



2020/10/12, Technology

Chinese 5G Not Living up To Its Hype



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"In fact, human societies do not have an urgent need for 5G," said Huawei's founder and CEO, Ren Zhengfei, "What people need now is broadband, and the main content of 5G is not broadband."

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Mounted on rooftops, utility poles, and streetlights throughout China since last year are hundreds of thousands of high-tech wireless towers for 5G, a powerful sign of the country's ambition to lead in new technology. Yet many of them are operational for only half the day.

China Unicom, one of three telecommunication operators, announced in August that its Luoyang branch in Henan province would automatically switch its 5G transmitter stations to sleep mode from 9 p.m. to 9 a.m. because there were few people using them. The other two carriers quickly followed suit and since then have rolled out the same policies in other cities across the country.

"Shutting down base stations is not a manual shutdown, but an automatic adjustment made at a certain time," Wang Xiaochu, chairman of China Unicom, said at the company's midyear earnings conference.

5G is one of the biggest technology investments in China's recent history. Touted as the next big leap forward in digital communication, the 5th generation mobile network technology is supposed to change the world and spur a new digital revolution.

China officially launched its commercial 5G networks in September 2019 with the promise of delivering unprecedented digital speed to support new applications from autonomous driving to virtual surgery. More than a year later, the biggest 5G market is now facing widespread complaints about network speed and skyrocketing costs of deployments.

Signals are hitting walls

To handle more data at higher speeds, 5G uses higher frequencies than current networks. However, the signals travel shorter distances and encounter more interference.

"5G uses ultra-high frequency signals, which are about two to three times higher than the existing 4G signal frequency, so the signal coverage will be limited," Wang Xiaofei, a communication expert at Tianjin University told Xinhua, the official state-run press agency, last year as the country's state telecoms started to make 5G networks available to the public.

Wang said since the coverage radius of its base station is only about 100 meters to 300 meters, China must build a station every 200 to 300 meters in urban areas. Because the penetration of 5G signals is so weak, even indoor stations will have to be built in densely distributed office buildings, residential areas, and commercial districts.



Photo Credit: Reuters / TPG Images

Workers place a China Mobile 5G sign on an equipment as they set up a 5G network base station in Fenggang, Guizhou province, China May 26, 2020.

many as 10 million stations across the country, according to a report by Xinhua.

"For the next three years starting this year, 1 million 5G base stations may need to be built every year," Xiang Ligang, director-general of the Information Consumption Alliance, a telecom industry association, told the state media last year.

In the first half of this year, China only built 257,000 new 5G base stations. The total number of the stations installed across China so far was only about 410,000 by the end of June, according to the Ministry of Industry and Information Technology (MIIT).

Big costs, small benefits?

The cost of the energy needed to power 5G has proved to be one of the biggest headaches for Chinese telecommunication companies.

"The 5G base station equipment consumes about three times more energy than 4G because of the way the technology works," Soumya Sen, associate professor of information and decision sciences at the University of Minnesota, told VOA in an email. "5G uses multiple antennas to make use of reflected signals from buildings to provide gains in channel robustness and throughput."

If 5G is to reach the same level of coverage as 4G networks, the base station's annual electricity bill will approach US\$29 billion, according to a report by the China Post and Telecommunications News, a media outlet directly under MIIT. That amount represents about 10 times the 2019 profit of China Telecom, one of the three state-owned telecommunication companies in China.

In the early days, there were efforts to make 5G more power-efficient than its predecessors, but the ambitions were quickly dashed as realities settled in.

Two months after the official rollout of 5G services, a top executive from a Chinese carrier admitted that operators had made little progress in reducing 5G power consumption and cost. Speaking at a GSMA (Groupe Speciale Mobile Association) seminar in Beijing last week, Li Zhengmao, executive vice president of China Mobile called on the government to subsidize electricity costs for telecoms.

