

Solid State Drives (SSD) Markets and Applications Quarterly Series: 4Q 2010

2010 – 2015

Report Number

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Executive Summary

This report is the fourth of a series of quarterly SSD reports for 2010 focused on markets and applications. The first quarterly report was a comprehensive report focused on all segments of commercial, client, and enterprise. Each quarterly report following the comprehensive report does a deep dive into each of the segments. The second quarterly report focused on SSDs in the enterprise segment; its markets and applications. The third quarterly report focused on opportunities for SSDs in the client segment. *This fourth quarterly report focuses on SSDs in the commercial segment.*

The opportunity for SSD unit growth for the forecast period in the commercial space will be driven primarily by SSDs in the industrial / embedded applications followed by Medical applications. The overall opportunity in the commercial segment when compared to the client and enterprise segments is very small. The commercial segment is a slow changing segment with highly specialized designs that will be employed for long periods. This results in lower volumes and slower growth. SSD adoption rates are increasing in this segment as SSD prices continue to decline. Many times other storage options such as embedded flash and compact flash are used for its lower cost, performance, capacity requirements and board level integration for special purpose designs. This contributes to lower SSD volumes in industrial / embedded applications.

Although the commercial segment is very small compared to the overall SSD market, it by far demands some of the most stringent requirements for use, especially in aerospace and military applications. This helps drive the technology to ensure SSDs are adaptable in these environments. Meeting these requirements and making the necessary advancements in the technology with time trickles down to SSD products requiring less in its applications.

Overall revenues in the commercial segment are forecast to grow from \$408M in 2010 to \$799M in 2015 resulting in a growth rate of 23.5%. The greatest SSD unit demand by 2015 will be from the industrial / embedded segment followed by medical applications. On the other hand the greatest SSD revenue by 2015 is generated from aerospace / avionics applications followed by military applications. The accompanying charts in the later sections detail these findings. In addition to this report's primary focus on commercial applications, this report also details the findings for the forecast period of all applications.

For the year ending 2010, total volumes and revenue were 10.36M units and \$ 2.6B respectively. The enterprise grew at a healthy rate as more SSD suppliers enriched their enterprise product portfolio with higher performing SSDs, customer wins and completion of qualifications with OEM customers. SSDs in the client segment also experienced healthy growth resulting from the value proposition thin and light notebooks bring to the marketplace in design and performance. In both segments year over year unit growth doubled. The commercial segment experienced more moderate unit growth year over year where the dynamics of this segment changed more slowly.

Analysis and Reporting Methodology

This report analyzes the potential of the semiconductor storage technologies, in conjunction with the magnetic storage technologies. The report also assesses future developments of the storage industry and quantifies the different aspects of market growth from 2010 through 2015. It takes into consideration the major social, political, economic, and technology changes underway; and the impact these changes will have on the economy, on the storage industry in general, and on solid state technologies in particular.

Because of the growing complexity and scope of the data storage industry and markets, there is a need to put the qualitative and quantitative aspects of the development trends into a broader perspective. Therefore, this report considers the technological, commercial, and application development aspects of the storage industry. In particular, it explores, in general terms, the evolution of storage needs and requirements in the computing, communications and consumer industries.

Relevant primary data and information were collected from discussions with industry and company representatives. Secondary data and information have been obtained from public sources, such as company documents, press releases, annual reports and industry statistics, as well as from the existing Web-Feet Research database. Historic data have been crosschecked and correlated with industry statistics. Forecast data and their interpretation are based on analyses and assessments of Web-Feet Research.

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Web-Feet Research (WFR) offers a full complement of technology consulting services, management consulting services and market research for nonvolatile memory, solid state storage technologies and mobile hard disk drive products. Special emphasis has been focused on the development and growth of Flash memory, Flash cards and SSD markets.

The company has consistently identified the emerging trends in the electronics industry and has been the first to forecast their impact in the Flash and nonvolatile memory markets since its inception in 2000. Some of WFR's firsts are in the following areas: SSD, Flash cache/Hybrid Flash, Embedded Flash Drives, Ultra Low Cost PC, Mobile storage, MP3, NAND MCP, USB Drives, Flash SIM cards, micro Flash cards, 3-bit/4-bit per cell NAND, serial NOR Flash and Storage Class Memories.

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The company also organizes annual public and on-site presentations, the NVM conferences, which supplement the consulting and research services. These conferences focus on technology evolution, product development, storage markets and industry / economic trends.

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