



What to Expect in 2015

Jim Handy

**OBJECTIVE
ANALYSIS**

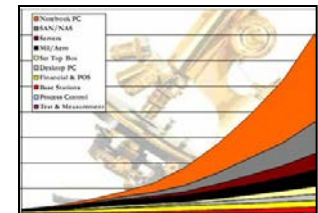
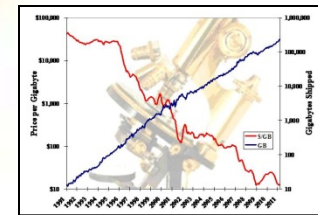
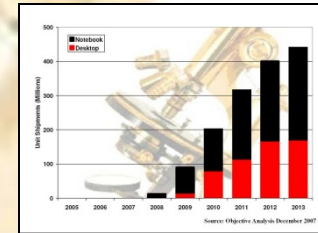
OBJECTIVE ANALYSIS



**Profound
Analysts**

**Reports &
Services**

**Custom
Consulting**

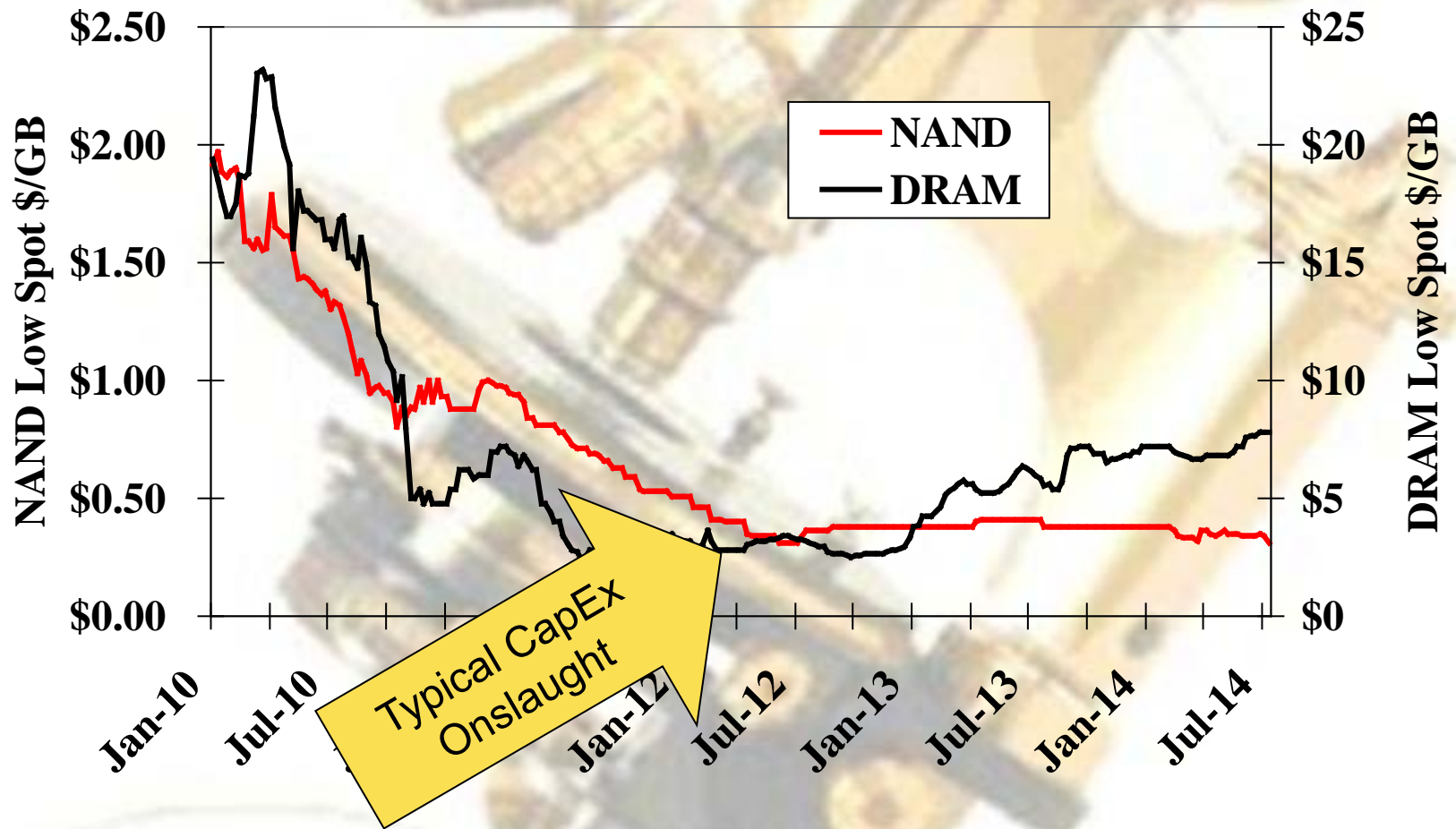


Now Entering a Time of Change

