Flash Memory Technology accelerate China's digital economy

AWU ZHENG
New Technology Revolution

Cloud

IoT

Big Data

AI

Blockchain
New Technology Revolution

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There will be 13.8 billion Industrial IoT connections globally by 2025. Greater China accounts for approximately 4.1 billion of these connections or a third of the global market. — GSMA
China's digital economy growing fast

In 2017, the digital economy will account for 36% of China's GDP and contribute 29 trillion RMB. By 2030, this proportion will reach 77%, exceeding 153 trillion RMB of GDP. — KPMG’s forecast

The development of China's urban digital economy has shown a remarkable "3 centers and 5 hot spots" pattern, and eight digital economic city ecological groups have been formed nationwide.
Data Explosion

Data explosion

Data becomes a new means of production

Collect

- AI English
  - 45 million users
- Chinese speech library
  - 1 billion minutes

Construct

Chinese English speech recognition engine

Online trading
- Tens of billions of user characteristics analysis
- 28.6 billion product data
- Pat Li Tao
  - 10 million UV Daily

Data also generates value while generating new data
Two-state data

Big Data
- Exploration
- Weather forecast
- Gene Sequencing
- Astronomical

Hot Data
- Transaction
- Driverless
- AI
- IoT

Cloud
- Videos
- IoT
- Driverless
- Biometrics
- SMART factory
- FAST
- AI
- WeChat
- Alipay/JD
- Videos
- Cloud
- IoT
- Driverless
- Biometrics
# Flash Memory Technology Landscape

## Semiconductor material
- SMIC
- Samsung
- Micron
- Intel
- TSMC
- SK Hynix
- Toshiba
- Hynix
- Seagate
- Western Digital
- Qimonda
- Woxtek
- Renesas
- STMicroelectronics
- AMD
- ARM
- Freescale
- Global Foundries
- Qualcomm
- Marvell
- TI
- Nvidia
- Intel
- Samsung
- Micron
- Toshiba
- Hynix
- Seagate
- Western Digital
- Qimonda
- Woxtek
- Renesas
- STMicroelectronics
- AMD
- ARM
- Freescale
- Global Foundries
- Qualcomm
- Marvell
- TI
- Nvidia

## Chip manufacturing
- Samsung
- Micron
- Intel
- TSMC
- SK Hynix
- Toshiba
- Hynix
- Seagate
- Western Digital
- Qimonda
- Woxtek
- Renesas
- STMicroelectronics
- AMD
- ARM
- Freescale
- Global Foundries
- Qualcomm
- Marvell
- TI
- Nvidia

## SSD/storage module
- Intel
- HP
- Dell
- Lenovo
- Toshiba
- Samsung
- Micron
- Seagate
- Western Digital
- Qimonda
- Woxtek
- Renesas
- STMicroelectronics
- AMD
- ARM
- Freescale
- Global Foundries
- Qualcomm
- Marvell
- TI
- Nvidia

## Controller
- Intel
- AMD
- Marvell
- TI
- Nvidia
- Samsung
- Micron
- Toshiba
- Hynix
- Seagate
- Western Digital
- Qimonda
- Woxtek
- Renesas
- STMicroelectronics
- ARM
- Freescale
- Global Foundries
- Qualcomm
- Marvell
- TI
- Nvidia

## Package test
- Samsung
- Micron
- Intel
- TSMC
- SK Hynix
- Toshiba
- Hynix
- Seagate
- Western Digital
- Qimonda
- Woxtek
- Renesas
- STMicroelectronics
- AMD
- ARM
- Freescale
- Global Foundries
- Qualcomm
- Marvell
- TI
- Nvidia

## Flash storage system
- HIKVISION
- PureStorage
- Infineon
- SanDisk
- Western Digital
- Qimonda
- Woxtek
- Renesas
- STMicroelectronics
- AMD
- ARM
- Freescale
- Global Foundries
- Qualcomm
- Marvell
- TI
- Nvidia

## Chip design
- Qualcomm
- Samsung
- Micron
- Intel
- TSMC
- SK Hynix
- Toshiba
- Hynix
- Seagate
- Western Digital
- Qimonda
- Woxtek
- Renesas
- STMicroelectronics
- AMD
- ARM
- Freescale
- Global Foundries
- Qualcomm
- Marvell
- TI
- Nvidia

## Other
- Mentor
- Cadence
China All-Flash system players

China's major flash system suppliers include: Huawei, H3C, Inspur, Lenovo, HIKVISION, Toyou, Sugon, MacroSAN, UNIS WDC, UIT and Alibaba Cloud.

2018Q1, China's all-flash memory market achieved a **173.2%** leap in growth compared to the same period last year.
Controller: A new era of China’s investment

first-tier manufacturers

SAMSUNG
Intel
Micron
TOSHIBA

+ independent fabless

Microsemi
SEAGATE
Marvell
Western Digital
SiliconMotion
PHISON
SMI
Maxio
SAGE
MEMBLAZE
STARBLAZE
YEESTOR
UNIC
DERA
SCS
Greenliant
JMicron
SSD market exceeds HDD
China's fab enter mass production in 2019
It's never be too late
Inspire Connection with Data and Storage

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