Memory - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Memory Market size is estimated at USD 148.95 billion in 2024, and is expected to reach USD 215.13 billion by 2029, growing at a CAGR of 7.63% during the forecast period (2024-2029).

The COVID-19 pandemic across the globe significantly disrupted the supply chain and production of the market studies in the initial phase of 2020. For fabrication units, this impact was more severe. Owing to the labor shortages, many of the package, assembly, and testing plants in the Asia Pacific region reduced and even suspended operations. This created a bottleneck for end-user companies that depend on semiconductors. More recently, COVID-19-related lockdowns in China again disrupted the Global Memory Market supply chain. In December 2021, Samsung Electronics and Micron Technology, two of the world's largest memory chip producers, warned that strict COVID-19 curbs and lockdowns in the Chinese city of Xian might disrupt their chip manufacturing bases in the area. According to Micron Technology, the lockdowns could cause delays in the supply of DRAM memory chips, widely used in data centers.

The memory market is witnessing rapid growth, with semiconductors emerging as the basic building blocks of most modern technologies. The innovations and advancements in this market are resulting in a direct impact on all downstream technologies.

The National Cable and Telecommunications Association projected that the number of connected devices in 2020 will be around 50.1 billion. Every IoT or IIoTdevice contains sophisticated semiconductor memory chips that permit devices to achieve remote connectivity. Moreover, as the IoT is poised to grow significantly, it is expected to impact the growth of the memory market as well.

By 2025, the market is set to experience significant benefits from the ongoing development and innovation in the automotive

industry, connectivity, communications, and data centers. The rise in the consumption of electronic components used in the navigation of safety, infotainment, and automobiles further contributes to the market's growth.

Semiconductor memory products are used extensively across electronic devices, such as smartphones, flat-screen monitors, LED TVs, and civil aerospace and military systems. The memory industry is also likely to benefit from progress in biometrics capabilities. The growing demand for smartphones and technologically advanced products, such as wearable gadgets, etc., is also accelerating the growth of the market studied.

Further, several vendors are investing in this technology to gain an advantage. For instance, in April 2022, Keysight Technologies, Inc., a leading technology company that provides advanced design and validation solutions, announced that SK Hynix selected Keysight's integrated peripheral component to interconnect express (PCIe) 5.0 test platforms for speeding up the development of memory semiconductors used for designing advanced products capable of managing huge data and supporting high data speeds and.

Memory Market Trends

Consumer Products is Expected to Hold Significant Market Share

The emerging memory technologies have enhanced the potential of memory by allowing the storage of more data at a lesser cost than the expensive-to-build silicon chips used by popular consumer electronic gadgets, including digital cameras, cell phones, notebooks, etc.

Taiwan's United Microelectronics Corporation (UMC), a global semiconductor foundry, is providing embedded non-volatile STT-MRAM blocks based on a 28nm CMOS manufacturing process, which will enable customers to integrate low latency, very high performance, and low power embedded MRAM memory blocks into MCUs and SoCs, targeting the Internet of Things, wearable, and the consumer electronics sector.

The technological advancements in the field are driving the demand for the market studied. Companies like Nanterohave developed high-density non-volatile memory called NRAM, which is incredibly fast, offer huge amounts of storage in a small space, and consumes very little power. With Nantero'sNRAM, consumer electronics vendors can develop new consumer devices that are considered to be futuristic. With such developments, the adoption of non-volatile memory is expected to grow.

The emerging memory technologies in the sector are mainly driven by wearable and connected devices that are expected to grow at a faster pace during the forecast period. Cisco Systems estimates that the number of connected wearable devices worldwide could reach 1,105 million units by 2022.

The demand for these memory technologies is further expected to rise owing to the effective memory requirement for other consumer electronics devices such as digital cameras, smartphones, gaming devices, etc. Ericsson estimates that the shipment of smartphone units could reach 1574.4 million by 2022.

The Americas Account for the Largest Market Share

Rapidly changing technologies and high data generation across industries are creating a need for more efficient processing systems in the country. With the advent of mobile and low-power devices, as well as high-end data centers and large on-chip caches, another high-priority demand has emerged: non-volatile, dense, and low-energy-consuming memories.

In memory semiconductor manufacturing technology, the United States has regained its competitiveness in DRAM and 3D-NAND

in the last few years, and US companies are fully embracing EUV (Extreme Ultraviolet).

According to the US Department of Energy, there are about 3 million data centers in the United States. The data center has become the new unit of computing. DPUs (Data Processing Units) are the essential elements of secure and modern accelerated data centers in which GPUs, CPUs, and DPUs are able to combine into a single computing unit that is fully programmable. Nvidia estimates that data management drains up to 30% of the central processing cores in data centers. The increasing demand for data centers is also boosting the demand for memory components. Currently, large data center projects in North America have contributed to the strong demand for memory, such as DRAM.

Furthermore, It is expected that 5G will enable the transmission of a huge amount of telecommunications data in a short time, which also means devices would need more storage. This would increase the adoption of NAND flash.

The US is a major market for factory automation and industrial control. FRAM offers fast random access, high read and write endurance, and low power consumption. In factory automation, the industry-standard architecture, interface, features, and packages can enable a simple drop-in solution that can eliminate the costly re-designs of the system.

Memory Industry Overview

The Memory Market is highly competitive owing to multiple vendors providing memory to the domestic and international markets. The market appears to be moderately fragmented, with the significant vendors adopting strategies for mergers and acquisitions and strategic partnerships, among others, to expand their reach and stay competitive in the market. Some major players in the market are Samsung Electronics Co. Ltd, Micron Technology Inc., SK Hynix Inc., and ROHM Co. Ltd., among others. Some of the recent developments in the market are:

October 2021 - Micron Technology, a US-based memory manufacturer, will invest more than USD 150 billion worldwide over the next decade in advanced memory manufacturing, research, and development, including potential United States-based fab expansion.

December 2021 - Micron Technology announced an expansion of its business relationship with United Microelectronics Corporation, providing Micron the opportunities to secure supply for mobile, automotive, and critical customers into the future.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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