

PLATINUM PLATTERS

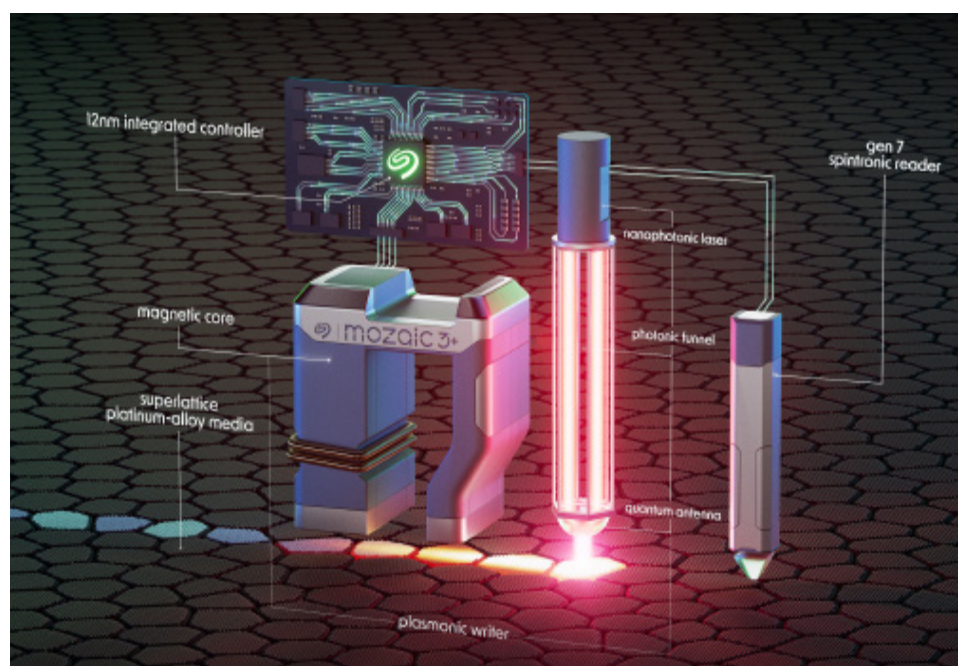
Rapid AI-led data expansion is behind an uptick in demand for hard disk drives

The market for hard disk drives (HDDs) is showing signs of a rebound after almost two years of decline thanks to the rapid growth in machine learning and artificial intelligence (AI) driving the need for expanded data storage. According to Forbes, total HDD unit shipments in the last quarter of 2023 were up just under 1%, marking a turnaround in HDD demand, which had been in quarterly decline since the first quarter of 2022.

HDDs have been losing market share to solid state drives (SSDs), especially in consumer applications such as personal computers and gaming consoles. HDDs are data storage devices comprised of magnetic platters coated with a platinum alloy

media to improve thermal and magnetic stability, whereas SSDs use memory chips to store data, typically using a flash memory.

Superior speed and increasing cost competitiveness with HDDs are two of the key drivers behind the growth in SSD adoption. However, HDDs are still lower cost than SSDs on a per gigabyte basis, meaning it remains the preferred option for organisations needing to store vast quantities of data. What is more, HDDs are benefiting from the introduction of heat-assisted magnetic recording (HAMR) technology, an innovation that is improving storage, or 'areal' density and so growing storage capacity without increasing HDD size or creating



Seagate has launched a HAMR HDD with a pioneering platinum-alloy media. Picture credit: Seagate

additional power requirements. These latter two features are of particular interest to the data centre segment which is deploying a broad range of solutions to better manage energy efficiency and storage capacity to reduce its carbon footprint.

At the same time, cloud computing, AI, and machine learning are leading to rapidly growing demand for data storage capacity. Indeed, it is estimated that between 2024 and 2025, 30 zettabytes – a trillion gigabytes – of data will be generated, while only two zettabytes of storage capacity will be manufactured.

Pioneering platinum alloy

Earlier this year, Seagate, a leading innovator of sustainable mass-capacity data storage solutions, launched a new HAMR HDD equipped with a pioneering ‘superlattice’ platinum-alloy media, which significantly enhances disk performance, providing over three terabytes of storage density

per platter and enabling its groundbreaking Seagate ‘Exos’ 30 terabyte hard drive. The hard drive areal density improvements achieved will enable its customers to store more data within the same footprint, economically and efficiently expanding the installed capacity of hard drive-based mass storage facilities, especially data centres.

Meanwhile, computer drive manufacturer and data storage company Western Digital is also pushing 30-terabyte territory with its new generation of drives built with technology specifically designed for data centre customers who are looking for the highest capacity storage to help them achieve the lowest possible total cost of ownership. Western Digital’s high-capacity 28 terabyte and 24 terabyte HDDs are built with 40% (by weight) recycled content and are around 10% more energy efficient per terabyte compared to its earlier generation products.

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