

ASBIS[®]

SUCCESS THROUGH FOCUS

The right choice for
your storage.

Yuri Malachly

Product Line Manager

February 20, 2024
Astana



ASBIS HIGHLIGHTS



Subsidiaries
in **30**
countries



20 000
active customers
in 56 countries



2 600+
employees



Revenue
\$ 2.7B
in 2022



4
Distribution
centers



More than
110 000
SKUs in portfolio



Headquartered in
Cyprus
since 1995



Over
240
vendors



#ASB
Listed on WSE
since 2007

WIDE GEO COVERAGE ACROSS EMEA

CEE

Bosnia
Bulgaria
Croatia
Cyprus
Czech Republic
Greece
Hungary
Poland
Romania
Serbia
Slovakia
Slovenia
Ukraine

CAUCASUS

Armenia
Azerbaijan
Georgia

CENTRAL ASIA

Kazakhstan
Uzbekistan
Kyrgyzstan
Turkmenistan
Tajikistan

MIDDLE EAST

United Arab Emirates

BALTIC

Estonia
Latvija
Lithuania

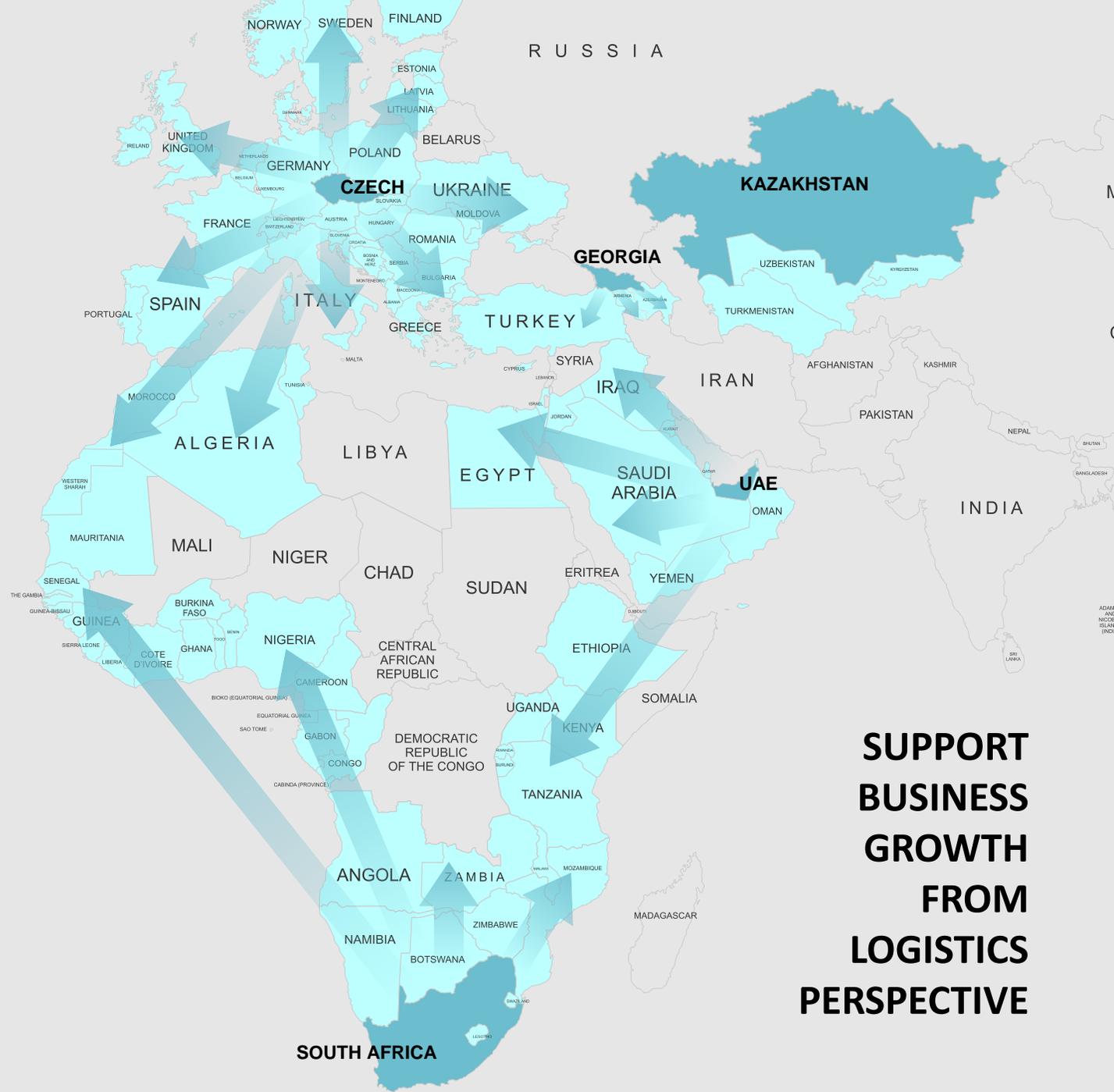
AFRICA

Algeria
Egypt
Morocco
South Africa
Tunisia



UPGRADED CAPACITY OF DISTRIBUTION CENTERS

- **CZECH REPUBLIC**
Distribution Center upgraded from 5K m² to 13K m²
- **DUBAI (UAE)**
Distribution Center upgraded from 4K m² to 15K m²
- **GEORGIA**
Distribution Center for GE, AM, AZ
- **SOUTH AFRICA**
NEW Distribution Center



**SUPPORT
BUSINESS
GROWTH
FROM
LOGISTICS
PERSPECTIVE**

95 %

amazon

Google

Microsoft



Age – is just digits.



