

ALL YOU NEED TO KNOW

CHINA WATCH

CHINA DAILY 中国日报

COLD DELIGHTS

ICE AND SNOW BECKON
THRILL SEEKERS

BUSINESS, PAGE 3



MODERN MAKEOVER

HIGH-TECH BRINGS OLD
ARTWORKS TO LIFE

LIFE, PAGE 4



This supplement is printed and distributed in select areas by the Los Angeles Times Media Group. Received by NSD/USA Registration Unit 05/20/2025 12:46:21 PM

More opportunities knock

Discussing the pace of innovation in China, Matthew Ye, local head of the French tire and mobility company Michelin, offers a perspective that differs from many senior executives in other parts of the world.

Collaborating with Chinese electric vehicle companies and traditional car manufacturers has become more demanding in terms of response speed and technical requirements than it used to be, said Ye, chief executive and president of Michelin China and Mongolia.

"As a result, I must spend more time to push our local, European and Japanese engineers in China to accelerate their innovation efforts."

The company will continue to expand passenger car tire production capacity at its factories in Shanghai and Shenyang, Liaoning province, to meet the country's surging demand, he said.

With China creating more favorable conditions to transform and modernize traditional industries and cultivate emerging sectors, market watchers and executives of multinational companies have voiced confidence about the substantial growth opportunities and greater commercial engagement in the world's second-largest economy.

Recent policy measures to remove all market access restrictions for foreign investors in manufacturing are likely to prompt foreign companies to increase their investments in China, with a focus on high-end manufacturing and innovation, they said.

The latest edition of China's national negative list for foreign investment, which took effect on Nov 1, removed the last two manufacturing-related restrictions, according to the National Development and Reform Commission.

The items on the latest negative list, which specifies fields off-limits to foreign investors, have been reduced to 29.

Another negative list applied in the country's free trade



Employees work on a BMW assembly line in Shenyang, Liaoning province. PROVIDED TO CHINA DAILY

"A well-established supply chain and infrastructure for high-tech industries make it easier for foreign companies to set up operations and integrate into local ecosystems."

ZHAO PING

zones, which involve pioneering pilots in opening-up practices, achieved zero restrictions on foreign investment in manufacturing in 2021.

Wang Xing, a partner expert with the management consultancy Roland Berger, said these opening-up moves have significant strategic importance.

The updated national negative list, in conjunction with other policies aimed at attracting overseas capital, not only demonstrates China's determination to

deepen reforms, but also creates a better investment and business environment for foreign companies. They are key measures integrating Chinese industries into the global economy, Wang said.

Many companies are establishing what are called light-house factories, advanced manufacturing facilities recognized for their leadership in applying the latest technologies to drive innovation, efficiency and sustainability in production, throughout China. These investments cater not only to the Chinese market but are also aimed at bolstering overall global competitiveness and digital transformation, Wang said.

Manufacturing was the earliest sector in China to open up to foreign investors and is the most competitive and closely coordinated one in terms of the global industrial division of labor.

"A well-established supply chain and infrastructure for high-tech industries make it easier for foreign companies to set up operations and inte-

grate into local ecosystems," said Zhao Ping, dean of the academy at the China Council for the Promotion of International Trade in Beijing.

With the structure of foreign investment continuing to improve, high-tech manufacturing in China used 80.18 billion yuan (\$11.07 billion) in foreign direct investment between January and October, accounting for 11.6% of the national total, the Ministry of Commerce said. That represents an increase of 0.7 percentage points over the corresponding period last year.

Expressing long-term confidence in the Chinese market, the German carmaker BMW Group announced in April an additional investment of 20 billion yuan in its production base in Shenyang.

In September the French industrial group Schneider Electric SE completed the second phase of an innovation laboratory park project in Shanghai.

SEE INVESTMENT, PAGE 3

Technology companies reaffirm faith in China market

Tim Cook, chief executive of Apple Inc., reaffirmed the critical role of China's supply chains in supporting the U.S. company during a recent visit to China, aligning with other multinational companies in committing to the Chinese market and integrating more deeply into global industrial and supply networks.

In a visit before the opening of the China International Supply Chain Expo in Beijing late last month, Cook said Apple is "very committed to China", and that he has visited the country three times this year.

Asked about Apple's future relationship with China, Cook said: "I think it will only get better. I always do something special in China."

China is one of Apple's largest supply-chain providers and one of its most important international markets. More than 80% of Apple's 200 major suppliers have production in the country.

When Cook visited China in October he also said Apple will continue to increase

investment in the country and contribute to the high-quality development of supply chains.

Cook joined a group of top executives from companies at home and abroad, including Rio Tinto Plc., Corning Inc. and the Chinese computer maker Lenovo Group, that took part in the China International Supply Chain Expo.

Jason Juang, managing director of HP Greater China, said: "As one of the most dynamic and important markets in the world, China plays an important role in HP's global supply chain." HP of Palo Alto, California, has always adhered to the development strategy of "in China, for China", and continuously introduced advanced technology and management expertise into the Chinese market, he said.

"We will continue to provide consumers here with continuously iterated high-quality products, boost the digital upgrading of industrial and supply chains, and actively support the construction and development of China's infor-



The Apple Inc. booth at the second China International Supply Chain Expo in Beijing in November. WANG JING/CHINA DAILY

mation technology industry," Juang said.

