Digital Documents, Print Documents

Griffith Feeney

Digital and Print Documents
Dimensions of Comparison

- Storability
- Transportability
- Reproducibility
- Searchability

- Computability
- Formatability
- Printability
- Security

The Bottom Line

- Digital documents have *tremendous* advantages over print documents
- Print documents have *tremendous* advantages over digital documents
- Digital documents will *supplement*, not *supplant*, print documents for many years, probably decades, to come

Digital Documents are *Much* Less Expensive to **Store**

- *Example* Letter size paper document 400 pages long; 2 inches thick; 1.6 mb
- Slightly over one 1.44 mb diskette (0.9 oz; ratio 7:1)
- 60 such documents (pile 10 feet high) on one 95 mb Zip disk (1.8 oz; ratio 233:1)
- 400 such documents (pile 70 feet high) on one 650 mb CD-ROM (0.9 oz; ratio 6400:1)

Digital Documents are *Much* Less Expensive to **Transport**

- On diskette you can send 7 copies for the cost of mailing one copy, an 85% reduction in mailing costs

- On CD-ROM you can send six thousand copies for the cost of mailing one copy, a 99.983 percent reduction in mailing costs

- Digital documents can be sent over networks, once in place, more cheaply still

Digital Documents are *Much* Less Expensive to **Reproduce**

- Current generation PCs can reproduce digital output that will fill a pile of paper 10 feet high in a matter of minutes

- Compare the cost of photocopying a single copy; *copy machine + paper + operator*

- Compare the cost *and turn-around time* of publication; less expensive than photocopying, but much more expensive than copying a file

Digital Documents are *Much* Less Expensive to **Search**

- The d:\ drive on my computer contains 726 megabytes of files
- That's slightly more than one CD-ROM's worth, a pile of paper 80 or so feet high
- My computer can search the entire drive for, *e.g.*, the file 'pkzip' in less than 10 seconds
- How long would searching the print take?

Digital Documents are *Much* More **Computable**

- Digital documents can be processed by computer without the slow, expensive and error-prone print-digital conversion processes of keying or scanning

- This is a particularly powerful advantage for census and other statistical data, which required extensive processing to yield useful information

Digital Documents are *Formatable*

- You can change the format of a digital document in many ways, easily and inexpensively

- You can change just about anything: fonts, colors, page size, file format

- You can also easily and inexpensive select and rearrange parts of a digital document

Formatting Census Tables

- Much practical work of census publication involves formatting tables of different sizes to a fixed page size

- Digital documents allow every "page" to be a different size, so every table can occupy a single "page"

- For hard copy, used general purpose formatting software, *e.g.*, a spreadsheet

Digital Documents are **Printable**

- You do have to print them, if you want a print copy, but …

- Printing a digital document is radically less expensive and time consuming that digitizing a print document

- We still want print for many reasons; digital documents give us print and its advantages as well as digital and its advantages

Digital Documents are *Much Less* **Secure** *Unless ...*

- You understand security issues and implement them in your computer systems, in which case …

- Digital documents are (surprise) *more* secure and offer other security advantages as well

- Security of digital documents, like computer security in general, is a complex topic requiring separate discussion

Books Have Endured
For a Reason ...

- Ergonomics
- Contrast and Luminance
- Resolution
- Weight and portability
- Viewing angle

New York Times Business Section, Sunday May 25, 1997, Section 3, page 12, by Richard C. Hsu and William E. Mitchel

- Durability
- Cost
- Life expectancy
- Editorial quality
- Intangibles
- Power consumption
- Search Capability

The Emerging Paradigm

- Information will exist simultaneously in print and digital form
- We will move back and forth between media to realize the advantages of both
- Already we routinely use digital card catalogues to find printed books
- "Distributed publishing" digital transmission and user-produced "hard" copies (*e.g.?*)

Review of Key Points

- Digital documents have tremendous advantages over print documents

- And *visa versa*: 'Books Have Endured For a Reason …'

- Digital documents pose very serious **security issues** that *must* be dealt with

- It's not a contest; we want both; we need both; *we want it all!*

Exercise

- Several of the advantages of digital documents cited in this presentation are also cited as advantages of books in the *New York Times* article cited, *e.g.*, portability

- How to resolve this apparent contradictions? Go through the points one by one, assess, and report

Questions?
Comments?
Discussion?