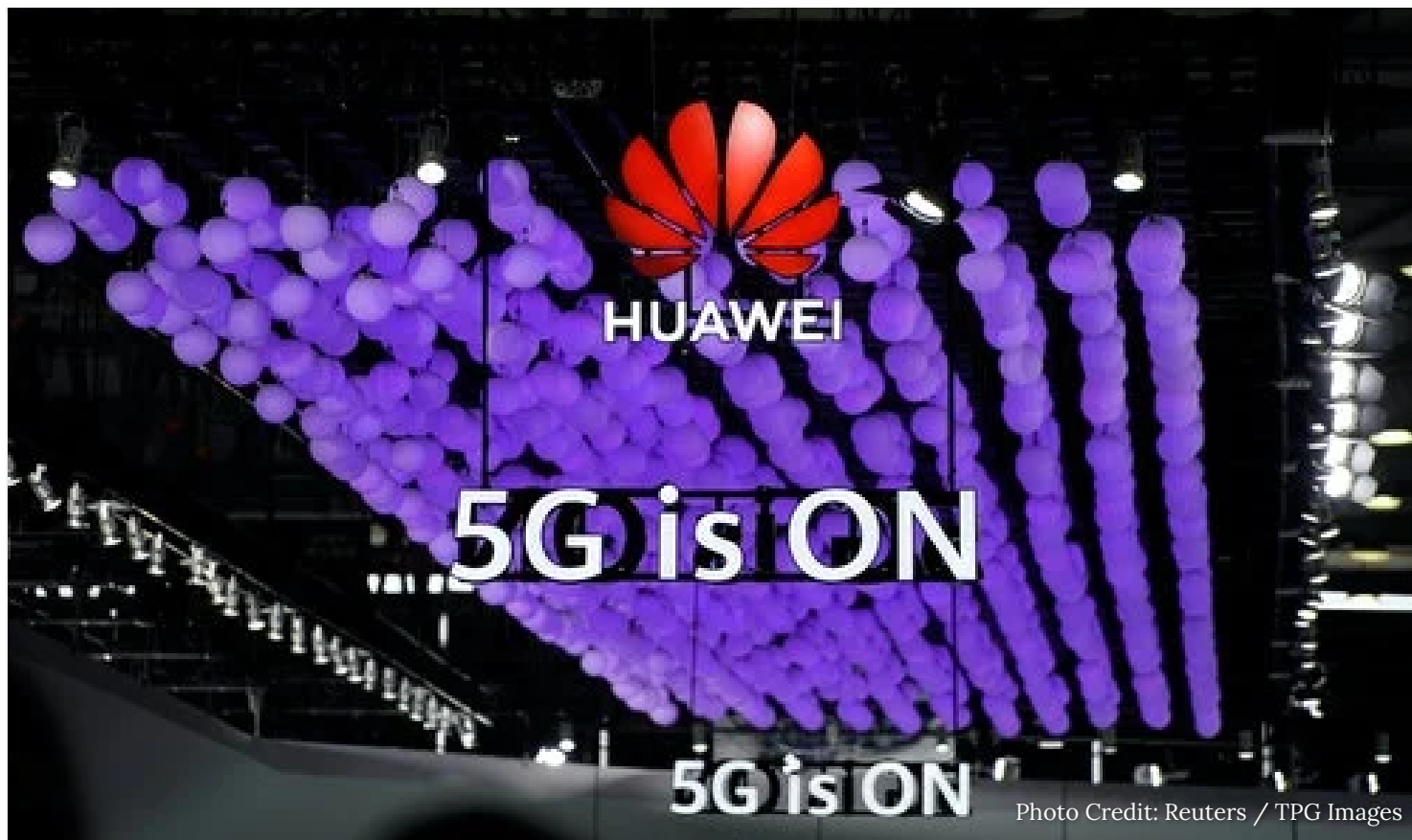


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A Huawei logo and a 5G sign are pictured at Mobile World Congress (MWC) in Shanghai, China June 28, 2019.

"This might require government to support extended periods for subsidized monthly fees or subsidized handsets at the B2C [business to consumer] level, or tax breaks and other incentives," said Ross Feingold, a lawyer and political risk analyst.

The total investment could top US\$220 billion in the next few years, said Li Yizhong, former minister of Industry and Information Technology early this year during a forum.