The third plenary session of the 20th Central Committee of the Communist Party of China, a meeting key to the country's continuing modernization, said China will further deepen reform and opening-up and facilitate international collaboration in industrial and supply chains.

Zhang Qingwei, vice-chairman of the Standing Commit-

tee of the National People's Congress, China's top legislature, said during a recent meeting that China is both a participant in and beneficiary of global industrial and supply chains, as well as a firm defender and builder of the chains.

The country will integrate more deeply with the global industrial and supply chain system, he said.

— CHENG YU

TIANJIN'S MUSICAL MAESTROS ON THE GO

The Tianjin Juilliard Orchestra embarked on its first ever China tour, presenting concerts at the National Center for the Performing Arts in Beijing on Nov 20.

The Tianjin Juilliard Orchestra was established in September 2020, and plans for a tour soon began. It is the first overseas campus of the Juilliard School in New York, and the tour is part of celebrations for the fifth anniversary of the Tianjin orchestra's founding.

"We're eager to have our students go out and demonstrate their artistic talent, while presenting a successful teaching model to our peers," said He Wei, chief executive and artistic director of the school.

"To me the Tianjin Juilliard Orchestra is the best representation of our school's educational philosophy of 'focusing on collaborative musicianship'."

The orchestra is made up of students from two graduating classes, meaning that every September it experiences a big turnover, with half its members changing each year. It is thus an orchestra that never ages, He said.

Taysia Petersen, 23, said she completed her undergraduate studies in the United States before coming to China to study. She is the principal oboist on the tour. Last year she performed Richard Strauss' *Serenade in E-flat Major, Op 7*, with her wind faculty, and had the opportunity to closely observe the playing of her colleagues, and to gain firsthand performance experience, something she said she cannot get in class.

"This was my first time participating in an orchestra tour. Performing in different cities and concert halls was a new experience for me, and Tianjin Juilliard has created many unprecedented opportunities for us."

The Tianjin school has a series of other important events to mark its fifth anniversary. In January its annual Festival Connect will focus on one of the most revolutionary composers of the 20th century, the French-American composer Edgard Varese. In February the faculty will travel to New York to collaborate with colleagues on the New York campus for a faculty concert.

As a highlight of the fifth anniversary program, the school will hold an orchestra forum during graduation season next May. Teachers and students from the world's leading music conservatories will gather in Tianjin to discuss topics related to classical music education, and form a student orchestra to rehearse and perform together.

"As a cooperative educational institution between China and the U.S., cultural exchange is embedded in the DNA of the school," He said.

— CHEN NAN



The Tianjin Juilliard Orchestra in concert on Oct 20.

PROVIDED TO CHINA DAILY

SOCIETY

Videos on the internet depicting the beauty and perils of the Ailao Mountains, the once-hidden range in Yunnan province, have piqued a wave of curiosity in recent months.

The topic "A bird numbering only 1,000 worldwide observed in the Ailao Mountains" on the microblogging platform Sina Weibo drew many readers.

"The white-eared night heron is hard to spot because of its small population and secretive habits," said Zhao Xuebing, a lecturer at Yunnan University's School of Ecology and Environmental Science.

The bird, classified as endangered on the International Union for Conservation of Nature Red List of Threatened Species, has been given top-level protection by the Chinese government.

The Ailao Mountains, in central Yunnan, extend about 310 miles from northwest to southeast. The range is home to China's largest, least disturbed, and most intact subtropical montane wet evergreen broad-leaved forest ecosystem.

This pristine environment is a home for many lesser-known creatures. Many are rare and endangered animals, including the western black-crested gibbon, the clouded leopard and the green peafowl.

There are estimated to be just 1,000 white-eared night herons in the wild. In early October one was found at the Jinshan Yakou Xinping bird banding and monitoring station in the Ailao Mountain National Nature Reserve.

One of the most elusive members of the heron family, it breeds in southern and central China and in autumn migrates to the China-Myanmar border and Southeast Asia.

"The first discovery of the bird in the Ailao Mountains was in 2006," said Zhao, who is also the secretary-general of the Kunming Birdwatching Association.

"After many years of silence, since 2021 it has



A green peafowl displays its tail feathers. YAN QIAN / FOR CHINA DAILY

endangered plants and animal resources and their habitats.

It spans five counties and county-level cities.

It is home to 86 species of mammals, 65 species of amphibians and reptiles and 430 species of birds. Among them, 35 species are listed as national first- and second-class protected wild animals. They include the western black-crested gibbon, the gray langur, the stump-tailed macaque, the clouded leopard, the black bear, the green peafowl and the black-necked long-tailed pheasant.

Wu Fei, an associate researcher in ornithology at the Kunming Institute of Zoology, Chinese Academy of Sciences, said he is most concerned about the endangered green peafowl.

The green peafowl, measuring 70 to 90 inches in length, is the only native peafowl species in China and the largest of the country's wild pheasants.

The males, having bright blue-green plumage with a crest of feathers on their heads, look robust and extraordinarily ornate.

Deep within the Ailao Mountains, in Shuangbai county of Chuxiong, a prefecture-level nature reserve named Konglong River was established in 2003 to protect the green peafowl.

To better protect the green peafowl population and its habitat, the local authorities gradually expanded the reserve, built a monitoring network, and implemented rescue, protection, and restoration projects.

