



Enabling Exceptional User Experiences:

The Importance of Embedded Storage for Smartphones and Tablets

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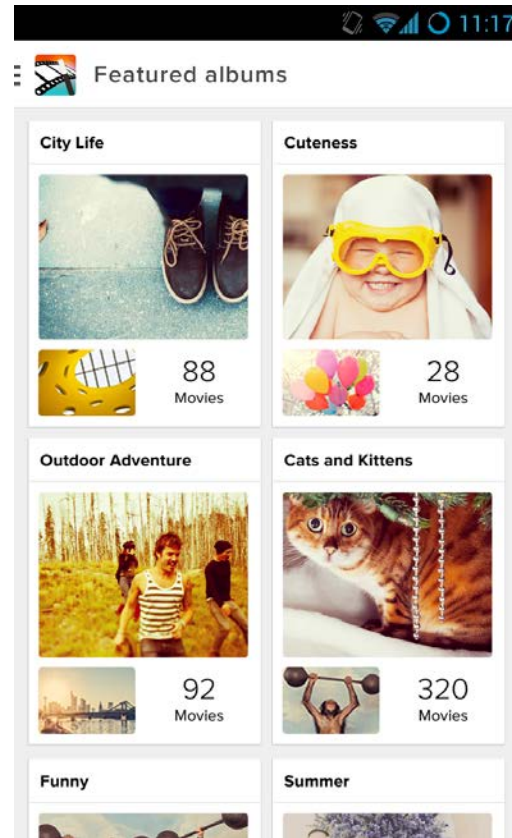
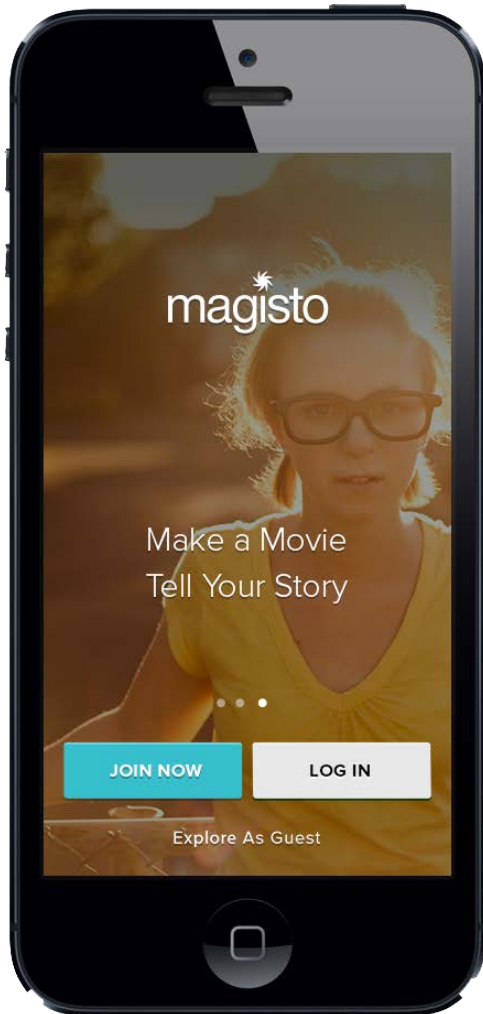
Director of Marketing, Mobile & Tablets

