Storage Class Memory - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 120 pages | Mordor Intelligence

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Report description:

The Storage Class Memory Market is expected to register a CAGR of 35.6% during the forecast period.

Key Highlights
- Storage Class Memory (SCM) is a critical component in the transition from rotating mechanical storage, such as disk drives, to solid-state, non-volatile RAM. As a result, SCM promises to deliver higher-performance and more energy-efficient solutions than existing SLC/MLC NAND flash products.
- Storage Class Memory (SCM) is faster for reading and writing operations than NAND flash. Furthermore, it has higher endurance properties due to being significantly more resistant to data rewrites. SCM features include advantages over NAND flash and a lower cost per GB when compared to DRAM.
- Furthermore, the ability to perform at near-memory speeds, as well as ultra-high endurance and persistence through power outages, makes SCM suitable for latency-sensitive applications such as financial trading applications, analytics, direct-attached storage applications, and databases.
- The demand for in-memory processing increasingly used in Big Data applications, like interactive database queries, has prompted Intel and other chipmakers to boost memory bandwidth. When running analytics workloads, such as the Spark-based cluster computing framework, Intel claims queries run eight times faster on persistent memory than on DRAM storage combinations.
- The rise of application containers in data centers also has boosted requirements for persistent memory in recent years. Hence, vendors present in the market ecosystem are emphasizing the advantages of larger persistent memory tiers, including increased CPU and server utilization and the faster delivery of distributed applications.
- Moving forward, when digital data is stored in non-volatile memory, it is essential to have a mechanism for detecting and correcting specific errors. Error correction code (ECC) offers to encode data so that a decoder can identify and correct errors in the

data.
- Many end-user industries across different nations were affected by the pandemic resulting in the shutdown of various business operations. For instance, the introduction of lockdowns in India indicated shutting down all sectors and activities. These lockdown implementations lead to a massive impact on every industry, with the majority of businesses suffering losses. According to Intel, the increased need for virtualized desktop infrastructure and virtualized storage solutions is driving demand for its storage and memory products in the data center. The need to enhance and accelerate storage and memory capabilities for the two application types has come in response to the large number of workers who moved to home offices and a rise in the use of digital resources that have been prompted by the COVID-19 pandemic. Intel's Non-Volatile Memory Solutions Group saw first-quarter revenue grow 46% year-over-year to USD 1.3 billion.

Storage Class Memory Market Trends

Persistent Memory is Expected to Grow Significantly

- Demand for in-memory processing, increasingly used in big data applications like interactive database queries, has prompted Intel and other chipmakers to boost memory bandwidth. When running analytics workloads such as the Spark-based cluster computing framework, Intel claims queries run eight times faster on persistent memory than on DRAM storage combinations.
- The rise of application containers in data centers has also boosted requirements for persistent memory in recent years. Hence, vendors in the market ecosystem emphasize the advantages of larger persistent memory tiers, including increased CPU and server utilization and the faster delivery of distributed applications.
- Persistent memory can also significantly increase memory capacity to up to 512 Gigabytes while providing increased performance and efficiency. This performance makes persistent memory ideal for applications such as in-memory databases, analytics, and content delivery networks.
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- A storage controller was used to link peripheral devices like hard drives and SSDs to a server or computer. The controller communicates with the CPU directly, typically over the PCIe interface. The storage controller's job is to translate I/O requests into data blocks for reading and writing to and from physical media. Because hard drives are slower than main memory, the storage controller also serves as a cache and performs data security features, such as hardware RAID.
- With the rising demand for persistent memory in potential application areas, in August 2020, Mouser Electronics announced that it is now stocking Intel Optane persistent memory. Intel Optane persistent memory modules were developed to provide access to large, affordable memory capacity that is able to act as either volatile memory or a persistent, high-performance data tier.

North America to Hold a Prominent Share in the Market

- An increase in big data analytics, growth of mobile broadband, and cloud computing are driving the demand for new data center infrastructure in the North American region. The region also witnesses new players and technology entering the storage and memory markets.
- According to Data Reportal, in January 2022, there were 307.2 million internet users in the United States. At the start of 2022, 92.0% of the United States' total population had internet access. In January 2022, the United States had around 307.2 million internet users. Around 270 million people were using social media at the time.
- Further, 90% of US internet users accessed the internet via their mobile phones in the third quarter of 2021. Moreover, the

country hosts the maximum number of data centers. According to Cloudscene, the country has 2,751 data centers in total, while Germany, which stood at the second-highest in the world, had only 484 data centers in total. This shows the huge difference in the data center market of the United States, which is the biggest in the world; therefore, it represents a huge market for storage-class memory.

- Additionally, the region is witnessing continue investment in the data center market in upgradation, expansion, and new construction of data centers. For instance, in February 2022, Cologix partnered with CIM Group to create a new data center in Toronto, Canada. The two joint venture aims to build and operate TOR4, a 50,000 square foot (4,650 square meters), 15MW data center in Markham, Ontario.

- Strategic operational applications and databases requiring low latency, high durability, and reliable data consistency tend to benefit from persistent memory. The technology can accelerate virtual machine (VM) storage and deliver higher performance to multi-node, distributed cloud applications. The region's major players are actively involved in the development of cutting-edge technology, which is opening up huge opportunities for the market.

- Moreover, Big Data and IoT penetration in the region is expected to significantly transform the next-generation modular data centers' size and scope. With the existing competition, organizations are under pressure to evolve IT scalability and capacity. With the exponential growth of data, hybrid cloud, and outsourcing third-party data centers, containerized data centers gain traction, owing to their flexibility in installing a center within the least possible time.

Storage Class Memory Industry Overview

The market for storage-class memory is consolidated due to the presence of major players like Samsung and Panasonic, who dominate the market with their offerings. Also, as the manufacturing cost is high for SCM, the entry for new entrants and gaining market share is challenging. Hence, the trend is expected to continue in the forecast period.

- August 2022 - Kioxia announced a number of developments, including a new software-defined interface for the Linux Foundation's Software-Enabled Flash technology. The open source project departs from legacy HDD protocols by introducing customizable flash storage that uses the technology better. Kioxia also introduced a new PCIe Gen 5 SSD family and an update to its FL6 storage class memory (SCM).

- March 2022 - Micron Technology, Inc. announced the release of the first 176-layer NAND SSD for data centers to be vertically integrated. The Micron 7450 SSD with NVMeTM satisfies the requirements of the most demanding data center workloads with a quality-of-service (QoS) latency of fewer than two milliseconds (ms), a wide capacity range, and the most form factors. Other storage-class memory (SCM), including 3D Xpoint.

Additional Benefits:

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

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