"As a flagship species, protecting the green peafowl also safeguards the river valley habitat and many other rare and endangered species within the original habitat," said Wu.

"It plays a crucial role in maintaining the stability of the river valley ecosystem," he said.

—LI YINGQING AND ZHANG XIAOMIN

Majestic mountains reveal hidden glory

been found here four years in a row, indicating that its numbers have reached a certain size."

Over the past 20 years Zhao, whose main research interest is nocturnal bird migration, has visited the Ailao Mountains many times from September to November. On each visit he spends more than a month working with station staff and his colleagues on bird banding and research.

The Ailao Mountains are an important corridor for migratory birds, he said. The birds gather in lower passes in the mountain range to fly through.

The Jinshan Yakou Xinping banding station and Jinshan Yakou Zhenyuan banding station, where Zhao works, are on either side of a ridge at the



Male (top) and female western black-crested gibbons. PHOTOS BY LI WEI / FOR CHINA DAILY

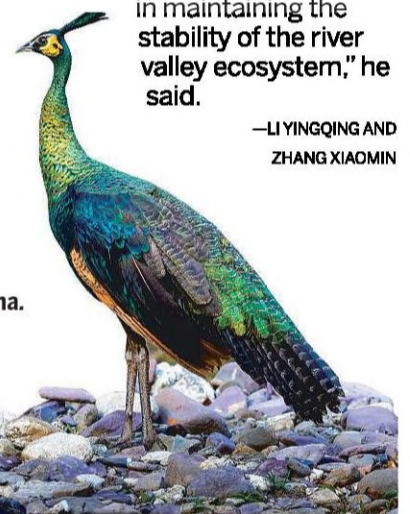
border of Xinping county in Yuxi and Zhenyuan county in Pu'er, with an average altitude of 7,900 feet. According to the station's records, more than 200 species of migratory birds appear in that area each year, including the yellow-breasted bunting.

"It is now listed as a critically endangered species globally and a national first-class protected wild animal," Zhao said, adding that it used to be a common bird and is similar in appearance to a sparrow.

To protect the Ailao Mountains, many national, provincial, prefecture-level and county-level nature reserves have been established within its expanse.

Ailao Mountain National Nature Reserve, in the central and northern parts of the range, protects rare and

The green peafowl is the only native peafowl species in China. PHOTOS BY YAN QIAN AND ZHANG XIAORONG / FOR CHINA DAILY



Youths call for action on climate change



Gao Shiqing works in the wild in Beijing. PROVIDED TO CHINA DAILY

During an event themed "Vulnerable Cities under Climate Impact" on the sidelines of the COP29 conference in Baku, Azerbaijan, a set of Chinese twin brothers delivered a speech via video in which they called on young people to do more in the fight against climate change.

Li Bingchen and Li Bingheng, 13, from Shenzhen, Guangdong province, told of what they had done in the past year to encourage their peers to take action on climate issues.

They have organized various activities, including inviting a COP28 expert to speak with their classmates about climate issues and organizing a field trip to a zero-carbon community in Shenzhen.

In another event held on the sidelines of COP29, Gao Shiqing, 15, a student at Keystone Academy in Beijing,

talked about the years he has devoted to protecting the North China leopard.

A species native to Beijing, it fled the city due to habitat destruction in the 1990s, partly driven by climate change.

Shiqing began working as a volunteer with the Chinese Felid Conservation Alliance, a nonprofit organization, in 2016.

One of his key tasks was to conduct fieldwork for the alliance, and he devoted much of his free time to that work after school.

Shiqing's consistent engagement has produced results. The shy creature was spotted in a location 186 miles from Beijing in 2020, and it was seen in Baoding, only about 124 miles from the capital, last year, he said in his speech.

—CHEN LIANG AND HOU LIQIANG

An American guide for a Chinese museum

Liangzhu Museum in Hangzhou, Zhejiang province, houses a treasure trove of jade, lacquerware and myriad artifacts, but what has most impressed Emma Chen there is its black pottery collection, which sports unique symbols that some scholars think are inscriptions from another era.

Chen, a volunteer, passionately explains to visitors that long before smartphones, the Liangzhu people were possibly sharing their daily life on pottery like people today do on social media.

The museum, on the outskirts of Hangzhou and established in 2005, has on display the archaeological findings from the Liangzhu ruins.

What has particularly caught Chen's attention is a ring-footed black pottery jar that bears 12 symbols. Some scholars say it tells a story.

"One version is that it says that a man caught a tiger with a net," Chen said. "There are many different explanations, but they were probably depicting specific scenes or events, inscribing on a pot what had happened earlier that day."

You may think Chen, an American who speaks fluent Mandarin, is an unlikely guide for China's ancient past, but her knowledge of museums is extensive and her enthusiasm bridges centuries. She has the knack of captivating visitors by making the ancient feel familiar.

She even quizzes visitors, asking them if they thought a wooden well, unearthed in



Emma Chen introduces a black pottery jar to visitors in the Liangzhu Museum in Hangzhou, Zhejiang province. PROVIDED TO CHINA DAILY

FRIENDS AFAR

Liangzhu and dating back more than 5,000 years, was real.

Looking at it, many say it must not be authentic because the wood would have decayed long ago, but Chen corrects them.

"That's what we learn from archaeology, that objects submerged under water are often better preserved," she said, adding that the well stood as an example of how the ancient Liangzhu people knew about water conservancy.

