

Flash Memory Has a Champion & People Will Cheer



Source - [docomics](#)

***Champions** – When people see superheroes on the big screen, they cheer. They know their heroes are going to look out for the little guy, do what's right and deliver the right answer. Finally, the flash industry champion has emerged and people now believe their content/data will be saved.*

There are two things I really like about the Tech industry – video content and storage.

Everyone loves a good movie.

Good storage? ... Not so much.

The “ah ha” light came to me at FMS (Flash Memory Summit) ... storage doesn't have a hero, a champion.

The iNet has one – Vint Cerf (one of its founders) who fights for it, protects it, leads the charge for Internet everywhere.

You know, peace, justice, the global way!

The storage industry's superhero (specifically flash) is one you would least expect.

It's the likeable (O.K., loveable) Woz – Steve Wozniak, the technical whiz who helped set the platform for Apple.

Sure, he has a vested interest in flash because Fusion-io (he worked with them) was bought by SanDisk.

Still, he's a techie that techies listen to, believe.

Even kids listen when he talks about devices.

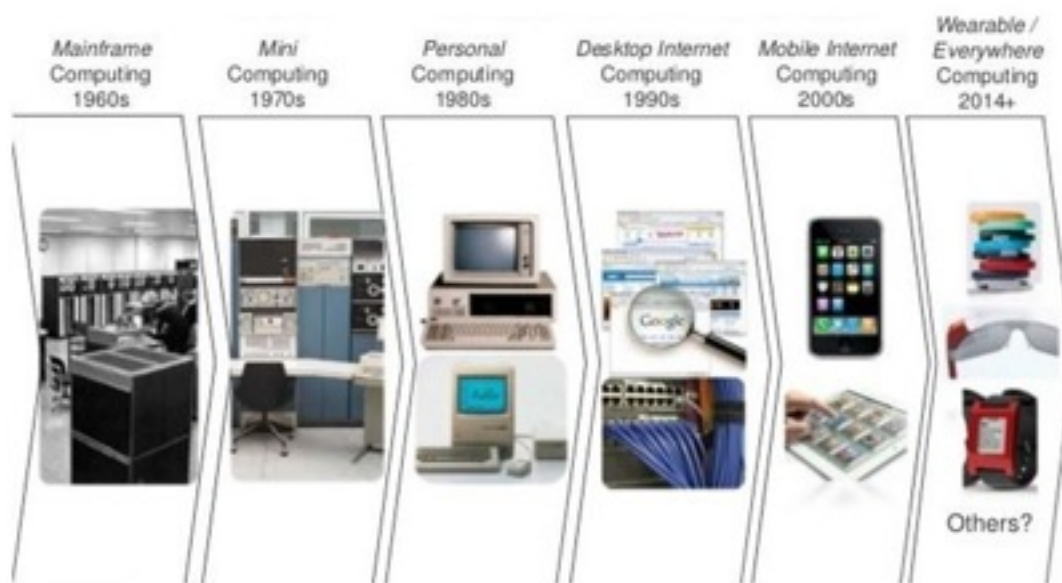
Our champion has emerged!

It's about time!

Of course, he was pivotal in opening the floodgate of storage demand because Mac is the standard of the M&E industry and content kids.

He made using a computer fun, cool ... not just a work tool.

After that, Apple went on to make a bunch of computer-based really fun things; and we never looked back.



Source - KPCB

Multiplying – *The variety and volume of computer-based products has grown steadily since the first mainframes were introduced. They've gotten smaller, stronger and more affordable--to the point that you have more power in your smartphone than the computers that guided our early exploration in space. They keep getting better; we keep buying more.*

We outgrew the 2nd platform of PCs and servers and are totally into the 3rd platform of devices, things.

Yes, billions of 'em.

They're so good, so luscious that people are buying more smartphones, tablets than PCs.

But don't get too hyped because it will take my kids' kids to get to the point that they can really do serious work on them.

