

New Opportunities for Chips Because of ChatGPT?

HONG KONG, CHINA, February 20, 2023 /EINPresswire.com/ -- ChatGPT's popularity has revived enthusiasm in the AI market. In addition to the construction of various types of large models, the underlying technical capability support required for behind-the-back training and calculation has attracted much attention.

As a model product that contains a huge amount of information and training, chatGPT inevitably has high requirements for large-scale parallel computing, which is also the reason why Nvidia is the first to benefit from ChatGPT and its stock price rises accordingly. In addition to GPU, [chip](#) types involving computing power also include CPU, [FPGA](#), ASIC, etc., and different types of computing chips can be combined. It can satisfy the calculation needs of different models. In addition, it is necessary to match computing with memory, interface, and other types of chips.

In the current semiconductor downcycle, the sudden surge in demand seems to have given the market a shot in the arm, and the relevant computing industry chain chip companies will benefit from this is an important question.

Citigroup estimates, for example, that ChatGPT could generate \$3 billion to \$11 billion in Nvidia-related product sales over 12 months. It means that increasing demand for high-end chips from ChatGPTs and ChatGPT-like applications will drive average chip prices.

It's worthy of attention that AI chips involving high computing power are currently facing many challenges in China, such as sustained internal development and continuous changes in the external environment. The development of high computing chips requires the joint efforts of domestic hardware and software ecological chain enterprises.

Could chatGPT's need for computing power be the vital factor to lift the semiconductor industry as it enters the down phase of its cycle amid ongoing consumer market weakness?

At this point, it is difficult to quantify how much impact chatGPT will have on semiconductor demand. It will depend on the production schedule and training of specific AI companies.

Currently, only chatGPT is relatively visible. Elvis Hsu, general manager of the semiconductor business division of CINNO Research, analyzed the 21st Century Business reporter, at present ChatGPT has developed to GPT-3.5 generation, which is about 500th of the human brain, the

number of users is more than 175 billion, which is about more than 10,000 GPUs composed of high-performance network cluster.

The technology required includes powerful AI computing chips and a massive data supply, which explains why Nvidia is the first company to benefit and directly contributes more than \$3 billion to its revenue. It also helps companies that develop high-end memory chips because it requires large amounts of data.

The high-end memory chips referred to here are mainly DRAM, which has fast read/write speeds and low delay, but slow access speeds. After decades of the market boom, the current leaders are mainly overseas, such as Samsung, Micron, and SK Hynix. According to [JAK Electronics](#), Samsung and SK Hynix have already received new orders.

A chip industry worker told the reporter that whenever data is involved, memory chips are needed, and ChatGPT's current product is more like an enhanced AI product. The difference between ChatGPT and its predecessor may be the architecture. However, the new requirements for memory chips on the application side have not been significantly different for the time being.

"I understand that this is a more analytical database, involving all kinds of background learning algorithms, information sorting algorithms, model building, etc. But for the performance of the storage enterprise, I think it is not so quickly reflected. Our market needs long-term accumulation and training. And as more platforms launched, there may be gains in the long term, but not in the short term." "He continued.

In general, Elvis believes that for the computing chips, in addition to the first benefit of GPU, AI brain chips such as FPGA/CPU, and ASIC/DPU/TPU will have a high demand development market in the future.

From the perspective of domestic industry chain companies, he further analyzed that the related AI chip /GPU/CPU/FPGA/AI SoC industry chain contained unlimited business opportunities driven by the popularity of ChatGPT, such as the development of AI chips, such as the development of AI chip and Monta Technology, CPU Loongson Zhongke and Haiguang, GPU Jingjiawei, FGPA Unigroup Guowei, AI SoC Ruixin Micro, IP interface core shares and so on.

Of course, it is necessary to point out that this is only from a long-term goal, and not now can quickly cash in on the performance of the enterprise. Some relevant domestic companies still have their own ways to go.

In general, even without chatGPT, we are already facing a world of data explosion as the era of communication changes and we enter the era of intelligence.

So heterogeneous computing has become a much-talked-about direction for semiconductor

companies over the years, which is why Intel bought Altera and AMD bought Celix. The heterogeneous methods such as CPU+FPGA/ASIC+GPU can deal with the digital world with more and more computing quantity.

In these core areas, domestic manufacturers are on the climbing stage. Elvis told reporters that the top priority for the domestic industry chain related to AI chips is to improve the design capability of high-end chips, produce GPU/FPGA/ASIC AI chips with high computing power, and enter the ranks of international competition, to accelerate the share of ChatGPT's long-term market in the future.

At the same time, it is vital to focus on the advance of Chiplet applications of advanced packaging technology to achieve leading advantages and capture business opportunities.

The so-called Chiplet is that there are many different types of chips in the SoC, but they are all made with the same process. After adopting the core technology, these chips can be further disassembled, and small chips of different processes can be combined and stacked with 2.5D/3D advanced packaging technology to produce a combination of chips, not all made with high process. The ability to still achieve the effect of high-process technology is also an vital direction in the post-Moorish era.

At present, many companies using this technology route to make chips are overseas, such as AMD, Intel, Apple, etc. Before that, the industry has been actively forming various types of alliances, which are still in the early stage of development, but also means that many companies have the opportunity to participate in active growth.

Zheshang Securities analyzed that, faced with the potential exponential growth of computing power in the future, Chiplet isomerization technology will be used to accelerate the landing of various application algorithms in the short term, and in the long term, it will be a potential way to build an integrated memory and computing chip to reduce the data transfer inside and outside the chip, which may become a potential way to upgrade computing power in the future.

In general, hardware is the core underlying capability that supports the development of large computing AI platforms, but it also requires the joint efforts of domestic hardware and software manufacturers to grow together in this market.

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