



What Makes A Great External Hard Drive?

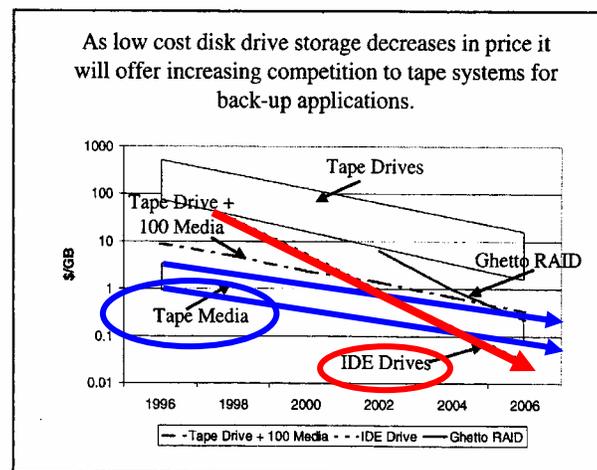
A Solutions Overview

April 2005

Portable Storage: Five Trends that Have Forced Out Tapes, Zips, and Orbs, and Made Hard Drives the Preferred New Choice

Since the end of 2001, a paradigm shift, a revolution, has occurred in the portable data storage market. Floppy disks, Zip and Orb drives, CDs and DVDs, and tape cartridges, are being replaced with a new class of portable storage, namely portable/external hard drives and flash memory. The explosion in the portable and external drive market has been fueled by the following trends:

(1) The cost per Gigabyte (\$/GB) of hard drives has fallen much faster than tape – previously the lowest-cost mass portable media. The cost erosion of hard drives vs. tape is depicted in the graph below (Peripheral Research Corporation, November 11, 2001).



(2) The capacity of hard drives is over 400 GB and growing – 3.5” ATA hard drives are leading the maximum capacity war over other popular portable media. Such 3.5” ATA hard drives can provide high capacity at a low price, meeting the storage needs of today’s data-intensive applications.

(3) The demand for data storage has been growing at a projected 20.3% CAGR according to Soloman Smith Barney, 2001, who projects this increased demand for data storage in relation to its applications. The largest applications of storage are graphics (games, design, tools), video, and data files. Emerging applications that will drive storage capacity increases in the next five years include E-medicine, digital photography, and CRM/ERS. Gartner Dataquest, 2003, projected “enormous growth” in 2004 for non-PC markets for hard disk drives, particularly audiovisual applications. Garner Dataquest forecasted shipment of a net 22 to 48 million drives that year for non-PC applications, presuming that the applications would take off in 2004. Looking at longer-term trends, in the next five years, Gartner Dataquest projects that

every television will have a HDD in it, or near it, and most teenagers will carry around a portable storage device for MP3s. The emergence of the IPOD is proof that this is already happening. Moreover, Gartner Dataquest states, “In the evolving breeds of portable jukeboxes, game stations, programmable set-top boxes and high-definition TVs, a growing hunger for low-cost, high-capacity HDDs makes imminent sense.”

(4) The widespread availability of USB 2.0, Firewire, and SATA (more recently) interfaces have made high-speed plug-and-play a reality, providing transfer speeds that can move a Gigabyte of data in less than a minute. These transfer rates, combined with the ease of use of such interfaces, makes it practical to use high-capacity storage devices on a daily basis.

(5) Most importantly, hard disk drives have long been a preferred media from an ease-of-use standpoint because of their random access file structure. For example, backup is made much easier with hard drives compared to tape by reducing both the cataloging process from hours to minutes, as well as dramatically reducing restoration time from hours to minutes (no more cartridge shuffle when disk drives are used). No wonder a recent InfoStor survey shows about 64% *of small businesses, end users, resellers, system integrators, and OEMs plan to purchase disk-based backup products in the next 6 to 12 months*. This survey also revealed that over 70% of respondents cite backup speed, capacity, and reliability, and about 66% cited recovery speed, as factors that will influence the type of backup purchase in the next 6 to 12 months. Hard drives have the clear advantage in all four of these factors over tape.

External and Portable Drives are “Flying Off the Shelf”

External drives are growing at an explosive rate as part of the storage growth cited in the previously illustrated trends. In 2002, NPD Group stated about external hard drives: “Unit volume has grown equivalently, with year-over-year unit growth of over 128% in contrast to the 4% growth in sales of internal drives.” During 2003, sales have continued to increase. An article published in the Taipei Times (Sept. 26, 2003), states, “In the Asia-Pacific region, the value of external disk storage shipments increased by 10.1 percent to US \$386.9 million in the second quarter of this year from the first quarter, according to US-based International Data Corp (IDC).” In a September 2003 article¹ in CNET, it was stated: “NPD Group's Stephan Baker said people are eager to expand on their PCs when they don't have to open up the

¹ Ed Fraunheim, “In PC design, harbingers of shrink”, CNET, 9/16/03.

equipment to add technology.” Furthermore, “He noted that for the first seven months of this year (2003), unit shipments of external hard drives were up 47%...”

Most External Hard Drives Don’t Keep Data Safe Enough

“Rough Handling Accounts For More Hard Disk Drive Damage Than All Other Factors Combined.”