35%

29%

17%

19%



Hard Disc Drives



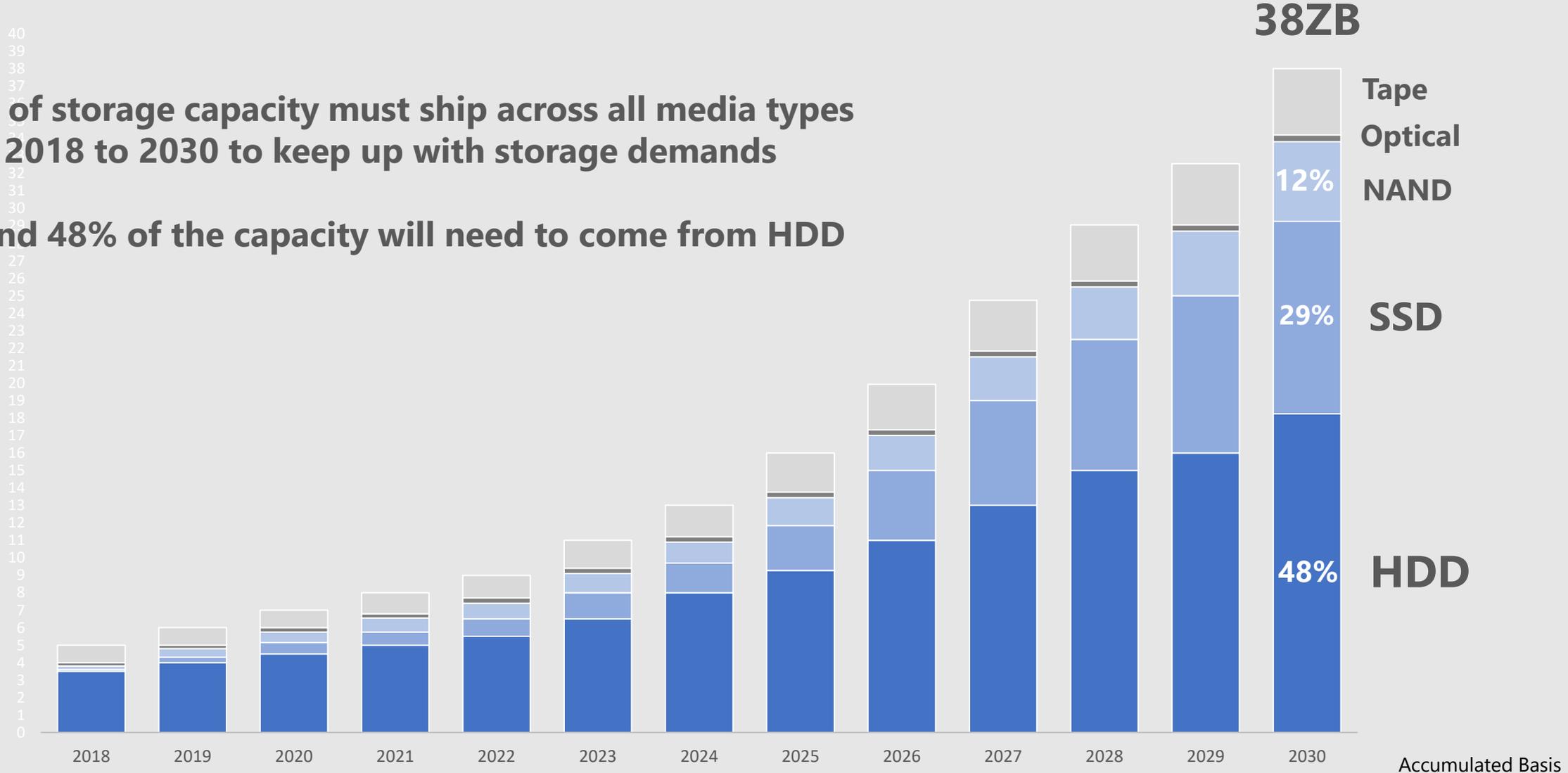
TOSHIBA



Storage Capacity Trend

38ZB of storage capacity must ship across all media types from 2018 to 2030 to keep up with storage demands

Around 48% of the capacity will need to come from HDD



38ZB

Tape
Optical
NAND
SSD
HDD

12%
29%
48%

Accumulated Basis

~2025 HDD TAM Forecast

Toshiba forecast as of Oct'22

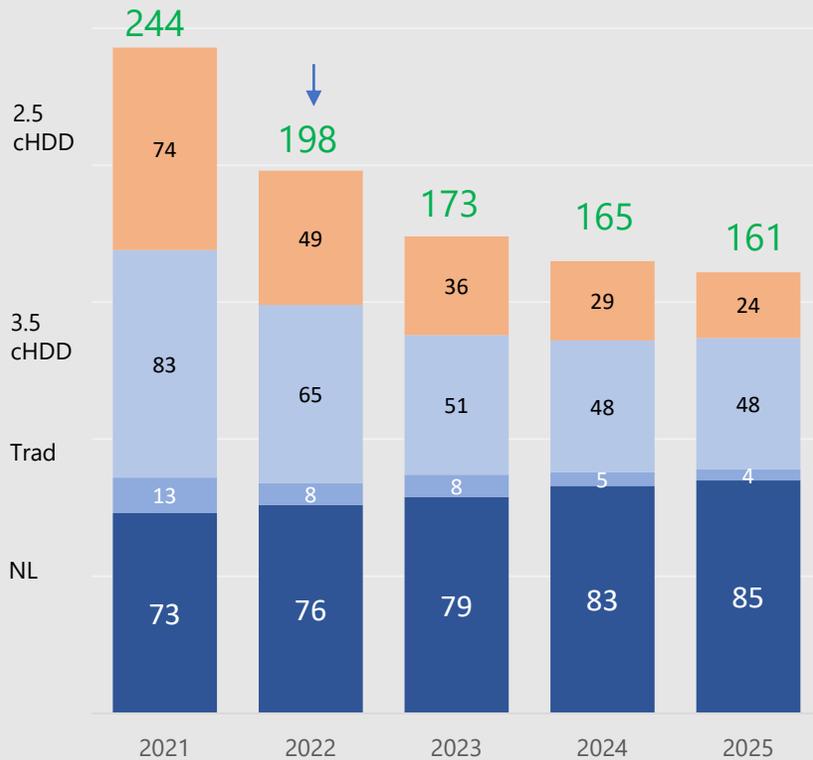
The trend toward higher capacities is more pronounced

Quantity

Capacity

Amount

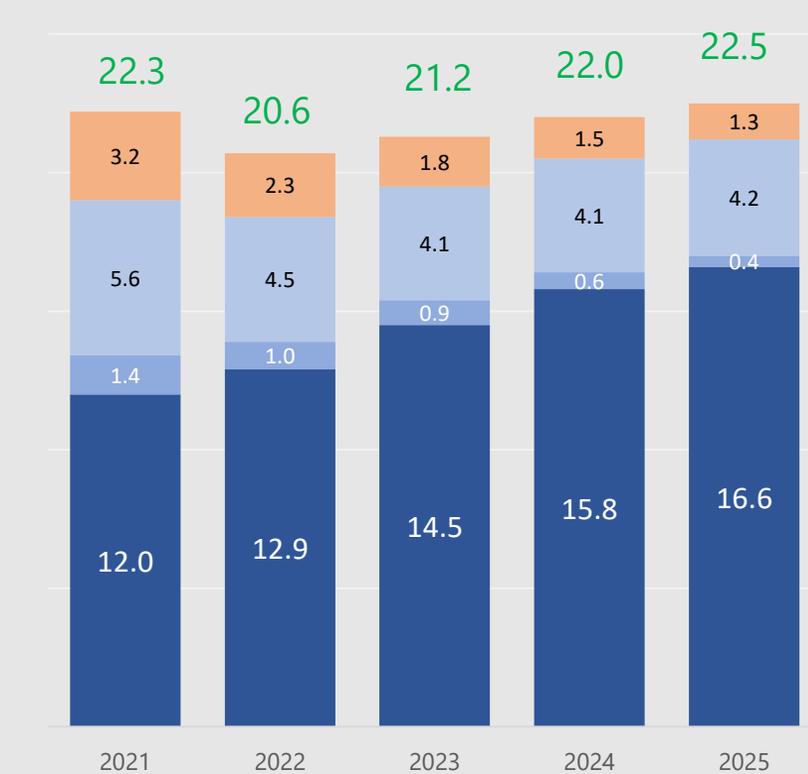
[Mp]



[ZB]



[B\$]

