



*"Hot": ~20%-30%*

*"Not Hot" (But Always Accessible in <30 Seconds): ~70%-80%*

*Enterprise DATA that should be managed  
as an actively accessible archive expand to >100ZB...*

# Scarcity Creates Value

*— And clarifies the deepening  
need for new enterprise  
storage technologies...*

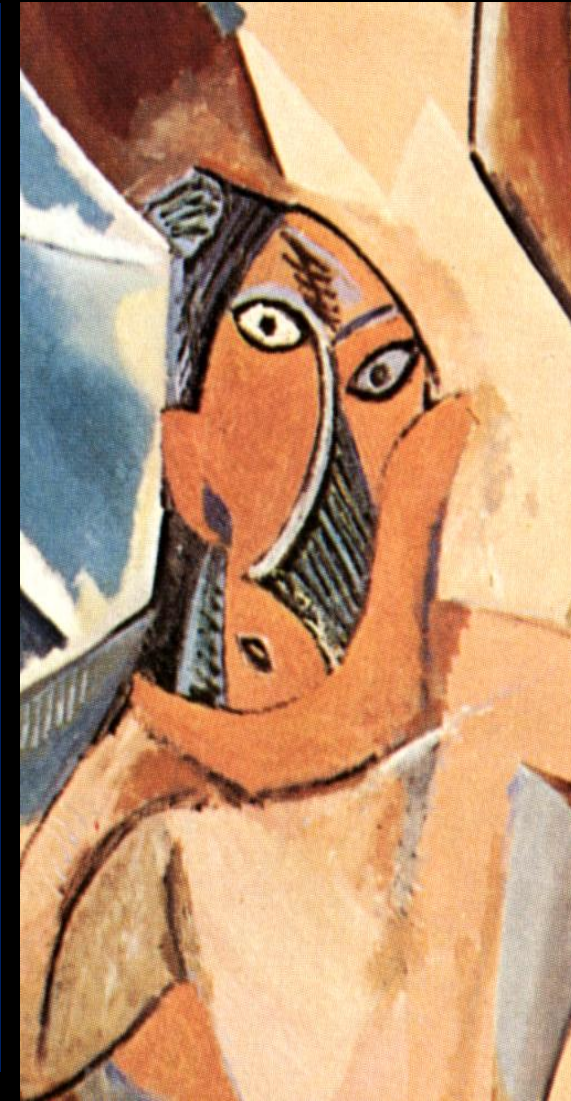
*By 2035, transformative new technologies  
will allow for <\$2.50/TB initial user  
integration storage costs with consistent  
<10-second access times...*

Library of Congress  
DSA Conference, March 9, 2026

John Monroe, Furthur Market Research, LLC  
[torstones@gmail.com](mailto:torstones@gmail.com)  
Mobile Office: +1 (408) 828-3967  
[www.Furthurdata.com](http://www.Furthurdata.com)

# PRELIMINARY EXPECTORATION: AN “UNPRECEDENTED” PB CRISIS

- “The only thing new under the sun is the history you don’t yet know about.” — *Does the GenAI era change this age-old adage, coined in ancient texts and massively re-iterated in Finnegans Wake?*
- The laws of Chaos will shape evolving markets:
  - ∞ *“Infinitely self-similar, never the same...”*
  - ∞ *Will Monroe’s Law change?: Just as soon as the drive makers can ramp production to meet an apparent increase in demand, the demand dissipates — a matter of mystery and some debate, but it has happened with disturbing frequency...*
- What will be different in the coming cycles?



*Mandelbrot and Julia Sets: myriad uncertainties in the GenAI dataverse, iteration gone wild...*

# TOTAL ENTERPRISE EB DELIVERED: *UP ONLY 2.2% IN 2022 AND 4% IN 2023*

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>SSD</b>										
Vendor Enterprise SSD Uncompressed Shipment Estimates (EB)	29	52	66	109	149	173	120	251	323	459
YoY Change %	61.1	77.9	28.7	64.0	36.9	16.0	(30.5)	108.7	28.8	42.1
Vendor Enterprise Uncompressed SSD Direct Revenue Estimates (\$M)	\$12,973	\$14,861	\$9,424	\$16,601	\$20,353	\$20,741	\$8,173	\$26,891	\$38,808	\$89,919
YoY Change %	55.2	14.5	(36.6)	76.2	22.6	1.9	(60.6)	229.0	44.3	131.7
Vendor Uncompressed Enterprise SSD Direct Blended ASP/TB (\$)	\$447.36	\$288.00	\$141.92	\$152.45	\$136.51	\$119.96	\$68.00	\$107.22	\$120.15	\$195.90
YoY Change %	(3.7)	(35.6)	(50.7)	7.4	(10.5)	(12.1)	(43.3)	57.7	12.1	63.0
<b><i>The effects of overproduction are always ruinous...and scarcity will always create value...</i></b>										
<b>HDD</b>										
Vendor Enterprise HDD Uncompressed Shipment Estimates (EB)	267	394	490	680	959	942	1,039	1,085	1,439	1,753
YoY Change %	22.5	47.6	24.2	38.9	41.0	(1.8)	10.3	4.4	32.7	21.8
Vendor Enterprise Uncompressed HDD Direct Revenue Estimates (\$M)	\$8,935	\$10,915	\$10,737	\$11,326	\$13,035	\$12,887	\$13,755	\$14,077	\$20,076	\$26,351
YoY Change %	(0.6)	22.2	(1.6)	5.5	15.1	(1.1)	6.7	2.3	42.6	31.3
Vendor Uncompressed Enterprise HDD Direct Blended ASP/TB (\$)	\$33.46	\$27.70	\$21.93	\$16.66	\$13.59	\$13.68	\$13.24	\$12.98	\$13.95	\$15.03
YoY Change %	(18.8)	(17.2)	(20.8)	(24.1)	(18.4)	0.6	(3.2)	(2.0)	7.5	7.7
<b>TAPE</b>										
Enterprise Tape Compressed Shipment Estimates (EB)	136	125	134	136	190	207	228	265	299	350
YoY Change %	9.7	(8.1)	7.2	1.5	39.7	8.9	10.1	16.2	12.8	17.1
Enterprise Tape User Spend Estimates (\$M)	*	\$1,162	\$1,066	\$1,048	\$1,172	\$1,068	\$1,132	\$1,296	\$1,459	\$1,776
YoY Change %		-	(8.3)	(1.7)	11.8	(8.8)	6.0	14.4	12.6	21.7
Estimated Tape User Initial Integrated Compressed Average Acquisition Cost/TB (\$)		\$9.30	\$7.96	\$7.71	\$6.17	\$5.16	\$4.97	\$4.89	\$4.88	\$5.07
YoY Change %		-	(14.4)	(3.1)	(20.0)	(16.3)	(3.8)	(1.5)	(0.2)	4.0
<i>*Tracking of Tape user revenue begins 2018.</i>										
<b>Total Compressed Enterprise EB Shipped</b>	<b>438</b>	<b>581</b>	<b>703</b>	<b>947</b>	<b>1,328</b>	<b>1,356</b>	<b>1,411</b>	<b>1,650</b>	<b>2,126</b>	<b>2,654</b>
YoY Change %	20.4	32.7	21.0	34.6	40.3	2.2	4.0	17.0	28.8	24.9
Uncompressed SSD % of Total EB Shipped	7.9	10.7	11.3	13.8	13.5	15.3	10.2	18.2	18.2	20.8
Uncompressed HDD % of Total EB Shipped	61.0	67.8	69.6	71.8	72.2	69.4	73.6	65.7	67.7	66.0
Compressed Tape % of Total EB Shipped	31.1	21.5	19.1	14.4	14.3	15.3	16.2	16.1	14.1	13.2

SSD and HDD vendors sell directly to hyperscalers (such as AWS), OEMs (such as Dell), and distributors (such as TD SYNnex).

Users purchase cloud services from hyperscalers or smaller Internet Service Providers (ISPs) and integrated products from OEMs or distributors.

Source: Furthur Market Research and Brad Johns Consulting, March 2026

***To put this in historical perspective...from 2000-2021 — there were no years of <10% expansion...SSD and HDD EB shipments showed variable growth but never declined...Enterprise shipments expanded by more than 1000% 2000-2010 and by a 29% CAGR 2010-2020...***



## Unimaginable Immensity...

How much of these surging data oceans can our infrastructures manage?