Personal Relationships with Smartphones

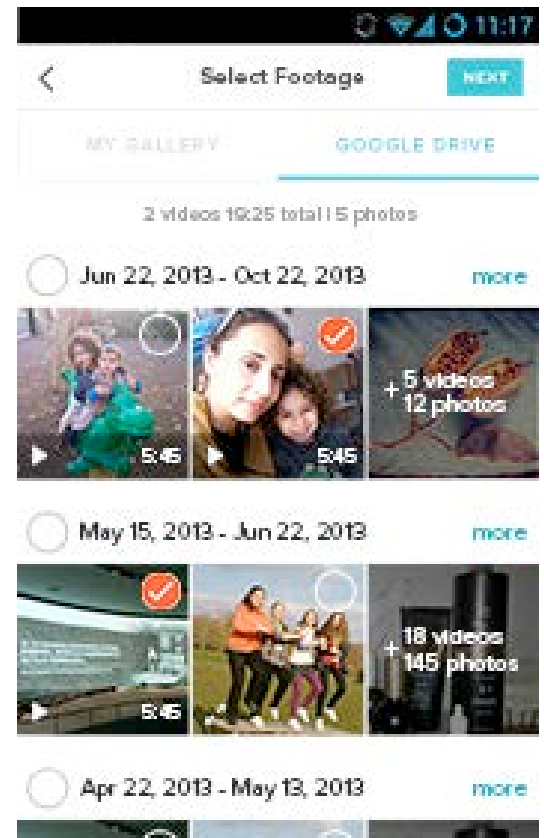


89% of 18-24 year-old smartphone owners reach for their devices within 15 minutes of waking up

