

What's Happening With Hybrid Storage?

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What's Happening with Hybrid Storage?

- The PC market desires a solution that delivers all the benefits of an SSD with the affordable capacity of an HDD. A hybrid hard drive is an innovative approach in which a relatively small amount of NAND Flash delivers most of the SSD benefits to the traditional hard disk drive. Other Flash caching solutions exist where the Flash is separated from the HDD but the Hybrid HDD shows great promise as the solution of choice for the PC market.
- Hybrid HDD is moving forward
- The Key to NV Caching is beyond speed & size.
 - It's cache management

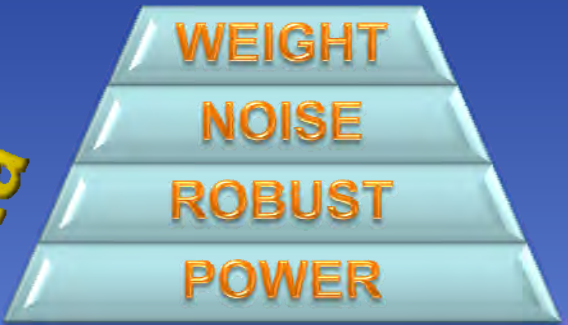


Choosing Storage
Non-Volatile Caching
What Happened?
What's Happening?



Choosing Storage for the PC

Buying Criteria



Suppliers Differentiate
Around Attributes

In-Category Differentiators



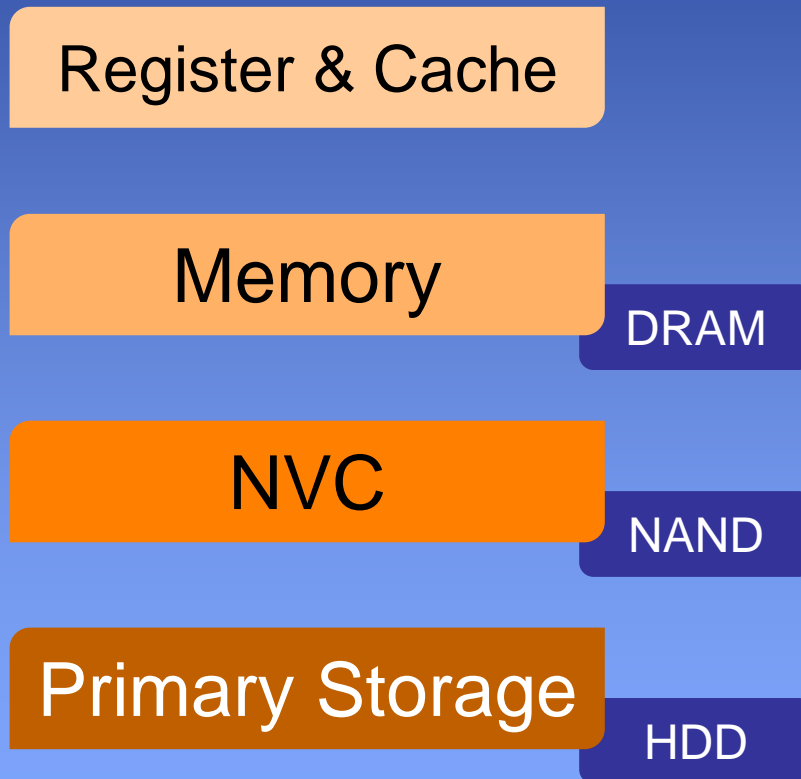
Class of Storage Defined
by Pricing Categories

Category Class



Entitlements

Non-Volatile Caching (NVC)



Microsoft Vista shipped with two new features

ReadyBoost

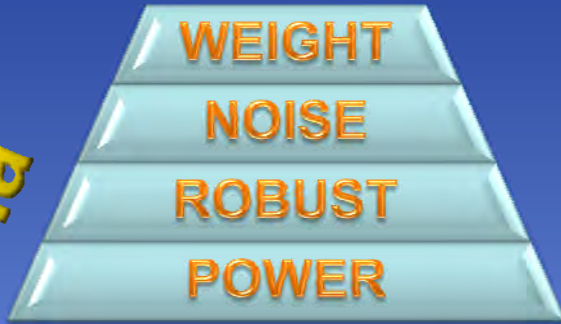
- Designed as a memory extension using USB drives

ReadyDrive

- Manages a hybrid drive

NVC – What Happened?

Buying Criteria



ReadyBoost Promised

- Faster general performance



ReadyDrive Promised

- Faster Boot
- Longer Battery
- Faster App Launch
- More Reliability



NVC Options

Flash Cache Module (FCM + HDD) –or–
Hybrid HDD (flash integrated into the HDD)

Considerations

- System Size:
 - » FCM: must accommodate an extra hardware slot
 - » Hybrid: fits in the storage slot already present
- Reliability:
 - » Only Hybrid HDD providers can back up claims with warranty for the entire storage solution
- Data Separation:
 - » FCM problematic in corner cases and in security
- Supply Chain:
 - » FCM: *flexibility* to match any FCM to any HDD + *complexity* to purchase, manage, and assemble a second component
 - » Hybrid: *complexity* to increase SKUs from HDD vendor + *simplicity* of integrating a single solution

What is Happening with Hybrid Storage?

- Fundamentals are there
 - IDC tested PC storage devices.
 - "The 2nd generation hybrid HDD exhibited significant improvement over the first-generation hybrid and even bested SSD in some cases."
 - » July 2008, IDC #213285, Volume: 1



Conclusion

Hybrid Storage

- Hybrid HDD market acceptance isn't so much a challenge of price premium or low capacity, but implementing technology for end-user benefit
- Areas to watch:
 - How do NVC Solutions solve real-world problems?
 - » End-user benefits
 - » Benefits aligned to market value





Thank You

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Join me at the Ask the Experts session tonight!

