

# Data Tsunami — Storage Trends in a Fragmenting Market

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Discobolus Designs / FormFactor

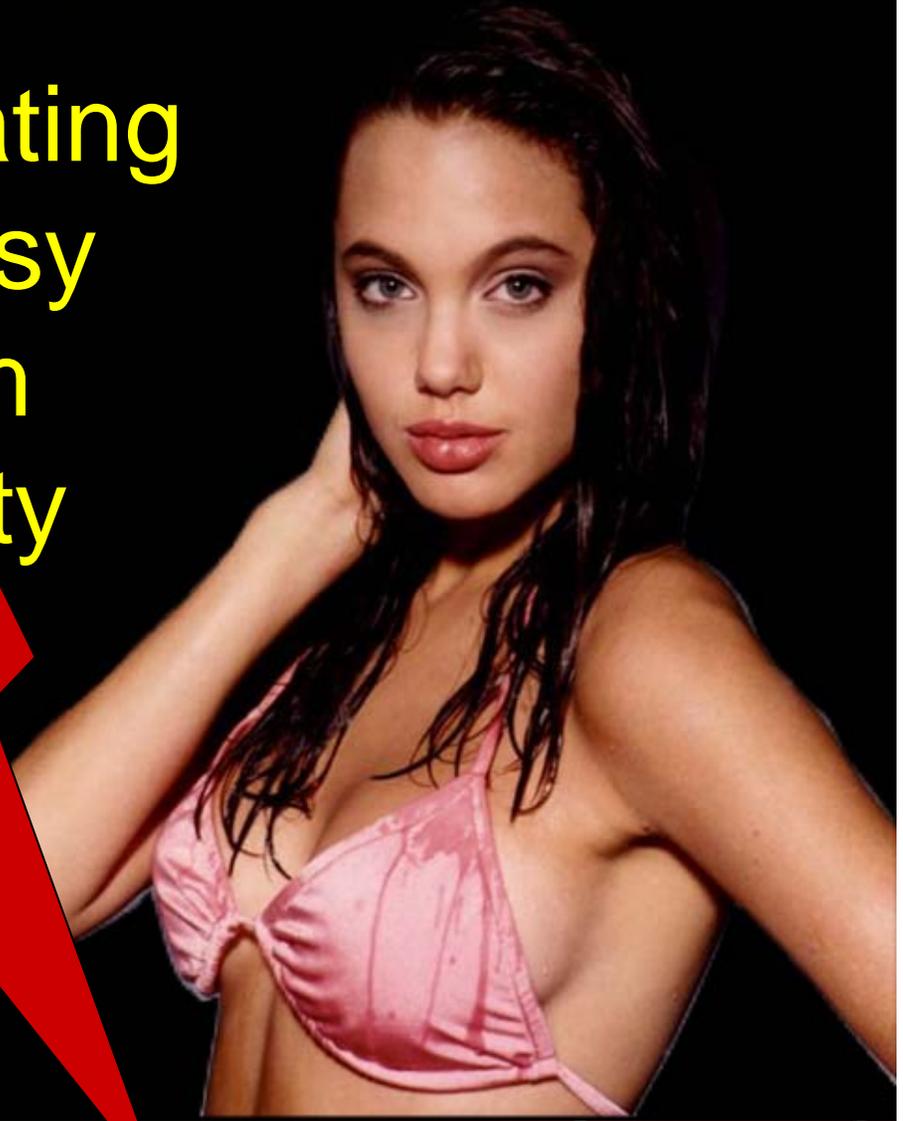
January 2011





Maybe  
Chicken Little  
was right...

