Global and China Memory Industry Report, 2019-2025

May 2019

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.
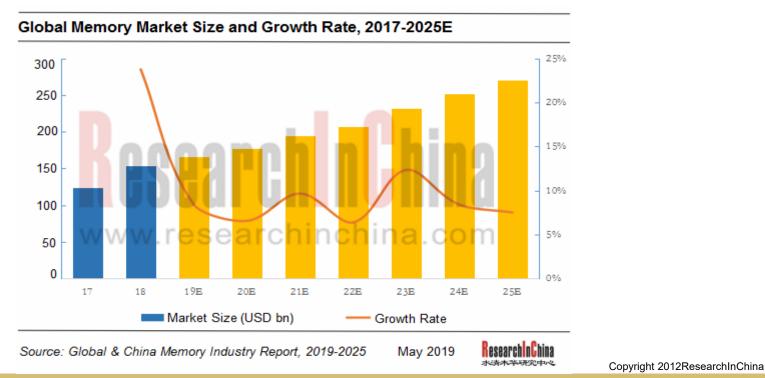
INFORMATION SOURCES

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

Abstract

In 2018, global memory market was worth USD153.4 billion, surging by 23.7% from a year earlier thanks to rising prices as a result of robust demand from mobile phones and cloud services and a higher supplier concentration. Global memory demand will continue to increase as emerging technologies such as AI, AR/VR and internet of things (IoT) rise and downstream sectors like consumer and automotive electronics need much more. It is predicted that global memory market size will hit USD270.6 billion in 2025, at a CAGR of 8.4% between 2018 and 2025.

Global Memory Market Size and Growth Rate, 2017-2025E

Market Size (USD bn) ■   Growth Rate ─

Source: Global & China Memory Industry Report, 2019-2025   May 2019   **Research**In**China**
水清木华研究中心

Memories are led by DRAM and Flash. Dynamic random access memory (DRAM) is used the most widely in systems for its excellent performance and lower cost than its peers in spite of volatility when powered down. In 2018, global DRAM market was valued at USD94.8 billion or so, a 30.2% jump on the previous year; Flash memory chip, the most common non-volatile memory, finds the broadest application in mass storage field because it is non-volatile even if power is turned off. In 2018, NAND Flash sales leaped by 14.4% to USD56.3 billon on an annualized basis; NOR Flash sales were approximately USD1.9 billion; market size of other memories (including static random-access memory (SRAM)) reached a combined roughly USD400 million.

Memory market segments vary in competitive pattern. In global DRAM market, Samsung Electronics remains the bellwether sweeping 46% market shares, and its four DRAM plants all with 12-inch production lines can produce 395,000 units a month; another Korean vendor SK Hynix branching out from Hyundai Technology, takes a 28% share, making itself the world's second largest DRAM vendor, with an 8-inch wafer production line and two 12-inch lines in Korea, an 8-inch line in Oregon, the US and a 12-inch line in Wuxi, China; America's Micron Technology is in the third place commanding 21% of the market and boasting a DRAM capacity of about 340,000 units per month after acquiring ELPIDA and Rexchip and integrating Inotera Memories' capacity.

As for NAND Flash, the global market has been monopolized by five vendors, i.e., Samsung, Toshiba, Micron, SK Hynix and Western Digital, with the CR5 reaching a staggering 98%. Samsung Electronics whose NAND Flash capacity stands at 560,000 units per month has decided to expand Phase II of its plant in Xi'an city, China for a larger NAND Flash capacity. Toshiba and Western Digital will keep their partnership, with a collective capacity of 510,000 units per month; Toshiba's Fab 6 still under construction will start 96-layer 3D NAND capacity expansion plan; also, its Fab 7 has been kicked off, and will become operational in the second half of 2019 for producing 96-layer-above 3D NAND and go into mass production in 2020. Micron has a monthly capacity of 350,000 units and proposes construction of Phase III of its fab. SK Hynix will build another new plant, M15, on the site of its existing plant in Cheongju, Korea, to produce 96-layer-above 3D NAND, and put it into use in 2019, with a monthly capacity of 50,000 units. Chinese player Yangtze Memory Technologies Co., Ltd. under Tsinghua Unigroup will see the capacity of its manufacturing base in Wuhan City reach 150,000 units at the end of 2019.

Global & China Memory Industry Report, 2019-2025 highlights the following:

- Memory overview (definition and classification, industry chain and technology roadmap);
- Memory applications (mobile phone, tablet PC, notebook computer and server);
- Memory industry (market size and segments (DRAM, NAND Flash, NOR Flash, etc.));
- 14 memory vendors (Samsung Electronics, SK Hynix, Micron, etc.) (operation, main products, production layout, output and sales, development strategy, etc.).

