facilitated in China to develop better communicators in international exchanges. He also recommended more collaboration with colleagues from other countries. "International cooperation in the transfer of technology to people allows us to grow together," he added.

Chuah's ties to China are more than just professional. Aside from his frequent business trips, he takes annual sightseeing tours in China with friends from Malaysia and Singapore. Jiuzhaigou is his favorite tourist destination for scenery, while Xi'an is his favorite city for cultural richness.

Letter to the Editor

My Life in China

By Arodh Lal Karn

I am a citizen of Nepal and have been in China since 2010, working at the Northwestern Polytechnical University for the past four years, and would like to share some of my academic and life experiences in China with you.

As per QS World University Rankings 2022, China is home to many world-renowned universities. Chinese universities encourage creativity and independent thinking. Being a lecturer, and teaching students of almost all levels at the School of Management, I must say that Chinese students are very confident in their own judgments, willing to ask questions and challenge other points of view.

Moreover, students are also given the chance to study abroad through some exchange programs. In this way Chinese students are exposed to different cultures and backgrounds. That is why the academic environment in China is gaining a great reputation.

China had more than 2.1 million researchers in 2019, an increase of 13 percent compared with 2018. China is also becoming a hub for sci-tech talent at home and abroad.

The first benefit of doing research in China is that the country is working to de-emphasize researchers who publish a lot of papers and to find new ways to assess the impact of their work. As a result, China's share of the top one percent most cited science publications has been growing faster than its share of total publications, a clear indication that the quality of the country's basic scientific research is rapidly improving.

According to King's College London, China is set to overtake the U.S. to become the world's biggest spender on R&D and one of the most significant research partners in the world. This is another benefit of doing research in China. The country has become a popular research destination for many students from the Belt and Road Initiative (BRI) countries, the Global South and beyond.

Moreover, China is generally more bilateral in its international co-authorship than other large countries. Around three-quarters of its recent papers co-authored with the U.S. are bilateral, as are about 60 percent of papers with Canada and Australia, while 40 percent of its collaborative papers with Germany and France are solely bilateral. The mission of NSFC, a mainly basic-research foundation in China, is to be a "friend" of scientists, including giving fair reviews, rewarding research, international partic-



Dr. Arodh Lal Karn. (COURTESY PHOTO)

ipation, efficient management, large number of grants, and diverse disciplinary coverage.

In terms of employment opportunities, China now employs an increasingly larger number of scientists and engineers at relatively high earnings and produces more science and engineering degrees than the U.S. at all levels.

Entering the 21st century, by using a "Brain Gain" approach to attract highly educated overseas Chinese to return home, China has made significant improvements in its innovation system. I personally feel that this innovation system in China has definitely improved my day-to-day work and living standards. I see this in everything from food branding to fashion designing, and from electronic gadgets to Internet surfing, almost all aspects of life here have indigenous innovation.

What I believe is that the opportunity to experience a completely different culture is a huge attraction to foreigners who consider studying and working in China.

As far as my personal experience is concerned, I have a completely international atmosphere, not only in class, but also in daily life. The lab is full of international students, while professors frequently invite international scholars to present their current research work. Most of researchers whom I personally know have international co-authors in their research papers. Chinese universities have many research grants and facilities to participate in international seminars, conferences and lectures. To motivate these international collaboration activities, universities have different reward systems. This has motivated me a lot to publish more quality papers.

Arodh Lal Karn is an assistant professor in the School of Management at Northwestern Polytechnical University.

Service Info

Spring Festival Fast Facts

By Staff Reporters

The most important holiday for the Chinese people is Spring Festival, also known as Lunar New Year. It is a time when all family members gather and celebrate together. The festival is also observed in some East Asian and Southeast Asian countries and regions. The Lunar New Year in 2022 will begin on February 1.

The ancient Chinese lunar calendar, the basis for the New Year, served as a religious and social guide. It evolved from the people's sacrifice to gods and ancestors at the end of an old year and a new one during the Shang Dynasty (1600 BC-1046 BC). Nowadays, the Chinese government mandates a three-day public holiday for the Lunar New Year.

The Spring Festival involves many traditions, some of which are still followed today, but others have been updated with the development of technology.

Preliminary Eve is the 23rd day of the 12th lunar month. People offer sacrifices to the kitchen god at this time. However, most families now prepare delicious food for the occasion.