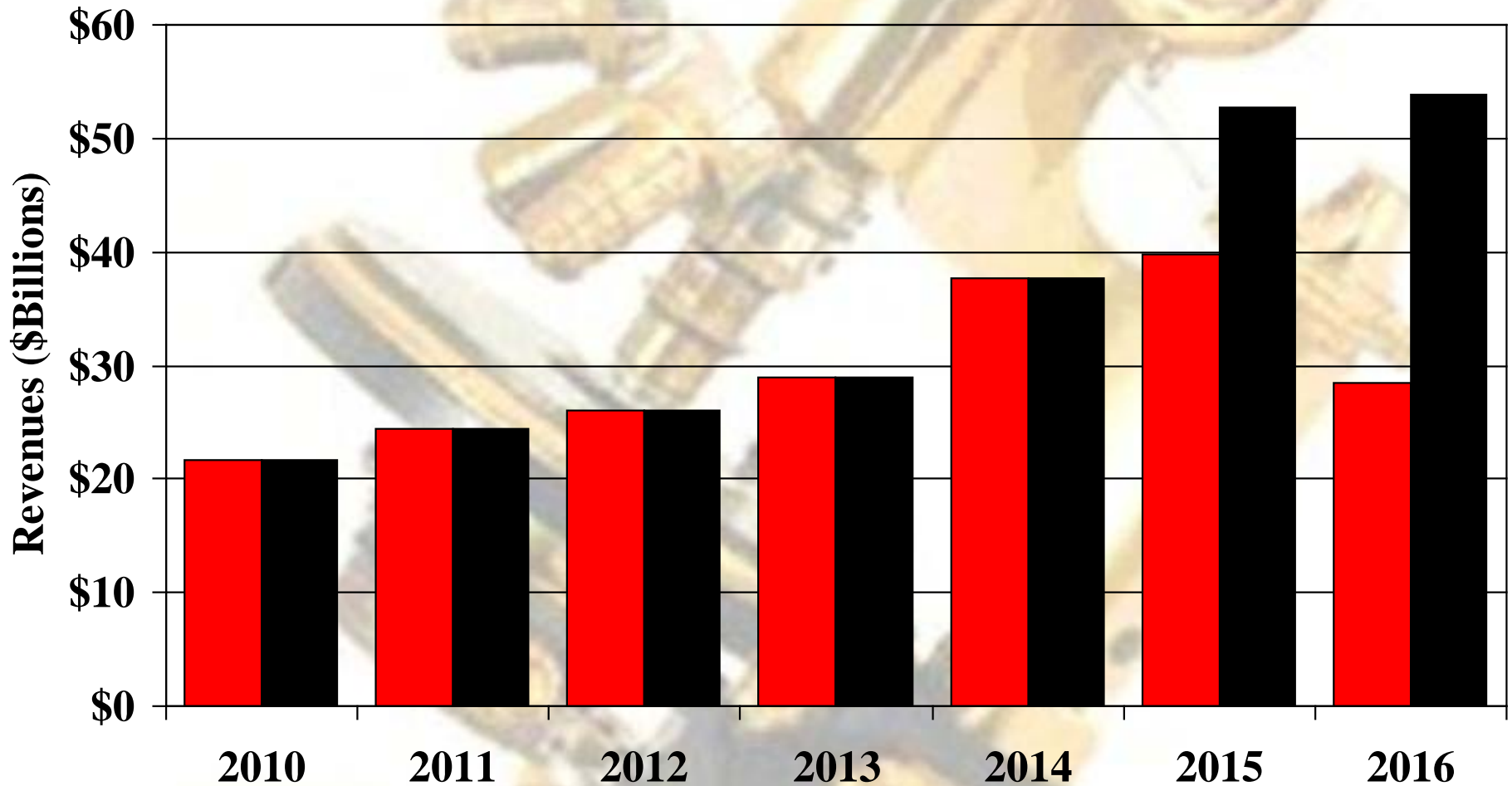
- Historical behaviors no longer followed
 - Typical memory “Boom/Bust” cycle is investment driven
 - Profits aren’t driving CapEx as they always have in the past
- Major technology shifts underway
 - NAND: Planar → Hi-k → 3D
 - SSDs: SLC → MLC → TLC → 3D
 - Systems: HDD → SSD → PCIe → M/B Flash