Separating  
fantasy  
from  
reality



# The Cloud Storage Dream



**Google Docs**

**Facebook**



**Skydrive**



**Dropbox**

**Wikileaks**

# The Cloud Storage Reality



**@Home**



**MySpace**



**AOL**

# Cloud Storage Trust Factor = 0

**Flickr**



**Pixagogo**



**Picasa**



**Some Data is  
Temporal**

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**Email**

**Facebook  
postings**

**Twitter  
postings**

**Some Data  
Lives Forever**

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**Family photos**

**Business Data  
Archives**

**Tax records**

# Data Choices Last 3 Decades

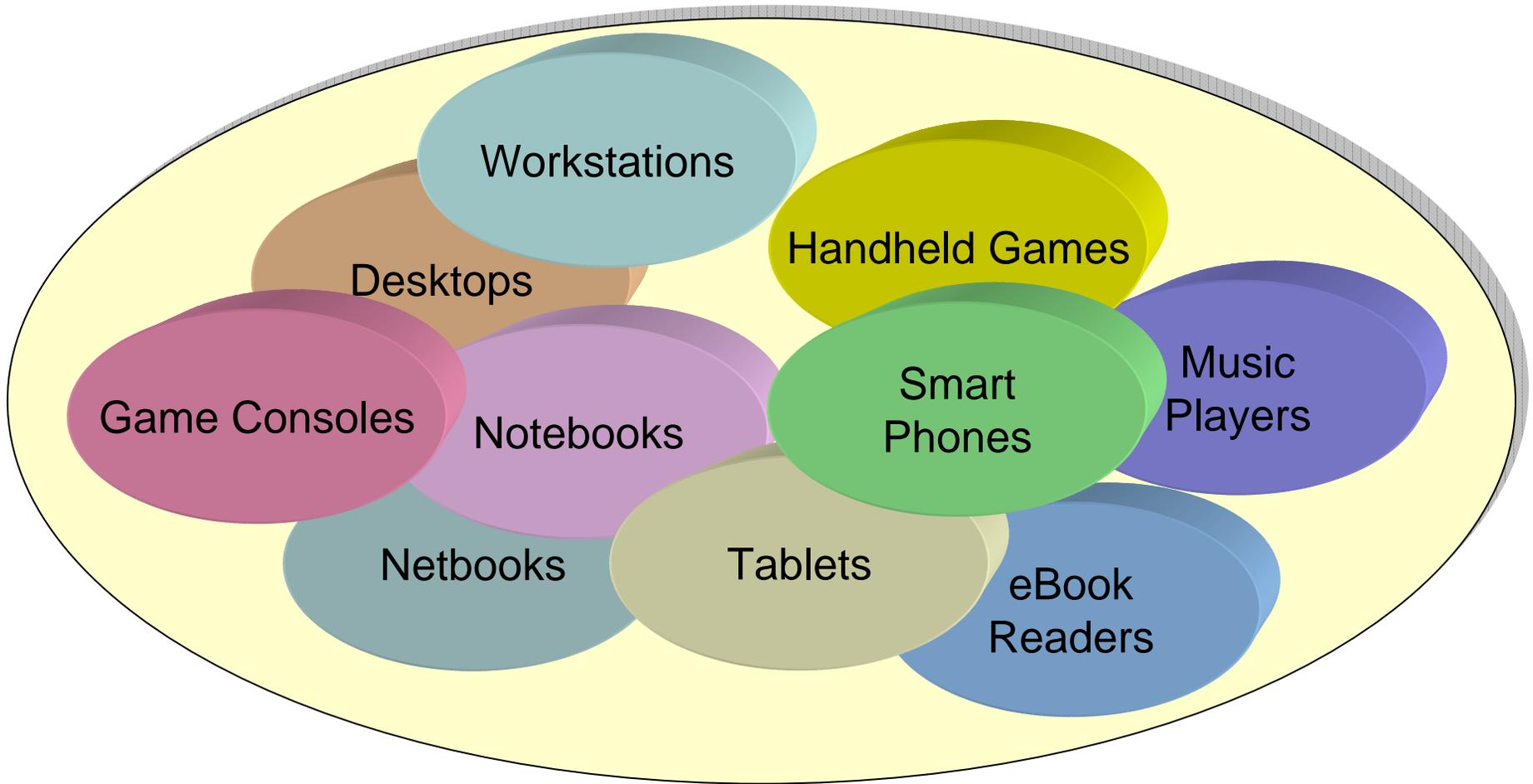


**Choice #1**



**Choice #2**

# Data Choices Circa 2011



## Observed Trends

Windows/Mac OS no longer the only operating systems

Desktop PC going away

Netbooks = Notebooks

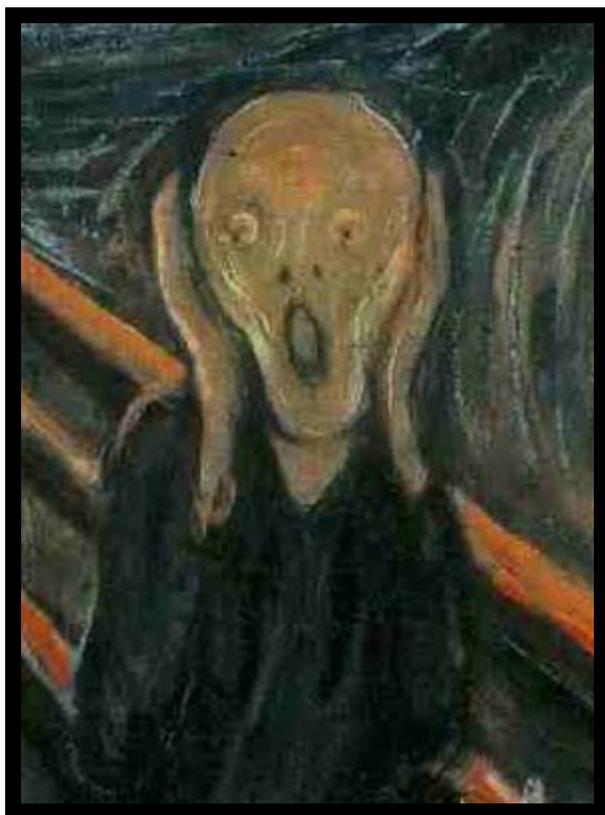
Notebooks tethered to the wall plug

WIFI and 3G/4G are ubiquitous

The image shows two Best Buy advertisements. The top advertisement is for a Toshiba Netbook. It features the Intel Atom logo, a Toshiba laptop, and text: "NETBOOK", "Perfect for Internet and e-mail on the go", "BEST BUY EXCLUSIVE", "ADD Geek Squad SETUP! \$49.99", "10.1\"/>The image shows two Best Buy advertisements. The top advertisement is for a Toshiba Netbook. It features the Intel Atom logo, a Toshiba laptop, and text: "NETBOOK", "Perfect for Internet and e-mail on the go", "BEST BUY EXCLUSIVE", "ADD Geek Squad SETUP! \$49.99", "10.1\"/>

The bottom advertisement is for a Compaq Laptop. It features the AMD logo, a Compaq laptop, and text: "LAPTOP", "HOT PRICE", "15.6\"/>

# Rude Awakenings



Losing your photos

Losing your music collection

Losing your bookshelf



## Tying the Loose Ends

Mobility is for temporal data

Forever data requires tethered  
computing

Since the cloud cannot be trusted...

...Universal home storage needed...

