Twist Bioscience Highlights White Paper Sizing Future DNA Data Storage Market

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Zone of potential insufficiency, where storage demand outstrips capacity, could be >25 zettabytes during 2030

Approximately 75% of all data stored to be ‘cold’ data, infrequently accessed ‘just in case’ it is needed

Data retention times are ‘indefinite,’ say key industry executives, never deleted

SOUTH SAN FRANCISCO, Calif.--(BUSINESS WIRE)--Aug. 2, 2022-- Twist Bioscience Corporation (NASDAQ: TWST), a company enabling customers to succeed through its offering of high-quality synthetic DNA using its silicon platform, today shared a new white paper from Furthur Market Research[1] highlighting the dramatic need for new enterprise storage technologies that can be deployed more cost effectively at massive scale with minimal power consumption, such as DNA data storage.

“We estimated the maximum production capabilities of current storage technologies (hard disk drive (HDD), solid state drive (SSD), tape) and concluded that potential demand at growth rates greater than 25% annually would exceed available supply of all enterprise-grade media,” said John Monroe, founder, Furthur Market Research and lead author of the paper. “Importantly, moving beyond 2025, new DNA, optical and perhaps other enterprise storage technologies will be needed to cost-effectively and reliably preserve the priceless artifacts of our personal, corporate and cultural history.”

Storage Capacity Today, Not Available Tomorrow: Zone of Potential Insufficiency

To date, enterprise storage capacity continues to be available, but the data shows that at current and projected growth rates, there likely will be zones of potential insufficiency where the predicted storage capacity cannot meet the storage demand.

The new white paper confirms that in 2019, 2020 and 2021, shipments of enterprise petabytes accelerated and grew by 35%, 33.6% and 48.3%, respectively. Estimates show that:

- Assuming a 35% annual growth rate in enterprise storage demand, during 2030 the zone of potential insufficiency could be 7.9 million petabytes (7.9 ZB).
- Assuming a 45% annual growth rate, the zone of potential insufficiency during 2030 could exceed 25 million petabytes (25 ZB).

Archival (cold) Data Volume could be ~75% of Installed Base of Enterprise Data, Remain Undeleted

Several industry interviews with industry executives responsible for more than 100-petabyte storage infrastructures in diverse markets said their data retention times were ‘indefinite.’ The author notes that, to date, we have seen little or no inclination of any kind in any corporation to delete any data, and there is no reason to believe this trend will change.

- Approximately 75% of the active installed base of enterprise storage could be ‘cold,’ mostly containing ‘Just In Case’ (JIC) or ‘Write Once Read Never’ (WORN) data.
- Cold storage data may never be accessed at all, nor in most cases will it ever be deleted

“DNA holds the promise of offering the magic three in storage: ultra-high-density, reasonable cost, and sustainability. We expect that new media will be needed to address the $7B+ of unmet storage demand projected in the years ahead, and we remain at the forefront of innovation in this market looking toward introducing the first commercial DNA data storage solution in the near future,” commented Emily M. Leproust, Ph.D., CEO and co-founder of Twist Bioscience.

Expanding Power Requirements for Current Storage Solutions: Sustainability Considerations

The report notes new storage technologies must be more sustainable as the world’s appetite for data increases.

Dr. Leproust continued, “Today, the vast majority of enterprise data is stored on hard disk drives, which use a tremendous amount of power. As we prepare for the rapidly growing demand for storage, any new media must reduce the power consumption by one to two orders of magnitude. DNA is poised to do just that.”

To read the full Storage White Paper, please visit: https://www.twistbioscience.com/resources/white-paper/escalating-challenge-preserving-enterprise-data.

About Twist Bioscience

Twist Bioscience is a leading and rapidly growing synthetic biology and genomics company that has developed a disruptive DNA synthesis platform to industrialize the engineering of biology. The core of the platform is a proprietary technology that pioneers a new method of manufacturing synthetic

DNA by “writing” DNA on a silicon chip. Twist is leveraging its unique technology to manufacture a broad range of synthetic DNA-based products, including synthetic genes, tools for next-generation sequencing (NGS) preparation, and antibody libraries for drug discovery and development. Twist is also pursuing longer-term opportunities in digital data storage in DNA and biologics drug discovery. Twist makes products for use across many industries including healthcare, industrial chemicals, agriculture and academic research.

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This press release contains forward-looking statements. All statements other than statements of historical facts contained herein, including but not limited to projections of unmet demand for data storage, are forward-looking statements reflecting the current beliefs and expectations of management made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements involve known and unknown risks, uncertainties, and other important factors that may cause Twist Bioscience’s actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, the risks and uncertainties of the ability to attract new customers and retain and grow sales from existing customers; risks and uncertainties of rapidly changing technologies and extensive competition in synthetic biology could make the products Twist Bioscience is developing obsolete or non-competitive; the retention of employees of acquired companies and the ability of Twist Bioscience to successfully integrate acquired companies and to achieve expected benefits, risks of third party claims alleging infringement of patents and proprietary rights or seeking to invalidate Twist Bioscience’s patents or proprietary rights; and the risk that Twist Bioscience’s proprietary rights may be insufficient to protect its technologies. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to Twist Bioscience’s business in general, see Twist Bioscience’s risk factors set forth in Twist Bioscience’s Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on May 6, 2022 and subsequent filings with the SEC. Any forward-looking statements contained in this press release speak only as of the date hereof, and Twist Bioscience specifically disclaims any obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

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[1] White paper jointly sponsored by Fujifilm and Twist Bioscience.

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