According to Independent Technology Services. The most significant area that drives fail is their inability to keep data safe due to insufficient shock protection for handling, even when they are supposed to be “portable”. Hard drive manufacturer Fujitsu Corporation has published that *“A drop onto a hard surface from as little as ¼” (6 mm) can cause defects on the surface of the drive, so extreme care must be exercised when handling disk product.”* Most portable and external drives do not have sufficient shock protection from routine handling.

Another case in point comes from Maxtor, the dominant maker of external hard drives, which warns its 5000 DV drive customers on Page 3 of the product instructions (under “Handling Precautions”): **“Do not bump, jar, or drop the drive”**. Another area that drive makers fall short is warranty period – many makers only protect for one year, yet it is highly desirable for organizations to have at least a three-year warranty to match their typical computer buying cycle.

What Makes a Great Portable External Hard Drive?

Given the explosion of portable and external hard drives on the market, Olixir Technologies conducted surveys and market research to help understand what features the ideal high-capacity external portable hard drive would have. The study revealed seven key features for an optimal hard drive, which Olixir calls the *Portable Drive Checklist* :

- (1) High reliability and durability, keeping data ultra safe
- (2) A real warranty, preferably more than two years
- (3) Fast data transfers
- (4) Easy use and installation
- (5) Inclusion of comprehensive backup software
- (6) Compact size and ability to stand either horizontally or vertically to save desktop space
- (7) High maximum capacity (for data intensive applications)
- (8) Affordability

Most portable or external drives can successfully meet some of the criteria, but almost all drives fall short of meeting all eight (see chart below).

	Highly Reliable & Durable	Fast Data Transfer	Easy to Use & Install	Includes Back-up S/W	Handheld & Portable	High Capacity (200 GB+)	3-Year Warranty	Affordable Price
KEY								
● = Meets requirement								
○ = Meets requirement partially or sometimes								
□ = Fails to meet standard								
Olixir 40-400 GB Mobile DataVault	●	●	●	●	●	●	●	●
20-100GB Portable Drives	○	●	●	○	○		○	
80-400 GB External Drives		●	●	○		●	○	●
700 MB CD-ROM	●				●		○	●
Tape Drives	○			○	○	○	○	●
Zip & Orb Drives	●		○	●	○			●

Introducing Olixir Technologies' Mobile DataVault 3DX

Olixir Technologies, a provider of technologically advanced ruggedized, portable data storage solutions, recently began shipping its Mobile DataVault 2LX and 3DX, the industry's first slim, rugged, high-capacity 2.5-inch and 3.5-inch portable hard disk drives, which are targeted to meet the features addressed in the *Portable Drive Checklist*. The durable Mobile DataVault 3DX family of high-capacity portable 3.5-inch ATA hard drives, currently available in capacities of 120 GB, 160 GB, 250 GB, and 400 GB are encased in a handheld shell that competes with the form factor of many 2.5-inch portable drives (and is over 40% smaller than many popular external desktop drive form factors). The ultra shock-protected Mobile DataVault 2LX family of portable 2.5-inch ATA hard drives, currently in the capacities of 40 GB, 60 GB, 80 GB and 100 GB, are encased in the same handheld shell as the 3DX, and are certified to exceed the transit drop test of MIL-STD-810F. The 2LX family of drives survives drops of up to 7 feet on concrete and over 75 drops from 3 to 6 feet. The 2LX family also features added ultra protection against vibration, making it suitable for mobile DVR applications in military, bus, and police vehicles.

While other external disk-based data storage solutions typically cannot withstand a drop of even 3 inches, the patented shock-absorbent technology incorporated into the hot-swappable Olixir Mobile DataVault

provides sufficient shock protection for all applications where handling and mobility is required. Incorporating non-operational shock protection of up to 1,200G (or 18 inches on concrete/ 36 inches on carpet), the Mobile DataVault 3DX withstands routine handling required for media rotation and offsite archival in backup and disaster recovery applications. The Mobile DataVault 2LX has over 10,000G of non-operating shock protection, and withstands up to 7-foot drops on concrete, making it usable for hazardous environments, rough transportation and hostile vibrations.

“Handling is the number one cause of data loss today,” said Randy Dugger, CEO of Dugger & Associates, who has installed a backup system using the Mobile DataVault 3DX to completely replace tape backup of police and city records at a municipality in the Bay Area of California. “With any data storage system, shock damage from dropped or mishandled storage devices can permanently delete business critical data. Olixir’s portable Mobile DataVault 3DX and 2LX protects a high capacity of data like no other devices on the market today. It’s the simplest and easiest system to use to protect, secure, capture, and archive data every day.”

Slightly larger than a VHS tape, Olixir’s compact Mobile DataVault line is offered with a versatile interface that can be used with USB 2.0, Firewire, SATA, PCMCIA cables, or can be plugged into and out of a 5.25” docking bay (making it usable in rack-mountable chassis or desktop computer towers). The drive ships with award-winning Dantz Retrospect software, and comes with a standard three-year warranty.

The Mobile DataVault is a multi-purpose drive that is used for end user and enterprise backup, mobile video surveillance, transportation of large files, and external storage of digital photos, video, music, graphics, animation, and other critical files. Due to its patented shock-protected portable design, the drive can also be used to consolidate data and easily move data from one computer to another or survive harsh environments.

For More Information:

Additional information about Olixir Technologies and its products can be found on the company’s Web site at www.olixir.com. For more information:

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