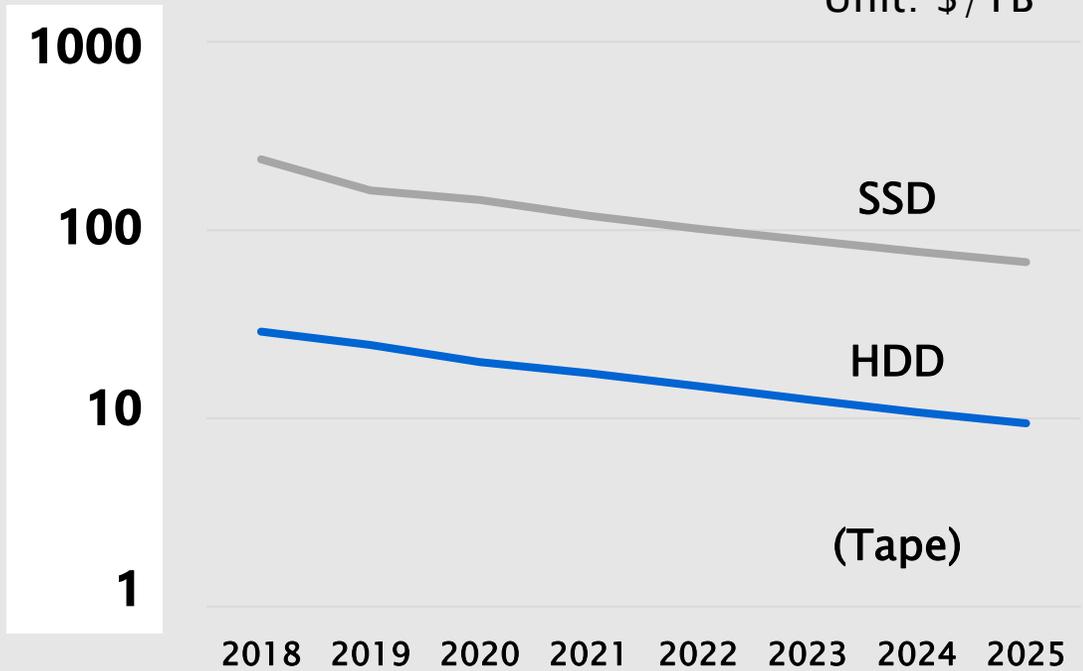


HDD vs. Solid State Memory based Storage Components

HDD/SSD bit cost comparison*1

HDD bit cost is 1 / 7 of SSD

Unit: \$/TB



*1 Source : Techno System Research Co., Ltd. HDD/SSD Market Trend(Annual) Dec. 2021

Manufacturing Capacity 2022:

- Total **Enterprise-HDD** Capacity shipped
- **1648 Exabytes** (Mio TB) in 92 Mio Units
-
- Total **Enterprise-SSD** Capacity shipped:
- **258 Exabytes** in 76 Mio Units
- Total (Enterprise and Client)
 - HDD: **1839 EB** in 154 Mio Units
 - SSD: **553 EB** in 489 Mio Units

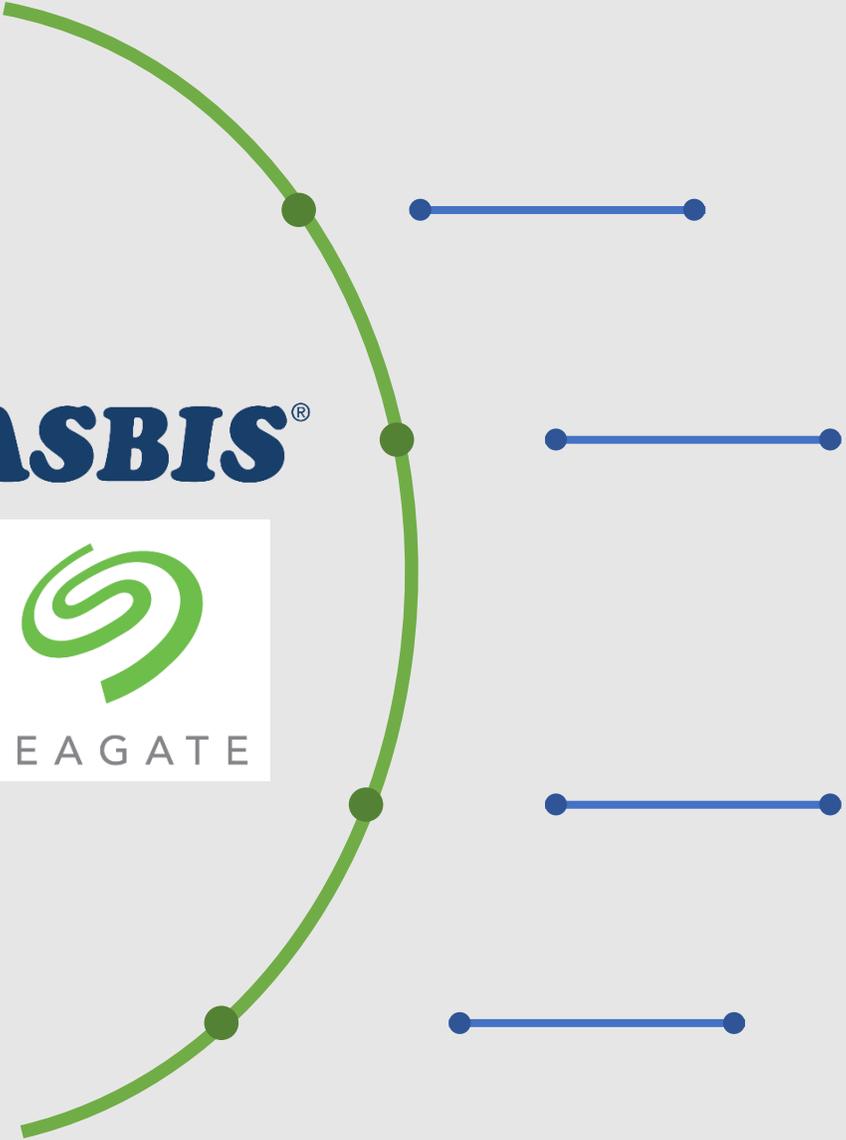
86%
HDD

77%
HDD

Source: TEE research & TEE estimates, Gartner 3Q22 Update

2024 FOCUS RPRODUCTS

ASBIS[®]



SEAGATE EXOS

ASBIS®



Applications:

- Data Centers
- Enterprises storage
- Telecom
- Information services



Targets customers:

- Cloud Providers
- Storage OEMs, integrators
- Banks, financial institutions
- Medical institutions
- Telecom operators
- Enterprises of all sizes
- Mass Media



SEAGATE SKYHAWK

ASBIS®



Applications:

- Video surveillance
- Security
- Video data storage



Targets customers:

- Video surveillance OEM
- Security companies
- Integrators
- Constructors
- Government agencies



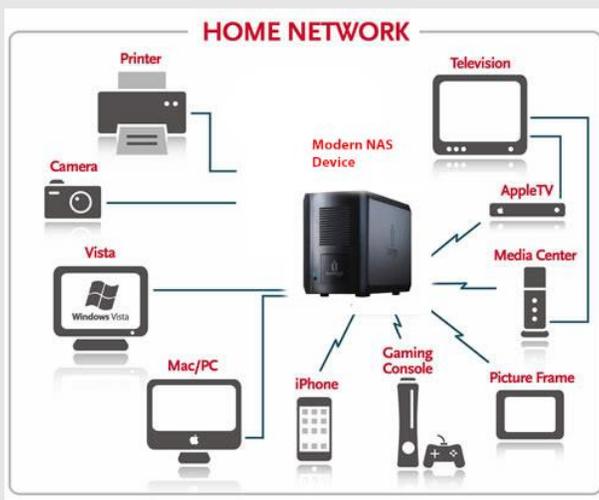
SEAGATE IRON WOLF

ASBIS®



Applications:

- Home NAS storage
- SMB NAS storage of all kind
- Enterprise NAS system



Targets customers:

- Retailers
- E-tail & Onliners
- Distributors
- Resellers
- SMB customers



ASBIS®

SEAGATE EXTERNAL STORAGE

ASBIS®



Applications:

- Home storage
- SMB storage of all kind



Targets customers:

- Retailers
- E-tail & Onliners
- Distributors
- Resellers
- Premium shops (Lacie)



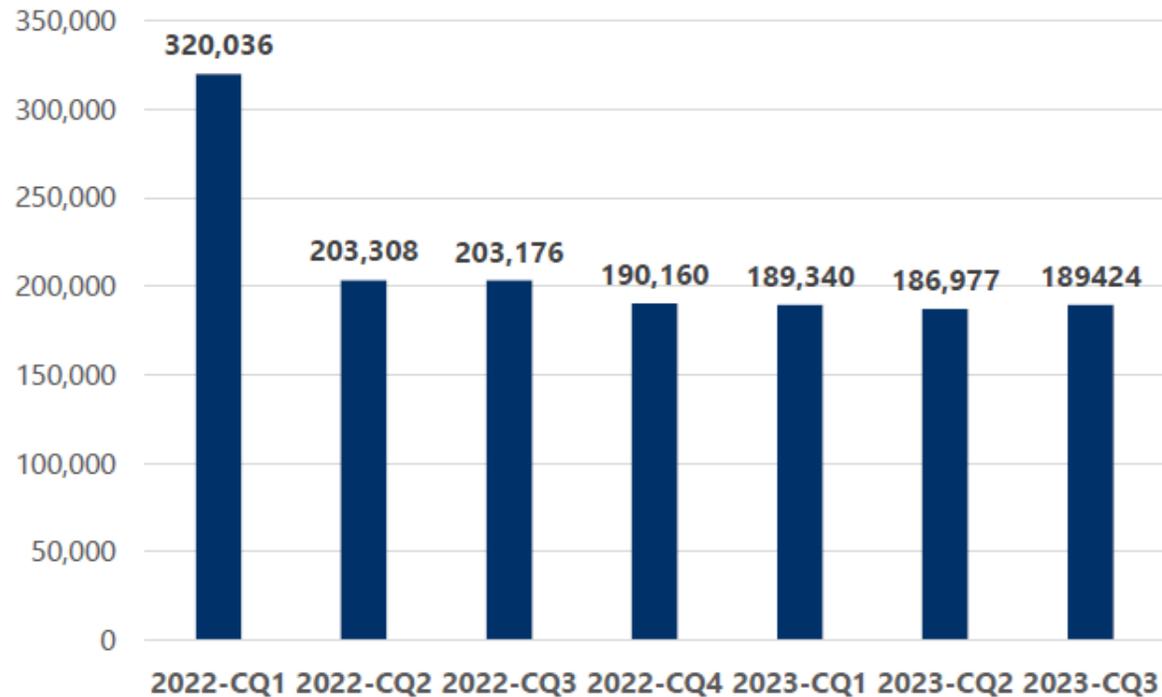
ASBIS®

Europe Distribution Sales TAM: Enterprise Capacity HDD

Toshiba share rises to 32%

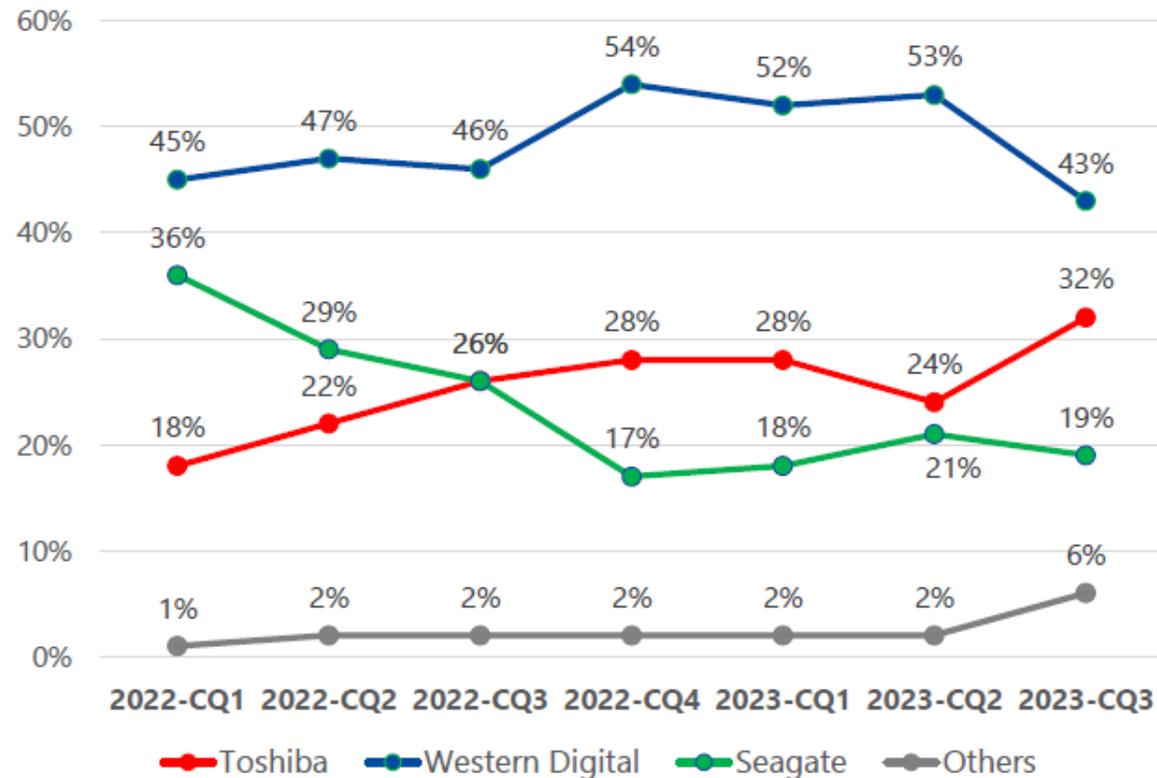
Source: Futuresource Consulting

TAM, Europe (units)

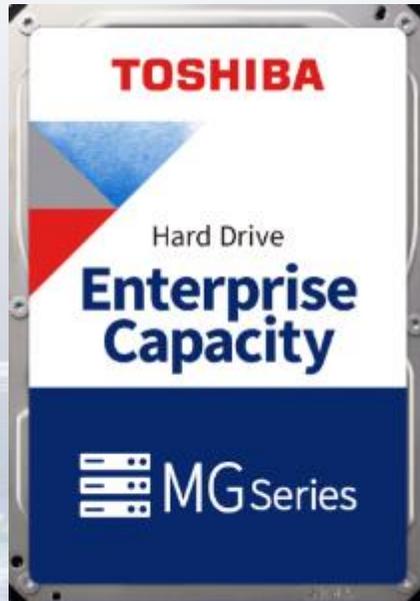


-7%
YoY

Share (units)