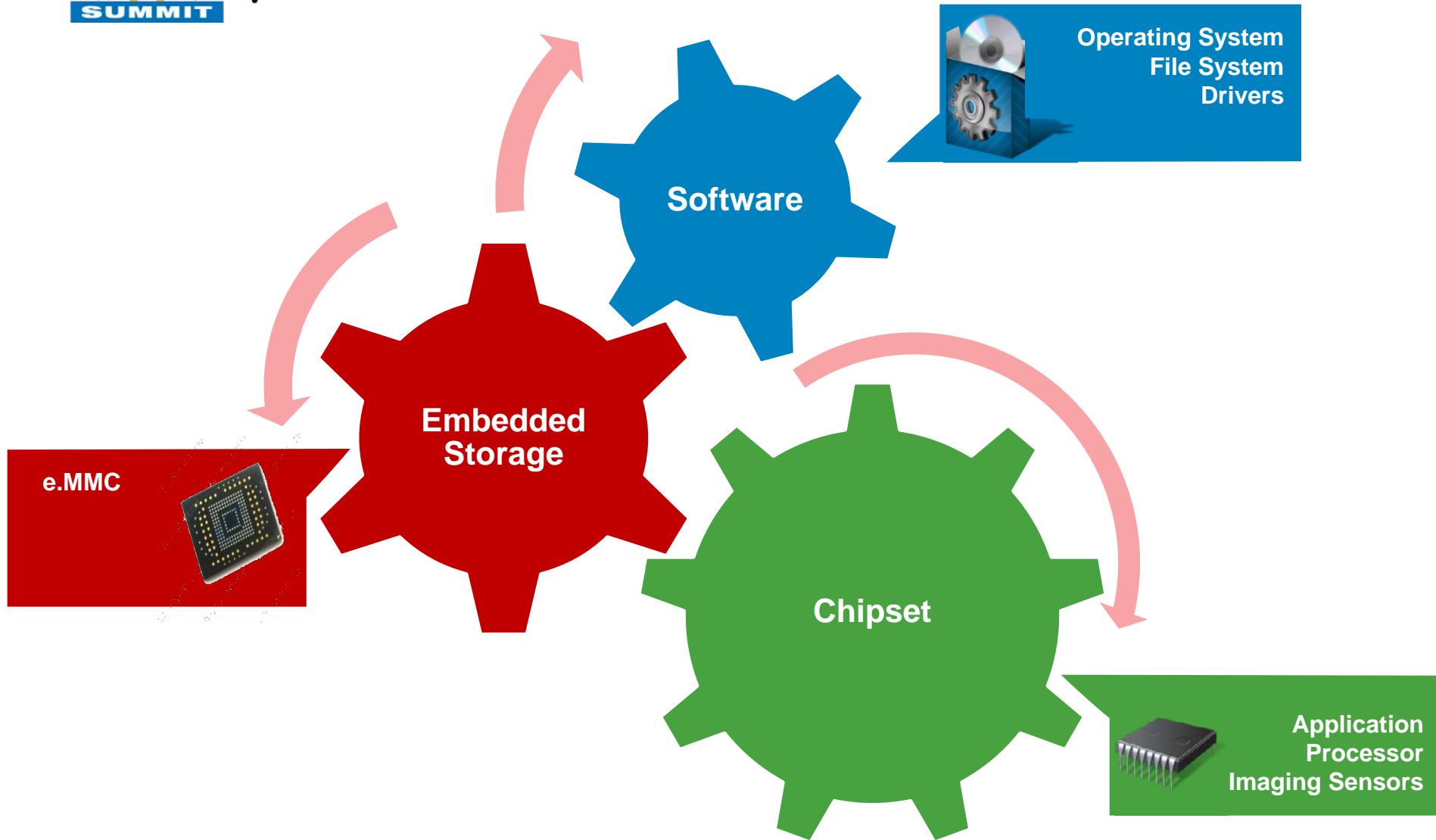
Smartphones Driving Content Creation



magisto



Foundation of Great User Experience





Storage is Essential for an Exceptional User Experience

We see this





Latency Frustrates Consumers

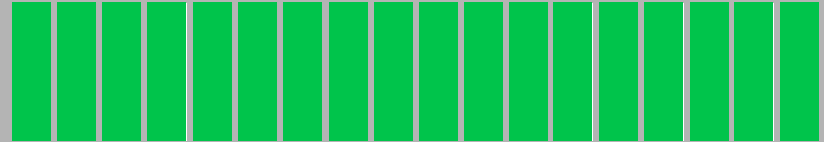
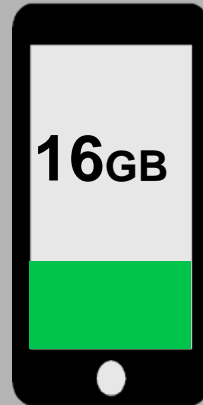
But capture this





Storage is Essential to an Exceptional User Experience

Consistent performance



Consumers are Impatient

Expect mobile devices to keep up with their lives

- More

- ▲ Multitasking
- ▲ Megapixel, Multishot, 4K Video
- ▲ Performance (USB3.0, WiFi 802.11ac/d)
- ▲ Storage for larger files and more apps
- ▲ Longer intervals between battery charging