Another former official warned in a recent speech that China's 5G push could become a failed investment.

"The existing 5G technology is very immature, hundreds of billions of investment have been deployed, and the operating cost is extremely high, no application scenarios can be found, and it is difficult to digest the cost in the future," former finance minister Lou Jiwei reportedly warned in a recent speech last month.



rewards of 5G, a white paper titled "The 2020 China 5G Economic Report" released by China Academy of Information and Communications Technology said.

Based on a recent survey of Chinese consumers, 73.3% of the people polled said they believe that there is no need for the public to buy 5G mobile phones. The study released last month by iiMedia, a market research group, also found that the main reason for not buying 5G mobile phones is because there is no such need.

With all the expectations and the investment, 5G is "actually exaggerated," and it is not something that the societies need anyway, according to the man who leads a company that dominates the technology.

"In fact, human societies do not have an urgent need for 5G," said Huawei's founder and CEO, Ren Zhengfei, "What people need now is broadband, and the main content of 5G is not broadband."

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GARAOTUS, a new brand of cloud service from SYSTEX, whose AI-HPC technology ranks the top 10 in the Asia-Pacific region



廣編企劃

What you need to know

Acting preemptively, SYSTEX launched a new brand, GARAOTUS, aiming to worldwide market with the leading HPC technology.

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As IoT sensors and portable devices have been popularized, recent years have seen an explosive growth of all sorts of data. With the benefits from machine learning, mature deep learning technology, and GPU chipset, a large amount of data collected can be thrown into the cloud for computing and AI modelling. Hence, the significance of high performance computing (HPC) is further underlined to suit the requirements for more real time and lower latency of data computing in the realm of medicine and transportation.

In addition, industries arising from COVID-19 prevention have enabled work-from-home and contactless modes. The Market Intelligence & Consulting Institute (MIC) estimated that telework will increase enterprises' enormous demand for HPC before the pandemic comes to an end. MIC also pointed out that HPC and 5G will become the major two driving essentials for industries in the next few years. Whether it is to respond to AI and big data computing or reverse business mode and enhance competitiveness through digital transformation, a new HPC era has begun.



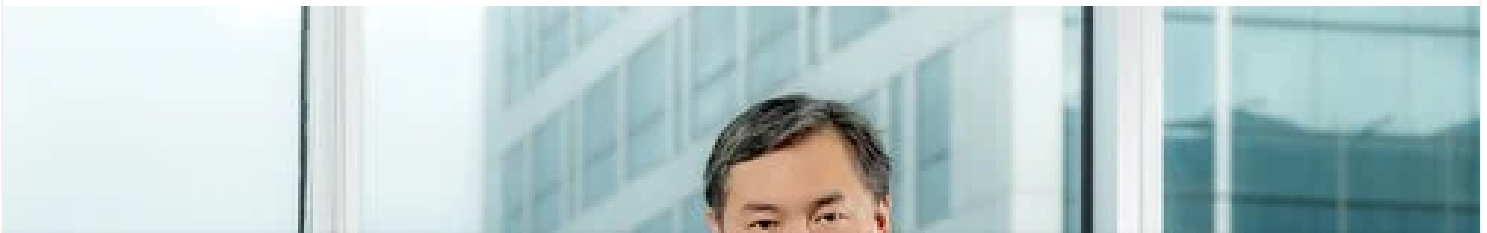


The GARAOTUS technical with substantial experience for decades in AI, HPC, Cloud Computing and Microservices infrastructure technologies have earned certification by international bodies in cloud technology and software products. They are a technical team that stays ahead of the curve in Taiwan.

Acting preemptively, SYSTEX launched a new brand, GARAOTUS, aiming to market the leading HPC technology worldwide.

With ever-changing industry, the giant of information service in Taiwan, SYSTEX, has accumulated strong technical capacity for years. At the moment when most enterprises take a defensive approach, SYSTEX has adopted an offensive strategy, rolling out a new brand, GARAOTUS. It provides leading HPC technology in combination with AI on the cloud that bolsters the level of HPC computing ability for domestic and overseas enterprises and academic institutions.