...Synching all computing devices to  
personal data



**“Mobile Home”  
NAS with all  
data**

**Visible to  
the cloud  
but secure**



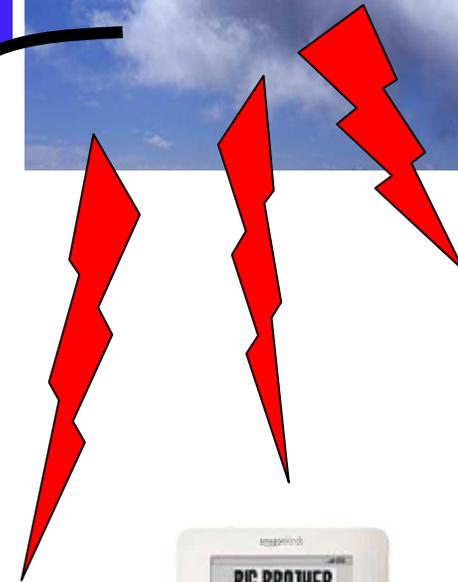
**Sync to all  
devices at  
home**



**“Mobile Home”  
NAS with all  
data**

**Visible to  
the cloud  
but secure**

**Sync to all  
devices  
from cloud**



## Challenge with the “Mobile Home” Vision



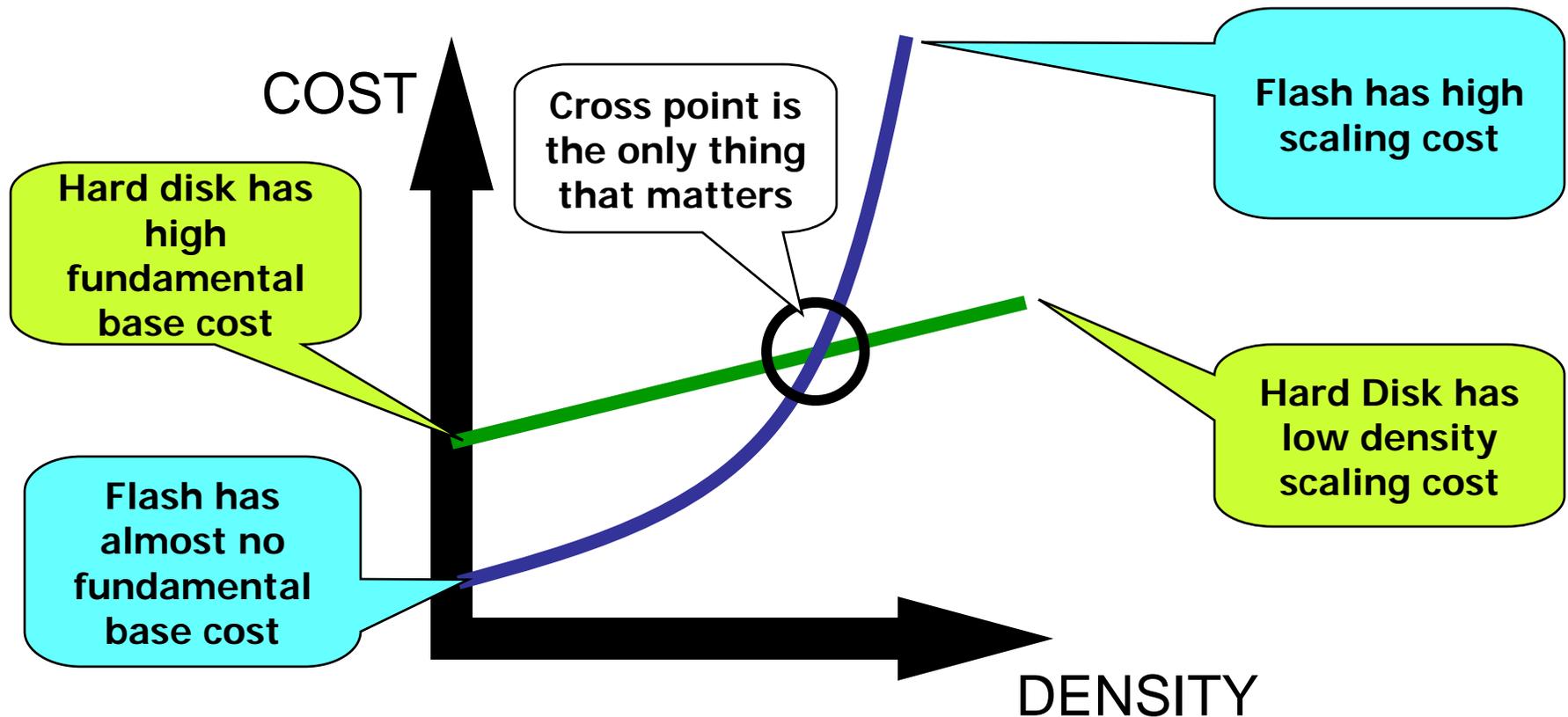
**Charge for Mobile Home  
mirroring, synching & backup**

## Data Storage Status Quo

Workstation	1 TB	Hard disk
Notebook	500 GB	Hard disk
Game Console	64 GB	Hard Disk
Tablet	32 GB	Flash
Smart Phone	16 GB	Flash
Music Player	8 GB	Flash
Ebook Reader	4 GB	Flash



# Flash Versus Hard Disk Crossover

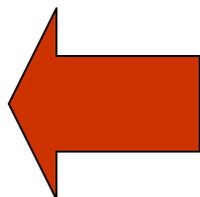


# Battery Life Status Quo

Workstation	N/A
Notebook	3 hours
Tablet	8 hours
Smart Phone	24 hours
Music Player	24 hours
Ebook Reader	1 month