Her passion for Chinese history predates when she was majoring in Oriental studies. She learned Chinese during her college days in the U.S., and the interest ultimately propelled her across the Pacific Ocean.

"In addition, instead of what books said, I wanted to see a true, three-dimensional

and comprehensive China with my own eyes."

She came to China in early 2015 after graduating, and became a member of the museum's volunteer team in 2022. Her frequent visits to the museum led to it offering her a job, she said.

"I had always wanted to do it, so I agreed without hesitation. It just happened to be in the right place at the right time."

She has studiously read numerous books on Chinese history and visited many museums in China, she said.

Among the many museums in China she has visited are YinXu Museum in Henan province and Sanxingdui Museum in Sichuan province. However, she regards Liangzhu Museum as an irreplaceable treasure, she said, believing every word written on a wall in the hall of the museum, that "Liangzhu is the most concrete testimony of 5,000 years of Chinese civilization".

— ZHAO JIA

CONTACT US

China Daily 15 Huixin Dongjie, Chaoyang, Beijing, China 100029 +86 (0) 10 64918366 chinawatch@chinadaily.com.cn Advertising: +86 (0) 10 64918631; ads@chinadaily.com.cn Website: www.chinadaily.com.cn Follow us on:

Facebook.com/chinadaily x.com/ChinaDaily

China Daily U.S.A. 1500 Broadway, Suite 2800, New York, NY 10036 +1 212 537 8888 editor@chinadailyusa.com

© 2024 CHINA DAILY ALL RIGHTS RESERVED

BUSINESS



A giant snowman set in Harbin, Heilongjiang province, highlights the city's winter attractions. PROVIDED TO CHINA DAILY

Boom year in the offing for winter tourism

The tourism market in Northeast China, led by Harbin, Heilongjiang province, is once again proving to be a big draw card this winter with its upgraded facilities after record tourism sales last year.

The Harbin Ice and Snow World theme park, to open in mid-December, will be expanded to 10.76 million square feet from 8.72 million square feet last year. The number of ice and snow slides, highly popular with tourists, will rise from 16 to 24, the local government said.

As Harbin prepares to host the 9th Asian Winter Games in February, the park will also integrate Games elements to create a dazzling snow and ice world.

Bookings of hotels in Harbin have risen more than 50% year-on-year, and the number of searches for travel products related to Harbin last month was triple those of October, Qunar, an online travel agency in Beijing, said.

Modern Hotel of Harbin Madiere Group Co., which is located on Central Avenue, has upgraded its guest rooms to welcome the ice and snow season.

"We will continue to provide personalized services, such as prioritizing check-in for elderly guests to reduce their waiting time and offering children's books and toys, as well as children's toothbrushes, slippers and baby supplies for families traveling with children to enhance their travel experience," said Zhang Jinying, manager of the group's brand promotion department.

Most travelers who have shown interest in visiting Harbin come from cities in the south of the country such as Shanghai, Hangzhou in Zhejiang province, Chengdu in Sichuan province, Nanjing in Jiangsu province and Shenzhen and Guangzhou in Guangdong province.

"Tourists from the south seem to be more enthusiastic about skiing, and some indoor



The Harbin Ice and Snow World theme park under construction in late November. PROVIDED TO CHINA DAILY

"The main groups who are interested in going skiing in China are young, highly educated and high-income consumers from first-tier cities."

SEAN JIA

ski resorts in Guangdong have become popular destinations," said Xiao Peng, a Qunar researcher.

The travel appeal of Harbin is also driving the popularity of neighboring cities. Hotel bookings in Yichun and Qiqihar in Heilongjiang rose about 50% over last year.

In addition, bookings of flights to Yichun, Qiqihar and Mohe, China's northernmost city, have all risen more than 40% on a yearly basis, Qunar said.

Last month the State Council issued a guide on stimulating the vitality of the ice and snow economy in the country and proposed 24 measures. By 2027 the value of sales of the ice and snow economy in China is forecast to reach 1.2 trillion yuan (\$165.8 billion), and by 2030 1.5 trillion yuan.

The growth of ice and snow tourism is likely to drive demand for transportation,

accommodation, catering and other sectors, and China's investment in the sector, including building or expanding ski venues and hotels, has increased, the U.S. business consultant Frost & Sullivan said.

"The main groups who are interested in going skiing in China are young, highly educated and high-income consumers from first-tier cities," said Sean Jia, partner and managing director of Frost & Sullivan China.

Males account for about 70% of the total, and those born in the 1980s and 1990s account for 80% of all age groups, he said.

In addition to Northeast China, the Aba Tibetan and Qiang autonomous prefecture in Sichuan province has become popular for ice and snow tourism this year, thanks to a newly opened high-speed railway and picturesque glacier landscapes locally.

Wang Wei of Beijing said he had changed plans to travel to Harbin and had booked a flight to Aba.

"I have always wanted to experience the Dagu Glacier, the lowest and youngest glacier in the world, as well as experience the world's highest-altitude cableway in Aba. The high-speed rail from Chengdu to Aba makes it much more convenient."

—ZHU WENQIAN AND ZHOU HUIYING

New rules on fully foreign hospitals set

China's recent move to allow the establishment of wholly owned foreign hospitals in nine regions is primarily aimed at providing diversified medical services for both foreigners living in the country and Chinese people, authorities say.

