



Big Changes Coming for NAND & SSD

Jim Handy

**OBJECTIVE
ANALYSIS**

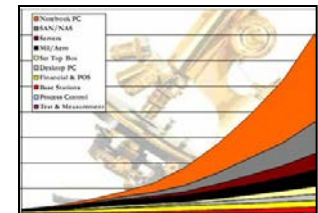
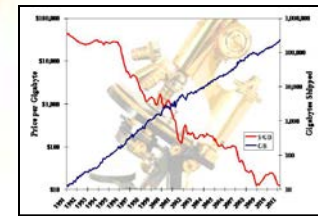
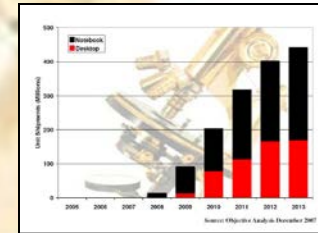
OBJECTIVE ANALYSIS



**Profound
Analysts**

**Reports &
Services**

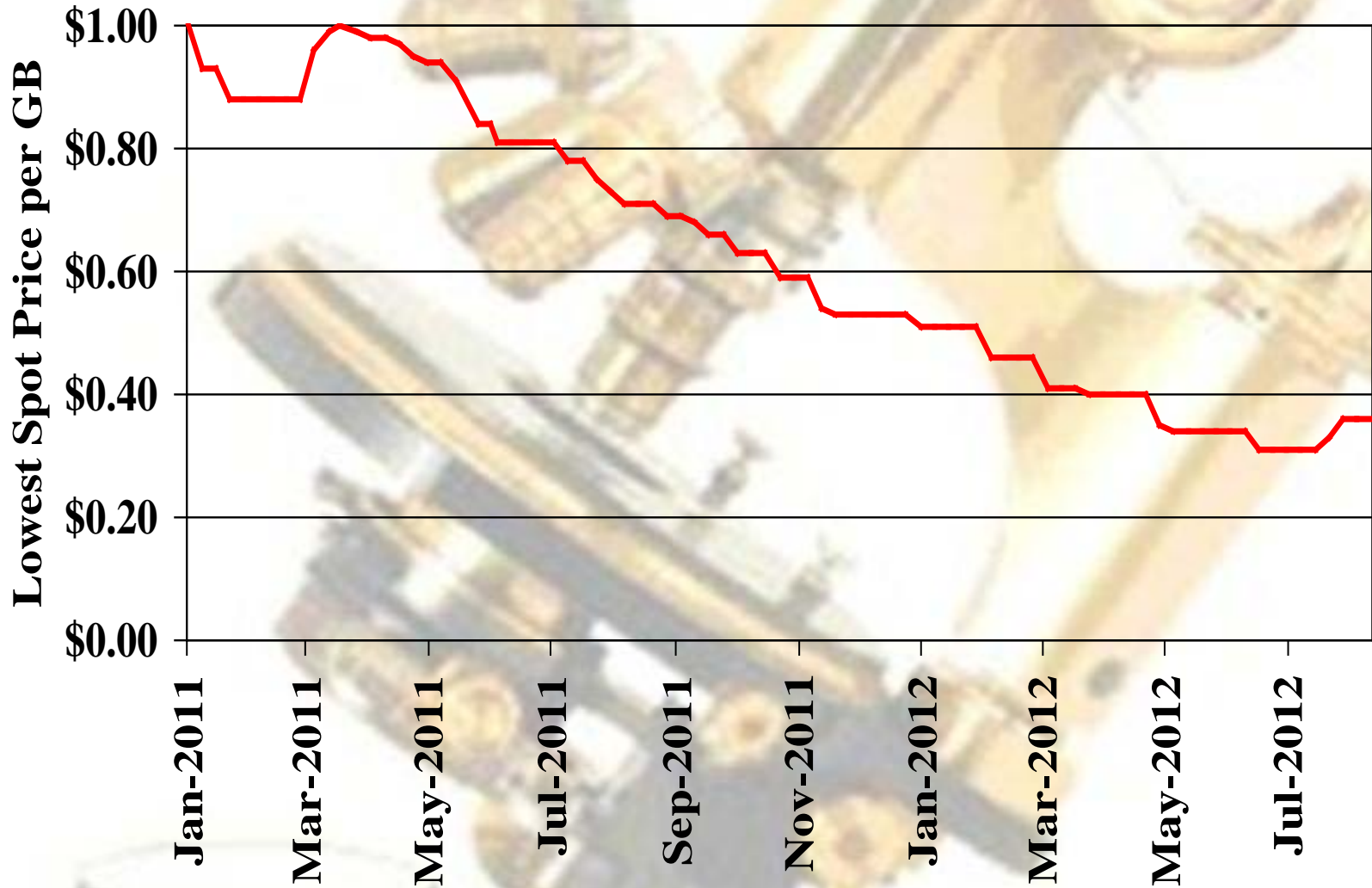
**Custom
Consulting**



Today's Situation

- NAND flash is oversupplied
 - Oversupply was in progress since late 2009
 - Toshiba cuts may not help
 - Recovery is near: Mid 2013
- SSDs moving into the PC
 - Ultrabooks embracing flash/HDD model
 - This will drive acceptance in other PCs
- Big flash adoption in data centers
 - How many IOPS is enough?

Pricing Reflects NAND Oversupply



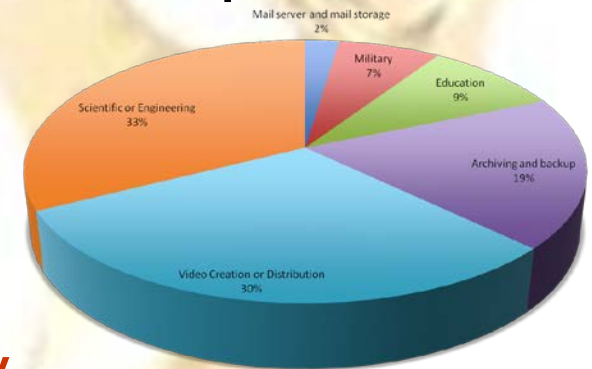
Average PC SSD Capacity in Decline



From: *Are Hybrid Drives Finally Coming of Age?*

How Many IOPS Do You Need?

- SSDs will be priced by speed and capacity
 - Users will benefit by knowing their speed & capacity needs
 - Sellers will too!
- Ongoing 5-minute survey at <http://TinyURL.com/IOPSsurvey>
- Initial results encouraging
- We need more respondents!



Summary

- Flash oversupply ends mid 2013
 - Prices stabilize at \$0.30/GB
 - Very difficult for some suppliers
- Ultrabook pushes cache SSDs into all PCs
 - Average SSD capacity to decline as a result
 - SSD-only PCs will take a hit
- Enterprise flash will continue to make solid progress



Thank You!

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