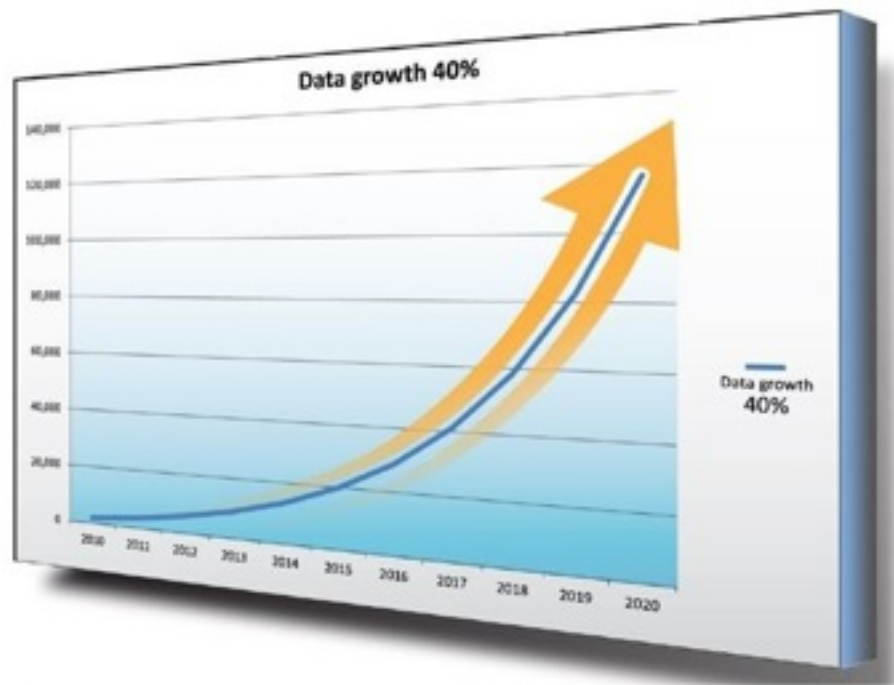
Overflow

Sure, we're already creating stuff with them – all of them:

- 2.5B GB of data every day
- 6M Facebook views
- 2+M Google searches
- 20M flickr views
- 100+ new LinkedIn accounts
- 100 hours of video to YouTube
- 1.3M YouTube views
- \$83K in Amazon sales

We've done so much with these new enabled devices that 90 percent of the content/data being stored "somewhere" didn't exist two years ago.

That's right, we've produced more stuff in the last two years than we did in the previous 5,000 years!



Source - IDC

Content Overload – *With billions of devices of all shapes and sizes, we have created more content in the past two years than was created in the past 5,000 years; and the volume shows no sign of slowing.*

Superhero Vint’s good-to-shady team is telling us a fantastic tale about how good it is (will be) to put all that stuff in their cloud.

They point out that 90 percent of it is “just” personal information, emails, tweets and facebook posts. You know, space junk that is nice but all you really want to do is put it somewhere for ... later.

Unfortunately, not all of people using Vint’s solutions are “nice:”

- Between 2005 and 2013 – over 864,108,052 sensitive (personal) records had security breaches.
- Last year, businesses paid an average of \$5.4M per breach, \$188 per record.
- The Internet is kinda’ slow, sorta’ unreliable, totally crackable/hackable for 4-20 year-olds.
- Some of the sales types sold aluminum siding last year (just kidding, but maybe...).

Personal Storage

Local storage looks a whole lot better and you have two choices – HDs for cheap capacity and fast flash memory/SSD.