The National Health Commission said the nine regions will import high-level medical resources, enrich domestic medical services and result in an improved business environment.

Rules and regulations will be adopted to supervise wholly owned foreign hospitals, it said.

In early September China announced that it would permit wholly owned foreign hospitals to be set up in nine jurisdictions in a trial as part of efforts to widen opening-up in healthcare. The nine jurisdictions are Beijing, Tianjin, Shanghai, Nanjing and Suzhou in Jiangsu province, Fuzhou in Fujian province, Guangzhou and Shenzhen in Guangdong province, and the island province of Hainan.

Last month the commission, the Ministry of Commerce, the National Administration of Traditional Chinese Medicine and the National Disease Control and Prevention Administration set out requirements and procedures for establishing such hospitals.

Wholly owned foreign hospitals are intended to deliver diversified healthcare services for foreigners working, studying and living in China as well as Chinese people with special needs, the commission said.

"The nine trial regions we have selected have large populations, high medical service demands and quality healthcare infrastructure. Moreover, these regions have created a favorable business environment, accounting for 45% of the total use of foreign capital in China."

With a high density of foreign-owned companies and foreigners as well as busy international flight routes in these regions, the trial program is expected to advance smoothly.

In addition to satisfying the demands of non-Chinese, the commission said that such hospitals can also deliver services for some Chinese with special demands, and their management and operation mechanism could offer lessons for

domestic medical institutions.

In response to concerns that foreign-owned hospitals, which tend to pay higher salaries, would probably poach experienced professionals from public hospitals, the commission said the trial program will be limited to certain regions and will be gradually implemented.

"Domestic hospitals remain an attractive workplace in the job market ... and the number of health-care workers in public hospitals rose to 7.72 million by the end of last year," the commission said.

China has allowed hospitals jointly funded by Chinese and foreign entities for more than 20 years, and there are now more than 60 such institutions nationwide, it said.

"We have accumulated mature and complete experiences and regulations concerning foreign-funded hospitals ... and such jointly funded hospitals have shown no sign of affecting the medical staff flow of local domestic hospitals."

The plan published last month stipulates that wholly owned foreign hospitals should adhere to domestic laws and regulations and meet certain requirements.

For instance, such hospitals' information management system should be linked to the local supervision platform, and their servers storing electronic medical records and information on medical equipment should be located on the mainland to ensure the security of medical information.

Health authorities will also carry out oversight on such hospitals equivalent to that of their domestically owned counterparts and subject them to identical medical quality management standards.

To avert the risk of leakage of human genetic resources, wholly owned foreign hospitals are barred from setting up hematological institutions, hematological clinical departments, conducting human organ transplants, assisted reproductive treatment, prenatal screening or prenatal diagnoses services.

Wholly owned foreign hospitals can apply to take part in China's basic national medical insurance upon meeting national requirements regarding service payment approaches and service pricing standards.

—WANG XIAOYU

7.72 million

The number of healthcare workers in public hospitals last year according to China's National Health Commission

Investment: Key growth areas blossom

From page 1

The country's progress in opening up, business model transformation and industrial consumption and large-scale equipment upgrades will consolidate its position as a strategic priority for global manufacturing businesses, fostering sustainable long-term financial growth, said Chen Jianwei, a researcher in the Academy of China Open Economy Studies of the University of International Business and Economics in Beijing.

Eager to expand its market share in China, Trane Technologies plc., a manufacturer of heating, ventilation, air conditioning and refrigeration systems, put a new plant into operation in Suzhou, Jiangsu province, last month.

With investment of 300 million yuan, the facility not only aims to improve the company's production capacity in China but also to supply products to other markets in the region, such as Australia, India, Japan, New Zealand and South Korea.

China is one of Trane Technologies' key growth markets globally, said Wu Chuangang, the group's vice-president of operations and integrated supply chain for the Asia-Pacific region, and the company has maintained double-digit growth in China over the past three years.

"The new factory will introduce additional product lines, particularly temperature control products, in the coming years, which are expected to drive further

business growth," Wu said.

Wang Xiaohong, a researcher at the China Center for International Economic Exchanges in Beijing, said China is already established as a key export hub for many foreign companies, and this has generated numerous growth points for businesses, including those in the service sector.

On Nov 21 the express transport company FedEx announced more frequent international cargo flights between Xiamen, Fujian province, and the U.S., along with the inauguration of its Xiamen international gateway facility.

These initiatives will improve FedEx's network in China and empower local businesses to capitalize on global trade opportunities with more effi-



The FedEx booth at the seventh China International Import Expo in Shanghai in November. PROVIDED TO CHINA DAILY

cient and intelligent logistics services and solutions, said Poh-Yian Koh, senior vice-president of FedEx and president of FedEx China.

In addition to removing all restrictions on foreign investment in manufacturing, China

has said it will further shorten the negative list for foreign investment this year, with market access restrictions in services sectors such as telecommunications and healthcare to be reduced.

—ZHONG NAN



A copy of *Chaoyuan Tu*, the best-known mural in the Yongle Palace in Yuncheng, Shanxi province. PROVIDED TO CHINA DAILY

AI shows true colors of iconic artwork

Technology such as artificial intelligence and deep learning is reshaping the preservation and restoration of cultural heritage, bringing masterpieces back to their former glory and enabling people to appreciate their beauty beyond time and space.

