

Is Flash Doomed?

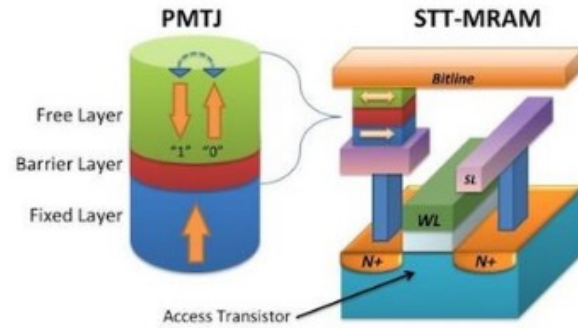
Presenter: Tom Coughlin, President
Coughlin Associates

Flash Can't Scale

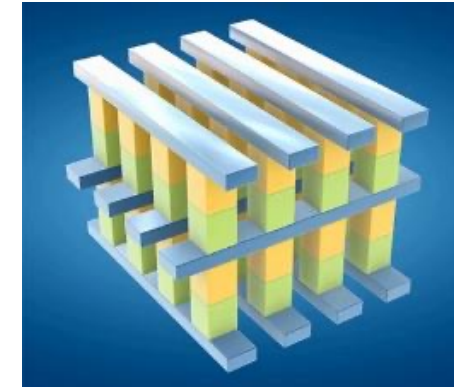
- Discrete NAND had to go 3D after 15nm
 - Now moving to hybrid bonding
- Embedded flash can't go past 28nm
 - Foundries already shipping 3nm logic
- New memory technologies promise to solve this
 - Scaling to sub-10nm nodes