MG-Series Product Overview



Enterprise Capacity Hard Drive

MG-Series

1TB	2TB	4TB
6TB	8TB	10TB
12TB	14TB	16TB
18TB	20TB	

Key features

- Highly reliable with a 2.5 million hour MTTF, 550 TB workload
- Equipped with RV sensors
- Persistent write cache technology
- Lower power consumption thanks to helium sealed inside
- 5-year warranty

Applications

- Cloud-scale Storage Infrastructure
- Software-defined data center infrastructure
- File and Object-based storage infrastructure
- Mid-line / Nearline Business Critical Workloads
- Tier 2 Business-Critical Servers and Storage Systems

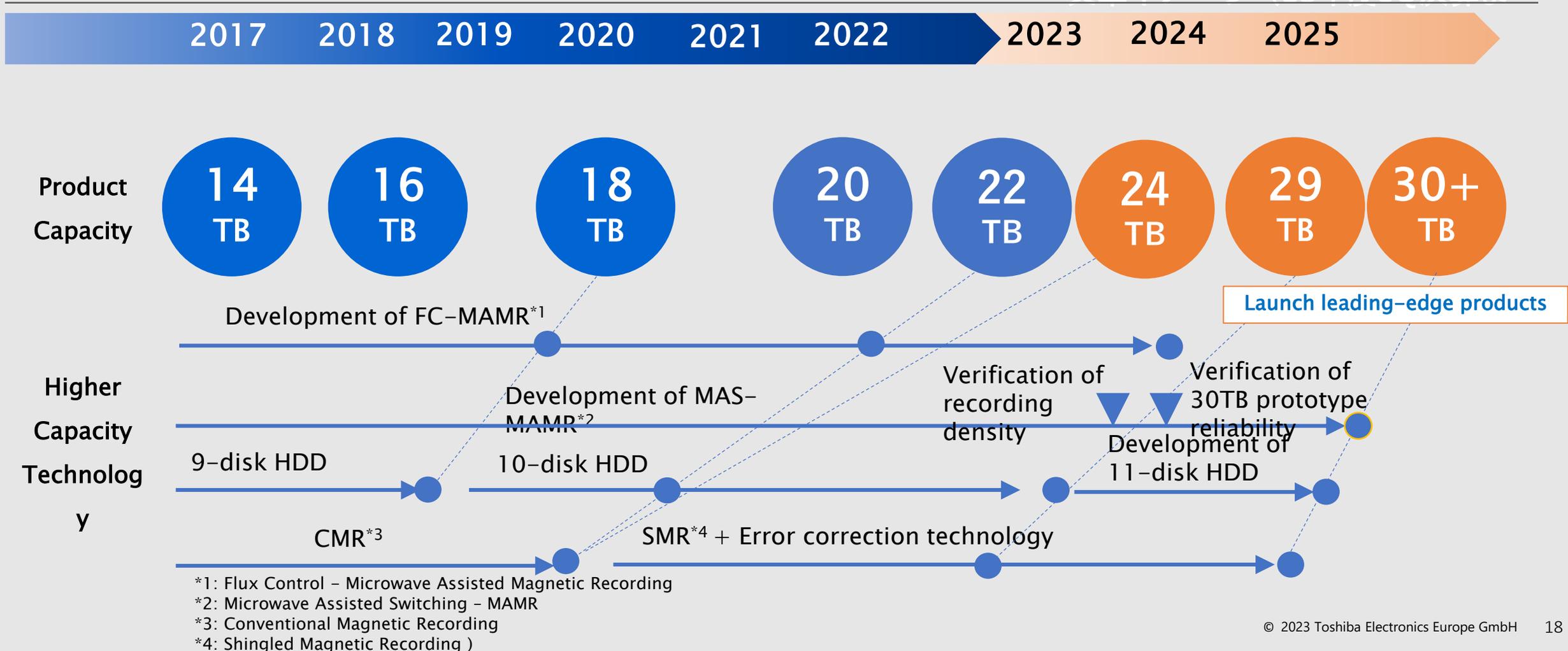
Specifications

		MG04		MG06	MG07	MG08		MG09	MG10		
Capacity		1TB	2TB, 4TB	6TB, 8TB, 10TB	12TB, 14TB	4TB	6TB, 8TB	16TB	18TB	20TB	
Features and Performance	I/F speed	-		SAS 12 Gbit/s						SATA 6 Gbit/s	
	Rotational speed	7200 rpm									
	Buffer size	128 MB		256 MB			512 MB				
	Sector length	512n	512e, 4kn, 512n	512e, 4kn		512n, 512e	512e, 4kn				
	Sealed	Air			Helium		Air		Helium		
Reliability/ Data Integrity	MTTF	1.4M hours		2.5M hours		2M hours		2.5M hours			
	Workload	550 TB/year									
	Read error rate	1 per 10 ¹⁵									

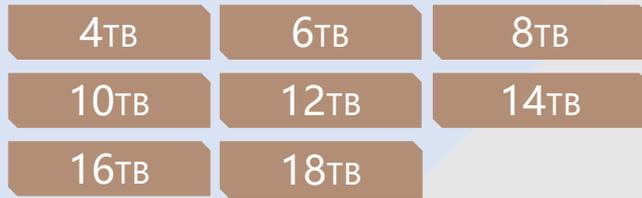
Nearline HDD Technology and Product Roadmap

Proposing vast capacity increases and TCO reductions through technology breakthroughs

文章イメージ (18年度3Q決算よ



N300 | NAS HDD Product Overview



Key features

- Specially developed for NAS
- 24/7 operation
- High performance (high data transfer rate, 512MB/256MB buffer)
- 3 year warranty

Applications

- Network Attached Storage (NAS)
- Desktop RAID and servers
- Multimedia server storage
- Private cloud storage
- Small business server and storage