>100ZB? >250ZB? >500ZB?

Enormous data centers fueled by local nuclear power sources may still be insufficient to meet evolving demand...



- *The combined might of the SSD and HDD makers have been and will continue to be insufficient to meet evolving demand.*
- *The ongoing PB crisis is going to make the 2011 Thai floods look like a mini-event and may soon force many users to integrate Tape and Emerging enterprise technologies sooner than they'd like.*

### • 2022-2023

- ∞ All NAND fab expansions were halted and NAND fab utilization rates fell to below 100%.
- ∞ All HDD makers were already deeply involved in the process of aligning future production with diminishing unit-volume demand.

### • 2024-2025

- ∞ The GenAI-generated sudden surge in demand was unprecedented and largely unanticipated.

### • 2H25

- ∞ Never before have core memory (SRAM, DRAM), NAND flash modules, NAND SSDs, and HDDs been in such severe, simultaneous and ongoing shortage.

- *“There are colossal differences of opinion regarding the ability [!] and the willingness [!] of the SSD and HDD makers to invest adequately to build to a storage demand of staggering—but uncertain, and possibly profitless [!]—dimensions.”  
— Me, in various iterations, 2015 onward...*

- **“Profitless” has recently been removed from that “equation” of concern: SSD margins >50%, HDD margins >45%**

# SCARCITY CREATES VALUE



## *Freakish Pricing Trends*

	2022	2023	2024	2025	1Q26
Vendor Direct Customer Bare-Bones Enterprise SSD Uncompressed ASP/TB (\$)	\$119.96	\$68.00	\$107.22	\$120.15	\$239.16
YoY Change %	(12.5)	(43.3)	57.7	12.1	99.1
Vendor Direct Customer Bare Bones Enterprise HDD Uncompressed ASP/TB (\$)	\$11.68	\$11.31	\$11.09	\$14.35	\$15.85
YoY Change %	0.6	(3.2)	(1.9)	29.4	10.5
Enterprise Tape Enduser Fully Integrated Compressed Average Acquisition Cost/TB (\$)	\$5.16	\$4.97	\$4.89	\$4.88	\$5.07
YoY Change %	(16.3)	(3.8)	(1.5)	(0.2)	3.9

- E-Grade SSD >1-Year Lead Times?...E-Grade Nearline HDD >2-Year Lead Times?
- E-Grade SSD ASP/TB >\$200 through 2H27?...E-Grade Nearline HDD ASP/TB >\$15 through 2H27?
- Stocks in the past year (20 February 2025-20 February 2026): *Nvidia (NVDA) up 41%... Micron (MU) up 333%...SanDisk (SNDK) up 1,190%...Seagate (STX) up 308%...Western Digital (WDC) up 450%*
- It appears that the current allocation and long lead times may last through 2028...*However: As soon as the drive makers can actually test the reality of an enormous backlog, the backlog evaporates...the SSD and HDD fiscal and sales executives are now (post 2022-2023) much more acutely aware of “double-ordering” relative to actual needs...*
- Tape (now) and Emerging (beginning 2H26) can deliver seamless S3 ease of integration and immediate availability of immensely cost-effective, power-efficient PBs.

*Demands for Tape and Emerging should soon expand greatly...but will they?*

# WHAT'S NEXT? LOGICAL ASSUMPTIONS BASED ON HARD FACTS CAN LEAD TO MONSTROUS CONCLUSIONS...

	2010	2015	2020	2025	2030	2035	2040	2045	2050
 Vendor Enterprise SSD Compressed Shipment Estimates (EB)	0.2	13	131	388	1,416	3,355	5,626	7,928	9,479
Estimated SSD User Spend, 85% Markup Over Vendor Revenue (\$M)	\$1,839	\$11,624	\$30,713	\$71,795	\$153,940	\$256,079	\$283,927	\$293,245	\$281,994
Estimated SSD User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	\$7,662.15	\$880.57	\$235.02	\$185.23	\$108.71	\$76.32	\$50.47	\$36.99	\$29.75
 Vendor Enterprise HDD Uncompressed Shipment Estimates (EB)	46	157	680	1,439	4,496	2,388	484	0	0
Estimated HDD User Spend, 50% Markup Over Vendor Revenue (\$M)	\$10,047	\$14,285	\$16,988	\$30,114	\$64,464	\$29,814	\$5,649	\$0	\$0
Estimated HDD User Initial Integrated Uncompressed Average Acquisition Cost/TB (\$)	\$218.41	\$90.98	\$24.99	\$20.93	\$14.34	\$12.48	\$11.67	\$0.00	\$0.00
Enterprise Tape Compressed Shipment Estimates (EB)	30	98	136	299	821	1,995	1,453	690	108
Estimated Tape User Spend (\$M) <i>Tracking begins 2018</i>			\$1,048	\$1,459	\$2,455	\$2,327	\$746	\$271	\$43
Estimated Tape User Initial Integrated Compressed Average Acquisition Cost/TB (\$)			\$7.71	\$4.88	\$2.99	\$1.17	\$0.51	\$0.39	\$0.40
Vendor Enterprise Emerging Shipment Estimates (EB) <i>Tracking begins 2026</i>					583	2,981	11,629	21,398	33,330
Estimated Emerging User Spend (\$M)					\$3,005	\$7,906	\$19,358	\$25,338	\$33,531
Estimated Emerging User Initial Integrated Average Acquisition Cost/TB (\$)					\$5.15	\$2.65	\$1.66	\$1.18	\$1.01
<b>Total Compressed Enterprise Shipment Estimates (EB)</b>	<b>76</b>	<b>269</b>	<b>947</b>	<b>2,126</b>	<b>7,316</b>	<b>10,719</b>	<b>19,192</b>	<b>30,016</b>	<b>42,917</b>
SSD % of Total Shipments	0.3	4.9	13.8	18.2	19.4	31.3	29.3	26.4	22.1
HDD % of Total Shipments	60.3	58.5	71.8	67.7	61.5	22.3	2.5	0.0	0.0
Tape + Emerging (Active Archive) % of Total Shipments	39.3	36.6	14.4	14.1	19.2	46.4	68.2	73.6	77.9
<b>Total Compressed Enterprise Active Installed Base Estimates (EB)</b>	<b>252</b>	<b>851</b>	<b>3,031</b>	<b>7,871</b>	<b>23,016</b>	<b>47,813</b>	<b>86,908</b>	<b>177,033</b>	<b>311,357</b>
<b>Total Enterprise User Spend Estimates (\$M) <i>Tracking begins 2018</i></b>			<b>\$48,749</b>	<b>\$103,368</b>	<b>\$223,865</b>	<b>\$296,126</b>	<b>\$309,680</b>	<b>\$318,854</b>	<b>\$315,567</b>
<b>Total Estimated User Initial Integrated Compressed Average Acquisition Cost/TB (\$)</b>			<b>\$51.50</b>	<b>\$48.63</b>	<b>\$30.60</b>	<b>\$27.63</b>	<b>\$16.14</b>	<b>\$10.62</b>	<b>\$7.35</b>
SSD % of Total Spend			63.0	69.5	68.8	86.5	91.7	92.0	89.4
HDD % of Total Spend			34.8	29.1	28.8	10.1	1.8	0.0	0.0
Tape + Emerging (Active Archive) % of Total Spend			2.2	1.4	2.4	3.5	6.5	8.0	10.6
<b>Alternate 2030-2050 Shipment Scenario at 25% Annual Expansion, Mimicing the 2025-2030 Forecast CAGR (EB)</b>						<b>22,328</b>	<b>68,138</b>	<b>207,942</b>	<b>634,588</b>
<i>EB Delta to Current Forecast</i>						<b>11,608</b>	<b>48,947</b>	<b>177,925</b>	<b>591,671</b>
<b>Even at 1/2 the Acquisition Costs Detailed Above, Alternate 2030-2050 Scenarios Are Clearly Unsustainable...</b>						<b>Alternate 2030-2050 User Spend Scenario (\$M)</b>	<b>\$616,816</b>	<b>\$1,099,494</b>	<b>\$2,208,895</b>
						<i>\$ Delta to Current Forecast</i>	<b>\$320,690</b>	<b>\$789,815</b>	<b>\$1,890,041</b>
						<b>Alternate 2030-2050 Active Installed Base Scenario at 25% Annual Expansion, Mimicing the 2025-2030 Forecast CAGR (EB)</b>	<b>75,055</b>	<b>229,053</b>	<b>699,016</b>
						<i>EB Delta to Current Forecast</i>	<b>27,242</b>	<b>142,145</b>	<b>521,983</b>

SSD and HDD vendors sell directly to hyperscalers (such as AWS), OEMs (such as Dell), and distributors (such as TD SYNEX).

