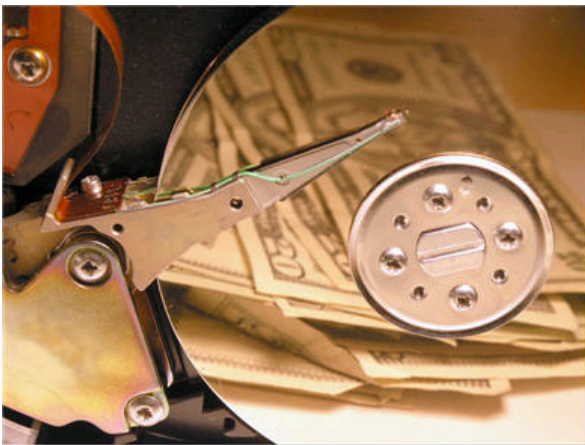




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How Big is the Biggest Library?

Posted by JohnPMayer under [Cyberculture] May 14, 2006 01:21



Reading an interesting article in the New York Times today titled "*Scan This Book*" by Kevin Kelly that had some numbers that I thought I would have some fun playing with...

*"... From the days of Sumerian clay tablets till now, humans have "published" at least **32 million books, 750 million articles and essays, 25 million songs, 500 million images, 500,000 movies, 3 million videos, TV shows and short films and 100 billion public Web pages...**"*

Emphasis mine.

How much disk space does this represent?

32 million books at 1 MB per book = 32 million million bytes or trillion bytes or 32 terabytes.

750 million articles at 1/10 MB per article = 75 million million bytes or 75 terabytes.

25 million songs at 10 MB per song (high resolution) = 250 million million bytes or 250 terabytes.

500 million images at 50 MB per image = 25,000 million million bytes or 25,000 terabytes.

500,000 movies or to keep the scales consistent 1/2 million movies at 2000 MB per movie = 1000 million million bytes or 1,000 terabytes.

3 million videos, TV shows, short films at 1000 MB per = 3000 million million bytes or 3,000 terabytes.

100 billion webpages or 100,000 million webpages at 1/10 MB per webpage = 10,000 million million bytes or 10,000 terabytes.

32 (books)

75 (articles)

250 (songs)

25,000 (images)

1,000 (movies)

3,000 (tv, video, short films)

10,000 (webpages) +

39,357 terabytes or about 40 petabytes (*the NYTimes article puts it at 50 petabytes, so my calculations aren't too far off*).

Checking Froogle for hard drive costs and things round out to around \$1 per GB or \$1000 per terabyte, so the cost of storing a digital copy of the entire world's movies, literature, songs, articles and webpages is...

\$39,357,000

Huh!

Pocket change for any of the big players in data storage like Google, Microsoft, Yahoo, IBM and others. Well within reach for most governments wanting to give access to the world's knowledge to their citizens - heck, it's within reach for most large cities and most state university systems and even some larger libraries.

Kryder's Law is similar to the more familiar Moore's Law applied to hard disk density (and perhaps to cost) and the Wikipedia entry tells the tale for the future...

*"...If current rates of growth are maintained then within **two decades**, a consumer will be able to store all of the creative works produced by every member of the human species in a \$100 storage device, including realtime video capture of ones entire lifetime..."*

Emphasis mine.

The NYTimes article is a bit more precise, but never-the-less compelling...

"...Today you need a building about the size of a small-town library to house 50 petabytes. With tomorrow's technology, it will all fit onto your iPod. When that happens, the library of all libraries will ride in your purse or wallet..."

But this is not the best point. Having everything digital makes it potentially accessible, re-usable, re-mix-able and makes us all potentially smarter and more dangerous.