Specifications

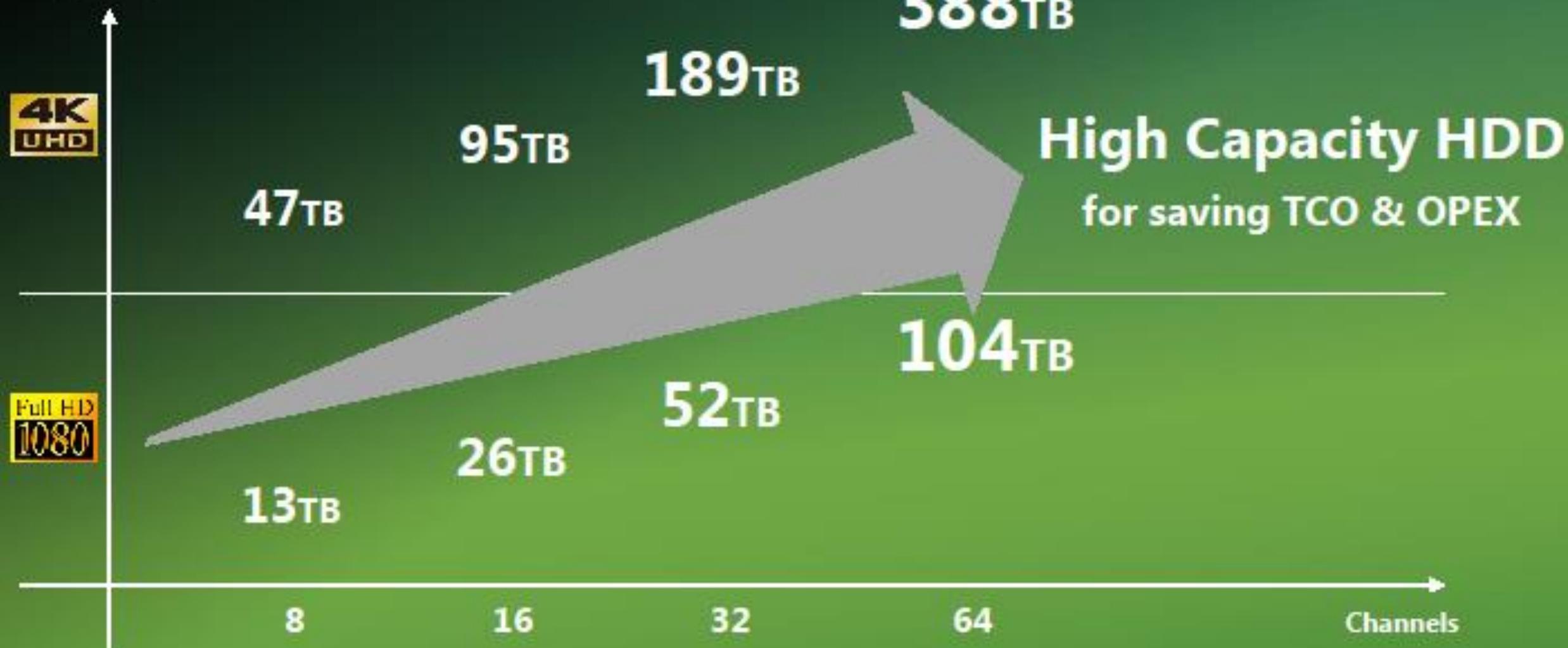
Capacity		4TB	6TB	8TB	10TB	12TB	14TB	16TB	18TB
Features and Performance	RV Sensor	yes							
	Drive Bays Supported	8							
	Rotational speed	7200 rpm							
	Buffer size	256 MB				512 MB			
	Data transfer speed [MB/s Typ.] (Sustained)	232	250	260	248	253	260	274	281
Reliability/ Data Integrity	MTTF	1 000 000 hours				1 200 000 hours			
	Workload	180 TB/year							
	Read error rate	1 per 10 ¹⁵				1 per 10 ¹⁴			
Power Requirements	Operating	6.84 W	7.22 W	8.41 W	9.48 W	6.49 W	6.91 W	6.91 W	7.48 W
	Idle	4.04 W	4.93 W	5.61 W	7.22 W	4.28 W	4.03 W	4.03 W	4.14 W
Temperature	Operating (surface)	5 to 65° C			0 to 65° C	5 to 65° C	0 to 65° C		
	Non-Operating	-40 to 70							

PRODUCT PORTFOLIO VIDEO



Surveillance Storage Requirements

Storage Requirement



Toshiba focus on Surveillance System

Support both front end and backend system with high reliable HDD

IP camera/Switch



Network Video Recorder

High resolution >4K
24x7 reliability



7.2Krpm **10/8/6** TB

Support upto **64** cameras

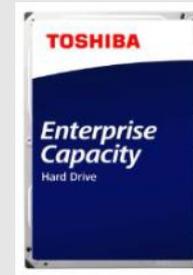
High reliability : **24x7** operation

workload : **180TB**/ year

Key Advantage: **Higher performance**

Large scale storage/JBOD

Large capacity
With higher reliability



7.2Krpm **12/20** TB SAS/SATA

MTTF **2.5M** hours

High reliability : **24x7** operation

workload : **550TB**/ year

Key advantage:

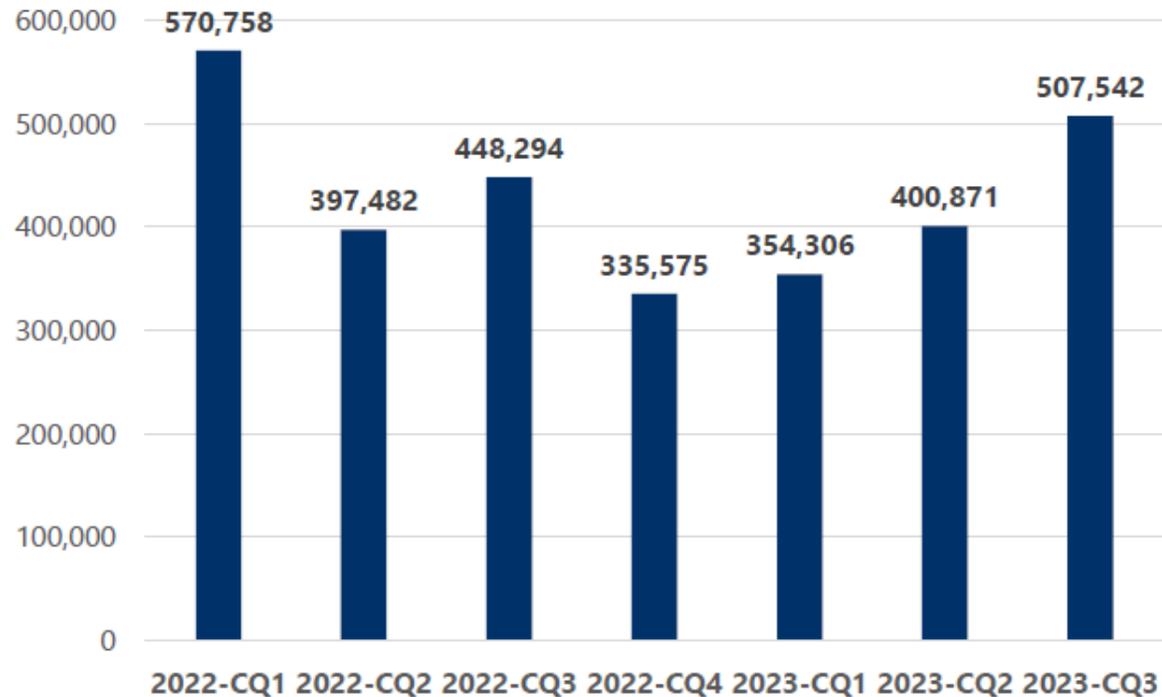
Lower power consumption for Total Cost Of ownership