Users purchase cloud services from hyperscalers or smaller Internet Service Providers (ISPs) and integrated products from OEMs or distributors.

Source: Furthur Market Research and Brad Johns Consulting, March 2026

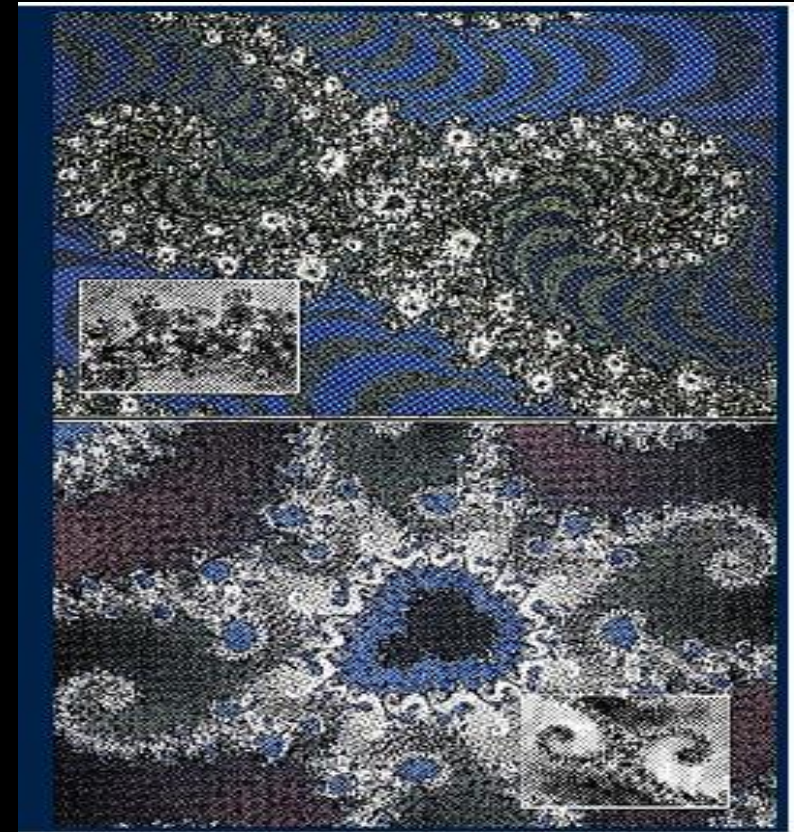


## *Changing the game but not the playing field:*

- ∞ ROI and long-term profits will remain more-urgent priorities for all storage vendors.
- ∞ Meanwhile all CFOs — confronted by a general desire to “store everything” at untenable costs — will work with their IT managers to diversely deploy GenAI “archive rules” to restrain data growth and increase ROI.

# INCONCLUSIVE CONCLUSIONS *(BLINDINGLY BLATANT)*

- The vast majority of stored stuff in the staggering GenAI-enhanced dataverse will not require the nano-to-millisecond access times that SSDs and HDDs can provide.
  - ∞ *We sorely need new technologies that can be deployed at massive scale with minimal power consumption and can deliver data recovery times of less than 10 seconds at <\$1.80 initial user integration costs per terabyte.*
- Even with transformative new technologies, we cannot feasibly maintain the historic >25% annual growth rates we saw 2000-2021.



*Infinitely self-similar,  
never the same...*

∞ *Sustainability, Immutability and Security (SIS) are central corporate concerns and will remain crucial to any coherent strategy for long-term, cost-effective digital preservation.*

# **APPENDICES**

**ENTERPRISE DATA DEFINITIONS**

**REVISED FORECAST ASSUMPTIONS**

**GRANULAR SHIPMENT AND REVENUE DETAILS, 2010-2050**

# ENTERPRISE DATA DEFINITIONS

We define “enterprise exabytes” as the total capacities delivered on all enterprise-class SSDs, HDDs, tape, and—in the near future—enterprise emerging storage media. This definition specifically excludes exabyte shipments of consumer-grade SSDs, HDDs, and flash modules delivered to PCs, entertainment devices, cell phones, home video surveillance, and other consumer and industrial applications (such as aircraft and telecom installations), the vast majority of which are already backed up in, and therefore reflected by, the enterprise-grade exabytes serviced by corporate and cloud data centers.

The following notes are relevant to all forecast tables:

*—SSD capacities reflect an approximate 5x compression ratio, but only for <10% of all enterprise SSD EBs shipped, the vast majority of which (>90%) are configured in server/direct-attached storage (DAS) systems, with little or no data compression, not in fabric-attached solid-state arrays (SSAs), wherein sophisticated data compression software is the norm.*

*—HDD capacities are raw/uncompressed, since so few enterprise HDDs are integrated with any form of data compression.*

*—Tape capacities include both LTO and IBM TS1100 shipments and reflect a global average of at least 2.5x data compression.*

*—Enterprise optical shipments remain minimal at <1,000PB/year—less than half of 1% of the 2025 total—and have not been included in our estimates of historical shipments or the current active installed base. That said, there should be huge opportunities for what we are now referring to collectively as “enterprise emerging storage” technologies to play major roles in future markets, as indicated in our 2026-2050 growth estimates. The “Total ‘Active-Archive’ Storage Opportunity” is the sum of all LTO+IBM+enterprise emerging technology shipments.*

*—We estimate the active installed base of enterprise data was 94.6 exabytes in 2006 and will likely grow to exceed 300 zettabytes in 2050. For the active installed base, we assume a 5-year infrastructure refresh/replacement cycle SSDs, HDDs and tape, retiring, for example, all 2010 shipments in 2015 while adding 2015 shipments to the installed base of the prior year, and we repeat this cycle through 2050. For emerging technologies, we assume a 15-year refresh/replacement cycle.*

# REVISED FORECAST ASSUMPTIONS

Assumptions in the wake of the 2025-2026 shortages and the freakish 4Q25-1Q26 pricing:

- SSD vendor ASPs peak in 2026 at  $> \$200/\text{TB}$  and may never decline to below  $\$15/\text{TB}$  (vs  $> \$9/\text{TB}$  in prior forecast). SSD shipments never expand beyond 8ZB/year (vs  $> 9.5\text{ZB}/\text{year}$  in prior forecast).
- HDD vendor ASPs peak in 2026 at  $> \$15/\text{TB}$  and may never decline to below  $\$7.50/\text{TB}$  (vs  $> \$6/\text{TB}$  in prior forecast). HDD shipments expand more quickly to  $\sim 4.7\text{ZB}/\text{year}$  in 2031 then decline more quickly to EOL in 2043 (vs expansion to  $4.3\text{ZB}/\text{year}$  and slow decline through 2050 in prior forecast).
- Tape user average acquisition Cost/TB declines to  $< \$0.30/\text{TB}$  ( $\sim$ same as in prior forecast). Tape ZB shipments about the same as in prior forecast.
- Emerging user average acquisition Cost/TB declines to  $< \$1.50/\text{TB}$  (vs.  $< \$0.80$  in prior forecast). Emerging shipments are somewhat less than in prior forecast.
- User storage spend expands to \$224 billion in 2030 and \$316 billion in 2050 (vs \$102 billion in 2030 and \$147 billion in 2050 in prior forecast). After careful further analysis, we raised our estimates of user spend to an 85% markup over SSD vendor revenue (vs. a 50% markup in prior forecast) and raised our estimates of user spend to a 50% markup over HDD vendor revenue vs. a 35% markup in prior forecast).
  - ∞ *SSD and HDD vendors sell directly to hyperscalers, major OEMs and global distributors.*
  - ∞ *Users purchase cloud services from hyperscalers or smaller Internet Service Providers (ISPs) and integrated products from OEMs or distributors.*

