

# Solid

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# State of Mind

## Howard Globus

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### IT ON DEMAND

There are many different kinds of hard drives available. From old-style platter hard drives to Solid State Drives (SSD) to USB/thumb drives. The different kinds of drives that would be used depend on several factors:

- How will the drives be used (internal, external, portable)?
- What media will the drives be storing?
- Is speed to read/write an issue?
- Is cost a limiting factor?
- Are you looking for disposability or longevity

How the hard drive will be used helps to guide the decision on what type of drive to choose.

What's the difference between the old-style hard drive and new SSDs? Old hard drives have round disks mounted on a spindle that is spun using a motor. The disks are covered with magnetic filaments and a little articulating arm with a needle at the end of it hovers just above the surface of the disk. As the disk spins, the arm moves the needle over sections (or sectors) of the disk and information is either read or written through this needle and arm. When the disk becomes slightly unbalanced and spins in a way that the needle makes contact with the surface, ripping up some of the magnetic field, this is what was termed a hard drive crash, the arm crashed into the platter and made the data unusable.

These hard drives are very stable, but they use a lot of power and generate heat and are bulky to house the moving parts.

A Solid-State Drive (SSD) does not have any moving parts and therefore uses less power. The read and write times are also much better, sometimes 2, 3 or 10 times that of a traditional mechanical hard drive.

So why don't all drives move to SSD format? They are more expensive to manufacture, and the longevity of the devices has not been proven past a few years. Data stored on old style hard drives has been retrieved 30 and 40 years on, but the longevity of the SSDs is not expected to be more than half that time right now.

Based on the how the data storage is being used will determine drive the decision about speed to read and write versus data preservation all while

considering cost to store a Gigabyte of data.

How to properly dispose of the hard drive is another consideration.

When looking at the life of a hard drive, how to dispose it responsibly should be taken into consideration as well. None of the drives are pieces of equipment that should just be thrown into a landfill.

As with most computer parts all hard contain some heavy and precious metals. There is a value to reclaiming the materials and care of disposing of them.

A consideration when recycling or disposing of old hard drives, computer equipment or cell phones is the sensitivity of the information that has been stored on the equipment. Most operating systems have internal tools to erase or remove data from the systems. However, there are whole industries dedicated to retrieving data from hard drives and equipment like cell phones where data that was deleted accidentally or specifically to remove sensitive information prior to disposal.

Therefore, I believe still to this day that the best way to ensure that information is irretrievable from the device is to physically mar or destroy the device using a drill press or crushing device to damage the disk or chip on the drive. Not everyone has access to a multi-tone pneumatic crushing tool or an industrial drill press. Most of us do have ready access to a corded or cordless drill with a metal-to-metal drill bit. Obviously, safety precautions should be taken, such as using protective eye and ear wear, using a clamp to hold the hard drive in place and gloves should be worn when performing these types of tasks.

Once the drive is physically damaged beyond use, there are still



services that can recycle the materials equipment. Earth 911 offers a search tool to find local resources on where to recycle/recycle many different types of computer equipment and materials.

When considering the type of hard drive to use, take into consideration your budget, the way the device will be used - internally or externally on a machine and for high speed video and audio editing or slower tasks such as email and web brows-

ing - and the longevity of the data storage you need. Based on these factors and the portability as well as connection method to the computer you can make a better informed decision about what type of hard drive to purchase for your project or daily usage.

Security Evangelist Howard Globus has more than twenty years of experience designing, installing and supporting Windows server and workstation products in industries where security and reliability are critical. System engineering and administration experience includes customized Windows Server and Workstation installs, designed to be deployed using the latest automated technology available and managed using products found onsite at most Fortune 500 firms to ensure a wide variety of potential personnel to support the products in the future.