In fact, the new brand GARAOTUS was just established, but it represents a milestone of SYSTEX's global presence in cloud services. Terry Tai, Senior Technical Director of SYSTEX, stated, "The core of GARAOTUS brand is Moving Your Cloud Forward. This is also our value proposition!" This slogan highlights GARAOTUS' insistence on keeping cloud computing technology progressing with the times. Especially in the critical post-pandemic times, they are able to leverage the leading cloud technology to help strengthen customers' competitiveness, showing their ambition.

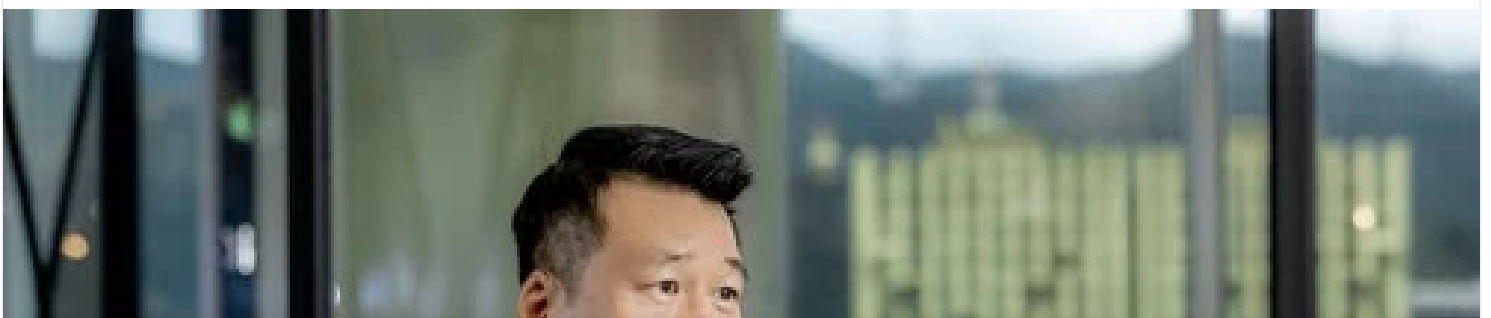




The head of the GARAOTUS team, Jay Hsueh, has led the team to plan and build three TOP 500 Supercomputers. The team is equipped with international high-class cloud technology capability.

In addition to determination, GARAOTUS has planned ahead and worked their market strategies out, targeting the Asia-Pacific market. Terry Tai explained that as an information service solution provider, they are deeply aware of the importance of satisfying service. What is more crucial is to commit to professional and delicate service provided by professional talents. GARAOTUS team members have laid a solid foundation in the HPC industry for over a decade. Coupled with offices in Hong Kong and China, the cross-national team has a profound understanding of local market demand and channels and connections.

In other words, GARAOTUS is based in Taiwan, thinks globally, and expands their business by stages. Setting out from Taiwan, GARAOTUS continues to inject resources and spread to Hong Kong and Southeast Asia. Furthermore, they have developed relations with local partners and kept on training talents so as to open up new HPC business opportunities in the market.





Terry Tai, Senior Technical Director of SYSTEX, stated that GARAOTUS' cloud platform provides comprehensive service and solutions of HPC, AI-HPC and Cloud Orchestration.

Intended for enterprises and organizations, GARAOTUS Cloud Platform boasts three advantages of high-speed computing.

What features does GARAOTUS Cloud Platform have that catch our eye? Terry Tai commented that the cloud platform GARAOTUS launched achieves full integration of HPC, AI-HPC (HPC incorporated into container management) and Cloud Orchestration. The front end seems like a portal site, but the back end under the hood virtually chains all kinds of APIs of OpenStack software, providing engineers and architects with various feature modules to swiftly cater cloud computing applications to users' needs. On the other hand, in order to reduce the deployment thresholds for enterprises, Terry Tai added that GARAOTUS Cloud Platform can support virtual technology by implementing Hypervisor Management and Container Management modules. This addresses the difference among the data center environment of each enterprise. Accordingly, GARAOTUS is a right fit regardless of a physical server or virtual machine and container mode. It can even manage a cluster of VMs, enabling customers to provision a virtual environment using VM scripts under HPC structure in a short span of time.