**Granular Details of Enterprise Storage Shipment and Revenue Histories, 2010-2020**

	2010	2011	2012	2013	2014	2015	CAGR 2010-2015	2016	2017	2018	2019	2020	CAGR 2015-2020	
<b>SSD</b>														
Vendor Enterprise SSD Uncompressed Shipment Estimates (EB)	0.2	0.6	1.0	3.0	7.0	11.0	122.9	18.0	29.0	51.6	66.4	108.9	58.2	
YoY Change %	-	200.0	66.7	200.0	133.3	57.1		63.6	61.1	77.9	28.7	64.0		
Vendor Enterprise SSD Uncompressed Direct Revenue Estimates (\$M)	\$994	\$2,662	\$3,022	\$4,429	\$5,630	\$6,283	44.6	\$8,359	\$12,973	\$14,861	\$9,424	\$16,601	21.4	
YoY Change %	-	167.8	13.5	46.6	27.1	11.6		33.0	55.2	14.5	(36.6)	76.2		
Vendor Enterprise SSD Uncompressed Blended ASP/TB (\$)	\$4,970.04	\$4,436.41	\$3,021.87	\$1,476.48	\$804.34	\$571.18	(35.1)	\$464.39	\$447.36	\$288.00	\$141.92	\$152.45	(23.2)	
YoY Change %	-	(10.7)	(39.2)	(66.7)	(73.4)	(61.3)		(18.7)	(3.7)	(35.6)	(50.7)	7.4		
Vendor Enterprise SSD Compressed Shipment Estimates (EB)	0.2	0.7	1	4	8	13	% Changes	22	35	62	80	131	% Changes	
Estimated SSD System User Spend, 85% Markup Over Vendor Revenue (\$M)	\$1,839	\$4,924	\$5,590	\$8,194	\$10,416	\$11,624	Same As	\$15,464	\$24,001	\$27,492	\$17,434	\$30,713	Same As	
Estimated SSD User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	\$7,662.15	\$6,839.47	\$4,658.72	\$2,276.23	\$1,240.03	\$880.57	Uncompressed	\$715.94	\$689.68	\$444.00	\$218.80	\$235.02	Uncompressed	
<b>HDD</b>														
Vendor Enterprise HDD Uncompressed Shipment Estimates (EB)	46	52	66	91	117	157	27.8	218	267	394	490	680	34.1	
YoY Change %	-	13.0	26.9	37.9	28.6	34.2		38.9	22.5	47.6	24.2	38.9		
Vendor Enterprise HDD Uncompressed Direct Revenue Estimates (\$M)	\$6,698	\$7,831	\$8,897	\$8,917	\$9,181	\$9,523	% Changes	\$8,988	\$8,935	\$10,915	\$10,737	\$11,326	% Changes	
Vendor Enterprise HDD Uncompressed Blended ASP/TB (\$)	\$145.61	\$150.60	\$134.80	\$97.98	\$78.47	\$60.66	Same As User	\$41.23	\$33.46	\$27.70	\$21.93	\$16.66	Same As User	
Estimated HDD System User Spend, 50% Markup Over Vendor Revenue (\$M)	\$10,047	\$11,747	\$13,346	\$13,375	\$13,772	\$14,285	7.3	\$13,482	\$13,403	\$16,372	\$16,106	\$16,988	3.5	
YoY Change %	-	16.9	13.6	0.2	3.0	3.7		(5.6)	(0.6)	22.2	(1.6)	5.5		
Estimated HDD User Initial Integrated Uncompressed Average Acquisition Cost/EB (\$)	\$218.41	\$225.89	\$202.20	\$146.98	\$117.71	\$90.98	(16.1)	\$61.84	\$50.20	\$41.55	\$32.90	\$24.99	(22.8)	
YoY Change %	-	3.4	(10.5)	(27.3)	(19.9)	(22.7)		(32.0)	(18.8)	(17.2)	(20.8)	(24.1)		
<b>TAPE</b>														
Enterprise Tape Compressed Shipment Estimates (EB)	30	43	53	62	86	98	26.8	124	136	125	134	136	6.7	
YoY Change %	-	44.3	22.9	16.4	38.3	15.0		26.0	9.7	(8.1)	7.2	1.5		
Enterprise Tape User Spend Estimates (\$M)	Tracking begins 2018										\$1,162	\$1,066	\$1,048	(5.0)
YoY Change %	Tracking begins 2018										-	-8.3	-1.7	
Estimated Tape User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	Tracking begins 2018										\$9.30	\$7.96	\$7.71	(8.9)
YoY Change %	Tracking begins 2018										-	(14.4)	(3.1)	
<b>EMERGING</b>														
Vendor Enterprise Emerging Shipment Estimates (EB)	Tracking begins 2026													
YoY Change %	Tracking begins 2026													
Vendor Enterprise Emerging Revenue Estimates (\$M)	Tracking begins 2026													
YoY Change %	Tracking begins 2026													
Estimated Enterprise Emerging User Initial Integrated Average Acquisition Cost/TB (\$)	Tracking begins 2026													
YoY Change %	Tracking begins 2026													
<b>TOTAL ACTIVE ARCHIVE</b>														
Active-Archive Storage, Vendor Tape+Emerging Shipment Estimates (EB)	30	43	53	62	86	98	26.8	124	136	125	134	136	6.7	
YoY Change %	-	44.3	22.9	16.4	38.3	15.0		26.0	9.7	(8.1)	7.2	1.5		
Active-Archive Storage, Tape+Emerging Revenue Opportunity (\$M)	Tracking begins 2018										\$1,162	\$1,066	\$1,048	(5.0)
YoY Change %	Tracking begins 2018										-	(8.3)	(1.7)	
<b>TOTAL SHIPMENTS FOR ALL TECHNOLOGIES</b>														
Total Compressed Enterprise EB Shipped	76	96	120	157	211	269	28.6	364	438	581	703	947	28.7	
YoY Change %	-	25.9	25.4	30.0	34.8	27.3		35.4	20.4	32.7	21.0	34.6		
Compressed SSD % of Total EB Shipped	0.3	0.7	1.0	2.3	4.0	4.9		5.9	7.9	10.7	11.3	13.8		
Uncompressed HDD % of Total EB Shipped	60.3	54.2	54.8	58.1	55.5	58.5		60.0	61.0	67.8	69.6	71.8		
Compressed Active Archive % of Total EB Shipped	39.3	45.1	44.2	39.6	40.6	36.6		34.1	31.1	21.5	19.1	14.4		
Total Compressed Active Installed Base of Enterprise EB	293	321	402	505	659	851		1,119	1,436	1,861	2,353	3,031	28.9	
YoY Change %	-	9.4	25.4	25.6	30.5	29.2		31.4	28.4	29.6	26.4	28.8		
<b>TOTAL USER SPEND FOR ALL TECHNOLOGIES</b>														
Total User Acquisition Cost/TB (\$)	Tracking begins 2018										\$77.50	\$49.21	\$51.50	(18.5)
Total Enterprise Storage User Spend (\$M)	Tracking begins 2018										\$45,026	\$34,606	\$48,749	4.1
YoY Change %	Tracking begins 2018										-	(23.1)	40.9	
SSD % of Total Spend	Tracking begins 2018										61.1	50.4	63.0	
HDD % of Total Spend	Tracking begins 2018										36.4	46.5	34.8	
Active Archive % of Total Spend	Tracking begins 2018										2.6	3.1	2.2	
<b>COMPREHENSIVE ASP AND COST RATIOS</b>														
Vendor ASP Ratios														
SSD:HDD Vendor ASP/TB	34.1	29.5	22.4	15.1	10.3	9.4		11.3	13.4	10.4	6.5	9.2		
User Acquisition Cost Ratios	Tracking begins 2018													
SSD:Tape User Cost/TB	Tracking begins 2018													
HDD:Tape User Cost/TB	Tracking begins 2018													
SSD:Emerging User Cost/TB	Tracking begins 2026													
HDD:Emerging User Cost/TB	Tracking begins 2026													
Tape:Emerging User Cost/TB	Tracking begins 2026													

SSD and HDD vendors sell directly to hyperscalers (such as AWS), OEMs (such as Dell), and distributors (such as TD SYNnex). Users purchase cloud services from hyperscalers or smaller Internet Service Providers (ISPs) and integrated products from OEMs or distributors.

