San Jose State University

SJSU ScholarWorks

October 2002

Interactional Digital Libraries: Uses and Users

Anita Coleman
University of Arizona, charis.coleman@gmail.com

Follow this and additional works at: https://scholarworks.sjsu.edu/slis_pub

Part of the Library and Information Science Commons

Recommended Citation

Interactional Digital Libraries: Uses and Users

Anita Coleman

School of Information Resources & Library Science

University of Arizona

Importance of Interactivity

Source:
http://www.umich.edu/%7Enewsinfo/Releases/2002/Oct02/r101502.html

New Sunbelt
Melting Pot
Heartland States

What is a digital library?

- Definition of digital libraries
- Commonly heard: Digital libraries, Virtual libraries, Traditional libraries (libraries), Digital archives, Digital repositories
- Information systems – knowledge bases, expert systems, decision systems
- Gateways, portals, p2p services, tools

Characteristics

- Managed collections of recorded information
  - Selected according to some criteria
  - Organized for retrieval
- Lowest-common denominator uses
  - Collect and Disseminate; Search and Retrieve
- All users
  - Contrary to popular belief, there is a typical library user – for example, one must be literate.

Components

- Collections (Content)
  - Text, Multimedia
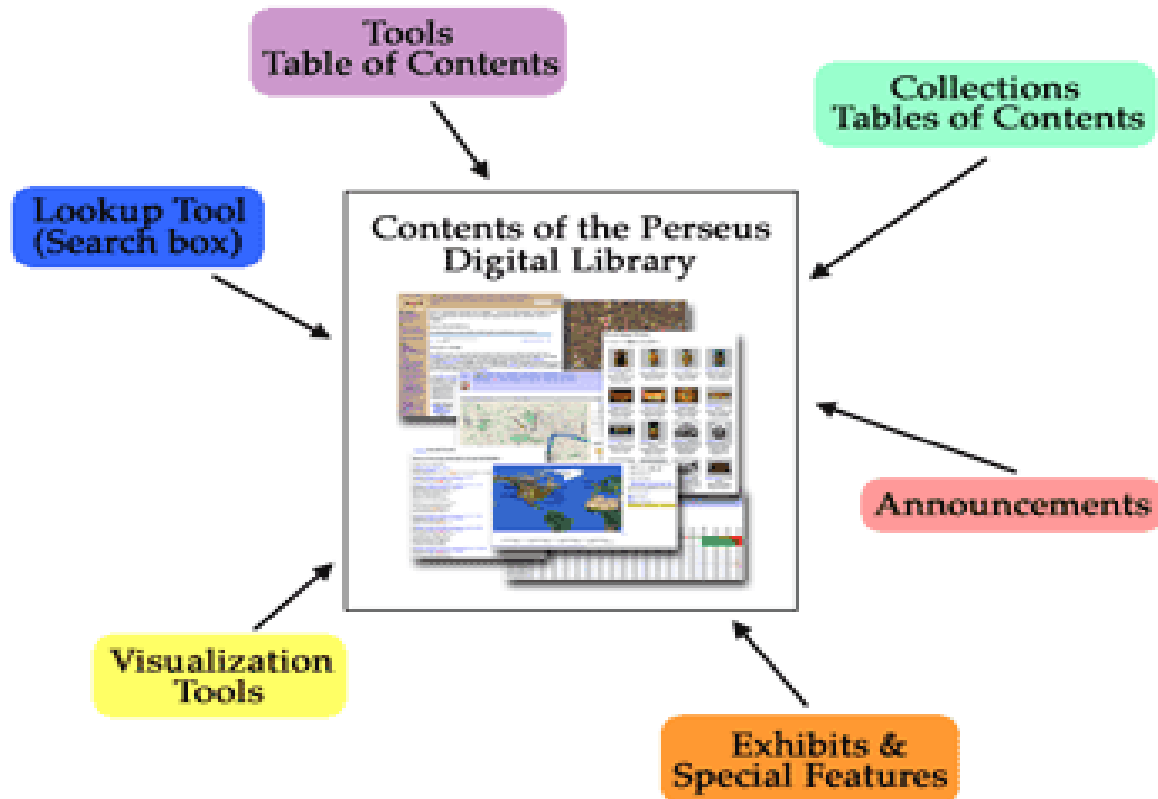- Services
  - Discovery/Identification (search engines)
- Tools
  - Highlighting, Marking, Exporting
- Interfaces
  - User-machine; user-user; user-message

Perseus Digital Library

URL: http://www.perseus.tufts.edu/

Informedia DVL

– http://chronicle.com/data/articles.dir/art-44.dir/issue-18.dir/18a02701.htm

– Synthetic interview – [video of] an interaction between a human and a sophisticated multimedia database – Einstein is played by actor Jerry Mayer

– Vocabulary (dictionaries – quotations)

– Multimedia (video, audio, images)

– Interaction (real and archival)

Uses & Users

- Social Perspective: Storehouse of knowledge; Repository of information; etc.

