

## **Nand Flash Memory Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)**

Market Report | 2023-01-23 | 120 pages | Mordor Intelligence

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### **Report description:**

The NAND flash memory market was valued at USD 66.52 billion in 2021, and it is expected to reach a value of USD 94.24 billion by 2027, registering a CAGR of 5.33% over the forecast period 2022 - 2027. The current macro trends of AI and machine learning, mobility, and connectivity are favorable to the NAND markets and are expected to increase their share in the semiconductor market.

#### Key Highlights

With the rise of PCs and smartphones, NAND flash consumption is dramatically increasing, much of which is attributed to the growth of the average capacity in smartphones. This is expected to drive the demand for NAND flash packaging, thus influencing the demand for memory packaging.

According to Micron, an average smartphone contains 43 GB of NAND flash storage, and it is expected to grow substantially over the next four years. By 2021, the company estimates that the average phone may have 142 GB of NAND flash storage, with flagship devices having one terabyte of flash storage.

Other consumer products such as tablets and cameras, along with industrial equipment and sensors, automotive systems, and medical devices, rely upon flash memory, which is integrated alongside their processors, and stores both data and the code they execute. As demand for massive data processing for artificial intelligence and machine learning applications grows, the trend for flash-based storage will continue to evolve.

Production of China-based NAND flash vendors was not severely affected by the outbreak of novel COVID-19. This is because the plants are highly automated, have relatively low demands for manpower, and operators are also stocked up with raw materials before the Chinese Lunar New Year. Foundry output was delivered to customers in China because semiconductor fabrication plants hold national special licenses. These allow them to ship their products throughout domestic China, even with cities under quarantine.

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The electronics device sector is anticipated to be impacted significantly by the COVID-19 outbreak, as China is one of the major suppliers of raw materials and finished products. The industry faced a reduction in production, disruption in the supply chain, and price fluctuations. The sales of prominent electronic companies were affected during the period. The travel restriction on both people and products hampered the market's growth in the short run.

## NAND Flash Memory Market Trends

### The Smartphone Segment is Expected to Witness Significant Growth

Flash memory storage has become an essential component in smartphones. The NAND flash demand has been growing exponentially, primarily driven by the growth of the average capacity in smartphones.

NAND flash memory in smartphones can significantly enhance the performance of web browsing, email loading, games, and even social network sites such as Facebook. With the increasing adoption of smartphones, companies are adding extra features and applications to differentiate their products from other manufacturers.

For instance, manufacturers are integrating features such as gesture control, fingerprint scanners, and GPS into the devices. This is boosting the demand for NAND flash memory, which is used as code storage media for smartphones.

With 5G wireless communication on its way, the use of smartphones would increase multifold, increasing the need for the latest models to raise the bar continuously. For instance, according to the Ericsson Mobility report, in the North American region, 5G subscriptions are expected to account for 55% of mobile subscriptions by the end of 2024.

### Asia-Pacific to Hold a Significant Market Share

Asia-Pacific is one of the biggest markets for NAND flash memories across the globe. The region has a very high demand from almost all the end-user applications, primarily led by the demand for smartphones in multiple developing countries in the region, such as China, India, and Indonesia.

Also, there is a high activity from the semiconductor fabrication facilities in countries like China, Korea, and Singapore. An immense amount of capital is directed into the Chinese market by several multinational memory manufacturers, especially boosted by the country's government initiatives, such as Made in China 2025. The country's ambitious goal is to reach USD 305 billion in semiconductor output by the year 2030 and meet at least 80% of the domestic demand for semiconductors, which is expected to draw more investments into the country over the forecast period.

Multiple new companies in China, such as Yangtze River Storage Technology, Fujian Jin Hua, Hua Li, and Hefei Chang Xin Memory, are expected to invest heavily in the region. These companies are also expected to double their equipment investments.

Owing to such development in multiple countries, various competitors in the region are intensifying their efforts for expansion. For instance, as of February 2019, SK Hynix, one of the world's largest memory-chip makers, announced that it is planning to invest a huge sum of USD 106 billion, primarily to establish four new semiconductor fabrication plants in South Korea. In April 2021, the company held a completion ceremony for its new fabrication plant M16 at headquarters located in Icheon, Gyeonggi-do, South Korea.

### NAND Flash Memory Market Competitor Analysis

The NAND flash memory market is dominated by major vendors, such as Intel, Micron Technology, Samsung Electronics, SanDisk, SK Hynix, and Toshiba. As the entry barriers in the market are high, the entry of new players is difficult. The existing vendors in

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the market are investing heavily in the R&D of new and innovative products.

December 2021 - SK Hynix announced the acquisition of Intel's NAND unit for an investment of USD 9 billion. The company aims to focus on completing another integration process by 2025. Thus, such developments are driving the market.

November 2021 - Mercury Systems Inc. announced the launch of the NAND flash non-volatile memory device. The new device features a plastic ball-grid array (BGA) package to meet NASA's EEE-INST-002 space-grade application guidelines for ultra-high density memory storage applications in high-radiation environments like space.

Additional Benefits:

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

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