Source: Furthur Market Research and Brad Johns Consulting, March 2026

**Granular Details of Enterprise Storage Shipment and Revenue Histories, 2020-2024, and Forecasts, 2025-2030**

		2020	2021	2022	2023	2024	2025	CAGR 2020-2025	2026	2027	2028	2029	2030	CAGR 2025-2030	
<b>SSD</b>	Vendor Enterprise SSD Uncompressed Shipment Estimates (EB)	109	149	173	120	251	323	24.3	459	575	647	911	1,180	29.6	
	YoY Change %	64.0	36.9	16.0	(30.5)	108.7	28.8		42.1	25.3	12.5	40.8	29.5		
	Vendor Enterprise SSD Uncompressed Direct Revenue Estimates (\$M)	\$16,601	\$20,353	\$20,741	\$8,173	\$26,891	\$38,808	18.5	\$89,919	\$76,018	\$70,727	\$77,569	\$83,211	16.5	
	YoY Change %	76.2	22.6	1.9	(60.6)	229.0	44.3		131.7	(15.5)	(7.0)	9.7	7.3		
	Vendor Enterprise SSD Uncompressed Blended ASP/TB (\$)	\$152.45	\$136.51	\$119.96	\$68.00	\$107.22	\$120.15	(4.7)	\$195.90	\$132.21	\$109.32	\$85.15	\$70.52	(10.1)	
	YoY Change %	7.4	(10.5)	(12.1)	(43.3)	57.7	12.1		63.0	(32.5)	(17.3)	(22.1)	(17.2)		
	Vendor Enterprise SSD Compressed Shipment Estimates (EB)	131	179	207	144	301	388	% Changes	551	690	776	1,093	1,416	% Changes	
Estimated SSD System User Spend, 85% Markup Over Vendor Revenue (\$M)	\$30,712.55	\$37,653	\$38,371	\$15,121	\$49,749	\$71,795	Same As	\$166,350	\$140,633	\$130,845	\$143,503	\$153,940	Same As		
Estimated SSD User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	\$235.02	\$210.45	\$184.94	\$104.83	\$165.30	\$185.23	Uncompressed	\$302.02	\$203.82	\$168.53	\$131.27	\$108.71	Uncompressed		
<b>HDD</b>	Vendor Enterprise HDD Uncompressed Shipment Estimates (EB)	680	959	942	1,039	1,085	1,439	16.2	1,753	2,211	2,678	3,581	4,496	25.6	
	YoY Change %	38.9	41.0	(1.8)	10.3	4.4	32.7		21.8	26.1	21.1	33.7	25.6		
	Vendor Enterprise HDD Uncompressed Direct Revenue Estimates (\$M)	\$11,326	\$13,035	\$12,887	\$13,755	\$14,077	\$20,076	% Changes	\$26,351	\$27,909	\$30,121	\$35,916	\$42,976	% Changes	
	YoY Change %	16.66	\$13.59	\$13.68	\$13.24	\$12.98	\$13.95	Same As User	\$15.03	\$12.62	\$11.25	\$10.03	\$9.56	Same As User	
	Vendor Enterprise HDD Uncompressed Blended ASP/TB (\$)	\$16.66	\$13.59	\$13.68	\$13.24	\$12.98	\$13.95		\$15.03	\$12.62	\$11.25	\$10.03	\$9.56		
	Estimated HDD System User Spend, 50% Markup Over Vendor Revenue (\$M)	\$16,988	\$19,553	\$19,330	\$20,633	\$21,116	\$30,114	12.1	\$39,527	\$41,864	\$45,182	\$53,874	\$64,464	16.4	
	YoY Change %	5.5	15.1	(1.1)	6.7	2.3	42.6		31.3	5.9	7.9	19.2	19.7		
Estimated HDD User Initial Integrated Uncompressed Average Acquisition Cost/EB (\$)	\$24.99	\$20.39	\$20.52	\$19.86	\$19.47	\$20.93	(3.5)	\$22.55	\$18.93	\$16.87	\$15.04	\$14.34	(7.3)		
YoY Change %	(24.1)	(18.4)	0.6	(3.2)	(2.0)	7.5		7.7	(16.0)	(10.9)	(10.8)	(4.7)			
<b>TAPE</b>	Enterprise Tape Compressed Shipment Estimates (EB)	136	190	207	228	265	299	17.1	350	435	501	639	821	22.4	
	YoY Change %	1.5	39.7	8.9	10.1	16.2	12.8		17.1	24.3	15.2	27.5	28.5		
	Enterprise Tape User Spend Estimates (\$M)	\$1,048	\$1,172	\$1,068	\$1,132	\$1,296	\$1,459	6.8	\$1,776	\$2,023	\$2,098	\$2,160	\$2,455	11.0	
	YoY Change %	(1.7)	11.8	(8.8)	6.0	14.4	12.6		21.7	12.6	3.7	13.9	13.7		
	Estimated Tape User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	\$7.71	\$6.17	\$5.16	\$4.97	\$4.89	\$4.88	(8.7)	\$5.07	\$4.65	\$4.19	\$3.38	\$2.99	(9.3)	
YoY Change %	(3.1)	(20.0)	(16.3)	(3.8)	(1.5)	(0.2)		4.0	(8.3)	(10.0)	(19.3)	(11.6)			
<b>EMERGING</b>	Vendor Enterprise Emerging Shipment Estimates (EB)	Tracking begins 2026								0.3	15.0	129.0	298.0	583.0	>1000
	YoY Change %									-	4,900.0	760.0	131.0	95.6	
	Vendor Enterprise Emerging Revenue Estimates (\$M)									\$4.08	\$139.45	\$889.00	\$1,753.00	\$3,005.00	>1000
	YoY Change %									-	3,317.9	537.5	97.2	71.4	
Estimated Enterprise Emerging User Initial Integrated Average Acquisition Cost/TB (\$)									\$13.60	\$9.30	\$6.89	\$5.88	\$5.15	(21.5)	
YoY Change %									-	(31.6)	(25.9)	(14.6)	(12.4)		
<b>TOTAL ACTIVE ARCHIVE</b>	Active-Archive Storage, Vendor Tape+Emerging Shipment Estimates (EB)	136	190	207	228	265	299	17.1	350	450	630	937	1,404	36.3	
	YoY Change %	1.5	39.7	8.9	10.1	16.2	12.8		17.2	28.5	40.0	48.7	49.9		
	Active-Archive Storage, Tape+Emerging Revenue Opportunity (\$M)	\$1,048	\$1,172	\$1,068	\$1,132	\$1,296	\$1,459	6.8	\$1,780	\$2,162	\$2,987	\$3,913	\$5,460	30.2	
YoY Change %	(1.7)	11.8	(8.8)	6.0	14.4	12.6		22.0	21.5	38.1	31.0	39.5			
<b>TOTAL SHIPMENTS FOR ALL TECHNOLOGIES</b>	Total Compressed Enterprise EB Shipped	947	1,328	1,356	1,411	1,650	2,126	17.6	2,654	3,351	4,084	5,611	7,316	28.0	
	YoY Change %	34.6	40.3	2.2	4.0	17.0	28.8		24.9	26.3	21.9	37.4	30.4		
	Compressed SSD % of Total EB Shipped	13.8	13.5	15.3	10.2	18.2	18.2		20.8	20.6	19.0	19.5	19.4		
	Uncompressed HDD % of Total EB Shipped	71.8	72.2	69.4	73.6	65.7	67.7		66.0	66.0	67.7	63.8	61.5		
	Compressed Active Archive % of Total EB Shipped	14.4	14.3	15.3	16.2	16.1	14.1		13.2	13.4	15.4	16.7	19.2		
	Total Compressed Active Installed Base of Enterprise EB	3,031	3,995	4,914	5,744	6,692	7,871	21.0	9,197	11,191	13,865	17,825	23,016	23.9	
	YoY Change %	28.8	31.8	23.0	16.9	16.5	17.6		16.8	21.7	23.9	28.6	29.1		
<b>TOTAL USER SPEND FOR ALL TECHNOLOGIES</b>	Total User Acquisition Cost/TB	\$51.50	\$43.96	\$43.32	\$26.14	\$43.72	\$48.63	(1.1)	\$78.24	\$55.11	\$43.83	\$35.87	\$30.60	(8.8)	
	Total User Enterprise Storage Spend	\$48,749	\$58,378	\$58,769	\$36,886	\$72,160	\$103,368	16.2	\$207,656	\$184,659	\$179,013	\$201,290	\$223,865	16.7	
	YoY Change %	40.9	19.8	0.7	(37.2)	95.6	43.2		100.9	(11.1)	(3.1)	12.4	11.2		
	SSD % of Total Spend	63.0	64.5	65.3	41.0	68.9	69.5		80.1	76.2	73.1	71.3	68.8		
	HDD % of Total Spend	34.8	33.5	32.9	55.9	29.3	29.1		19.0	22.7	25.2	26.8	28.8		
	Active Archive % of Total Spend	2.2	2.0	1.8	3.1	1.8	1.4		0.9	1.2	1.7	1.9	2.4		
	YoY Change %														
<b>COMPREHENSIVE ASP AND COST RATIOS</b>	Vendor ASP Ratios														
	SSD:HDD Vendor ASP/TB	9.2	10.0	8.8	5.1	8.3	8.6		13.0	10.5	9.7	8.5	7.4		
	User Acquisition Cost Ratios														
	SSD:Tape User Cost/TB	30.5	34.1	35.8	21.1	33.8	38.0		59.5	43.8	40.3	38.8	36.4		
	HDD:Tape User Cost/TB	3.2	3.3	4.0	4.0	4.0	4.3		4.4	4.1	4.0	4.5	4.8		
	SSD:Emerging User Cost/TB	Tracking begins 2026													
	HDD:Emerging User Cost/TB								22.2	21.9	24.5	22.3	21.1		
Tape:Emerging User Cost/TB								1.7	2.0	2.4	2.6	2.8			
SSD and HDD vendors sell directly to hyperscalers (such as AWS), OEMs (such as Dell), and distributors (such as TD SYNnex).															
Users purchase cloud services from hyperscalers or smaller Internet Service Providers (ISPs) and integrated products from OEMs or distributors.															
Source: Furthur Market Research and Brad Johns Consulting, March 2026															