At UNESCO headquarters in Paris in late October, *Fragments of Civilization — Exhibition on the Mural Art of the Yongle Palace*, one of the latest examples of reviving cultural heritage in the digital era, was on display.

Chaoyuan Tu, or the painting of the heavenly court, was the highlight of the exhibition. Using AI technology, experts have brought the mural close to what are said to have been its authentic colors of about 800 years ago, making the original features of the mural a present-day reality that can be admired by visitors from around the world.

"In modern times the restoration of cultural relics is no longer about individual conservators working manually with tools," said Xi Jiulong, director of the Yongle Palace mural preservation research institution, at the exhibition opening in Paris.

"Technological advances are enabling the preservation of cultural heritage. Computing power will ultimately help us reverse time."

Divided into five sections — mural art, digital restoration, color exploration, replicas of costumes on the murals and related cultural creative products — the exhibition displayed a hand-painted replica of *Chao-*



From left: Part of the original mural that depicts the Jade Emperor. PROVIDED TO CHINA DAILY Cheng Kun (right), head of the Beijing Culture Pieces Development Co., with a visitor at the Yongle Palace. ZHU XINGXIN / CHINA DAILY

yuan Tu from the 1980s and an AI-restored version to offer a comparison on how technology has breathed new life into the viewing of ancient murals.

Karalyn Monteil, head of Programmes and Stakeholders Outreach for the Diversity of Cultural Expressions in UNESCO's culture sector, encourages related parties to protect and promote culture in the digital environment, especially in the face of climate change.

Cheng Kun of the Beijing Culture Pieces Development Co., the company behind the exhibition, said that "technology makes it possible to recreate the authentic beauty of the *Chaoyuan Tu*. Through this exhibition, the Yongle Palace murals, with their unique artistic language, give the world a glimpse into the splendid Chinese culture."

The mural, located in Ruicheng county in Yuncheng,



Shanxi province, is the best-known of its kind at the Yongle (eternal joy) Palace, built in the Yuan Dynasty (1271-1368). Known for its frescoes covering about 10,820 square feet, the Taoist temple complex commemorating Lyu Dongbin, one of the Baxian, the Eight Immortals of Taoism, comprises four wooden structures built along a line running from south to north.

Chaoyuan Tu, 318 feet long and 14 feet high, features about 300 Taoist figures in a scene of congregation that tells a story about Taoist etiquette.

In the mural the eight main deity figures are as tall as 9.8 feet. The characters are arranged in four layers from front to back, with various poses including sitting, standing, bending and facing forward or sideways, in an orderly manner.

"*Chaoyuan Tu* is considered the crown jewel among exist-

ing Yuan Dynasty mural art," Xi said. "The strokes and lines of these murals remain awe-inspiring, but sadly their colors have decayed over time. We don't have a chance to see these murals in their original, vivid colors."

But this situation was remedied when the Beijing Culture Pieces Development Co. and the U.S. chip design company AMD planned to collaborate on an AI restoration program for cultural heritage in 2019.

Cheng, 33, a Yuncheng native, has long been fascinated by the exquisite murals in Yongle Palace, and as she watched the colors fade she knew it was time to make a childhood dream come true. Human input will always be paramount in art, she said.

Jovi Chi, senior marketing director at AMD, said that as a technology company, it is its responsibility to preserve and pass down cultural heritage.

A year ago the Yongle Palace's and the company's joint digital studio was established.

Fan Aizhu, a mural restorer and inheritor at the palace, said the studio helps break the barriers humans cannot cross.

"There are 289 celestial figures in the mural, along with individually unique auspicious animals, religious instruments, costumes and accessories. The palette is extraordinarily diverse and nuanced, making it challenging to capture every detail."

Even with AI, Xu Jinghui, an algorithm expert who provides technological support to the studio, said it is challenging to restore the vivid colors.

Learning from mural experts such as Fan, Xu's team has to first scan the painting and then deconstruct it in several steps, such as separating the outline, drawing and coloring. The accurately labeled text and image data is then fed into the AI engine.

With the amount of data being fed to AI, the machine not only processes the data related to the mural but also analyzes the discoloration, color fades, damage, cracks and stains that the mural has endured over 800 years.

"AI is like a student, and our data annotations are akin to lessons for it," Xu said.

"If we feed accurate information to AI it can quickly become an expert on mural paintings. This requires that we provide as much accurate data as possible to lead us closer to the original, true colors."

— WANG QIAN AND ZHU XINGXIN

Carpets a reminder of home's rich tapestry

In 2010, Ma Hailun, 18, a middle school student, left Urumqi in the Xinjiang Uygur autonomous region to study in New York.

Among her belongings was a handmade wool carpet 4 feet long and 2.6 feet wide, an item that reminded her of home, sweet home.

The piece was made from high-quality, durable wool with intricate traditional patterns in a rich array of colors centered on shades of red. It was from her bedroom in Urumqi.

Xinjiang is one of the world's centers of carpet weaving, with archaeological findings tracing the art in the region back over 2,000 years.

After completing her post-graduate studies in fashion photography at the School of Visual Arts in New York, she returned to China and settled in Shanghai in 2018.

Now as a photographer who frequently focuses her lens on her hometown and its people,

handmade carpets have become a recurring element in her work.

"Carpets give me a sense of being grounded," she said. "They bear the weight of life, much like a soft patch of land."

