Looking for (and Thinking about) Storage at the 2018 CES

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Hard Disk Drives

• My first view of Seagate’s multi-actuator 3.5-inch HDD
• Seagate says that they will ship HAMR drives to customers by 2019.
• WD and Toshiba favor use of MAMR in enterprise HDDs
• He-filled drives are everywhere—squeak, squeak
• Toshiba said that 1 and 2 disk 2.5-inch HDDs are moving to SMR
Solid State Drives

- Seagate, WD and Toshiba were showing SSDs (64 layer 3D flash in production, 92-96 layer by end of year)
- Kingston showing SSDs based upon collections of U.2 devices in a single chassis (e.g. DCU1000 has 4 U.2 modules.
- NVMe SSDs will dominate in consumer as well as enterprise apps—faster performance.
- Embedded NVMe SSDs will be used in space constrained consumer devices
- Flash prices will drop in 2018 and 2019
Solid State External Storage

• SSD portable drives with USB-C and up to 2 TB (still a bit expensive)
• Thunderbolt SSD devices for M&E editing applications (as well as ingest)
• Higher speed external SSDs could replace portable HDDs as the $/GB declines—depending upon the application
HDD External Storage

• Seagate has a few external storage partnerships—one with drone maker DJI (the CoPilot). Another combination storage and battery charger with JD in China (the Joy Drive)

• Seagate also showing external game drives in partnership with Microsoft Xbox

• Toshiba had updated Canvio HDDs
Content Ingest and Storage

- A great variety of HDD and flash-based devices for ingesting content from flash cards or smartphones
- Some are devices where you provide the USB storage—e.g. Kwilt and Monument

Gnarbox
Kwilt·Shoebox
WD My Passport Wireless Pro SSD
LaCie DJI CoPilot

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Connecting with NAS

- Some including AI features, IP camera integration
- Capacities of 20 TB or higher available
- Synology and ioSafe exhibited with Seagate at CES Unveiled

Promise Apollo Cloud 2
WD My Cloud Home
ioSafe, Fireproof and Waterproof
Synology SSD and HDD NAS

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USB Drives

- Kingston was showing their HW encrypted USB drives, including IronKey drives (seem to be waterproof)
- SanDisk introduced very small Ultra Fit USB 3.1 USB drive
- SanDisk also introduced a 1 TB USB-C drive
- Kingston Bolt and SanDisk iXpand for memory expansion for iPhone and iPad (Lightning Connector)
Other Storage

• Digital storage products can be found throughout the CES

• Many are just showings incidental to their main advertised product

• Storage and memory are everywhere!

Seagate Cloud Scale Storage Array (1 PB in 5U)

SanDisk Extreme Pro Card

Macronix had a presence
What else was at the 2018 CES, well...

$5,000 Headphones

$100 LIDAR?

Electric Hookah

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And more!

Quantum Computing

Intel CEO Perk

Motiv Ring

Activity + Heart Rate + Sleep Tracker

mymotiv.com

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