Lots of Potential Alternatives

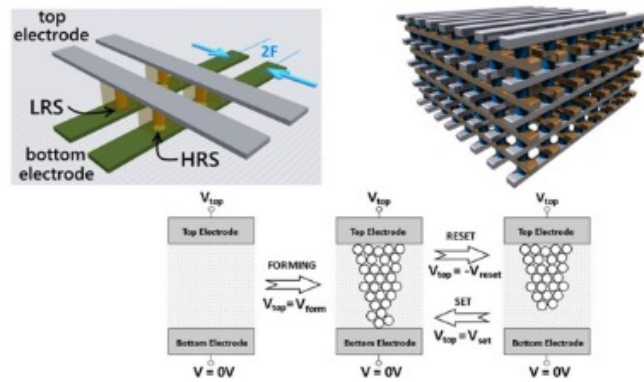
MRAM



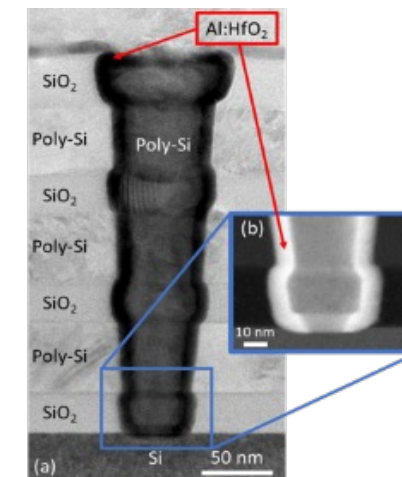
PCM



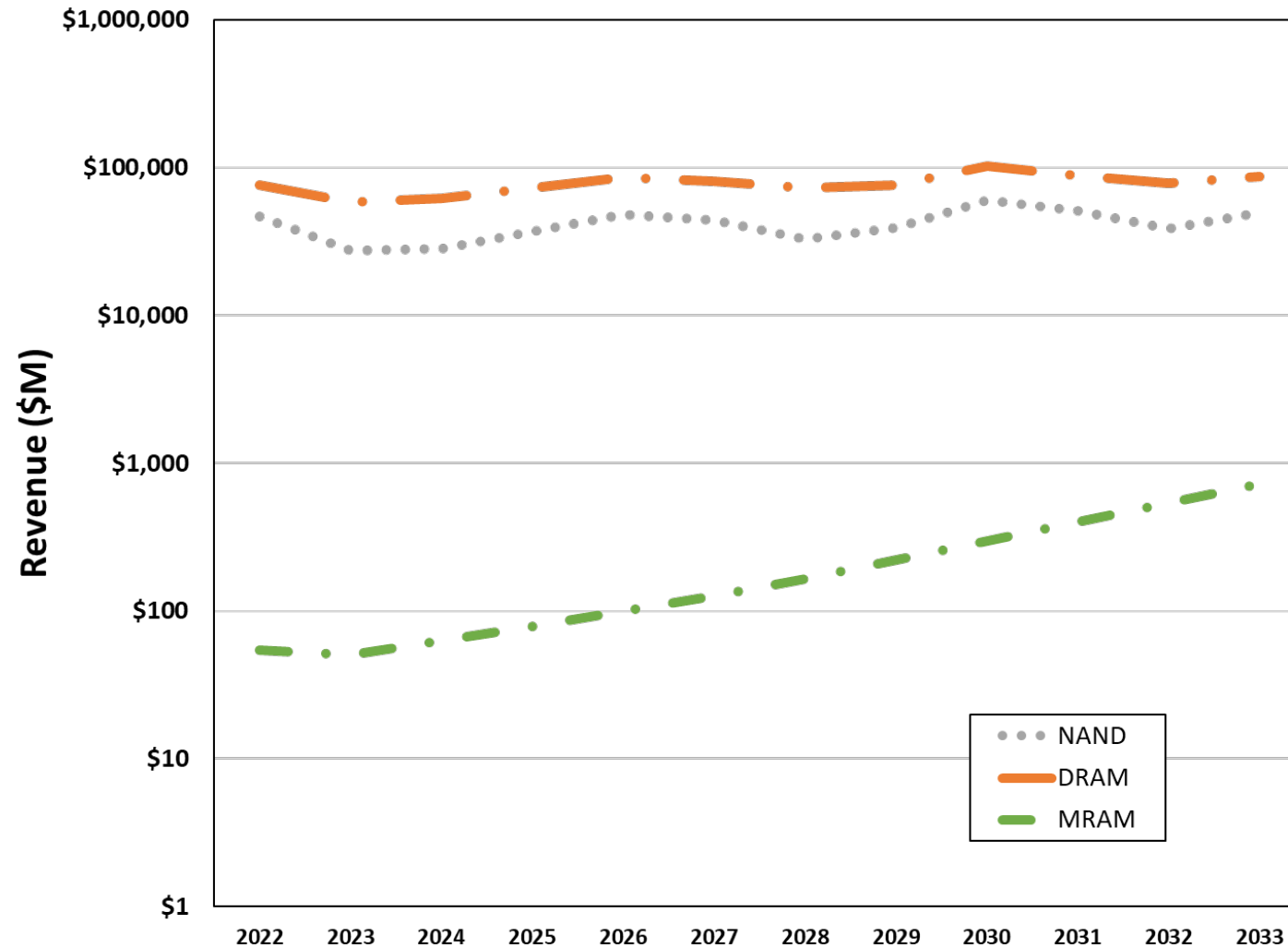
ReRAM



FRAM

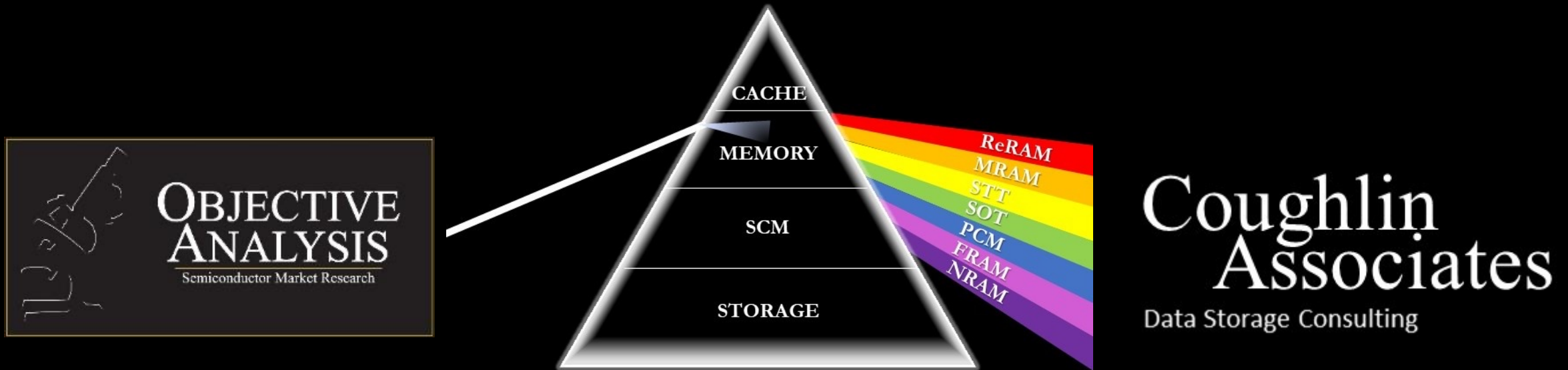


The Future of Emerging Memories



Stand-alone emerging memory revenue forecast to grow significantly faster than DRAM or NAND flash

New Report: Emerging Memories Branch Out



Now Available!

<https://Objective-Analysis.com/reports/#Emerging>
<http://www.tomcoughlin.com/techpapers.htm>