After all this, there’s the next memory tech!

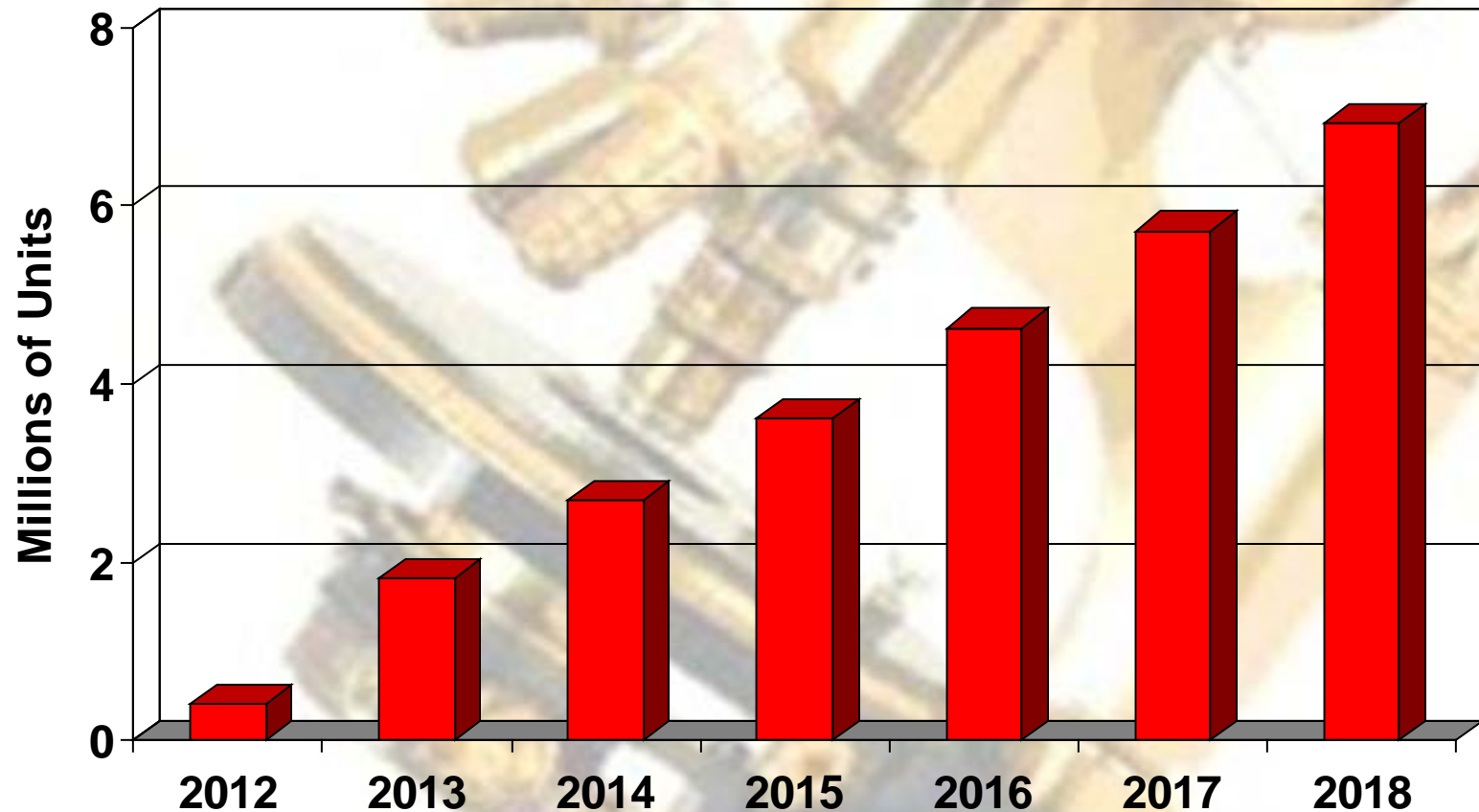
NAND & DRAM Pricing Moves



NAND Flash Forecast with Stall