- Less

- ▼ Smaller/lighter-weight devices
- ▼ Tolerance for any failure



How Storage Supports an Exceptional User Experience

Performance



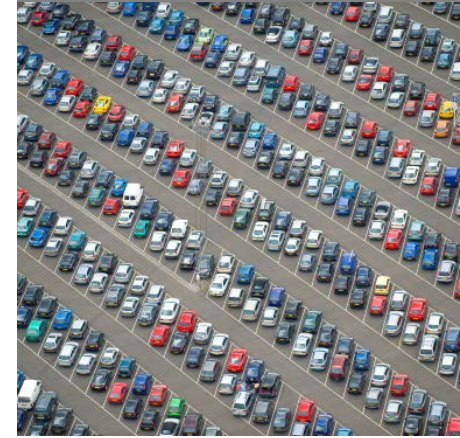
Consistently Rapid



Robustness



Capacity

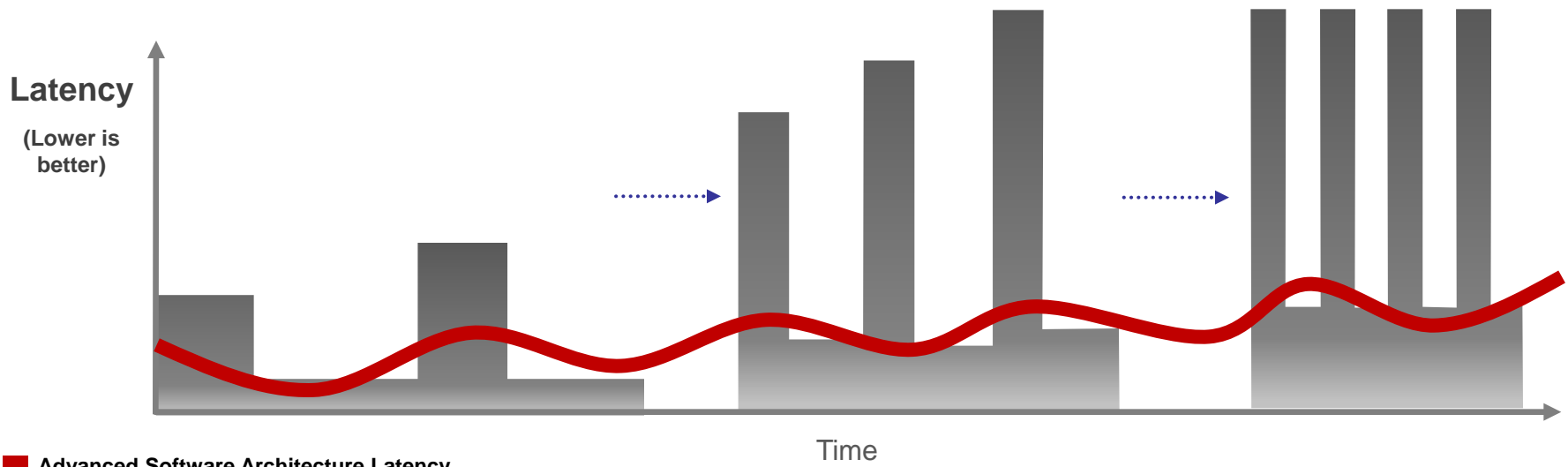




Storage Matters- Latency

Advanced software architecture enables reduced latency

Extremely low latency over time means an extremely responsive user experience



■ Advanced Software Architecture Latency

■ Legacy/Industry-standard Latency

Full Page Mapping and Low Latency Scheduler

▼ Latency

▲ Random IOPS

▲ Performance Consistency





MULTISHOT LIMIT

High-bandwidth multi-shot

- *Write/read speed to support 24fps multi-shot in HD*

Storage Matters- Consistently Rapid

- Performance inconsistency means an uneven user experience
 - Degraded video stream quality
 - Limited multi-tasking
 - Unstable E-mail client sync
- Consistent rapid behavior over lifespan of the device
 - As storage gets filled or aged
 - While multitasking
 - Performance stability across access patterns/alignments



Storage Matters- Robustness

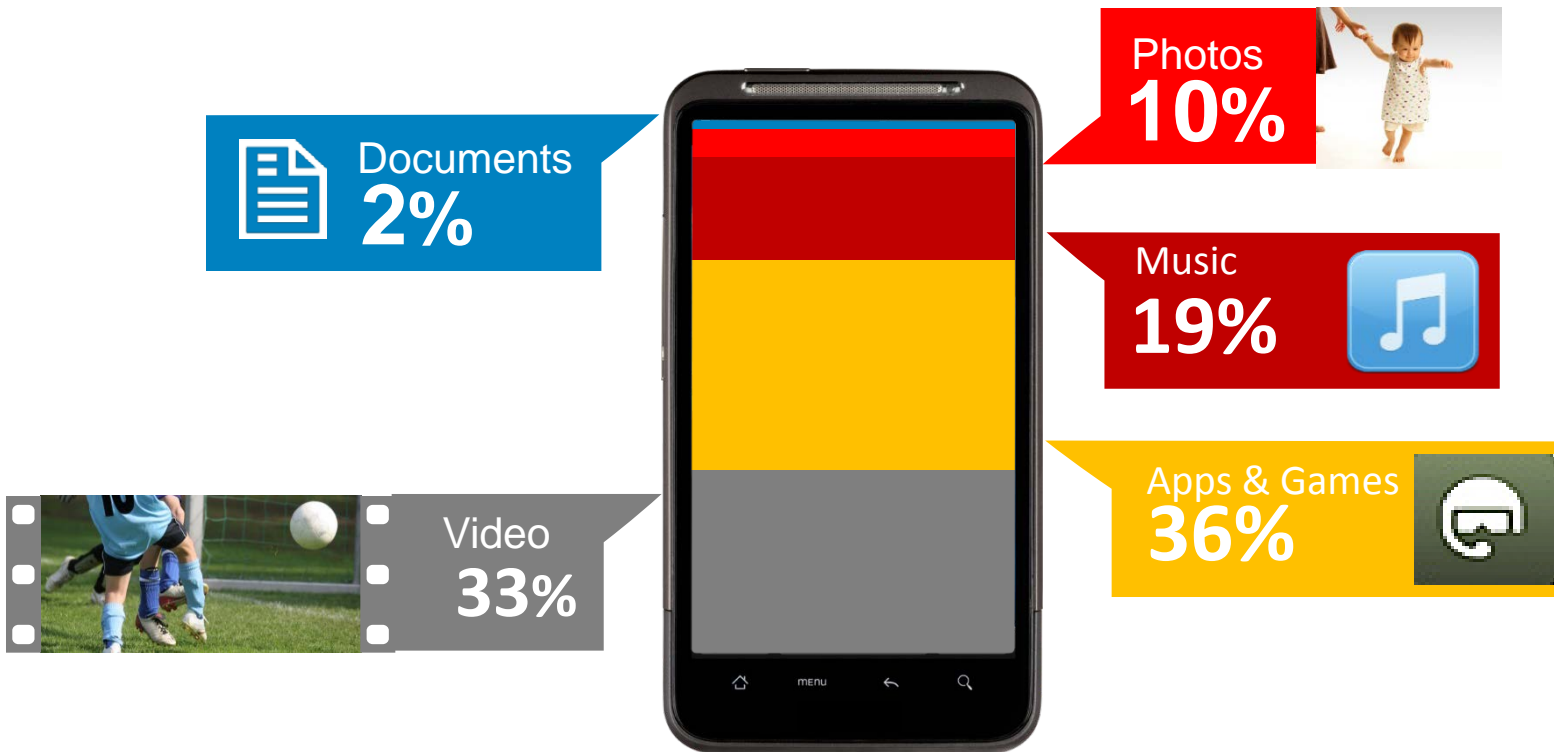
New usage patterns require more from storage