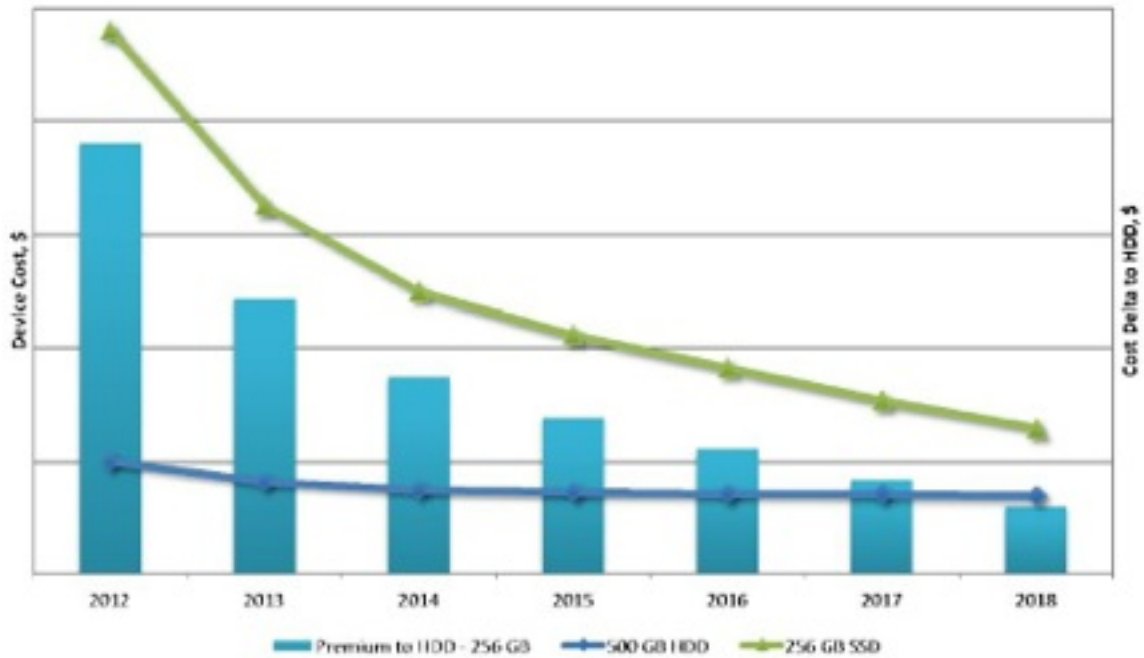


Source - EETimes

***Woz Talk** – Steve Wozniak, the co-founder of Apple, developer of the early Mac and perpetual techie tinkerer; kept the FMS audience spellbound as he talked about developing technology tools/products for consumers, education reform and more.*

Woz does as much listening as talking and says what people want/need are:

- Fast out-of-the-box performance
- Reliability
- Endurance – things that last for awhile
- Long device/data life
- Light devices that don't use a lot of power
- Quick, easy, on-the-go solutions
- Storage, storage, storage



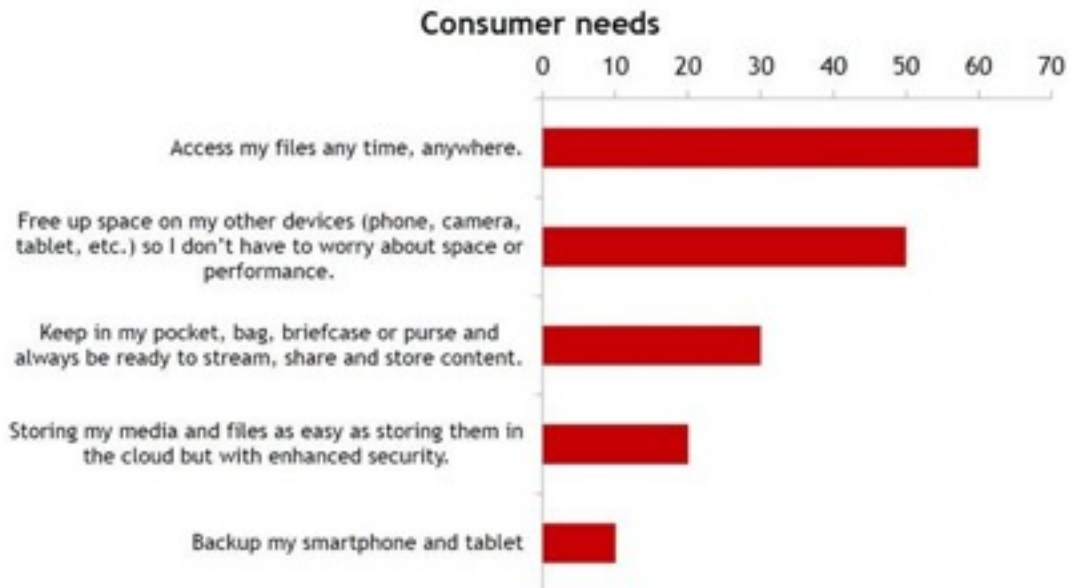
Source - engadget

***Getting Better** – Semiconductor memory technology keeps improving while production/ packaging costs continue to place added pressure on HD solutions to multiply capacity and drive down the cost per GB.*

Flash memory/SSD is increasingly meeting most of those needs.

Woz also concedes that semiconductor technology will probably never replace HDs.

Since you can't carry all your stuff in your device, you might as well have a cheap, multi-TB hard drive that can be slipped in your pocket/backpack as *your* personal cloud.