Enterprise SSD Forecast

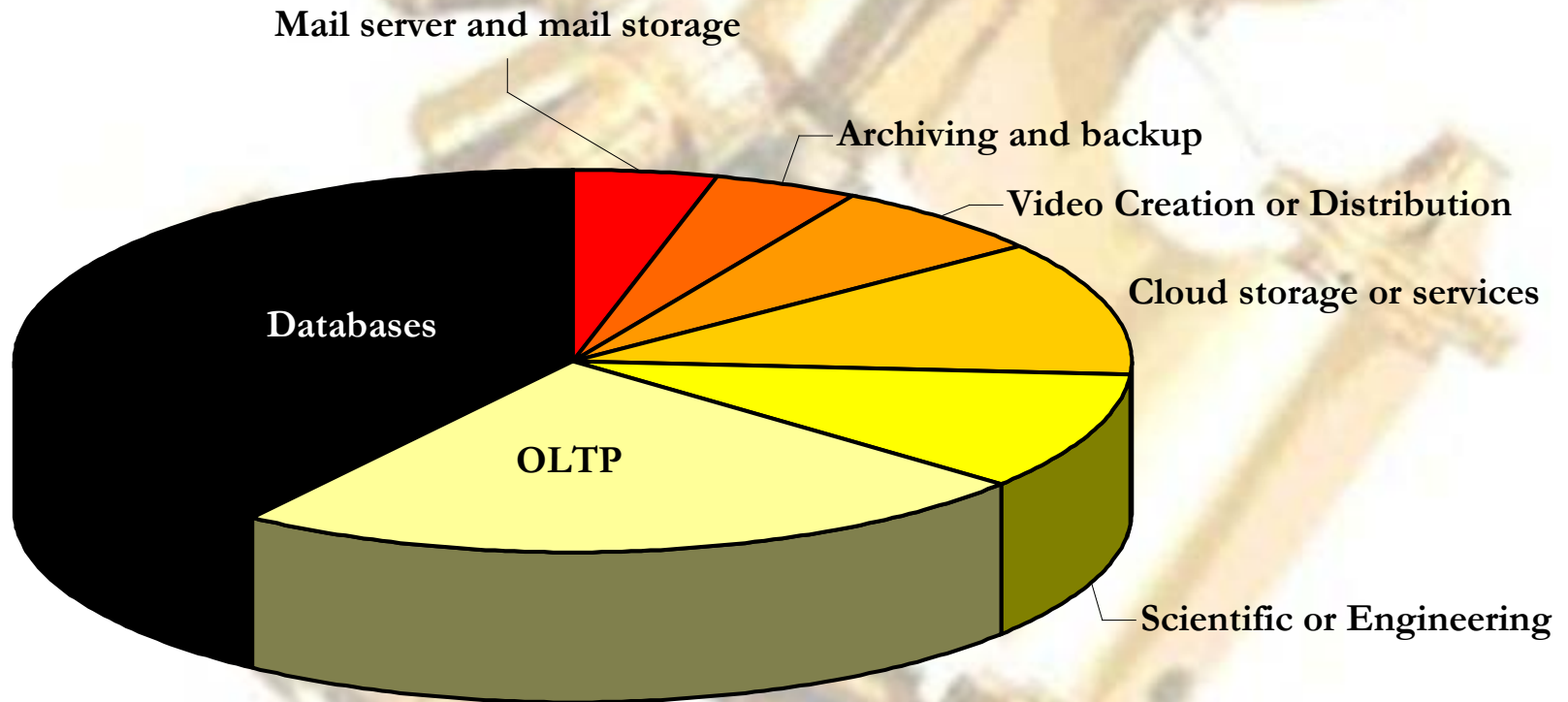


Report: The Enterprise SSD – Technologies and Markets

Will TLC-Based SSDs Prevail?