Classification of Memory

Memory Industry Chain

Comparison between Various Types of Memory

Comparison between New Memory Technologies

Emerging NVM Time to Market by Application, 2015-2025E

Comparison of Emerging Memory and Established Memory

Global Mobile Phone Shipments, 2007-2018

Global 3G/4G Mobile Phone Shipments by Region, 2011-2018

Worldwide Smartphone Sales to End Users by Vendor in 2018

Worldwide Smartphone Sales to End Users by Operating System in 2018

Shipments of Top 10 Mobile Phone Vendors Worldwide, 2018

Mobile Phone Shipments in China, 2013-2018

Market Share of Major Smartphone Vendors in China, 2018

Market Share of Major 4G Mobile Phone Vendors in China, 2018

Notebook Computer Shipments, 2008-2018

Shipments of Major Notebook ODM Vendors Worldwide, 2010-2018

Global Tablet PC Shipments, 2011-2018

Shipments of Top 5 Tablet PC Vendors, 2018

Shipments, Market Share and Growth of Top 5 Tablet PC Vendors, 2018

Global Server Market Size, 2013-2018

Top 5 Corporate Family, Worldwide Server Systems Factory Revenue, 2018

Top 5 Corporate Family, Worldwide Server Systems Factory Revenue, 2018

Worldwide: Server Vendor Shipments, 2018

Worldwide: Server Vendor Revenue, 2018

EMEA Server Vendor Revenue, 2018

EMEA Server Shipment, 2018

Market Share of Server Brand Vendors Worldwide, 2018

Market Share of Server OEMs Worldwide, 2018

Supply Relationship between OEMs and Server Brand Vendors

Enterprise SSD Market Size, 2013-2018

Global Memory Market Size, 2017-2025E

Global Memory Market by Type, 2018

Automotive Memory Market Size, 2016-2025E

Automotive Memory Market by Technology, 2016-2025E

DRAM Industry Capex, 2013-2018

DRAM Oversupply Ratio, 2013-2018

DRAM Demand by Devices, 2013-2018

DRAM GB/System, 2013-2018

DRAM Oversupply Ratio, 2014-2018

Market Share of Branded DRAM Vendors, 2018

DRAM Prices, 2011-2018

Market Share of Mobile DRAM Vendors, 2018

NAND Industry Capex, 2008-2018

NAND Flash Prices, 2011-2018

Market Share of Branded NAND Vendors, 2018

Market Share of Major NorFlash Vendors, 2018

Market Share of Major NorFlash Vendors, 2018

Memory Vendor Rankings by Revenue, 2017-2018

Revenue and Operating Margin of Memory Design Companies

Operating Margin of Major Memory Vendors, 2017-2018

Revenue and Operating Margin of Samsung Memory Division, 2010-2018

Revenue of Samsung Memory Division by Product, 2010-2018

Revenue of Samsung Memory Division by Application, 2018

Samsung DRAM/NAND Operating Margin, 2010-2018

Samsung DRAM Shipments, 2012-2018

Samsung DRAM ASP, 2012-2018

Samsung DRAM Fab Input (12-inch Wafer), 2013-2018

Samsung NAND Shipments, 2012-2018

Samsung NAND ASP, 2012-2018

Samsung NAND Fab Input (12-inch Wafer), 2013-2018

Samsung System LSI Revenue vs Operating Margin, 2010-2018

SK Hynix Revenue vs Operating Margin, 2008-2018

SK Hynix EBITDA vs Net Margin, 2013-2018

SK Hynix Assets vs Liabilities, 2013-2018

SK Hynix Revenue Mix by Product, 2013-2018

SK Hynix Revenue Mix by Application, 2018

SK Hynix DRAM Shipments vs ASP, 2013-2018

SK Hynix NAND Shipments vs ASP, 2013-2018

Micron Revenue vs Operating Margin, FY2008-FY2018

Micron Revenue vs Net Income, FY2008-FY2018

Micron Revenue Mix by Segment, FY2012-FY2018

Micro Gross Margin by Segment, FY2012-FY2018

Micron Revenue Mix by Location, FY2012-FY2018

Micro Customers

Micron Roadmap

Framework of Nanya, Micron & Inotera

Nanya Revenue vs Gross Margin, 2008-2018

Nanya Revenue vs Gross Margin, 2013-2018

Nanya Mix by Application, 2013-2018

Nanya Mix by Application, 2017-2018

Nanya CAPEX, 2016-2018

Nanya Shipments, 2011-2018

Revenue vs Gross Margin of Western Digital, 2013-2018

Revenue Mix by Application of Western Digital, 2013-2018

Revenue by Location of Western Digital, 2013-2018

Macronix Organization

Revenue vs Gross Margin of Macronix, 2013-2018

Revenue by Segment of Macronix, 2013-2018

ROM Revenue Mix by Tech of Macronix, 2013-2018

NAND Shipments of Macronix, 2013-2018

Winbond Organization

Revenue vs Gross Margin of Winbond, 2013-2018

Revenue by Application of Winbond, 2013-2018

Revenue by Geometry of Winbond, 2013-2018

CAPEX of Winbond, 2013-2018

Revenue by Segment of Winbond, 2013-2018

Revenue vs Gross Margin of Intel, 2013-2018

Revenue by Segment of Intel, 2018

Customers of Intel, 2018

Revenue by Product of Intel, 2018

Revenue vs Operating Margin of Cypress, 2013-2018

Revenue by Business of Cypress, 2013-2018

Revenue by Region of Cypress, 2013-2018

GigaDevice Balance Sheet, 2016-2018

GigaDevice Revenue vs Operating Income, 2016-2018

GigaDevice Cash Flow, 2016-2018

GigaDevice Financial Indicators, 2016-2018

GigaDevice Customer Distribution, 2018

GigaDevice Supplier Distribution, 2018

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