Apart from the diversified technology applications, the most paramount value of GARAOTUS Cloud Platform lies in the capability to boost enterprises' IT management performance. The remote support service provided by GARAOTUS Support Service (GSS) allows subscribed business users to select which IT resources are handed over to the Cloud Support center that

SYSTEX has been well recognized by the industry when it comes to the level of advancement and understanding of HPC application technology. Terry Tai specified that they worked on a project related to a gene database. They took advantage of data of floating-point operation and quickly finished predictive modelling. Another example is helping universities and research institutes of Hong Kong introduce GARAOTUS Cloud Platform and realize the maximization of resource utilization in a HPC environment. In this way, the enterprise's CAPEX saved nearly 40% while completing the building of HPC and cloud computing environments.

Collaborate with strategic partners to move forward onto the global stage. Cultivate Taiwanese software talents to facilitate paradigm shift.

However, furnished with such diverse applications, GARAOTUS Cloud Platform is built on the ground of exceptional human resources. In fact, SYSTEX spares no effort to cultivate software talents. "We systematically recruited students who were willing to delve into software infrastructure to attend Systex Cloud School (SCS). They can obtain relevant certification in the cloud service field; we are training cloud software professionals of an international standard for Taiwan. Besides, GARAOTUS can lead these excellent software talents to bring their strengths into play on the global stage when we have the opportunity to get connected to the international market," explained Terry Tai.

Moreover, after these talents obtain certification, GARAOTUS will arrange meetings for the students to exchange ideas with the international open source software community. This is an

the industry talent base takes a lot of time and is costly as well, but in order to exploit the development potential of the software industry, we are more than willing to make long-term investment!”

GARAOTUS, a new brand of cloud service from SYSTEX, looks to grow the international market, develop new generation talents to pass on the knowledge, and expand on future vision. Terry Tai stressed that GARAOTUS will strive to work closely with industry partners and create comprehensive solutions to tailor vertical applications to their needs, forming a HPC application ecosystem. It is expected that the “gang fight” model collaboration can help industries upgrade and even contribute to paradigm shift. Terry Tai confidently says, “We will maintain our determination to stay as a lead in the cloud service field, and jump onto the global stage with our solid technologies!”



Terry Tai, Senior Technical Director of SYSTEX, expressed, “The core of GARAOTUS brand is Moving Your Cloud Forward, which is our value and belief! We will also continue to deepen our determination to take the global lead in cloud technology and let the software skills of Taiwan be seen in the world!”

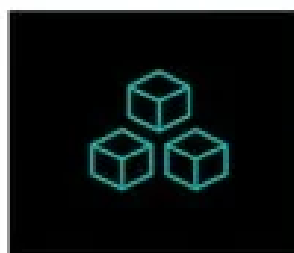
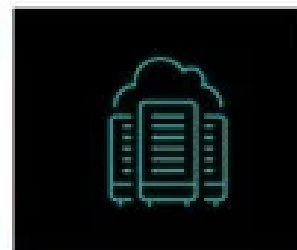
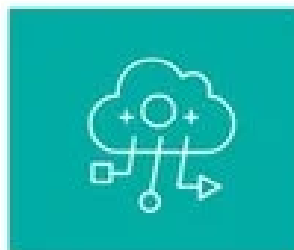


GARAOTUS

Moving Your Cloud Forward

GARAOTUS, a brand for cloud service, is derived from Gaea, god of the Earth, Uranos, god of the sky, Ourea, god of the mountains, and Pontus, god of the sea from Greek Mythology. It symbolizes our principal focus on the seamless integration of four large structures, namely, AI, HPC, Cloud Computing and Microservices, into the GARAOTUS Cloud Platform which our team has devoted themselves to.

The GARAOTUS team employs advanced techniques to achieve vertical integration from the basic layer to service layer on a cloud platform. Top enterprises can benefit much from GARAOTUS' leading and diverse cloud services to develop core competitiveness that is more globalized.



For more information about GARAOTUS:

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