

Digital Media Life Expectancy and Care

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Recording media for digital data are vulnerable to deterioration and catastrophic loss, and even under ideal conditions they are short lived relative to traditional hard copy format materials. Although we have been dealing with acid-based paper, fax paper, photo film and other fragile media for decades, the risks posed by magnetic and optical media are qualitatively different. They are the first reusable media and they can deteriorate fairly rapidly, making the time frame for decisions and actions to prevent loss a matter of years, not decades.

In addition to the challenge of media deterioration is the problem of obsolescence in retrieval and playback technologies. Innovation in the computer hardware, storage, and software industries continues at a rapid pace, yielding greater storage and processing capacities at lower cost. Devices, processes, and software for recording and storing information are being replaced with new products and methods on a regular cycle, driven primarily by market forces. Records created in digital form are vulnerable to technological obsolescence. Even though some optical disk technologies promise life spans of up to 100 years, many authorities argue that enhanced media longevity is of questionable value because current media outlast the software and devices needed to read them.

How long do digital data storage media last?

With moderate care, most magnetic media will last for 10 years. With special storage and handling, digital magnetic tape formats can reliably store information for 30 years or more. Optical disc media, such as CD-ROM and CD-R, can last for several decades. Testing by Imation/3M indicates that their CD media will last for over 100 years, although this figure should be viewed with at least a little skepticism. Research by Kodak also shows that CD-ROM media is estimated to last for over 100 years. Older magneto-optical (M-O) and phase change (PD) media have a life expectancy comparable to magnetic media of 10 - 30 years.

Comparative media life

Life expectancy ratings when given for data storage media are similar to mile-per-gallon ratings for cars and trucks.

The actual life expectancy that you get from your media will depend on a number of factors:

The quality with which the media was manufactured

- The number of times the media is accessed over its lifetime
- The care with which the media is handled
- The storage temperature and humidity
- The cleanliness of the storage environment
- The quality of the device used to write to or read from the media

