Libraries as Read/Write Services

OCLC Research Distinguished Seminar Series

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In a Nutshell

- Trend: DL Services & Special Collections
- Trend: PIM and Digital Assets

Read/Write Libraries (Participatory)

- Training/Consultation
- Policies and Practices
- Libraries of People

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The Institutional DL Milieu

• 20 years of DL research and development
• Hybrid libraries
  – Academic, research
  – Publishing (e.g., ACM DL)
  – Secondary (e.g., OCLC, Research Index, ISI, institutional repositories)
• Born Digital
  – Special library projects (e.g., Perseus, Open Video)
  – E-science databases (e.g., Genbank, EOS, sensor nets) Petabytes per day, exabytes per year
  – Indexes (e.g., Google, Bing, Yahoo)
  – Contributor Run (e.g., Wikipedia, Ebird, ibiblio)
  – Social Networks (e.g., Twitter, FB)
• Trend: special collections and customized services
  – Academic libraries: institutional repositories, research data, specialized DLs, instruction
  – Public libraries: local interest exhibits, instruction and consultation

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The Personal DL Milieu

• Multiple capture of streams of personal memories
  – Files: photos, music, videos, texts, e-books
  – Communiqués: emails, blog posts, wall posts, tweets
  – Streams: SMS feeds, sensor streams (lifelogs, smart devices)
  – Secondary: annotations, hyperlinks, friend networks
  – Profiles, passwords, purchases, access and activity logs
  – Personal heath records (cumulative or virtual)

• Multiple generations
  – Annotations, edits, versions of objects
  – Formats and applications

• Multiple devices and formats: Cloud solution?
  – How many devices do you use? Have you lost data?
Institutional and Personal Time

• Libraries are memory institutions: avoid rediscovering knowledge
  – Access implies persistence
  – There is substantial responsibility in distinguishing between what is ephemeral and what is worth keeping
  – Digital libraries often emphasize local content (the popular materials are everywhere)

• Digital age now spans 3 generations

• Personal memories increase in value with age

• Digital assets require attention: no reliable attics

• Claim: Digital libraries must participate in collection, management, and perpetuation of personal memories

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Web 2.0 Drivers

• Web 2.0 is about more active participation (pull and push)
  – Communication and collaboration
    • Synchronous (e.g., IM, skype, IRC, RSS feeds)
    • Asynchronous (e.g., FB, Twitter, Flickr, wikis)
  – Collaboration gives new opportunities to libraries
    • Tagging and bookmarks (e.g., delicious, stumbleupon)
    • LibraryThing

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DL Collections and Services: The Sharium

• Digital Libraries are active workspaces in which many stakeholders participate
  – Multimedia streams as well as files/objects
  – Systems exhibit behavior (dynamic and interactive; computational; memorial)
  – Web 2.0 end user interactions: contributions; annotations/tags; crowd sourcing---these become part of the collection and must also be managed
Circa 1995 Sharium Workspace

The Sharium Work Space

- Searching/Discovery
- Problem Solving/Construction
- Contribution
- Presentation


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Spectrum of Examples

  - Contributions solicited physically
- Cornell Lab of Ornithology [http://www.birds.cornell.edu/netcommunity](http://www.birds.cornell.edu/netcommunity)
  - Several projects where people contribute data
- Baltimore Learning Community [now defunct](http://www.canis.uiuc.edu/projects/wcs/index.html)
  - Content centralized, Teacher lesson plans and use notes contributed
  - Registered users, contributor responsibility
- Worm Community System (and other scientific collaboratories) [http://www.canis.uiuc.edu/projects/wcs/index.html](http://www.canis.uiuc.edu/projects/wcs/index.html)
  - Data sharing, some with embargo (e.g., dbGaP)
- Ibiblio [http://ibiblio.org/index.html](http://ibiblio.org/index.html)
  - Contributor run DL with 1500+ collections
  - Member libraries, end user feedback
- Wikipedia
  - Evolving policies

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BitTorrent

- Virtual communities/co-ops
- **What.cd** for music sharing
  - Participation is payment
  - 100,000 participants; ~400,000 music albums
  - Invitation only; heavily regulated (one must earn rights to invite); the actions of invitees propagate to inviter (invite losers, you lose and vice versa)
  - Ratio system to modulate participation (including incentives and punishments)
  - Allow sharing as well as seeding new torrents
  - File integrity standards (e.g., format, bit rate) as well as metadata/authority standards
    - These quality standards are a hallmark of carefully controlled private sites like **what.cd**
  - Requests can be made and voted on/discussed by community—a kind of collection development mechanism
Participatory Trend

Institutional DL(1)

Institutional DL(n)

Personal DL(1)

Personal DL(2)

Personal DL(n)

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What are the roles of institutional DLs in Personal DLs?

