



OBJECTIVE ANALYSIS

Semiconductor Market Research

*Coughlin
Associates*

EMERGING MEMORIES POISED TO EXPLODE

Now Available

Abstract:

The memory business is at a critical juncture: Certain new technologies are on the verge of displacing the established leaders. How and why will this happen? What will be the impact? This report, jointly produced by Coughlin Associates and Objective Analysis, provides an exhaustive look at emerging memory technologies and their interaction with standard memories, both as discrete devices and in embedded applications (the memories within logic chips like ASICs and MCUs). The report will provide a well of technical information, market dynamics, forecasts, and competitive analyses of the leading companies. Forecasts will show how the markets will grow not only for the technologies themselves, but also for the capital equipment used to produce them. Read this to understand the competitive landscape and market drivers for these new memories, and to learn how to profit from tomorrow's market.

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, Crossbar, Nantero, Cypress, Weebit, Everspin, STT, Avalanche,
NVE, FMC, Others

Equipment Manufacturers: Applied Materials, Canon Anelva, ISI, Keysight
Technologies, 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