Source - Toshiba

Mobile Capacity - Because of the limited storage capacity in most mobile devices, consumers want to free up device storage space while still having data and content readily available. Rather than store the content in the unpredictable cloud, more people are using light, portable personal storage devices.

Woz is only a so-so dancer but he's as geeky as they come because he built new, cool stuff for himself that makes others go, "Wow, that's cool!"

At FMS, he noted that is why Tesla is such a great car. Elon built it for himself, his family and millions want to have that experience.

He said that's why the iPhone was, and is still, great compared to the nearest competitor – Samsung Galaxy (he does like some of the stuff they've done) and the myriad of knock-offs.

The iPhone rose to the top because it was designed/built to Steve Jobs' definition of a good product.

Wearables

While Woz thinks we're becoming way too attached to our devices – tablets, smartphones – he still thinks wearables – even with a ton of flash memory – have a long way to go.



Wearables – While there is a lot of buzz surrounding the great potential for wearable technology, it is still in its early stages. The potential is there, it will just take several generations of products to become gotta'-have, gotta'-use solutions.

Obviously, he has played with every personal device that comes along but feels most of them are just weak ideas developed for others – market researchers, focus groups, “them.”

Smartwatch? He's still waiting.

He's tried the majority of wearables and sees a lot of potential for those targeted at personal healthcare monitoring, management and communications in the coming years.

He's tried a lot of the fitness devices too, but there are some things even the best technology can't seem to do *for* you.

They aren't innovations, they're things that are modified for others.

But like a true champion, he gives the engineers, designers, developers and solution providers hope by noting that killer ideas are going to come in the future if the industry (and storage) can stay focused on their own course.

Woz sees a world of storage potential ahead for NAND (negated AND or Not AND) memory that is used in flash drives, SSDs (solid-state drives) and other storage products.

The technology is so widely used that it's the cheapest memory available and he feels that it won't be long before we see one and two TB SSDs that will be very economical (cheap even).

He told the engineering audience that there are two challenges:

- Cost has to be equal to or better than other storage technologies (HD)
- Engineers are running out of physical space on the chips to store more stuff

One of the market areas that has quickly moved to flash memory is Media & Entertainment (M&E).

Entertainment

The FMS M&E panel session moderated by Larry Jordan, host of Production BuZZ radio show, pointed out that Flash has changed the face of the movie production industry.

Jordan said SSD is the platform of choice ***IF!!!*** it becomes more affordable and supports larger storage sizes.

Cirina Catania, founder of the Catania Group, emphasized the point by noting that shooting 4K content consumes 72GB ... a minute.



Source – AJA

Video Production - While high-quality cameras are increasingly affordable to enable almost anyone to become a cinematographer, professionals like to point out that there's a lot of time and work involved between the great shoot and a great movie.

Her presentation brought tears of joy to the flash memory audience until she said that because of the capacity/cost issues, most of the material was saved on HDs.

Copies include:

- Original content (RAW) as shot
- Protection clone (never touched)
- Worker copy (files renamed, organized)
- Protection copy of worker
- Studio copy of worker
- 3rd clone of worker...just in case
- Output of the project
- Clone, 2nd protection

The result -- a project will end up consuming 10X the amount of storage capacity as the original shoot!

Neil Smith, LumaForge; Tony Cacciarelli, AJA and Matthew Rehrer, Harmonics; reinforced her points noting:

- While most new cameras today use SSD for capture, only a few offer the option of using conventional drives like the OWC 6G drives Cirina uses with industry-standard interfaces.
- Storage requirements are growing so rapidly that physical, content management is becoming a major issue.
- SSD is the solution of choice for high-speed/hot data and HD is used for high-capacity/low-cost storage in the field and in the studio.
- Organizations – of all types – have to implement object-based storage for global content distribution

Woz, the storage/flash industry superhero, sees video content as a way for people to reach and communicate with people in a new, more effective way.

He also sees a new generation of innovators emerging now who will deliver new ideas/products that nobody really knows what they'll be used for.



Source - hdwallpapersimages

***World of Content** – Today, people want to be able to tap into the world of information, news and content with their mobile devices in addition to staying in contact with friends, family anytime, anyplace.*

Woz is waiting for folks like you to develop a fantastic solution and show it to the world.

Me?

I'm hoping for bigger, cheaper bit buckets because I'm about out of storage capacity.

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