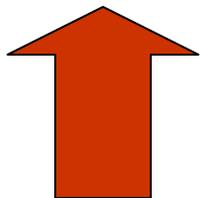


PCs  
350Mu



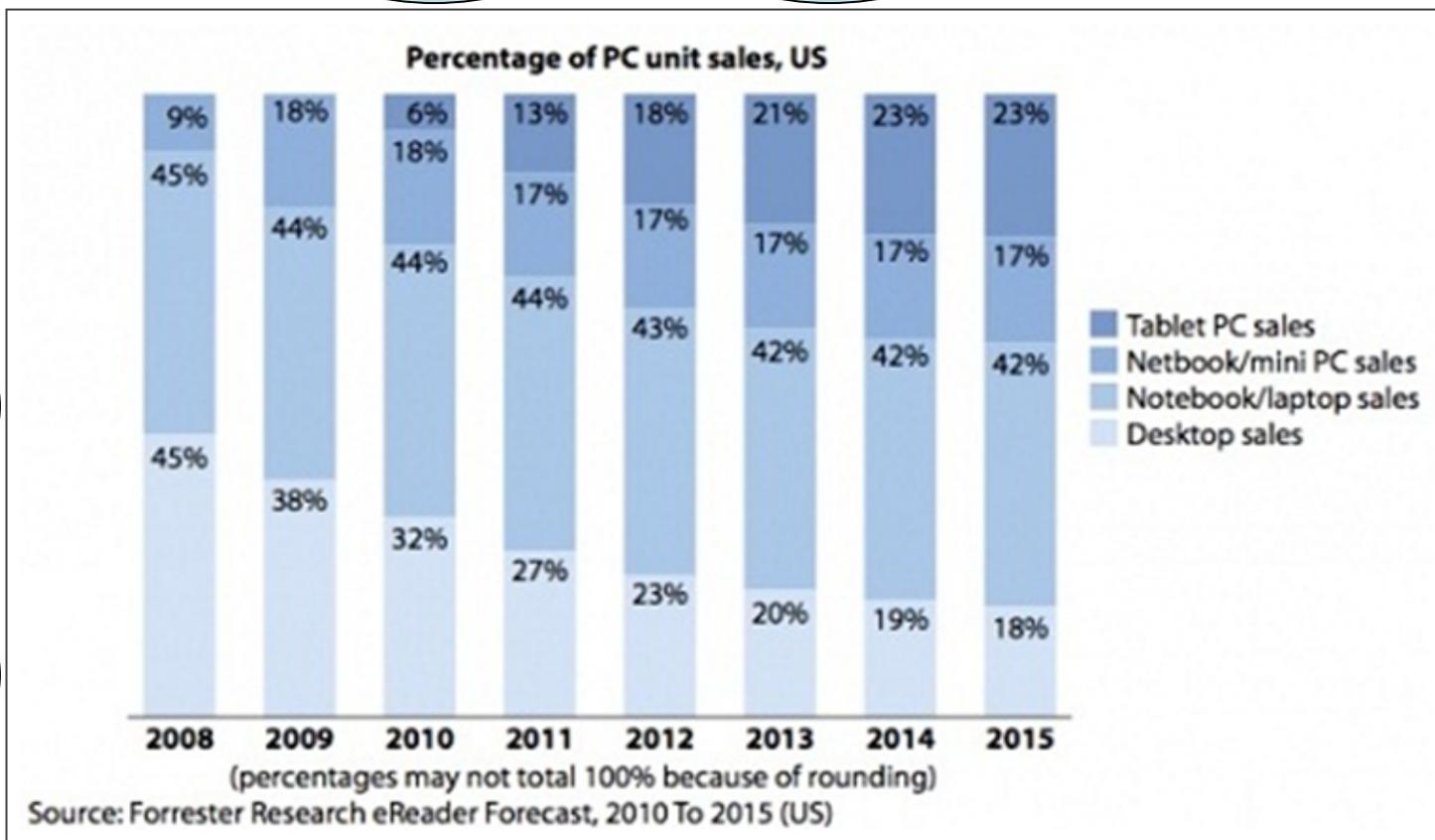
Netbooks  
30Mu

Game  
Consoles  
30Mu



eBook  
Readers  
10Mu

Tablets  
8Mu



The background of the slide is a photograph of a river flowing through a forest. The trees are in autumn, with leaves in shades of green, yellow, and orange. The river is clear and flows over rocks. The sky is overcast.

