

How Does ChatGPT Affect China's Chip Industry?

HONG KONG, CHINA, April 18, 2023 /EINPresswire.com/ -- By 2023, after the pandemic has passed, the hottest concept in tech will be ChatGPT, which Bill Gates calls the second revolutionary technology. Industry and investor enthusiasm for ChatGPT is based on ChatGPT's potential to enable a wide range of businesses.

As for UGC, BuzzFeed CEO Jonah Peretti said in a memo to employees that AI-created content will move from research and development to being part of the core business this year, and that there are already several accounts on other user production platforms that use AI-personalized production to produce content that is already profitable.

ChatGPT also enables education. On the one hand, it uses AI to create children's picture books, which can be used as an educational extension of fables. On the other hand, it can also help adults to practice oral English dialogues, further improving the efficiency of human life and work.

The semiconductor industry, which is the cornerstone of ChatGPT's computing power, will naturally be affected by this wave, especially the Chinese semiconductor industry, which is controlled by the United States.

How does ChatGPT affect the semiconductor development pattern in China?

At CITE 2023, which just ended last week, Xin Bang and CITE jointly held a seminar on AIGC and computing chips. Some people believe that AI is the main driving force of the next semiconductor cycle, and some people believe that ChatGPT will trigger rapid development of four segments: computing chips, memory chips, sealed test and PCB. There is also the view that storage and computing will play a big role in the future.

AI drives the semiconductor industry cycle recovery and stimulates the four major sectors of the industrial chain.

Since the birth of Moore's Law, the consumer electronics industry has been acting as the main driving force for the development of the semiconductor industry. After the growth of mobile phone business slowed down, PC drove a wave of domestic demand during the epidemic, becoming the main driving force to stimulate the continuous growth of the semiconductor

industry. Now in the post-pandemic era, the demand for consumer electronics is no longer strong, the semiconductor industry has entered a downward cycle, and new application incentives are urgently needed to become the driving force.

Yao Ningbo, managing director of Kailian Capital, introduced at the conference that the semiconductor cycle used to be driven by mobile phones, but now mobile phone sales drop by 10% every year, PC has become the main driving force during the epidemic, and new energy vehicles will become the new driving force in the future.

"AI, HPC and cloud services continue to rise in volume, and computing will be the main driver in the next semiconductor cycle," Yao said.

Yao also stressed that Samsung's recent announcement of production cuts means that the semiconductor cycle is about to bottom out, with the next semiconductor cycle coming in Q3 or Q4.

Bankeke, CEO of Chipboard, believes that the opportunities brought by ChatGPT to the chip industry are reflected in the industrial chain, which is mainly concentrated in four fields: computing chip, [memory chip](#), sealed test industry, and PCB industry chain.

As ChatGPT continued to attract more attention, relevant organizations predicted that the global growth rate of GPU would rise from 32.82% to 39%, and the skyrocketing demand for computing chips led to changes in the wafer factory business. As can be seen from the business revenue of TSMC, its high-performance computing continued high growth, accounting for 41% of the total revenue, surpassing the smartphone business for the first time. Nvidia's data center HPC chips will grow 200% to 250% year over year.

In the field of memory chips, Banco said that HBM, as a new CPU and GPU memory chip, has increased in volume and price, which can not only meet ChatGPT's new demand for storage but also bring bright color to the storage industry in the dark.

In June 2022, SK Hynix announced mass production of HBM3 and shipped it to Nvidia to match H100 GPU for accelerated computing. Currently, SK Hynix and Samsung have seen a surge in HBM orders, and HBM has become a new match point in the memory chip industry.

In the closed beta space, the demand for Chiplet has been even greater in recent years.

According to [JAK Electronics](#), in the PCB board industry, PCB board is used in the core parts of server motherboard, [power backplane](#), hard disk backplane, network adapter, and so on. The computing power revolution not only increases the consumption of PCB board but also promotes the development of PCB in the direction of high frequency and high speed. For domestic manufacturers, Katsuhiko Technology, the PCB supplier of Nvidia's A100/H100 graphics cards, will benefit directly.

Perhaps in the face of the US ban, China can only make a neutered version of ChatGPT based on the A800 because it cannot buy the A100, but besides Gpus, domestic semiconductor manufacturers can also find new opportunities in other parts of the industrial chain.

Lane changing and overtaking are integrated into storage and computing, injecting new power into China's AI large computing chip.

ChatGPT's fundamental need is for computing power, and while we can't match Nvidia in the GPU space right now, we can improve computing efficiency in another way. Dedicated to breaking the memory wall of the storage and computing integration technology has become a major direction of industry expectations, and capital chase.

Xu Fang, senior vice president of Yizhu Technology, explained in the seminar, from the perspective of the environment, the current demand for computing power is increasing, Moore's law is approaching the end, the market demand for energy efficiency ratio continues to increase, but the energy efficiency ratio and computing density has been close to the ceiling, which is the reason and necessity of the industry development of storage and computing.

On the other hand, from the perspective of the law of scientific development, Amdahl's law has always been the basic law of hardware acceleration design, representing the efficiency improvement ability of the processor after parallel computation. According to the formula deduction, the acceleration efficiency of the AI integrated with storage and computing is far better than that of GPGPU.

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That is to say, to some extent, integrated storage and computing can contribute to the improvement of computing power to a certain extent, and even have more advantages than GPU.

In addition to Ezhu Technology and other companies specializing in the development of integrated memory and computing chips, other domestic memory chip companies have also been involved in the integration of memory and computing.

At CITE, memory chip manufacturer Yixin Technology told Leifeng that the training of ChatGPT requires large-scale data sets, and data needs to be accessed first. With massive data storage, two-way interfaces with enough bandwidth to read large amounts of data are needed, bringing opportunities to the memory chip industry.

"Memory core itself is to do storage, we support large bandwidth data transmission, offline end support data encryption, independent data storage, calculation, transmission, and encryption work, landing in a specific scenario, can help users strengthen the requirements of data application in the scene."

"Personalized applications can be trained according to customers' AI application requirements, but this puts forward new requirements for storage and computing. Therefore, traditional static storage does not have much value, but needs to extract the stored data and optimize the model, to better meet customers' needs." "Explains Xiong Mingxia, senior marketing director of Yixin Technology.

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