People start preparing for the New Year after the Preliminary Eve. This is referred to as "seeing the New Year in." Before the New Year, people thoroughly clean their homes and their clothes, bedclothes, and then start decorating their clean rooms to create a festive



The Chinese Character "FU". (PHOTO: VCG)

and joyful atmosphere.

Spring Festival couplets are pasted on each side of the front door, highlighting Chinese calligraphy with black characters on red paper. Displaying the Chinese character FU (which means "blessing or happiness") is essential. Usually, the character is pasted upside down on the door between the couplets, because the "reversed FU" is homophonic with the phrase "Good luck arrives" in Chinese sound.

Families gather together for dinner on Festival Eve enjoying unique dishes prepared for the reunion, with some dishes such as fish and chicken meaning auspiciousness, abundance, and richness. After dinner, the entire family will gather to play or/and watch the Spring Festival Gala show on television.

Everyone dresses up when they wake up on New Year's Day. The day begins with people greeting their parents and grandparents. Then, as a New Year's gift, each child will receive money wrapped in red paper, also known as lucky money, which usually represents the new year's wishes from parents. With the development of modern e-payment systems, lucky money is now also sent through social media apps such as WeChat and Alipay.

For breakfast, people in Northern China eat jiaozi, or dumplings, because they believe the sound jiaozi means "bidding farewell to the old and ushering in the new." In addition, the dumping shape resembles a gold ingot from ancient China. As a result, people eat them and wish for money and good fortune. On this occasion, people in the southern part of China eat Nian-gao (a glutinous rice flour-made New Year cake), because Nian-gao is a homophone for "higher and higher, one year after another."

Fireworks were once the most popular Spring Festival custom. People believed that the sound could help drive away evil spirits. However they have been either entirely or partially prohibited in most cities after being considered unsafe, noisy, and the cause of environmental pollution.



Foreign experts learn paper-cutting at Guangxi International Paper Arts Center in Nanning, Guangxi Zhuang autonomous region. (PHOTO: DENG ZHUOYUAN)

Welcome the Year of Tiger with Paper-cutting

By DENG Zhuoyuan

On January 15, nearly twenty foreign experts from France, Vietnam, Thailand and other countries were invited to experience the charm of paper-cutting art and celebrate the upcoming Chinese New Year in Nanning, Guangxi Zhuang autonomous region.

Paper-cutting, the traditional Chinese folk art of cutting colorful paper into patterns with scissors or a knife, is one of China's most popular festive activities. It not only symbolizes luck and happiness, but also repre-

sents the cultural values of Chinese people.

The experts were attracted by the unique paper-cutting shapes. Under the guidance of the paper-cutting inheritor, they also cut out their own unique shapes for the Year of the Tiger.

According to the organizer of this activity, the Administration of Foreign Experts Affairs (AFEA) of Guangxi, more and more foreigners have come to work in Guangxi and made positive contributions to the region's economic and social development as it accelerates opening up.

Houfeng Didong Yi: World's First Seismoscope

Traditional Eastern Wisdom

By BI Weizi

Zhang Heng (AD 78 - 139) was an astronomer, mathematician, inventor, and geographer during the Eastern Han Dynasty. His outstanding contributions have left a lasting influence on China's science and technology development. The United Nations Astronomical Organization named a crater on the back of the moon "Zhang Heng Crater" and the asteroid 1802 in the solar system "Zhang Heng Star" in his honor.

Zhang was credited with inventing the world's first earthquake detection device — Houfeng Didong Yi, meaning "an instrument for measuring the seasonal winds and the movements of the Earth." Zhang believed that an earthquake was caused by winds and changes in air pressure, a lot earlier than the plate tectonic theory appeared in the early 20th century.

Although there are no surviving physical remains or illustrations of

Zhang Heng's seismoscope device, it was, according to historical descriptions, a large bronze instrument resembling an urn or vase in shape.

To indicate the direction of a distant earthquake, Zhang's device dropped a bronze ball from one of eight tubed projections shaped as dragon heads; the ball fell into the mouth of a corresponding metal object shaped like a toad, each representing a direction in which the seismic wave was traveling.

This device had eight mobile arms (eight directions) connected with cranks having catch mechanisms at the periphery. When activated, a crank and right angle lever would raise a dragon's head and release a ball supported by its lower jaw. The seismoscope device also included a vertical pin passing through a slot in the crank, a catch device, a pivot on a projection, a sling suspending the pendulum, an attachment for the sling, and a horizontal bar supporting the pendulum.

Although its function is still limited to measuring the approximate location of the epicenter, it led the development of the world's seismology technology about 1800 years.