**All data trends  
towards mobility**

**Hard disks are  
fundamentally  
immobile**

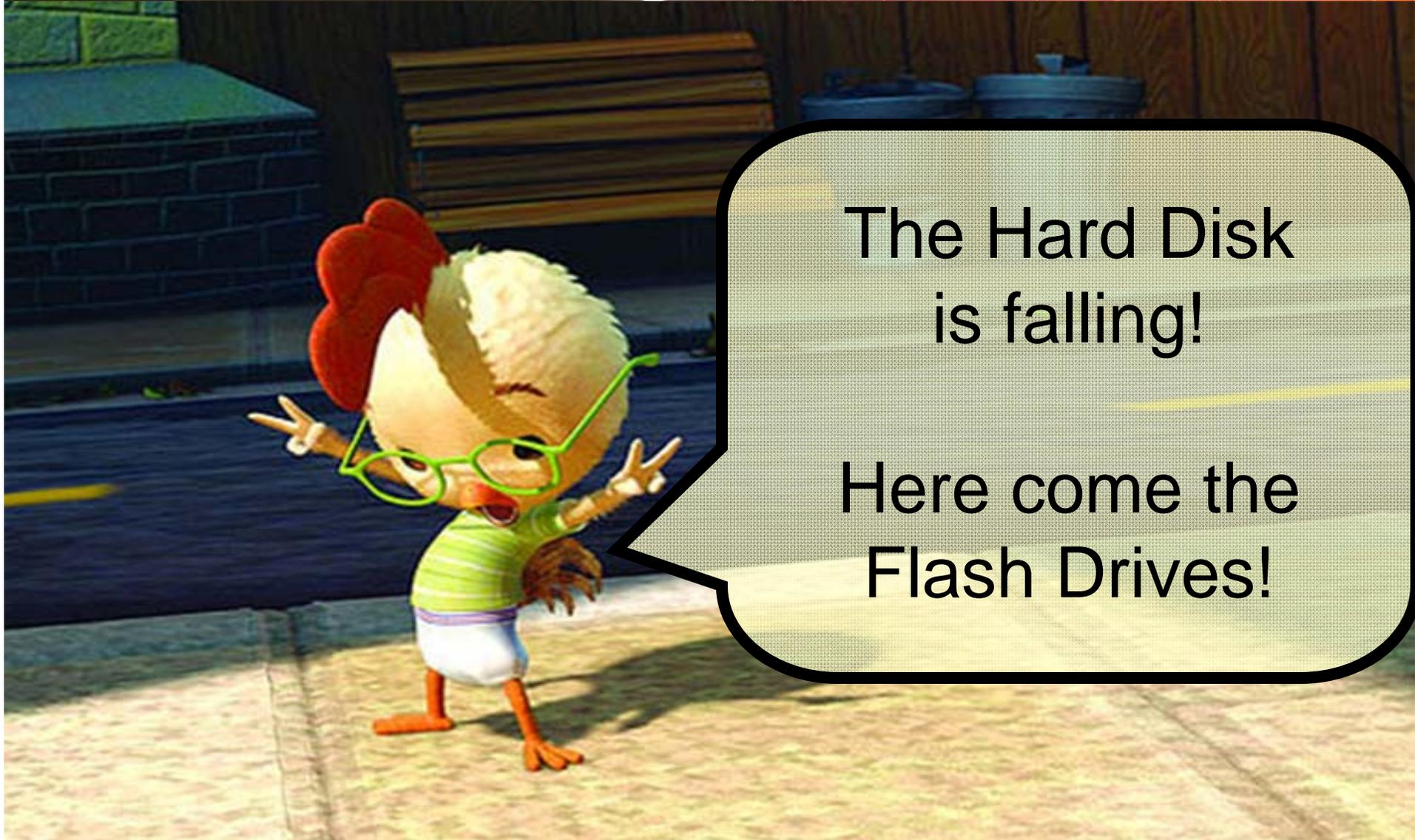
**...but it's too late...**

**Solid State Drive  
replaces HDD in  
notebooks**

**Notebooks lose  
market share to  
single purpose  
mobile devices**

## Data Tsunami





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*"Nerd Story"*  
available on Amazon &  
SmashWords



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