ELECTRONIC STORAGE MEDIA

Introduction

- Modern-day businesses need secure, reliable and speedy access to their data, making their choice of electronic storage device an important one.
- There are a wide range of storage types available, each with its own advantages in terms of performance and accessibility.
- Learning the differences between them can help you to make the right selection for your organization, ensuring that your data is always at your fingertips.

Basic Storage Options

- There are three basic records storage options:
  - Online storage. Records are available for immediate access and retrieval. Online storage devices include mainframe storage and network-attached storage. Online storage provides the fastest access and regular integrity checks.
  - Nearline storage. Records are stored on media such as network-attached storage, optical disks in jukeboxes, or tapes in automated libraries. Nearline storage provides faster data access than off- line storage at a lower cost than online storage.

Basic Storage Options.....

- Off-line storage. Records are stored on removable media such as magnetic tape or optical disk. Because human intervention is necessary, this option provides the slowest access.

Basic Storage Options.....

NOTE:

- The advantages of online and nearline storage include large storage capacities and the opportunity for data replication.
- Off-line storage devices are not recommended for record copies of vital, long-term, or archival records, as they are less likely to be routinely accessed and are often overlooked when systems are upgraded and electronic records are migrated to new formats.
- Off-line storage is recommended for backups or security copies, however, as the records can be stored off-site

Types of Digital Storage Media

- Digital media are divided into three types:
  1. Magnetic Storage Media
  2. Optical Storage Media
  3. Solid state Storage Media

Magnetic Storage Media

Magnetic media include:

- Magnetic disks, such as computer hard drives that store programs and files, are randomly accessed. Fixed disks reside permanently in a drive while removable disks are encased in plug-in cartridges, allowing for storage and transfer of data.
- Magnetic tape is a sequential storage medium used for data collection, backup, and archiving. Common magnetic tape formats include Digital Audio Tape (DAT), Digital Linear Tape (DLT), and Linear-Tape Open (LTO).

Optical Storage Media

Optical media options include:

- Compact Discs (CD) can be read-only (CD-ROM), write once read many (CD-R), and rewritable (CD-RW). CDs can hold roughly 700 MB of data.
- Digital Versatile Discs (DVD) are also called digital video discs. The data they store do not have to be in video form, however. DVDs can hold between 4.7 GB and 17.0 GB of data. Common types of DVDs include:
  - DVD Random Access Memory (DVD-RAM) is a rewritable disc that provides 4.7 GB per side storage capacity.
  - DVD-R has the same storage capacity as DVD-RAM, but can only be written to one time.
  - DVD+R is a writable disc with 4.7 GB of storage capacity on either side.
  - DVD-RW offer 4.7 GB per side, but can be overwritten 1,000 times. The DVD-RW technology is mainly used for video.
  - DVD+RW is an alternative rewritable format that has a capacity of 4.7 GB per side and is used for both data and video content.

Solid state Storage Media

With no moving parts, a solid state device uses electronics instead of mechanics. These devices are much faster and more reliable than magnetic and optical media. Solid state devices include:

- A computer's BIOS (Basic Input/output System) chip
- PCMCIA Type I and Type II memory cards, which are used as solid-state disks in laptops
- Flash and Dynamic Random Access Memory (DRAM-based) solid state drives
- CompactFlash, SmartMedia, or Memory Stick, which are most often found in digital cameras

CHOOSING STORAGE MEDIA

- When choosing digital storage media, each option's performance characteristics must be evaluated in relation to the users' records management needs. Consider:
  - ✓ How quickly users need to access the records. Some types of records require quick retrieval, while others do not.
  - ✓ The volume of records that can be stored on the medium. Examine the current volume of the records and try to determine future needs.

CHOOSING STORAGE MEDIA……

- How long the industry will support various media options and compare those figures with the time period that records must be kept according to the approved records retention schedule. A medium that meets many needs but is not widely used or has a high risk of becoming obsolete has limited long-term value.
- How easily a given medium can be damaged or will deteriorate. A medium that deteriorates after three years might be a suitable option for records that need to be retained for only one year.
- The types of file formats a medium can store. For example, a floppy disk cannot store large graphics files, but a CD or a DVD can store graphics, text,

CHOOSING STORAGE MEDIA…….

- The backward and forward compatibility of the digital media. A backward compatible component retains the functionality of an older component. Forward compatibility refers to the ability of the media to read information created for later versions. DVD-ROM drives are backward-compatible to CD-ROMs, but a CD-ROM drive is not forward-compatible to DVD-ROMs. This assessment will help determine how often to upgrade supporting systems, migrate and/or convert records.

- Costs and benefits of each medium, including the cost of converting and/or migrating records.



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