"Growing up in Xinjiang, carpets are an integral part of my life, as familiar to me as any other piece of furniture."

Ma, the daughter of parents who worked at a television station, spent her childhood in a large courtyard that housed the station's employees, who were of different ethnic backgrounds. On hot, dry summer afternoons she would sit with her family and neighbors on a carpet, eating watermelon, watching TV and chatting.

If a family in the courtyard needed to clean their carpet, all the children would come together to help.

"We would use small knives to scrape the dust from it. The carpet holds many such



From left: Ma Hailun and her boyfriend pose for a photo titled *Intimate Relationship*, in which a carpet becomes a symbolic element. Carpets on display at a Shanghai exhibition. PHOTOS PROVIDED TO CHINA DAILY

memories for me about home and childhood."

This is why, when she learned in 2021 that the Gaotai Gallery in Urumqi was starting a project to introduce art to the carpet workshops in Hotan prefecture in Xinjiang to inspire new product development, she joined up without hesitation.

The gallery is seeking to introduce new ideas to traditional crafts, and participating artists are expected to breathe fresh life into the ancient craft through their designs, while also spreading word about the history and skill behind Hotan's handmade carpets.



Ma Xing, curator of the gallery, said: "Through the innovative designs of the artists, our goal is to transform the public perception of Hotan carpets from being heavy and outdated, to being modern, finely crafted pieces that seamlessly combine strength and softness with skill and creativity."

The artists involved in the first round made sketches, which were then brought to life on carpets by weavers in Hotan. The collaboration resulted in the creation of five designs later exhibited and made available for sale in limited quantities.

Ma Hailun named her design *A Room of One's Own* after the classic feminist novel of the British author Virginia Woolf.

The focal point is on a young woman at ease in her own bedroom. She views this as an innovation, given that traditional carpet patterns usually depict nature, landscapes and other macroscopic elements.

She also made a deliberate choice to use baby pink and baby blue wools instead of the dark blue and red shades typical of Xinjiang carpets, with the intention of deviating from the traditional color scheme.

— XING WEN

CHINA DAILY GLOBAL WEEKLY

A 32-page weekend tabloid, featuring news, views and analysis of China and the globe.

Now readers can find China Daily Global Weekly on Flipster, the digital magazine subscription platform from EBSCO, which provides institutions worldwide with leading research databases, scholarly journals, magazine subscriptions, e-books, discovery services and more.

[ebsco.com/products/flipster/magazine/china-daily-global-weekly](https://www.ebsco.com/products/flipster/magazine/china-daily-global-weekly)

PAID ADVERTISEMENT

PAID ADVERTISEMENT

PAID ADVERTISEMENT

ALL YOU NEED TO KNOW
CHINA WATCH
CHINA DAILY 中國日報

Growing ring of confidence

Wider market access, support for advanced manufacturing and innovation prompt foreign companies to increase investment in China

Discussing the pace of innovation in China, Matthew Ye, local head of the French tire and mobility company Michelin, offers a perspective that differs from that of many senior executives in other parts of the world.

Collaborating with Chinese electric vehicle companies and traditional car manufacturers has become more demanding in terms of response speed and technical requirements than it used to be, said Ye, chief executive and president of Michelin China and Mongolia.

"As a result, I must spend more time to push our engineers in China to accelerate their innovation efforts."

The company will continue to expand passenger car tire production capacity at its factories in Shanghai and Shenyang, Liaoning province, to meet the country's surging demand, he said.

With China creating more favorable conditions to transform and modernize traditional industries and cultivate emerging sectors, market watchers and executives of multinational companies have voiced confidence about the substantial growth opportunities and greater commercial engagement in the world's second-largest economy.

Recent policy measures to remove all market access restrictions for foreign investors in manufacturing are likely to prompt foreign companies to increase their investments in China, with a focus on high-end manufacturing and innovation, they said.

The latest edition of China's national negative list for foreign investment, which took effect on Nov. 1, removed the last two manufacturing-related restrictions, according to the National Development and Reform Commission.

The items on the latest negative list, which specifies fields

off-limits to foreign investors, have been reduced to 29.

Another negative list applied in the country's free trade zones, which involve pioneering pilots in opening-up practices, achieved zero restrictions on foreign investment in manufacturing in 2021.

Wang Xing, a partner expert with the management consultancy Roland Berger, said these opening-up moves have significant strategic importance.

The updated national negative list, in conjunction with other policies aimed at attracting overseas capital, not only demonstrates China's determination to deepen reforms, but also creates a better investment and business environment for foreign companies. They are key measures integrating Chinese industries into the global economy, Wang said.

Many companies are establishing what are called light-house factories, advanced manufacturing facilities recognized for their leadership in applying the latest technologies to drive innovation, efficiency and sustainability in production, throughout China. These investments cater not only to the Chinese market but are also aimed at bolstering overall global competitiveness and digital transformation, Wang said.

With the structure of foreign investment continuing to improve, high-tech manufacturing in China used 80.18 billion yuan (\$11.07 billion) in foreign direct investment between January and October, accounting for 11.6% of the national total, the Ministry of Commerce said. That represents a 0.7 percentage point increase over the corresponding period last year.

Expressing long-term confidence in the Chinese market, the German carmaker BMW Group announced in April an additional investment of 20 billion yuan in its production base in Shenyang.