Europe Distribution Sales TAM: **Surveillance** HDD

Toshiba share rises to 16%

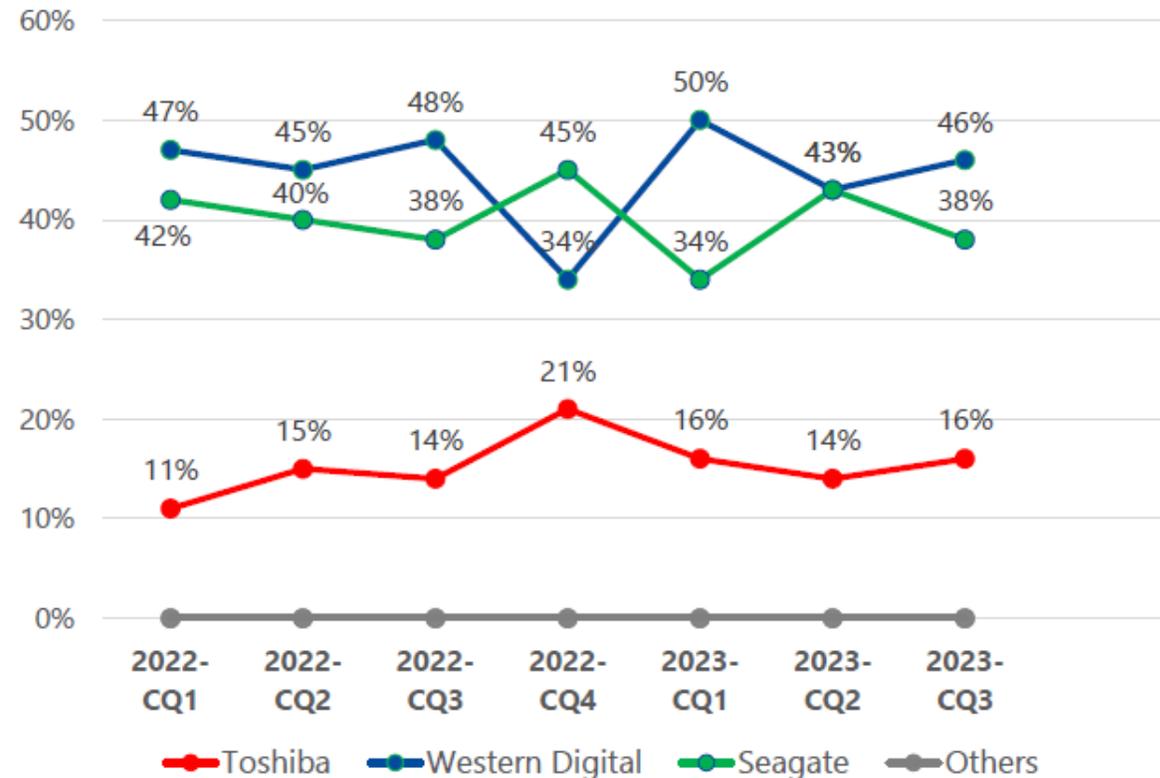
Source: Futuresource Consulting

TAM, Europe (units)



**+13%
YoY**

Share (units)



Platforms - JBODs

Scalable Capacity



Ultrastar Data60 – New Higher Capacities

Ultrastar Data60

Designed for Extreme Density

Industry's
Highest
Density
60 Bay
JBOD



IsoVibe™

ArcticFlow™

60-Bay

4U Storage Platform

SAS or SATA HDDs

2x 6x 4x-12Gb/s
SAS3 Host Ports

Up to 22TB

57.6 GB/s Bandwidth

96TB to 1.32PB

Capacity

Capacity updates to 22TB Summer 2022: $22\text{TB} \times 60 = 1320\text{TB}$

Ultrastar Data102 – New Higher Capacities

Ultrastar Data102

Designed for Extreme Density

Industry's
Highest
Density
102 Bay
JBOD



IsoVibe™

ArcticFlow™

102 – Bay

4U Storage Platform

SAS or SATA HDDs

2x 6x 4x-12Gb/s
SAS3 Host Ports

Up to 22TB

57.6 GB/s Bandwidth

360TB – 2.244PB

Capacity

Capacity updates to 22TB Summer 2022: 22TB*102 = 2244TB

OpenFlex™ NVMe-oF



Genomics research

Real-time analytics

HF-trading

Hosted services

Video analytics

Real-time telemetry

AI & ML

On-line Gaming

Common requirements: Low latency, high IOPS, high bandwidth



Ultrastar® Data Family Innovations

- **Western Digital enclosures are different**

- **Measured reduction of 62% in drive return rate***

- Same HDDs, vs. previous generation JBOD without IsoVibe & ArcticFlow

- **IsoVibe patented vibration isolation technology**

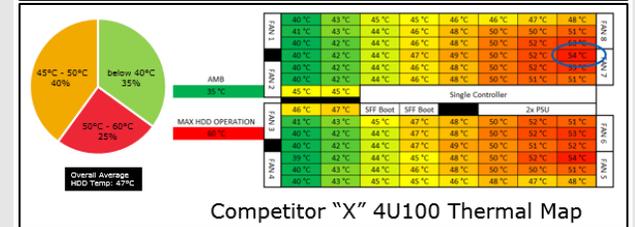
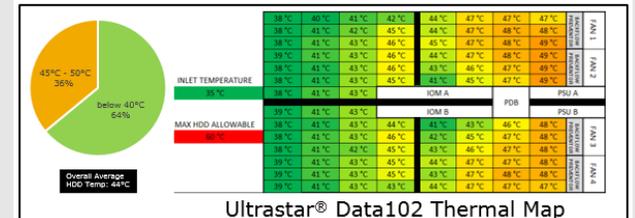
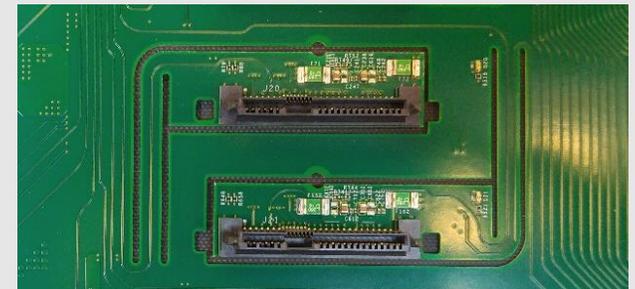
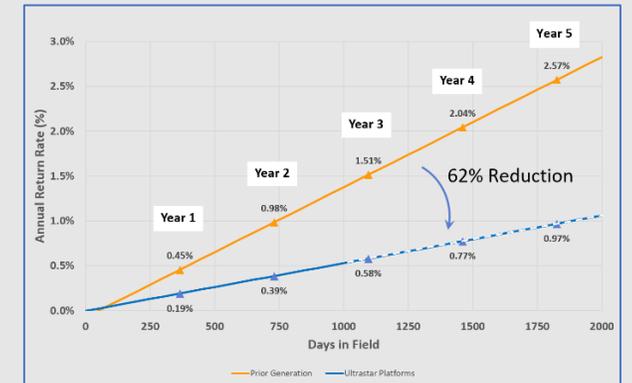
- Vibration Isolated HDD carrier/slot & fans
- Over 60% lower vibration
- Performance is maintained, even when all the drives are working hard

- **ArcticFlow thermal zone cooling technology**

- Lower temperatures, improved reliability, energy savings
- Projected 13% fewer drive failures
- \$1,500 in energy savings per enclosure

- **Serviceability – maximizing “cold aisle” access**

- Rack mounted top cover
- Top-load drives, tool-less carrier



* Based on observed drive return data, does not change product specifications and does not constitute a warranty

