

Opinion: Long Live Tape

Opinion by Mark Hall

OCTOBER 18, 2004 (COMPUTERWORLD) - I've been hanging around the rumor-mongering, low-cost disk drive crowd lately, so I started to think that their ATA drives are making tape obsolete. And when the information life-cycle management forces added their whispers about the improved performance and low cost of archiving data to fixed disks, I became a fervent convert to the notion that tape is all but dead.

In fact, I had intended to write something like my "Farewell Floppy" column of nearly five years ago, in which I (correctly) dismissed the floppy disk as credible IT technology. I had the similar self-righteous vigor of a convert as I set forth to write my "Death to Tape" column.

Alas, I did my research before writing. (A generally wise, although not always accomplished, task among journalists.) Tape is far from dead. If anything, thanks to continued technology improvements and recent corporate management shenanigans and the legislative responses to them, tape for backup and archival storage is experiencing a resurgence.

Take IBM's recent tape business. It has seen four consecutive quarters of double-digit upticks in revenue. And its main competitor for tape systems, Storage Technology Corp., has announced 16 consecutive quarters of year-over-year earnings growth. Those aren't the numbers of a technology in a tailspin, nor are they what I expected to find.

While technology advances and lower costs help keep tape competitive against ATA drives despite drawbacks in performance, it's the work of politicians that is giving tape renewed purpose in life. After all, they've passed Sarbanes-Oxley, the Health Insurance Portability and Accountability Act and other audit-friendly legislation, seemingly with tape in mind.

"A couple of years ago, legislation on corporate governance changed things," says Barry Rudolph, IBM's vice president for tape storage systems. Changed indeed -- in a good way for tape storage makers.

That's because top management wants IT archivists to err on the side of saving too much information rather than too little and to spend as little as possible in the process. For today (and tomorrow), that means tape. A 200GB ATA drive sounds cheap at \$140, but a \$40 tape holds just as much uncompressed data. By the end of the year, IBM will be shipping a 400GB version.

Over at Fuji Photo Film USA in Valhalla, N.Y., Rich Gadomski tells me that his company has already demonstrated 1TB uncompressed capacity on a single tape cartridge and expects to have it on the market in a year or two. And both Fuji and IBM claim that single tapes with 10TB to 15TB of storage will ship by 2010.

Plus, tape archiving systems use 100% of a tape's capacity, while disk-to-disk approaches risk duplicating the same inefficient storage utilization rates on backup disks as on production ones.

With those kinds of capacity and efficiency numbers, it's clear that low-end drive makers will forever play catch-up to tape when it comes to the storage capacity/cost ratio. Plus, you don't have to add the incremental expenses of a full RAID storage system, cooling technology and electricity that you need to make a disk drive useful. Tape is happy just to sit idle, drawing no power, requiring no special HVAC support.

ATA disk drive makers brag that their low-cost technology has at least 100 times the performance that you'll experience retrieving data from tape system. However, in the world of compliance-driven storage, audits aren't done in real time. You can usually retrieve requested information in a few hours -- or days -- and still meet user needs. That's right up tape's alley.

Tape has an obvious portability advantage over disk. And it offers less-obvious protection against disk-based viruses because you can always revert data on tape to a state prior to an infection. But an infected disk affects the whole drive, regardless of what state the data might be in.

So, it looks like you'll be using tape systems for the foreseeable future. Instead of seeking ways to dump tape, you need to develop tape strategies with the same zeal you have for plans to migrate and upgrade operating systems and applications.

Tape media might reliably retain data for 30, even 50 years. But you shouldn't count on it, especially because the tape subsystems that read and transfer the data change at a much faster rate.

Although applications vary, most companies should overhaul their tape systems every 10 to 15 years. Check to make certain that the new devices efficiently work with old tapes. Also, every 15 to 20 years, bring all your archived data onto newer tape, choosing data formats that abide by industry standards to better ensure future compatibility.

Born in an IBM lab back in 1952, tape, it seems, will never die.

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