Global and China Memory Industry Report, 2013

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STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

Abstract

Global and China Memory Industry Report, 2013 consists of the following contents:

Brief introduction to global semiconductor industry
Market analysis of DRAM and NAND
Major memory vendors
Major memory packaging and test vendors

No digital electronics can do without memory. Memory can be basically classified into RAM and FLASH. The former is Processor Unit, offering Cache and falling into Commodity DRAM, Mobile DRAM and Embedded RAM.

FLASH consists of NOR and NAND, used for storage of Data or Code. Presently, NOR is mostly applied to Embedded field, and seldom used independently.

Memory industry is highly concentrated. In NAND field, five vendors dominate the whole global market. From perspective of sales by brand, in 2013Q1, SAMSUNG occupied 37.1% market share, Toshiba 28.9%, Micron 13.7%, SK Hynix 12.7% and Intel 8.6%.

Seen from revenue by company, in 2012, global NAND vendors achieved revenue of USD28,995 million, of which, SAMSUNG held 36.8%, Toshiba and Sandisk (joint venture in NAND field) 35.0% and Micron (IMTF) 17.8%.

When it comes to Commodity DRAM, top four players together shared 91% of the market.

Since memory industry entered the stable phase in 2012, market competition has been eased considerably. Yet technical barriers and capital requirement have significantly risen. So there is no possibility of new player's appearing. Investment in capacity expansion has been reduced to a large extent. Balance of supply and demand is achieved and there even occurs short supply during peak season. Profit of memory companies embarks on a steep rising trend. Memory industry will get rid of the stage of fierce competition and consistent deficit, and usher in a new period for rich and stable profit.

2Gb DDR3 DRAM was priced only USD0.83 in Dec. 2012, but USD1.5 at the end of Apr. 2013, a jump of 80%. The price reached even up to USD1.96 in May, but dropped slightly in July, the slack season, yet still remained around USD1.8. 2Gb DDR3 DRAM is primarily used for PC. In 2013Q1, global PC demand fell by 14%, and PC DRAM output was down 25%. Monthly PC DRAM Wafer Capacity got just 270,000. That is to say, although PC DRAM price got increased, output didn't stop declining.

The short supply of PC DRAM was led by two reasons.

First, the jump in smart phone and tablet PC shipment caused the sharp increase of demand for Mobile DRAM. To deal with that, a large amount of capacity, previously targeting at PC DRAM, was shifted to Mobile DRAM, especially that of SAMSUNG. It would take at least half a year for producers to shift capacity back if they want to. But obviously they don't, for the prospect of Mobile DRAM is widely regarded much brighter than that of PC DRAM.

In addition, second-tier Taiwan-based vendors have dropped out of DRAM field because of years of loss. For instance, Powerchip Technology even sold the plant. Companies are so pessimistic about PC DRAM that even through the profit would double, there won't be many vendors switch to it. Mobile DRAM is extremely tempting, the prospect is highly rated and the present profit is generous as well.

In 2014, in the wake of upgrading of the processor, memory system of smart phones and tablet PCs will be further upgraded. By then, 2Gb LPDDR3 will be mainstream product. Bedsides, in addition to smart phones and tablet PCs, Ultrabook also will be the huge market of Mobile DRAM. For example, the latest Macbook Air of Apple has already abandoned traditional PC DRAM, and turn to lower-power-consumption Mobile DRAM.

As for NAND, since hit bottom in the middle of 2012, the price has started rebounding, yet at rate of only 40-50%, far slower than DRAM. Market driving force of NAND cover smart phones, tablet PCs, Ultrabooks and SSDs. But smart phone has lost its strong growth impetus, with growth rate getting lower and lower. The same is true for tablet PCs. Because of high price, Ultrabook also progresses slowly. Despite that SSD is developing vigorously, it is not strong enough to shore up the entire NAND market. NAND began dropping in price after May.

In memory module field, Kingston assumes the top role, exerting much pressure on its opponents. In the short supply period, without die, small plants won't be able to operate. As a result, independent memory module plants become increasingly few. The largest Chinese player Ramaxel is an affiliated company of Lenovo; Crucial was acquired by Micron lately, so did Smart Modular Storage and PQI, taken over by Sandisk and Foxlink, respectively. For memory module vendors, the key assets are retail outlets. But e-commerce is emerging, traditional retail outlets cost too much in operation, which generates big pressure on memory plants, and put them to be confronted with two choices, namely, transforming to electronics distribution or turning to DRAM Die plants.

In regard to packaging and test, SAMSUNG and SK Hynix do it mostly by themselves, and outsource a small part to STS and HANA, while Japanese and American companies outsource the majority of the work. Taiwan-based PTI, the top memory packaging and test provider, and Walton Advanced Engineering serve as the OEM of Elpida's Mobile DRAM and standard model DRAM production lines. Elpida conducts the advanced packaging, like Multi Chip Package (MCP) and Package on Package (PoP), in Japan by itself.

With regard to back-end packaging and test of Micron, there is huge difference between it and that of PTI. And its DRAM products are mainly packaged in ChipMOS, and tested in its Xi'an Testing Plant in Chinese Mainland. Packaging and test of NAND Flash is conducted by ChipMOS, iNETest and PTI.

Large NAND Flash vendor Toshiba has its memory products packaging and test done by PTI and Amkor.

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