—ZHONG NAN



Festival's celebration of renewal recognized

Children performing a dragon dance at a kindergarten in Xianju county, Zhejiang province, in January to welcome Spring Festival. This month at a meeting in Asuncion, Paraguay, UNESCO inscribed Spring Festival — the social practices of the Chinese people in celebration of their traditional new year — on the Representative List of the Intangible Cultural Heritage of Humanity. WANG HUABIN / XINHUA

Power of youth that brings two together

Carol Robertson Lopez is a strong proponent of people power, the kind of personal chemistry that brings countries together, and in the China-U.S. relationship she sees young people as having a particularly important role.

Lopez, chair emerita of Sister Cities International of the United States, says she first visited China 15 years ago with the Chinese People's Association for Friendship with Foreign Countries.

"During a two-week tour we traveled extensively and witnessed the country's incredible diversity and beauty. It truly opened my eyes to what a beautiful country China is."

The relationship between China and the U.S., the world's two largest economies, is critically important to everyone on the planet, she says.

"We must continue to promote mutual respect and understanding between our countries."

She regards building sister-city ties as an effective way of promoting mutual understanding.

"When people get to know each other we realize we have much more in common than differences. We focus on cultural exchange, educational exchange and building mutual respect and understanding."

In 1979 Hubei province and Ohio became the first U.S./China sister province/state relationship, and Nanjing, Jiangsu province, and St. Louis, Missouri, later established the first sister-city rela-



Students from the U.S. at a tea-making event in Zhejiang province. PROVIDED TO CHINA DAILY

tionship, initiating local-level exchanges. Since then China and the U.S. have formed 287 sister relationships, including 50 between provinces/states and 237 between cities.

Since 2014 Sister Cities International of the U.S. has co-hosted the U.S.-China Sister Cities Summit six times with the Chinese People's Association for Friendship with Foreign Countries to promote subnational exchanges.

Relationships between countries and cities can fluctuate, Lopez says, and constant effort is needed to maintain open lines of communication and collaboration.

Young people have a critical role in shaping global relations, she says.

"With the internet, youth now are more internationally connected than ever, learning about and engaging with cultures worldwide. We must focus on fostering these connections because our youth are our future."

At a welcome dinner held by friendly organizations in the U.S. in San Francisco in November 2023, Chinese President Xi Jinping announced that to increase exchanges between the peoples of China and the U.S., especially between the youth, China was ready to invite 50,000 young people from the U.S. to China on exchange and study programs in five years.

Lopez praised the initiative, knowing what a positive impact such experiences can have on young people.

"We've had young Americans return from China with great experiences, some even choosing to move to China for further education. These exchanges are crucial."

A report in July by the Center for China and Globalization, a think tank in Beijing, said more than 60 China-U.S. youth exchanges took place in 20 jurisdictions in China in the first half of this year. Participants included students, business people, media professionals and more, engaging in activities ranging from roundtable discussions to cultural performances, all aimed at fostering mutual understanding and friendship.

"China is a vast and diverse country, much like the U.S.," Lopez says. "Sometimes our lack of knowledge hinders our appreciation of its beauty and uniqueness. We need to learn more about each other to build mutual respect and understanding."

—YANG RAN



Employees work on a BMW assembly line in Shenyang, Liaoning province. PROVIDED TO CHINA DAILY

In dedicated diver, at-risk coral finds a faithful friend

Extreme typhoons can wreak havoc on coral reefs, something that Wang Fengguo knows better than most. Wang, 42, has literally immersed himself in marine conservation for more than 10 years and has become an expert on such reefs, some of the planet's most diverse ecosystems.

The destructive force and powerful currents generated by extreme typhoons can smash into the reefs, causing them to break into thousands of fragments.

In the aftermath, the corals resemble puzzle pieces scattered across the seafloor.

In his dive into the depths Wang has found solace and delight beneath the ocean surface. This ardor and his sorrow for the deteriorating coral ecosystems led him to his present post as head of ocean management at Wuzhizhou Tourism Resort in Sanya, Hainan province, where he merges his diving skills with his dedication to protecting coral.

A coral restoration program established on the island in 2016 has transformed Wuzhizhou, a popular diving destination, into a model of sustainable marine tourism, where environmental protec-

tion and tourism coexist side by side.

Fifteen years ago, in a move to protect the marine environment around the island of 370 acres, the resort established an office of ocean management. Wang, who started work at the resort as a diving instructor in 2006, joined the office in 2011, after the island established a marine ranching project.

In 2014 the idea of restoring the damaged coral reefs by planting them came to Wang when the experimental trial of a researcher at the Hainan Academy of Ocean and Fisheries Sci-

ences achieved initial success.

In that year Wang discovered that many broken corals transplanted by the researcher onto a steel frame underwater a year earlier, which works as a nursery, had not only survived but thrived, eventually spreading.

In 2016, after more experimental planting, the Wuzhizhou resort decided to carry out large-scale planting. Since then, in addition to continuing to collect marine debris and monitor and patrol the marine ranch, Wang's team has dedicated as many as three months a year to cultivating coral seedlings and



Wang Fengguo (right) and a fellow diver transplant corals at the ranch in May last year. YANG GUANYU / XINHUA

conducting coral planting.

By April 2.83 million cubic feet of artificial fish reefs had been built, and more than 51,000 coral seedlings had been transplanted, covering 13 acres.

—HOU LIQIANG