Making file copies can reduce digital headaches, heartbreak

by Jonathan Sidener

Daily, the hard-luck hard-drive tales trickle in to San Diego PC Help.

Often, the computers had been giving warning signals, making strange noises, clicking and whining.

And finally, the hard drives stopped altogether, putting all their files out of reach.

"We get 10 or 11 a week," said Jeremy Frank, a service coordinator for the repair business. "In many cases, we're able to recover some or all of the data. But in about four cases a month, the data is completely lost."

Increasingly, critical and often irreplaceable portions of our world get stored as computer files, including business records, digital home video and family photos.

And all too often, there's only one copy of each digital file. If the hard drive crashes, it means trouble.

BACKUP PLAN - All too often, people don't back up their hard drive. If it crashes, it means trouble. CNS Illustration by Cristina Martinez Byvik.At the very least, it will mean hauling the drive or the whole computer to an expert. And the recovered files are likely to come back without their original names, so they must be individually opened and renamed. It may mean sending the drive to a specialized data-recovery business, where they will crack open the drive inside a clean room, as long as the owner is willing to crack open his wallet and spend hundreds of dollars. And even then there are no guarantees. All the heartache could have been prevented. Simple, regular backups would have created a copy, and nothing would have been lost. It's the dirty little secret of many PC users. Sensible Americans - people who wear seat belts, floss their teeth and wash their hands after handling raw poultry - engage in unprotected computing. Nearly half of computer owners admitted they skip the backup process, according to a recent survey by Symantec.

One sheet-metal company called San Diego PC Help when its computer wouldn't start up. "They had Quick-Books and all their business records on there," Frank said. "They had six years' worth of data on there, and they had never backed it up.

"In many cases, we can get 75 to 100 percent of the data back, but in this case it was a complete loss."

Hard drives fail because they're complex mechanical devices that operate at high speeds with little margin for error. Imagine a turntable that plays three records at the same time, one above the other, with little space in between. Instead of spinning at 72 rpm, the hard-drive disks whir at 7,200 rpm, sometimes faster. And the arms that read the data move from the outside to the center and back dozens of times per second, with the end of the arm floating barely above the spinning disks. If a hard drive gets bumped, the read-and-write heads at the end of the moving arm can strike the spinning disks, technically known as platters. The high-speed collision can gouge or shred the platters' magnetic covering, which destroys data, if not the entire drive. There's a popular saying among computer professionals: "All hard drives fail." Although it's a slight exaggeration, it's true often enough to warrant routine backups.

There are several backup technologies, each of which has its strengths and weaknesses. In deciding which is best for you, think about how much data you need to copy, and how often those data change. You don't need to back up programs such as Windows and software that you added to the computer because you should have a System Restore CD for all the software that came pre-installed. And you should have the original CDs for other programs.

Focus your backup strategy on user files that you create, modify or store, such as e-mail, work documents and photos.

- External hard drives: This is the most popular method for backups, in part because it has become affordable as the prices of hard drives have fallen. Many external drives come with backup software that simplifies the process. After designating which files and folders will be copied, a backup can be accomplished with a single click. These drives typically hold 200 gigabytes or more of data. They're a good option for people who

frequently update many files. Because they contain hard drives, they must be handled carefully to prevent damage. In the relatively rare cases of burglary or natural disaster, external drives can be stolen or destroyed along with the main hard drive.

- Online storage: This option is growing in popularity. It gives home computer owners and small businesses a backup method comparable to a common corporate solution. Copies of files are stored remotely so they can't be stolen. Many services store multiple copies of the data in different parts of the country, so a natural disaster couldn't destroy the information that's been backed up.

"We have redundant copies of the backup on each server and redundant servers," said Wayne Slavin, founder of online storage company BackupRight.com.

Slow uploads from cable and DSL connections are a significant drawback to online storage. An initial backup can take several hours, Slavin said, but later backups will only transmit the files that have been changed.

- Combined storage: Some hard-drive manufacturers are working with online sites to save backups on an external drive and on a remote server.

- DVD and CD burners: For people who have files such as photos and video that are rarely edited, a backup on a CD or DVD offers an economical alternative. A DVD can hold nearly 5 gigabytes. While this provides a long-term storage solution, it's not permanent. Data burned to a disk at home will fade over time.

- Flash drives and memory cards: For people who don't have a lot of data to back up, "thumb" drives and memory cards - both of which use flash memory - may be a convenient option. Capacity for flash continues to increase and now tops out at 62 gigabytes, although the technology is only affordable at lower capacity. Flash drives holding 4 gigabytes are available online for about $100.

Flash memory is solid-state, a type of computer chip. It has no moving parts, so it's more stable than a hard drive. At a Best Buy's Geek Squad in San Diego, Tyler Thielman recalled a customer coming in with a deceased laptop. "She was pretty distraught," Thielman said. "She had family photos and work-related data on there. It was unrecoverable. We told her that she could send it to a clean room and have it disassembled, but she was unable to pay that kind of money."

Geek Squad sees a lot of hard-drive crashes. People who have done backups have a relatively painless experience, even if they're unsure how to restore files on their own.

"It takes a lot less time and a lot less money to get their data re-imported," Thielman said. "Backups are so important."

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