- User Perspective: Human Information Behaviors

  - Information Seeking – discovery/finding

  - Information Searching - strategies

  - Information Use – reading, recreation, annotation, create documents (reports, articles, reviews), planning, decision-making, learning

User-Centered Perspectives

- To build digital libraries
  - What do digital technologies enable that traditional libraries cannot?
  - What can users do with digital information?
    - What do users do with information now?
    - What will users want to do?
  - Checklist of uses (requirements document)
  - Design systems to meet these requirements

Design+ Evaluation

- Design and Evaluation go together
  - Simultaneous & Synchronous
- How?
  - Challenge: Disparate teams, terminologies, processes
- Interactional digital libraries
  - Interactivity in digital libraries
  - Interactivities
  - Design concepts are measurable

Interactional digital libraries

- Information spaces
  - Complex objects (items, resources, material types, files, formats) brought together for display or presentation of information
- Learning spaces
  - Objects are presented to enhance, facilitate learning
- Interaction spaces
  - Objects are acted upon – *transformation & impact*

IDL Attributes

- Interactivity
- Language (Vocabulary)
- Information Behaviors
  – Facilitate Searching, Browsing, Encountering
  – Support Sharing, Withholding, Filtering
  – Avoid Overload
  – Encourage Disciplinary & Interdisciplinary Uses

Interactivity

- Human Computer Interaction
  - Theories of Interaction Design
- Marketing
  - Advertising
  - Consumer Behavior
- Education
  - Psychology, Instructional Design
- Communications

Definitions

- Interactivity is
  - "Extent to which users can participate in modifying the form and content of a mediated environment in real time" (Steur,1992)
  - "Extent to which messages in a sequence relate to each other, and especially the extent to which later messages recount the relatedness of earlier messages." (Rafaeli and Sudwecks, 1997)

Benefits & Drawbacks

- Benefits of Interactivity
  - User Involvement
  - User Satisfaction
  - Enhanced Learning
- Drawbacks
  - Active (Learning by doing)
  - Overload

Measuring Interactivity

- Evaluation
  - Does "it" do what "it" is supposed to do?
  - Current evaluation of complex systems is piecemeal
  - Interface, tasks, content, user
- Four-dimension construct (Liu, 2001)
  - Active Control
  - Two-way communication
  - Freedom of Choice
  - Felt Synchronicity

Attributes

- Reciprocity
- Feedback
- Immediacy
- Relevancy
- Synchronicity
- Choice
- Immersion

- Play
- Flow
- Multi-dimensional sensory experience

Measures

- Interactivity scales
  - Online marketing (websites)
    - Cho and Lockenby (1999)
    - Wu (1999) included affective responses
    - McMillan (2000)
    - Liu (2001) – 10 items for each of the 4 constructs
      - 40 undergraduate students
      - Student community website, Amazon.com, Ericsson

Measures (contd.)

- Involvement
  - Consumer Involvement Profiles
  - Reader's involvement with magazine articles
- Perceived Control (Flow)
  - Novak, Hoffman, Young (1999)
- User satisfaction

Measures (contd.)

- Computer-mediated communication apprehension
- Locus of Control
- Self- efficacy
- Recall

Language

- Vocabulary
  - Controlled vocabulary
  - Natural language
- Tools
  - Glossaries
  - Thesauri
  - Scientific classifications and systems of organizations

Information Behaviors

- Groups of Users
  - By occupation, social role, demographics, discipline
- Avoiding Overload
  - Information overload
  - Cognitive overload
- Providing Contextual Information
  - Standard Reference Tools
- Supporting User Activities - Interactivities
  - Information Tasks Beyond Information Retrieval

References

- Coleman, A & M. Oxnam. (2002). Editors. Special Issue on Interactivity in Digital Libraries, Journal of Digital Information. URL: http://jodi.ecs.soton.uk/

- Liu, Y. (2001). Interactivity and its Implications for Consumer Behavior. Ph. D. Dissertation. Rutgers University. [Includes cites to Cho, Steurs, Mcmillan, Wu]

- Novak, T., D. Hoffman, and Y. Yung. (1999). Measuring the Customer Experience in Online Environments: A Structural Modeling Approach. Marketing Science, Winter, 19 (1): 22-44.