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Race on for 1st domestic satellite listed firm

Last year, China had over 17,000 newly registered commercial aerospace players

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China's commercial aerospace sector has embraced a wave of IPO (initial public offerings) plans recently, as private enterprises hasten to "aim for the stars" and become the country's first domestically listed aerospace company.

In March, Chang Guang Satellite Technology Co, the country's first commercial remote sensing satellite firm, is planning to file an IPO, according to the website of Haitong Securities.

The move came after rocket start-up Beijing Interstellar Glory Space Technology said in January that it planned to be listed on the Science and Technology Innovation Board or the STAR Market on the Shanghai bourse. The company, better known as iSpace, was the country's first private firm to launch a satellite into orbit in 2019.

Behind the IPO wave of Chinese aerospace-related startups is the huge transformation of the country's commercial aerospace industry, which quickly turned from scratch to mastering manufacturing and innovative capabilities over the past five years, industry experts said.

China's commercial aerospace industry, which mainly focuses on businesses related to satellite broadband internet and low-cost carrier rockets, is becoming the latest gold mine for private companies and a fresh engine driving global economic growth.

Morgan Stanley estimates that the global space industry could generate revenue of \$1.1 trillion or more by 2040, up from \$350 billion in 2021. The consultancy also said that the most significant short and medium-term opportunities will come from the satellite broadband internet industry.

Last year in China, more than 17,000 commercial aerospace-related companies were newly registered, soaring over 4 percent year-on-year. In 2021, 35 financings took place in the commercial aerospace sector, with the total disclosed financing amount hitting 6.45 billion yuan (\$1.01 billion), according to Qicheca, a company that tracks business conditions.

Jiang Jie, a member of the 13th National Committee of the Chinese People's Political Consultative Conference, said during this year's 20 sessions in March that the domestic commercial aerospace sector has developed "particularly rapidly" in recent years in terms of market demand.

"Private enterprises play a more important role in the commercial aerospace sector as they are encouraged to tap into space-related manufacturing and applications," said Jiang, who is also a senior investment analyst at the China Academy of Launch Vehicle Technology and an academician at the Chinese Academy of Sciences.

Mi Lei, founding partner of Casstar, a leading venture capital firm focused on hard tech investment, said: "For China, competition in the commercial aerospace sector has become strategically important. It is an area that the country cannot



Above: A rocket carrying a satellite co-developed by Chang Guang Satellite Technology and Tianjin Yuryao Aerospace Technology blasts off from Jiuzhan Satellite Launch Center in Northwest China's Gansu province, in December.

Right: Rocket models developed by Land Space Technology Co Ltd, a Chinese private aerospace enterprise engaged in the R&D and operations of launch vehicles, are showcased during an expo in Hangzhou, Zhejiang province.

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In the satellite sector, for instance, it is predicted that about 57,000 low-orbit satellites will be deployed in low-Earth orbit, an orbit that is relatively close to Earth's surface and requires the least amount of energy for satellite placement, Mi said.

"That is to say, there will be very little space left in low-Earth orbit by then. Whoever country deploys ahead of schedule is likely to seize such core resources for the future of humanity," he added.

Over the past few years, Chinese companies have greatly advanced through continuous innovation, investment and technological advancements.

In March, Galactic Energy, a private Beijing-based rocket firm, said

the company has successfully run a system test on its "self-developed" 50-ton-thrust reusable liquid oxygen-kerosene engine.

The company said that it is the country's largest liquid oxygen-kerosene engine and is also able to generate significant thrust.

Though the country's internet giants have not directly announced plans to develop, produce or launch satellites, they are showing a desire to do so. Tech conglomerate Alibaba Group launched a communications satellite to support its online shopping gala earlier.

Mi said that compared with the first development stage, which dates back to 2015 and before, China has since gained great momentum in product development and the initial

commercialization of products.

"The biggest driver under such progress is the increasing policy support, from both top-tier cities like Beijing, Xi'an and western inland cities," he said.

In 2014, the Chinese authorities launched policies and called for the first time for private players to actively participate in the country's space industry. The National Development and Reform Commission, along with the Ministry of Finance and the State Administration of Science, Technology and Industry for National Defense, also unveiled a 10-year blueprint to promote the commercial aerospace sector in 2015.

In 2020, the NDRC first incorporated satellite internet technology into new infrastructure. New infra-

structure is considered by the government a top priority for development and refers to infrastructure that is digital, smart and innovative.

Local provincial and prefecture-level governments are also gearing up efforts to attract more private companies to the commercial aerospace sector. Last month, Wuhan, Hubei province, vowed to create a 100 billion yuan space industry by 2025 to become the country's "satellite valley".

The city is offering preferential policies to support projects related to the manufacture of satellites, rockets and spacecraft, according to the city government's website.

Last year, Shenzhen, Guangdong province, also offered similar incentives to projects related to satellites and applications. In addition, a new commercial spaceport is being planned in the southern province of Hainan.

Though the country's commercial aerospace industry developed faster than expected, both company executives and industry experts noted that compared with other countries with established aerospace sectors, China still has big gaps in terms of core technologies and applications.

"The urgent problem for China's aerospace commercialization is to deal with bottleneck issues. That is, to lower the costs in related areas like launching satellites to low-Earth orbit," said Xia Dongkun, co-founder and vice-president of Galactic Energy.

Launching a satellite costs plenty, with a single satellite network costing at least 1.8 to 2 billion yuan. And a company cannot earn money by launching a single satellite, so the commercialization of satellites needs a network of dozens of satellites, industry experts said.

Xia said that in the US, Elon Musk's SpaceX introduced the Falcon 9, a reusable, two-stage rocket designed and manufactured by SpaceX for the reliable and safe transport of people and payloads into low-Earth orbit, as early as 2010 and made it reusable in 2015, which paved its way for lowering launch costs and realizing commercialization. But Chinese companies so far haven't achieved that, he said.

"Without new technological advances, it is difficult for China to achieve sustainable development of the commercial aerospace sector," said Wu Ji, a senior researcher at the National Space Science Center of the Chinese Academy of Sciences and a member of the 13th National Committee of the Chinese People's Political Consultative Conference.

Wu said that SpaceX had won a large number of orders from NASA thanks to its new and core technologies.

It is the same for Chinese companies, and they are expected to create more technological innovations to fill in the gap. Also, if technical strength cannot be boosted in the short term, Chinese companies are likely to expand into new markets or new aerospace applications. To make it simple, they should provide model innovations for commercial benefits," he said.