Our DNA can store a staggering amount of information in an almost inconceivably small volume

The prevailing long-term cold-storage method, which dates from the 1950s, writes data to pizza-sized reels of magnetic tape. By comparison, DNA storage is potentially less expensive, more energy-efficient and longer lasting. Studies show that DNA properly encapsulated with a salt remains stable for decades at room temperature and should last much longer in the controlled environs of a data center. DNA doesn't require maintenance, and files stored in DNA are easily copied for negligible cost.

Even better, DNA can archive a staggering amount of information in an almost inconceivably small volume. Consider this: humanity will generate an estimated 33 zettabytes of data by 2025—that's 3.3 followed by 22 zeroes. DNA storage can squeeze all that information into a ping-pong ball, with room to spare.

The "cloud" isn't a cloud at all. It is digital data centers in huge warehouses consuming vast amounts of electricity to store (and keep cool) trillions of millions of bytes. Costing billions of dollars to build, power and run, these data centers may struggle to remain viable as the need for data storage continues to grow exponentially.

DNA shows great promise for sating the world's voracious appetite for data storage.

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