- More precious data created on mobile devices and kept on embedded storage
- Reliable device required to support
 - <0.01% failure rate over the device lifespan
 - Over 10K times of internal power drops
 - Thousands of reads from same locations (especially on system areas)
 - Write endurance for over 2 years of heavy usage
 - Field failures recovery



Storage Matters- Capacity

*More than 20% of smartphone users have filled **80%+** of their internal storage*



Sources: SanDisk, 7/2013



A Global Leader in Flash Storage Solutions

Rankings



Trailing 4 Qtr. Financials*

\$6.0B Revenue
\$3.3B Net Cash*
\$0.7B R&D Investment

Global Operations



Technology

Fabs World Class NAND Capacity
19nm Leading Process Node
1Ynm Shipping

Computing: Enterprise, Client and Retail SSDs

Qualified at
6 of the Top 7
 Storage OEMs



Used by
All Leading PC OEMs

Retail: The Leading Brand in Key Markets^o



#1 Global Retail Revenue Share^o



Mobile:
 All leading smartphone & tablet manufacturers use SanDisk



Close to Half of Industry Bit Output

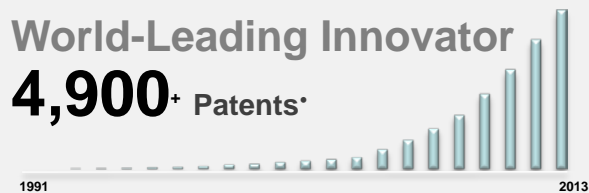
Together with manufacturing partner Toshiba*

65% Commercial Revenue*
35% Retail Revenue*



World-Leading Innovator

4,900+ Patents*



* Financials as of Q3, '13. Net Cash = [Cash + cash equivalents + short-term & long-term marketable securities] less [debt at maturity value] as of the end of Q3, '13. Headcount & patents as of Oct., '13. ^oNPD Estimate, Jan., '13. ^oEstimates of the memory card & USB markets from NPD (Aug. '13) and GfK Retail and Technology, Jul., '13. ^oGartner: NAND Flash Supply & Demand, WW 1Q '12-4Q '14, 3Q '13. Update Sep., '13.





