VNANDgoesFurther

V-NAND Reshapes Storage for the Crowded “Digital Universe”

The digital universe is growing 40% annually

- 6 BILLION HOURS OF YOUTUBE PER MONTH
- 35.6 MILLION TWEETS DURING #BRAvsGER
- 1 ZETTABYTE OF NETWORK TRAFFIC
- 44 ZEBTabytes OF DATA

Once quiet, the flat NAND suburbs are becoming crowded

3D VERTICAL NAND FLASH, OR V-NAND

2020

44 ZETTABYTES OF DATA

2016

1 ZETTABYTE

SOLID STATE DRIVE

RESHAPING MEMORY IN A NEW, UPWARD DIRECTION

2D PLANAR NAND FLASH

3D VERTICAL NAND FLASH

UNDER 20nm

ROOMY, QUIET, STABLE

CRAMPED, NOISY, WEARING OUT

REBEYOND PLANAR FLASH LIMITS A MORE EFFICIENT MEMORY METROPOLIS

BEYOND PLANAR FLASH LIMITS

A MORE EFFICIENT MEMORY METROPOLIS

ENDURANCE

Up to 2x improvement

POWER

Lower programming voltage

CAPACITY

Up to 11x DIFF by 2017

PERFORMANCE

Faster writes, half as many steps

VOLUME

65.2% of flash shipments in 2017

SSDs WITH V-NAND

Keep up with growing high-value data
Perform well on both reads and writes
Deliver better quality-of-service (QoS)
Extend lifespan with more endurance
Continue evolving for even greater value

www.samsung.com/enterprisessd

2. Tweet from @TwitterData (official statistics of Twitter), July 8, 2014
5. Samsung performance comparison against planar NAND-based SSDs
6. “NAND Flash Moves Into the Next Dimension”, IHS Technology, October 2013

#VNANDgoesFurther