**Granular Details of Enterprise Storage Shipment and Revenue Forecasts, 2030-2040**

		2030	2031	2032	2033	2034	2035	CAGR 2030-2035	2036	2037	2038	2039	2040	CAGR 2035-2040
SSD	Vendor Enterprise SSD Uncompressed Shipment Estimates (EB)	1,180	1,455	1,694	2,007	2,392	2,796	18.8	3,219	3,591	3,894	4,291	4,688	10.9
	YoY Change %	29.5	23.3	16.4	18.5	19.2	16.9		15.1	11.6	8.4	10.2	9.3	
	Vendor Enterprise SSD Uncompressed Direct Revenue Estimates (\$M)	\$83,211	\$92,281	\$96,264	\$109,765	\$122,653	\$138,421	10.7	\$148,092	\$153,064	\$149,197	\$148,587	\$153,474	2.1
	YoY Change %	7.3	10.9	4.3	14.0	11.7	12.9		7.0	3.4	(2.5)	(0.4)	3.3	
	Vendor Enterprise SSD Uncompressed Blended ASP/TB (\$)	\$70.52	\$63.42	\$56.83	\$54.69	\$51.28	\$49.51	(6.8)	\$46.01	\$42.62	\$38.31	\$34.63	\$32.74	(7.9)
	YoY Change %	(17.2)	(10.1)	(10.4)	(3.8)	(6.2)	(3.5)		(7.1)	(7.3)	(10.1)	(9.6)	(5.5)	
	Vendor Enterprise SSD Compressed Shipment Estimates (EB)	1,416	1,746	2,033	2,408	2,870	3,355	% Changes Same As	3,863	4,309	4,673	5,149	5,626	% Changes Same As
Estimated SSD System User Spend, 85% Markup Over Vendor Revenue (\$M)	\$153,940	\$170,720	\$178,088	\$203,065	\$226,908	\$256,079	Uncompressed	\$273,970	\$283,168	\$276,014	\$274,886	\$283,927	\$283,927	Uncompressed
Estimated SSD User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	\$108.71	\$97.78	\$87.61	\$84.32	\$79.05	\$76.32		\$70.93	\$65.71	\$59.07	\$53.38	\$50.47		
HDD	Vendor Enterprise HDD Uncompressed Shipment Estimates (EB)	4,496	4,870	4,432	3,577	2,960	2,388	(11.9)	1,875	1,390	998	716	484	(27.3)
	YoY Change %	25.6	8.3	(9.0)	(19.3)	(17.2)	(19.3)		(21.5)	(25.9)	(28.2)	(28.3)	(32.4)	
	Vendor Enterprise HDD Uncompressed Direct Revenue Estimates (\$M)	\$42,976	\$43,918	\$39,081	\$31,309	\$25,030	\$19,876	% Changes Same As User	\$15,307	\$11,293	\$7,910	\$5,588	\$3,766	% Changes Same As User
	YoY Change %	9.56	9.02	\$8.82	\$8.75	\$8.46	\$8.32		\$8.16	\$8.12	\$7.93	\$7.80	\$7.78	
	Vendor Enterprise HDD Uncompressed Blended ASP/TB (\$)	\$9.56	\$9.02	\$8.82	\$8.75	\$8.46	\$8.32		\$8.16	\$8.12	\$7.93	\$7.80	\$7.78	
	Estimated HDD System User Spend, 50% Markup Over Vendor Revenue (\$M)	\$64,464	\$65,877	\$58,622	\$46,964	\$37,545	\$29,814	(14.3)	\$22,961	\$16,940	\$11,865	\$8,382	\$5,649	(28.3)
	YoY Change %	19.7	2.2	(11.0)	(19.9)	(20.1)	(20.6)		(23.0)	(26.2)	(30.0)	(29.4)	(32.6)	
Estimated HDD User Initial Integrated Uncompressed Average Acquisition Cost/EB (\$)	\$14.34	\$13.53	\$13.23	\$13.13	\$12.68	\$12.48	(2.7)	\$12.25	\$12.19	\$11.89	\$11.71	\$11.67	(1.3)	
YoY Change %	(4.7)	(5.7)	(2.2)	(0.7)	(3.4)	(1.6)		(1.9)	(0.5)	(2.4)	(1.5)	(0.3)		
TAPE	Enterprise Tape Compressed Shipment Estimates (EB)	821	1,030	1,267	1,525	1,807	1,995	19.4	1,939	1,890	1,599	1,510	1,453	(6.1)
	YoY Change %	28.5	25.4	23.0	20.4	18.5	10.4		(2.8)	(2.5)	(15.4)	(5.6)	(3.8)	
	Enterprise Tape User Spend Estimates (\$M)	\$2,455	\$2,582	\$2,602	\$2,565	\$2,509	\$2,327	(1.1)	\$1,867	\$1,565	\$1,111	\$886	\$746	(20.4)
	YoY Change %	13.7	5.1	0.8	(1.4)	(2.2)	(7.3)		(19.8)	(16.2)	(29.0)	(20.3)	(15.8)	
	Estimated Tape User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	\$2.99	\$2.51	\$2.05	\$1.68	\$1.39	\$1.17	(17.2)	\$0.96	\$0.83	\$0.70	\$0.59	\$0.51	(15.1)
	YoY Change %	(11.6)	(16.2)	(18.1)	(18.1)	(17.4)	(16.0)		(17.4)	(14.0)	(16.1)	(15.6)	(12.5)	
	YoY Change %	(11.6)	(16.2)	(18.1)	(18.1)	(17.4)	(16.0)		(17.4)	(14.0)	(16.1)	(15.6)	(12.5)	
EMERGING	Vendor Enterprise Emerging Shipment Estimates (EB)	583	799	1,087	1,603	2,055	2,981	38.6	4,402	5,906	8,081	9,867	11,629	31.3
	YoY Change %	95.6	37.0	36.0	47.5	28.2	45.1		47.7	34.2	36.8	22.1	17.9	
	Vendor Enterprise Emerging Revenue Estimates (\$M)	\$3,005	\$3,560	\$4,338	\$5,387	\$5,992	\$7,906	21.3	\$10,389	\$12,333	\$15,573	\$17,765	\$19,358	19.6