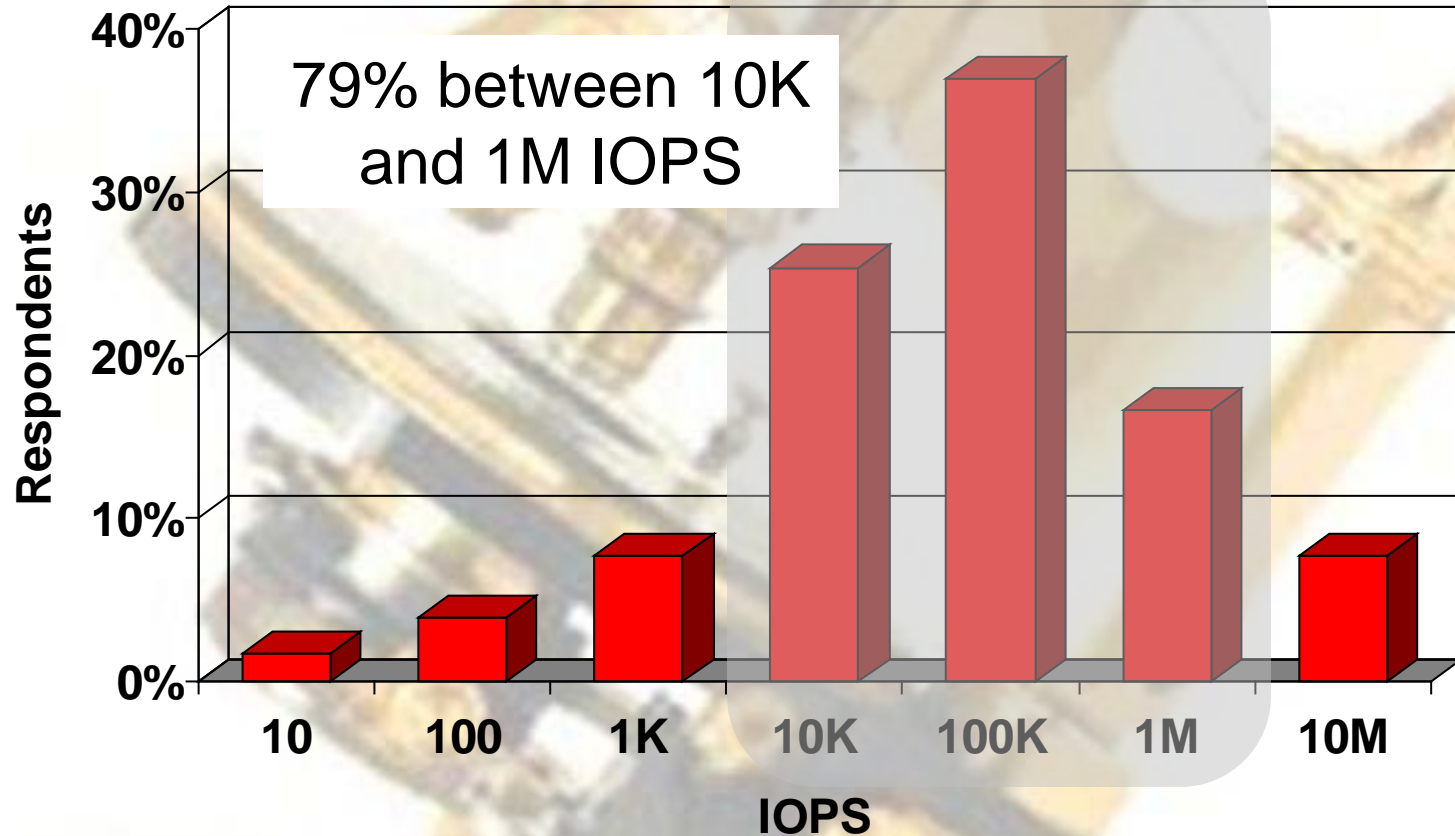
	Client		
	SLC	MLC	TLC
2005	Stock	Never	Never
2006			
2007			
2008			
2009			
20010			
2011			
2012			
2013			

IOPS Survey Application Breakdown



Report: How Many IOPS Do You Really Need?

IOPS Required



Report: How Many IOPS Do You Really Need?

Summary

- The changes are changing
 - Not the same cycles we have had in the past
 - Flash stall will cause complacency
 - ... but there will be a crash!
- SSDs are a moving target
 - Fast-growing market
 - Makers need to be adept
 - Understand customers' IOPS requirements
- There has never been a more “Interesting” time!



Thank You!

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