



Bringing Solid State Drives to Mainstream Notebooks

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SSD When and Why

Questions we all have.....

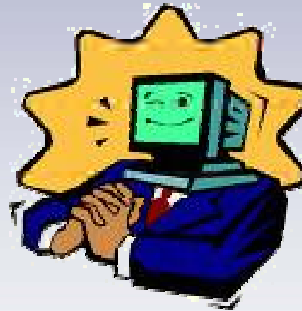
- **Why would anyone pay a premium for SSD over HDD?**
- **When will NAND have the same cost per MB as a hard drive?**
- **What else must happen to make SSD successful?**

What's In It For the Consumer

Basic Misconceptions of the Average Consumer:

Average Consumer
knows the brand of
HDD

Average Consumer
knows the difference
between random and
sequential speeds

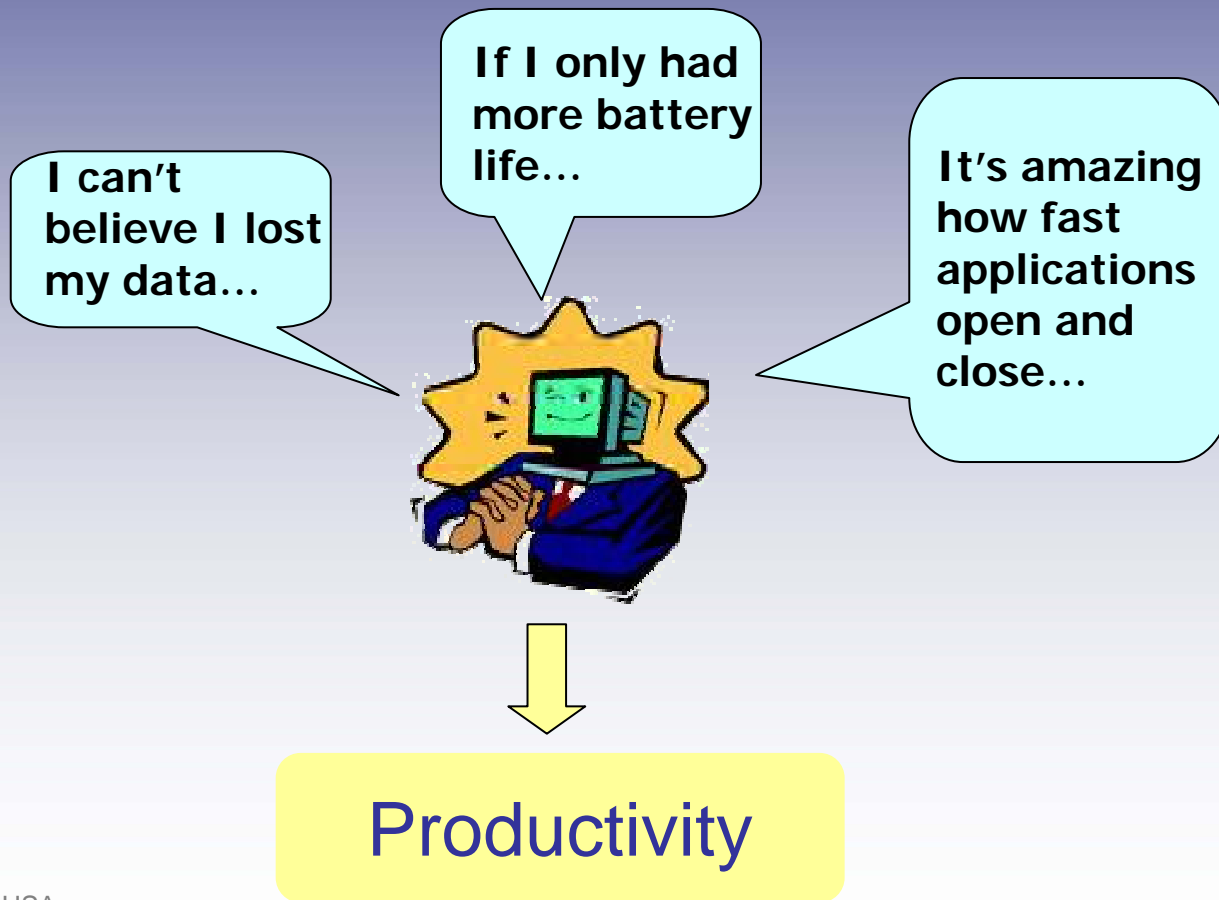


Average Consumer
knows the features of
his/hers HDD: RPM,
speeds, power
consumption

Average Consumer
understands
benchmark results:
PCMark, H2Bench etc,

What's In It For the Consumer

What's important for the average consumer:





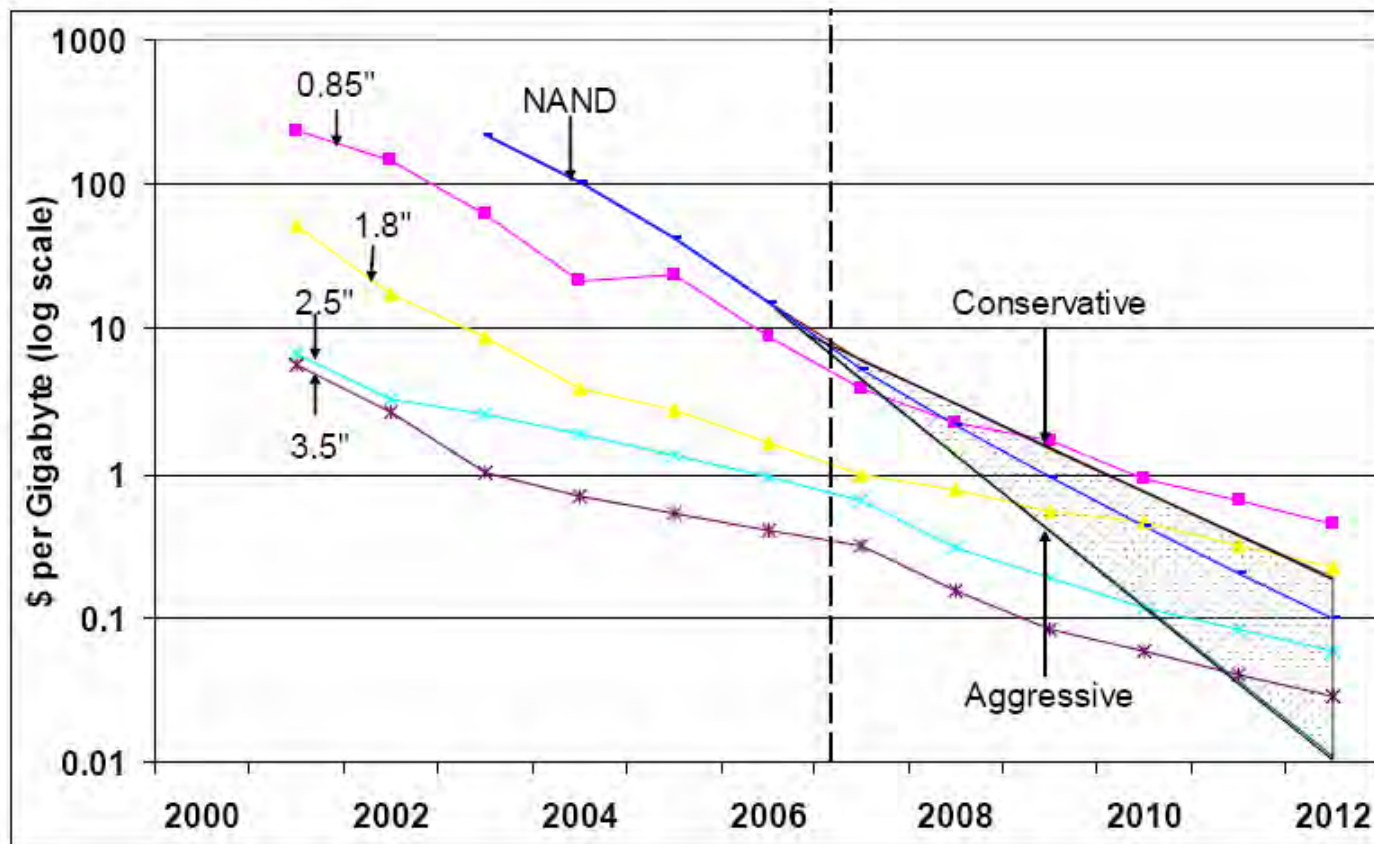
SSD Productivity benefits: tangible and appreciable

- SSD benefits must be tangible so consumers can really experience productivity improvements
- Need to target the relevant market segment (“moving target”); SSD is not for everyone
- Marketing message must be clear:
 - **“Reduced cost through reliability, increased performance” (Dell’s website)**
 - Total Cost of Ownership (TCO); lifetime cost of SSD vs HDD
 - Market education: consumers and decision makers
 - “Word of mouth” on user-experience



When will NAND have the same cost per MB as a hard drive?

Analyst view: Price projections



Source: Goldman Sachs Research estimates.

What else must happen to make SSD successful?

- **Quality** levels for SSDs for PCs are very difficult to achieve in many aspects. Only companies that have direct fab control can succeed to get the appropriate quality levels.
- **MLC** will accelerate the market. The high cost and limited production of SLC will limit mass market adoption. Companies with significant MLC IP will have the advantage.
- **New technologies** will enter reducing the \$/bit, X4, X3.
- **Flash expertise**: flash, controller and system knowledge
- **OS** level awareness of SSD



Thank You