	YoY Change %	71.4	18.5	21.9	24.2	11.2	31.4		18.7	26.3	14.1	9.0		
	Estimated Enterprise Emerging User Initial Integrated Average Acquisition Cost/TB (\$)	\$5.15	\$4.46	\$3.99	\$3.36	\$2.92	\$2.65	(12.4)	\$2.36	\$2.09	\$1.93	\$1.80	\$1.66	(8.9)
	YoY Change %	(12.4)	(13.6)	(10.4)	(15.8)	(13.2)	(9.0)		(11.0)	(11.5)	(7.7)	(6.6)	(7.5)	
	YoY Change %	(12.4)	(13.6)	(10.4)	(15.8)	(13.2)	(9.0)		(11.0)	(11.5)	(7.7)	(6.6)	(7.5)	
TOTAL ACTIVE ARCHIVE	Active-Archive Storage, Vendor Tape+Emerging Shipment Estimates (EB)	1,404	1,829	2,354	3,128	3,862	4,976	28.8	6,341	7,796	9,680	11,377	13,082	21.3
	YoY Change %	49.9	30.2	28.7	32.9	23.5	28.8		27.4	22.9	24.2	17.5	15.0	
	Active-Archive Storage, Tape+Emerging Revenue Opportunity (\$M)	\$5,460	\$6,142	\$6,940	\$7,952	\$8,501	\$10,233	13.4	\$12,256	\$13,898	\$16,684	\$18,651	\$20,104	14.5
YoY Change %	39.5	12.5	13.0	14.6	6.9	20.4		19.8	13.4	20.0	11.8	7.8		
TOTAL SHIPMENTS FOR ALL TECHNOLOGIES	Total Compressed Enterprise EB Shipped	7,316	8,445	8,819	9,113	9,692	10,719	7.9	12,079	13,495	15,351	17,242	19,192	12.4
	YoY Change %	30.4	15.4	4.4	3.3	6.4	10.6		12.7	11.7	13.8	12.3	11.3	
	Compressed SSD % of Total EB Shipped	19.4	20.7	23.1	26.4	29.6	31.3		32.0	31.9	30.4	29.9	29.3	
	Uncompressed HDD % of Total EB Shipped	61.5	57.7	50.3	39.2	30.5	22.3		15.5	10.3	6.5	4.2	2.5	
	Compressed Active Archive % of Total EB Shipped	19.2	21.7	26.7	34.3	39.8	46.4		52.5	57.8	63.1	66.0	68.2	
	Total Compressed Active Installed Base of Enterprise EB	23,016	28,807	34,290	39,448	43,827	47,813	15.7	52,246	58,009	65,850	75,454	86,908	12.7
	YoY Change %	29.1	25.2	19.0	15.0	11.1	9.1		9.3	11.0	13.5	14.6	15.2	
TOTAL USER SPEND FOR ALL TECHNOLOGIES	Total User Acquisition Cost/TB	\$30.60	\$28.74	\$27.63	\$28.31	\$28.16	\$27.63	(2.0)	\$25.60	\$23.27	\$19.84	\$17.51	\$16.14	(10.2)
	Total User Enterprise Storage Spend	\$223,865	\$242,738	\$243,650	\$257,981	\$272,954	\$296,126	5.8	\$309,187	\$314,006	\$304,564	\$301,919	\$309,680	0.9
	YoY Change %	11.2	8.4	0.4	5.9	5.8	8.5		1.6	(3.0)	(0.9)	4.4	2.6	
	SSD % of Total Spend	68.8	70.3	73.1	78.7	83.1	86.5		88.6	90.2	90.6	91.0	91.7	
	HDD % of Total Spend	28.8	27.1	24.1	18.2	13.8	10.1		7.4	5.4	3.9	2.8	1.8	
	Active Archive % of Total Spend	2.4	2.5	2.8	3.1	3.1	3.5		4.0	4.4	5.5	6.2	6.5	
	YoY Change %	2.4	2.5	2.8	3.1	3.1	3.5		4.0	4.4	5.5	6.2	6.5	
COMPREHENSIVE ASP AND COST RATIOS	Vendor ASP Ratios													
	SSD:HDD Vendor ASP/TB	7.4	7.0	6.4	6.2	6.1	5.9		5.6	5.2	4.8	4.4	4.2	
	User Acquisition Cost Ratios													
	SSD:Tape User Cost/TB	36.4	39.0	42.7	50.1	56.9	65.4		73.7	79.4	85.0	91.0	98.4	
	HDD:Tape User Cost/TB	4.8	5.4	6.4	7.8	9.1	10.7		12.7	14.7	17.1	20.0	22.7	
	SSD:Emerging User Cost/TB	21.1	21.9	22.0	25.1	27.1	28.8		30.1	31.5	30.7	29.7	30.3	
	HDD:Emerging User Cost/TB	2.8	3.0	3.3	3.9	4.4	4.7		5.2	5.8	6.2	6.5	7.0	
	Tape:Emerging User Cost/TB	0.6	0.6	0.5	0.5	0.5	0.4		0.4	0.4	0.4	0.3	0.3	
	Alternate 2030-2040 Shipment Scenario at 25% Annual Expansion (EB)	9,145	11,432	14,290	17,862	22,328	27,909		34,887	43,609	54,511	68,138		
	EB Delta to Current Forecast	700	2,613	5,176	8,170	11,608	15,831		21,392	28,258	37,268	48,947		
Alternate 2030-2040 User Spend Scenario at 25% Annual Expansion (\$M)	\$262,870	\$315,841	\$404,509	\$503,026	\$616,816	\$714,412		\$811,745	\$865,205	\$954,507	\$1,099,494			
\$ Delta to Current Forecast	\$20,131	\$72,191	\$146,528	\$230,072	\$320,690	\$405,225		\$497,740	\$560,641	\$652,588	\$789,815			
Alternate 2030-2040 Active Installed Base Scenario at 25% Annual Expansion (EB)	29,507	47,793	60,044	75,055	93,819	117,275		146,593	183,242	229,053				
EB Delta to Current Forecast	700	3,298	8,345	16,217	27,242	41,574		59,265	80,744	107,788	142,145			