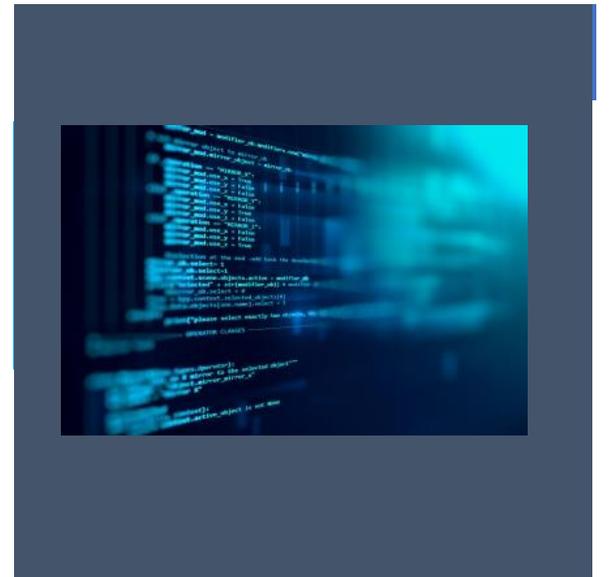
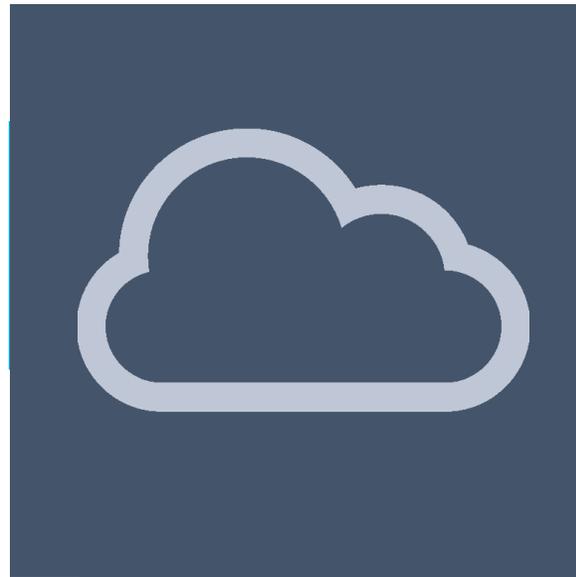
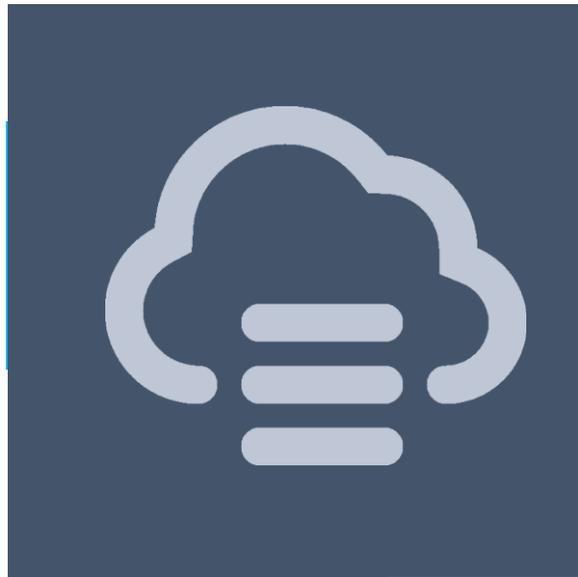
Focus markets for JBOD.

Video Surveillance

Back-up - Archive

Cloud

Software-Defined



milestone

axxonsoft
EXPERIENCE THE NEXT™

QSAN

veeam

VERITAS

arcserve

Acronis



COMMVAULT

ceph

caringo

nexenta

SUSE

OSNEXUS

LINBIT

ubuntu®

open-e

Microsoft

Quobyte

WEKA

vmware®

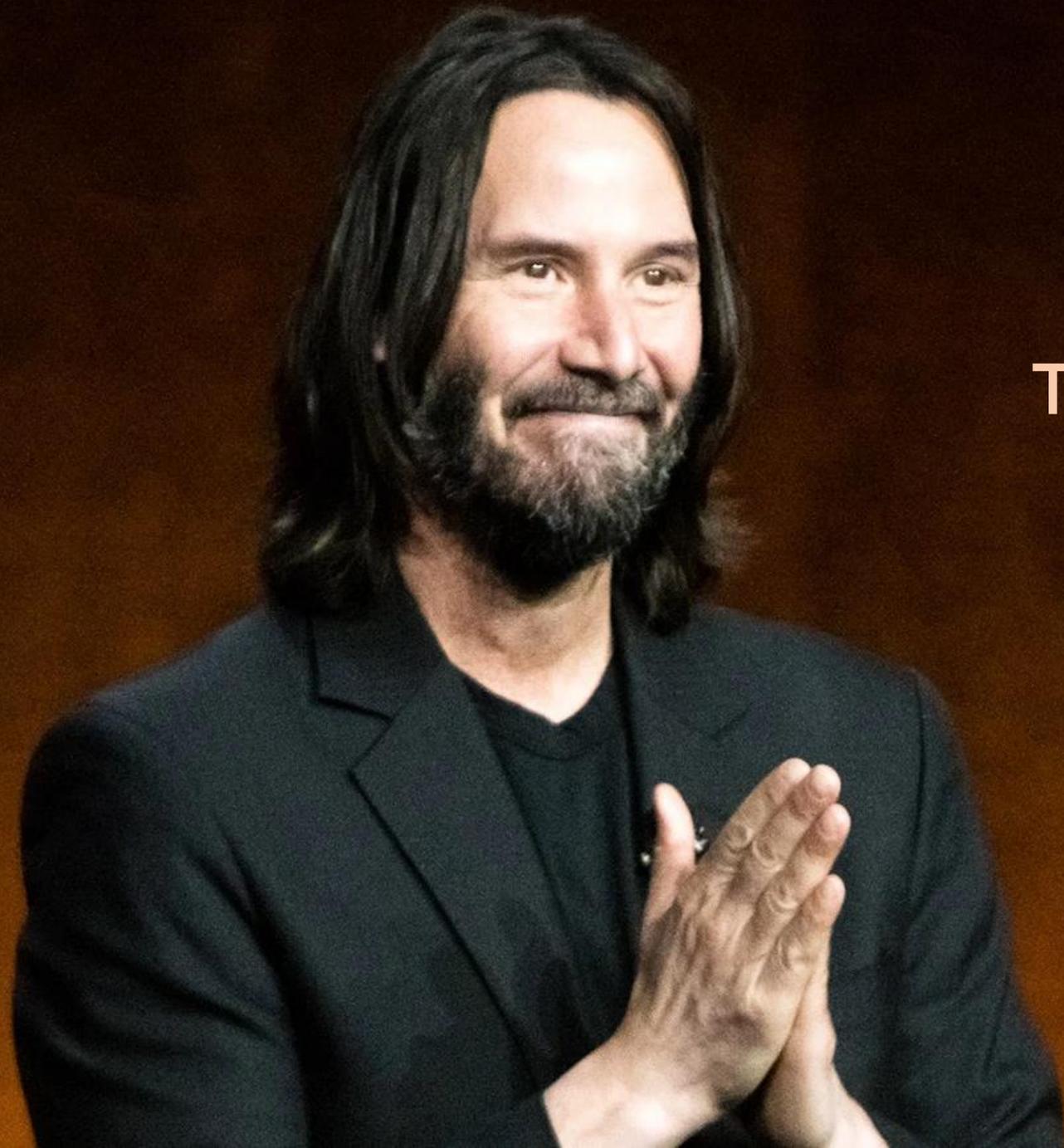
BeeGFS®

ROZO

RAIDX

DATAcore

Honeywell



THANK YOU