



OBJECTIVE ANALYSIS

Semiconductor Market Research

*Coughlin
Associates*

EMERGING MEMORIES RAMPING UP

Now Available

Abstract:

2019 will be remembered as the year that emerging memories really hit the mainstream, with new technologies seriously beginning to threaten the established leaders. Winning companies will understand this change and how to take the best advantage of it. This report is your guidebook to implementing an effective emerging memory strategy.

The report is an update to the popular 2018 edition jointly produced by Objective Analysis and Coughlin Associates. It exhaustively examines emerging memory technologies and their interaction with standard memories, both as stand-alone memory chips and in embedded applications (the memories within logic SoCs like ASICs and MCUs).

The study is a well of technical information, market dynamics, forecasts, and competitive analyses of the leading companies. Its detailed forecasts illustrate how the markets will grow not only for the technologies themselves, but also for the capital equipment used to produce them. Vendor profiles detail the strategies of both leading and nascent market participants.

Read this report to understand the competitive memory chip landscape and market drivers for these new technologies, and to find out how to profit from tomorrow's new memory markets.

Contents:

Executive Summary

Why Emerging Memories Are Popular

Scaling Limits for Entrenched Technologies

Embedded NOR and SRAM Scaling Challenges, Stand-Alone NAND & DRAM Scaling Concerns

Technical advantages

Persistence (Data Retention), Performance/Speed, Endurance

Potential Cost/GB Advantages

How the Economies of Scale Factor In

How a New Memory Layer Improves Computer Performance

How Persistence Changes the Memory/Storage Hierarchy (Storage Class Memories), Standardizing the Persistent Memory Software Interface, NVMe and NVMe-oF, Defining Persistent DIMM Standards, In-Memory Computing Possibilities, The Benefits of a Layer between DRAM & NAND even without Persistence

The Technologies

PCM/3D XPoint, MRAM, ReRAM/OxRAM/Memristors/CBRAM, FRAM,
Others

The Manufacturers

- Big Players with Multiple Bets
 - Samsung, Hynix, Intel, Micron, Toshiba, WD, Cypress
- Foundries with Embedded Memory Solutions
 - Global Foundries, TSMC, UMC, Others
- HP's Derailed Memristor Effort
- Smaller Contributors
 - Adesto, Avalanche, Crossbar, Nantero, Weebit, Everspin, Spin Memory, NVE, FMC, Others
- Equipment Manufacturers: Applied Materials, Canon, ISI, Keysight Technologies, Lam Research, Singulus, Tokyo Electron, Veeco, Others

The Outlook

- Memory Forecast, NAND, DRAM, etc.
- Potential Emerging Memory Scenarios
- Enabling or driving apps and processing at the edge (IoT, Smart Cities, ADAS)
- Big Data and AI
- Manufacturing methods
- Capital Spending Projections