

The DIGITAL LIBRARY (DL)

Constructed by Ron Houston,
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Just how important is the DL?

◆ Kirk
says to
Spock:

“Quick!
Get me
info
on 20th
century
Earth!”



Just how important is the DL?

◆ What
will
Spock
say:

“I shall
hasten
to the
library!”

OR:



Just how important is the DL?

◆ OR:
Will
Spock

◆ say:

“I shall
consult
the
computer!”



One of the great secrets of life:

EVERYTHING
ends up
in the trash –
or in a museum.

(and we are the only ones who know it!)

History

- ◆ Digital libraries ARE the future . . .
AND the past: in the past, & for the past.
- ◆ 1920s – Vannevar Bush worked on DLs.
Never studied cataloging or indexing . . .
and hated them anyway!
Promoted new IR paradigm, the memex.

History (cont.)

◆ Licklider (1965). *Libraries of the Future*.
-- STILL the libraries of the future.

◆ Why?

LIS has no theory.

IS has no coherent representational scheme.

CS uses too many: DBs, HCI, IS, LS, etc.

Fox & Sornil, Ch. 15, *Modern Information Retrieval*.

History Issue:

- ◆ “Local” focus of libraries expanded to a “global” focus, with union catalogs, OCLC, RLIN, and a focus on DLs to handle the mass of data.
- ◆ However – DLs in turn propelled the change from a “local” focus to a “digital” focus.
- ◆ WHY?

History Issue (cont.)

◆ WHY did DLs cause a local to global change?

◆ To avoid re-inventing the wheel.

DL steps:

1 capture (issues of selection & bias),

2 conversion to common format,

3 IR,

4 user access interface,

5 keeping up with change.

THEREFORE:

History Issue (cont.)

◆ Local libraries cooperated & standardized, to achieve economy, efficiency, & effectiveness.

◆ This leads to philosophical issues:

What about local content?

What about non-standard opinions?

Will DLs enforce obsolete cataloging/indexing?

Local Content

- ◆ In standardization, information **MUST BE** modified or deleted.
- ◆ When decisions must be made, information of global utility will be preserved at the expense of information of local utility.

Non-standard opinions

- ◆ If a gap exists between the information “haves” and “have-nots,” and if that gap correlates to the SES gap, then only the opinions of the “haves” will appear in DLs.
- ◆ Constitution example.

Enforcing obsolete cataloging & indexing

- ◆ DLs obviate cataloging, indexing, word authority, etc.
- ◆ Miksa says the ENTIRE *AACR2r* could be reduced to a few pages, were it not necessary to identify the one most important entry point (for the one place on the shelf).
- ◆ Indexing and word authority become obsolete with full-text searching.
- ◆ The burden shifts to query construction. BUT:

Enforcing obsolete cataloging & indexing (cont.)

- ◆ The people who do libraries, the ALA, the vendors of library systems, furniture, etc., the politicians who seek to appease the vast, uninformed majority who use libraries, They all support the status quo.
- ◆ THEREFORE, Webmasters, not the library establishment, will create DLs.

Enforcing obsolete cataloging & indexing (cont.)

- ◆ Users will not use obsolete techniques.
- ◆ Rao et al. suggest 4 user-driven innovations that libraries would do well to accommodate:
 - 1 Iterative, interactive browsing
 - 2 Source modeling (give each source an identity & unique characteristics)
 - 3 Access management (cost & time)
 - 4 Workspace integration (multi-tasking).

For More Information:

- ◆ Metadata: Meng, Yu, & Liu (2002) “Building efficient & effective metasearch engines”
- ◆ Why metasearch? Web expanding faster than indexing capabilities. Scalability of any one SE. Gives comprehensivity & ranking.
- ◆ Problems: selection of heterogeneous & proprietary DBs, doc selection, result merging.
- ◆ “Impose conditions on SEs?”
- ◆ (Meta searching has its place.)

Secondary Readings:

- ◆ XLibris: automated library research assistant:
- ◆ Crossen, Budzik, Warner, Birnbaum, & Hammond
- ◆ Add physical library behavior info:
location & objects interacted with.
- ◆ Thoughts: DD Classification reliance is weak.
User ID can mislead.
Cross-user matching function has promise.

Summary

- ◆ Digital libraries ARE the future . . .
AND the past.
- ◆ Local → Global → DL → Local → Global.
- ◆ What is gained? Connectivity? Preservation of
obsolete cataloging & indexing?
- ◆ What is lost? The local? The past? The non-
standard? User-initiated innovation?