SSD and HDD vendors sell directly to hyperscalers (such as AWS), OEMs (such as Dell), and distributors (such as TD SYNnex). Users purchase cloud services from hyperscalers or smaller Internet Service Providers (ISPs) and integrated products from OEMs or distributors.

Source: Furthur Market Research and Brad Johns Consulting, March 2026

**Granular Details of Enterprise Storage Shipment and Revenue Forecasts, 2040-2050**

		2040	2041	2042	2043	2044	2045	CAGR 2040-2045	2046	2047	2048	2049	2050	CAGR 2045-2050
<b>SSD</b>														
	Vendor Enterprise SSD Uncompressed Shipment Estimates (EB)	4,688	5,255	5,992	6,087	6,284	6,607	7.1	6,925	7,089	7,365	7,583	7,899	3.6
	YoY Change %	9.3	12.1	14.0	1.6	3.2	5.1		4.8	2.4	3.9	3.0	4.2	
	Vendor Enterprise SSD Uncompressed Direct Revenue Estimates (\$M)	\$153,474	\$155,808	\$163,216	\$158,983	\$162,544	\$158,511	0.6	\$160,780	\$155,602	\$152,607	\$151,801	\$152,429	(0.8)
	YoY Change %	3.3	1.5	4.8	(2.6)	2.2	(2.5)		1.4	(3.2)	(1.9)	(0.5)	0.4	
	Vendor Enterprise SSD Uncompressed Blended ASP/TB (\$)	\$32.74	\$29.65	\$27.24	\$26.12	\$25.87	\$23.99	(6.0)	\$23.22	\$21.95	\$20.72	\$20.02	\$19.30	(4.3)
	YoY Change %	(5.5)	(9.4)	(8.1)	(4.1)	(1.0)	(7.2)		(3.2)	(5.5)	(5.6)	(3.4)	(3.6)	
	Vendor Enterprise SSD Compressed Shipment Estimates (EB)	5,626	6,306	7,190	7,304	7,541	7,928	% Changes	8,310	8,507	8,838	9,100	9,479	% Changes
	Estimated SSD System User Spend, 85% Markup Over Vendor Revenue (\$M)	\$283,927	\$288,245	\$301,950	\$294,119	\$300,706	\$293,245	Same As	\$297,443	\$287,864	\$282,323	\$280,832	\$281,994	Same As
	Estimated SSD User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	\$50.47	\$45.71	\$41.99	\$40.27	\$39.88	\$36.99	Uncompressed	\$35.79	\$33.84	\$31.94	\$30.86	\$29.75	Uncompressed
<b>HDD</b>														
	Vendor Enterprise HDD Uncompressed Shipment Estimates (EB)	484	318	189				(100.0)						
	YoY Change %	(32.4)	(34.3)	(40.6)										
	Vendor Enterprise HDD Uncompressed Direct Revenue Estimates (\$M)	\$3,766	\$2,455	\$1,429				% Changes						
	YoY Change %	(32.4)	(34.3)	(40.6)				Same As User						
	Vendor Enterprise HDD Uncompressed Blended ASP/TB (\$)	\$7.78	\$7.72	\$7.56										
	YoY Change %	(0.8)	(0.8)	(2.1)										
	Estimated HDD System User Spend, 50% Markup Over Vendor Revenue (\$M)	\$5,649	\$3,683	\$2,144										
	YoY Change %	(32.6)	(34.8)	(41.8)										
	Estimated HDD User Initial Integrated Uncompressed Average Acquisition Cost/EB (\$)	\$11.67	\$11.58	\$11.34										
	YoY Change %	(0.3)	(0.8)	(2.1)										
<b>TAPE</b>														
	Enterprise Tape Compressed Shipment Estimates (EB)	1,453	1,299	1,085	904	782	690	(13.8)	491	345	293	199	108	(31.0)
	YoY Change %	(3.8)	(10.6)	(16.5)	(16.7)	(13.5)	(11.8)		(28.8)	(29.7)	(15.1)	(32.1)	(45.7)	
	Enterprise Tape User Spend Estimates (\$M)	\$746	\$655	\$484	\$337	\$300	\$271	(18.3)	\$193	\$136	\$116	\$79	\$43	(30.9)
	YoY Change %	(15.8)	(12.2)	(26.1)	(30.4)	(10.9)	(9.8)		(28.8)	(29.3)	(15.0)	(32.1)	(45.7)	
	Estimated Tape User Initial Integrated Compressed Average Acquisition Cost/TB (\$)	\$0.51	\$0.50	\$0.45	\$0.37	\$0.38	\$0.39	(5.2)	\$0.39	\$0.40	\$0.40	\$0.40	\$0.40	0.1
	YoY Change %	(12.5)	(1.8)	(11.5)	(16.5)	3.0	2.2		0.1	0.6	0.0	0.0	0.0	
<b>EMERGING</b>														
	Vendor Enterprise Emerging Shipment Estimates (EB)	11,629	13,504	15,745	17,388	18,980	21,398	13.0	23,788	25,786	26,504	29,381	33,330	9.3
	YoY Change %	17.9	16.1	16.6	10.4	9.2	12.7		11.2	8.4	2.8	10.9	13.4	
	Vendor Enterprise Emerging Revenue Estimates (\$M)	\$19,358	\$20,808	\$22,312	\$22,644	\$23,312	\$25,338	5.5	\$27,195	\$28,179	\$28,360	\$30,481	\$33,531	5.8
	YoY Change %	9.0	7.5	7.2	1.5	3.0	8.7		7.3	3.6	0.6	7.5	10.0	
	Estimated Enterprise Emerging User Initial Integrated Average Acquisition Cost/TB (\$)	\$1.66	\$1.54	\$1.42	\$1.30	\$1.23	\$1.18	(6.6)	\$1.14	\$1.09	\$1.07	\$1.04	\$1.01	(3.2)
	YoY Change %	(7.5)	(7.4)	(8.0)	(8.1)	(5.7)	(3.6)		(3.5)	(4.4)	(2.1)	(3.0)	(3.0)	
<b>TOTAL ACTIVE ARCHIVE</b>														
	Active-Archive Storage, Vendor Tape+Emerging Shipment Estimates (EB)	13,082	14,803	16,830	18,292	19,762	22,088	11.0	24,279	26,131	26,797	29,580	33,438	8.6
	YoY Change %	15.0	13.2	13.7	8.7	8.0	11.8		9.9	7.6	2.5	10.4	13.0	
	Active-Archive Storage, Tape+Emerging Revenue Opportunity (\$M)	\$20,104	\$21,463	\$22,796	\$22,981	\$23,612	\$25,609	5.0	\$27,388	\$28,315	\$28,476	\$30,560	\$33,574	5.6
	YoY Change %	7.8	6.8	6.2	0.8	2.7	8.5		6.9	3.4	0.6	7.3	9.9	
<b>TOTAL SHIPMENTS FOR ALL TECHNOLOGIES</b>														
	Total Compressed Enterprise EB Shipped	19,192	21,427	24,209	25,668	27,303	30,016	9.4	32,589	34,638	35,635	38,680	42,917	7.4
	YoY Change %	11.3	11.6	13.0	6.0	6.4	9.9		8.6	6.3	2.9	8.5	11.0	
	Compressed SSD % of Total EB Shipped	29.3	29.4	29.7	28.5	27.6	26.4		25.5	24.6	24.8	23.5	22.1	
	Uncompressed HDD % of Total EB Shipped	2.5	1.5	0.8	0.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
	Compressed Active Archive % of Total EB Shipped	68.2	69.1	69.5	71.3	72.4	73.6		74.5	75.4	75.2	76.5	77.9	
	Total Compressed Active Installed Base of Enterprise EB	86,908	100,658	117,263	135,533	155,162	177,033	15.3	200,900	225,986	251,738	280,040	311,357	12.0
	YoY Change %	15.2	15.8	16.5	15.6	14.5	14.1		13.5	12.5	11.4	11.2	11.2	
<b>TOTAL USER SPEND FOR ALL TECHNOLOGIES</b>														
	Total User Acquisition Cost/TB	\$16.14	\$14.63	\$13.50	\$12.39	\$11.88	\$10.62	(8.0)	\$9.97	\$9.13	\$8.72	\$8.05	\$7.35	(7.1)
	Total User Enterprise Storage Spend	\$309,680	\$313,390	\$326,889	\$317,912	\$324,319	\$318,854	0.6	\$324,831	\$316,179	\$310,799	\$311,392	\$315,567	(0.2)
	YoY Change %	2.6	1.2	4.3	(2.7)	2.0	(1.7)		1.9	(1.7)	(1.7)	0.2	1.3	
	SSD % of Total Spend	91.7	92.0	92.4	92.5	92.7	92.0		91.6	91.0	90.8	90.2	89.4	
	HDD % of Total Spend	1.8	1.2	0.7	0.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
	Active Archive % of Total Spend	6.5	6.8	7.0	7.2	7.3	8.0		8.4	9.0	9.2	9.8	10.6	
<b>COMPREHENSIVE ASP AND COST RATIOS</b>														
	Vendor ASP Ratios													
	SSD:HDD Vendor ASP/TB	4.2	3.8	3.6										
	User Acquisition Cost Ratios													
	SSD:Tape User Cost/TB	98.4	90.7	94.1	108.0	103.8	94.3		91.1	85.6	80.8	78.1	75.3	
	HDD:Tape User Cost/TB	22.7	23.0	25.4	30.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
	SSD:Emerging User Cost/TB	30.3	29.7	29.6	30.9	32.5	31.2		31.3	31.0	29.9	29.7	29.6	
	HDD:Emerging User Cost/TB	7.0	7.5	8.0	8.7	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
	Tape:Emerging User Cost/TB	0.3	0.3	0.3	0.3	0.3	0.3		0.3	0.4	0.4	0.4	0.4	
<b>Alternate 2040-2050 Shipment Scenario at 25% Annual Expansion (EB)</b>		68,138	85,173	106,466	133,083	166,353	207,942		259,927	324,909	406,136	507,670	634,588	
	EB Delta to Current Forecast	48,947	63,746	82,257	107,414	139,051	177,925		227,338	290,271	370,501	468,991	591,671	
<b>Alternate 2040-2050 User Spend Scenario at 25% Annual Expansion (\$M)</b>		\$1,099,494	\$1,245,735	\$1,437,568	\$1,648,278	\$1,976,043	\$2,208,895		\$2,590,825	\$2,965,818	\$3,542,210	\$4,087,018	\$4,666,126	
	\$ Delta to Current Forecast	\$789,815	\$932,345	\$1,110,679	\$1,330,365	\$1,651,725	\$1,890,041		\$2,265,994	\$2,649,639	\$3,231,411	\$3,775,626	\$4,350,559	
<b>Alternate 2040-2050 Active Installed Base Scenario at 25% Annual Expansion (EB)</b>		229,053	286,316	357,896	447,370	559,213	699,016		873,770	1,092,213	1,365,267	1,706,583	2,133,230	
	EB Delta to Current Forecast	142,145	185,659	240,633	311,837	404,050	521,983		672,870	866,227	1,113,529	1,426,544	1,821,872	

SSD and HDD vendors sell directly to hyperscalers (such as AWS), OEMs (such as Dell), and distributors (such as TD SYNTEX).

Users purchase cloud services from hyperscalers or smaller Internet Service Providers (ISPs) and integrated products from OEMs or distributors.

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