Diversified Portfolio of NAND Flash Solutions

Commercial

Consumer	Enterprise

Retail





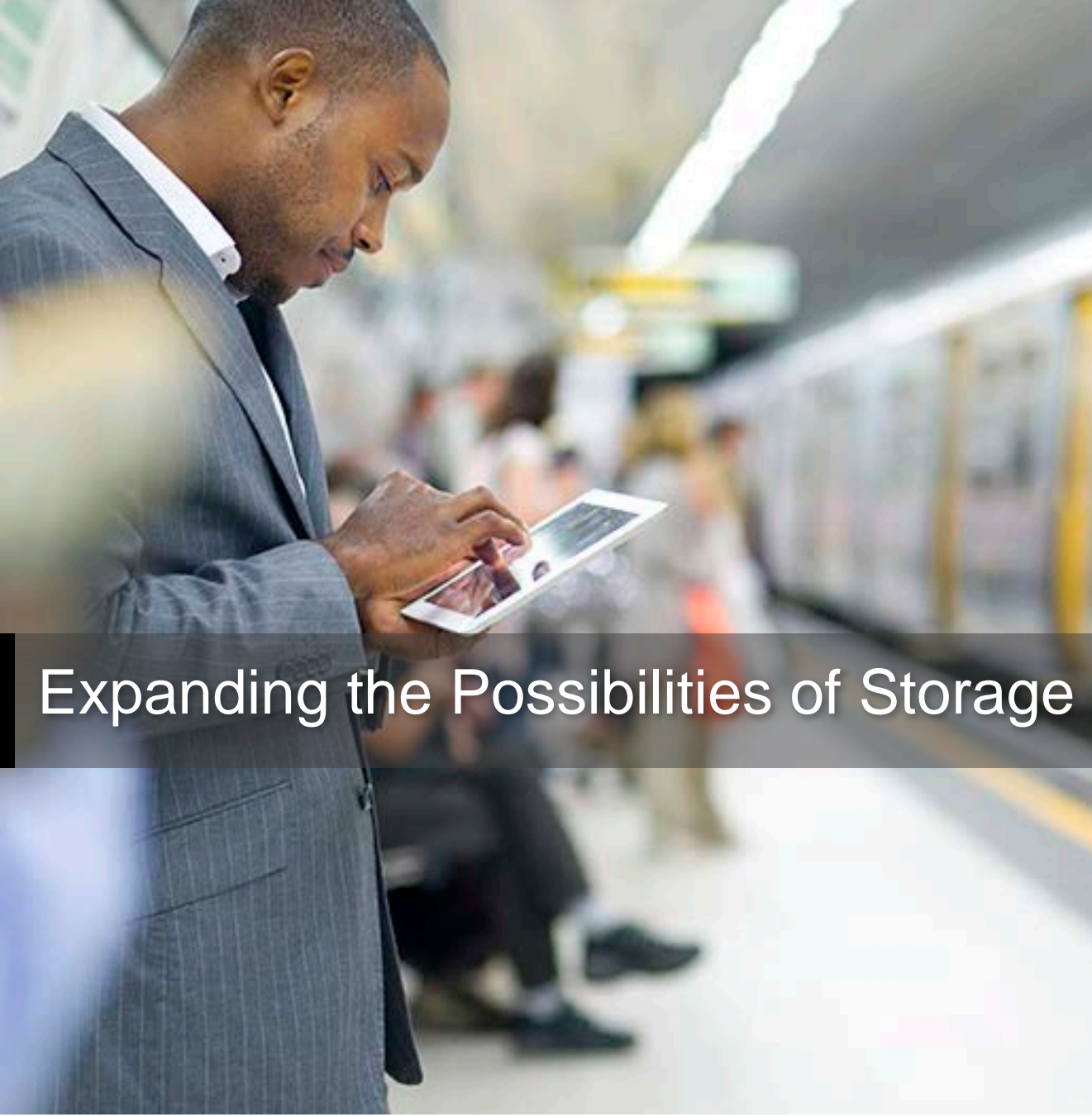
Thank you!

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Please stop by SanDisk booth #: 204

SanDisk®



Expanding the Possibilities of Storage



SanDisk



Thank you!

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1GB=1,000,000,000 bytes. Actual user capacity less.

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