• Storage? [economies of scale; digital estates; trusted imprimaturs]
• Technical and informational consulting? [reference and training]
• Customized services? [indexes, apps]
• Local history/cultural memory? [personal digital heritage blends into local heritage]
• Vocabulary and open source standards? [connect my digital life to other digital lives]
Personal and Cultural Identity

• PIM bleeds into GIM into DL
  – Implications for preservation
  – Implications for privacy
  – Implications for identity

• Sensor streams, click streams, and personal histories (e.g., MyLifeBits)

• Projections+Reflections=Proflections

• Institutional networks (e.g., DLs) recapitulate our personal networks

• DLs can become trusted personal repositories
From the Vision to the Implementation

• Many research and development challenges
• Many social challenges
• Information professionals must preserve the values of libraries (e.g., access, cooperation, stewardship) while adapting to powerful trends of computationally-augmented human behavior and knowledge generation.
Personal Identity: Your Proflection

• What are the surrogates for you?
• What are your surrogates in cyberspace? (there are more than you might think)
• Proflection as surrogate for self
  – Projection of surrogates into cyberspace
    • Conscious (e.g., your webpage, Facebook profile)
    • Implicit (your click streams, your exoinformation)
  – Reflections of self in cyberspace
    • What others say/link about/to you
      – You are aware or not
    • What machines and algorithms say/link about you and all of your projections and reflections
• A fundamental issue of cyberinfrastructure
  – It is a stimulating and challenging new world for information professionals—the curse of interesting times and the euphoria of life in these times

Digital Surrogates are Malleable
Search Engine Results Pages

Videos for gary marchionini

YouTube, Open Video and digital video repositories
2 min - 14 Oct 2008
Uploaded by uskala
youtube.com

Gary Marchionini: Informatics in Action...
20 min - 24 Oct 2007
Uploaded by UNCChapelHill
youtube.com
What does YOUR avatar say about you?
A Scholar’s Identity to ISI, Scopus, Google

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Purposeful

Incidental

aware

unaware

Projections

Reflections

Human Created

Agent Created

aware

unaware

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Library Responsibilities and Opportunities

• Balance public and private DLs
  – Privacy policies (e.g., blur my grandchildren’s faces on the public site)
  – Ownership policies (e.g., legacy and inheritance rights; right to be forgotten)
  – User assistance and consultation on PIM
  – Facilitating writing as well as reading (access)
Challenge: Managing Blurred Boundaries

Applications, Interfaces, Security

Open WWW

Curated Web

Private Web

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Libraries of People

• Digital Assets
  – Private, secure
  – Selectively shared
  – Digital afterlife

• Quid pro quo services
  – Trust, authority
  – Shared interests
  – Customized apps

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The SILS LifeTime Library: Living and Learning
Read/Write Libraries

- Trusted repository
  - Storage for life
  - Applications platform

- Shared Resources
  - Member resources
  - Connection to institution and community

- Pilot test in Fall 2010 and Spring 2011 at UNC-CH

- All incoming SILS students Fall 2011
LifeTime Library Circa Feb 2012

- 40 TB Grid
- iRods policy-based middleware
- iDrop Java application; iDrop web version
- 150 users
  - .25 TB storage per user
  - ~.5 TB total used
  - ~300,000 files
  - ~4 GB/user (range 0-155 GB)
  - ~2000 files/user
  - ~15,000 files/month uploaded
- SILS courses (personal DL, metadata)
- Harvester apps (iTunes, Flickr, FB)
- Shared resources: SILS photo library (2600 photos in 64 sets harvested from Flickr; video and special collections coming)
LifeTime Library 2012 Issues

• Synchronization
  – Devices, user control
• How to manage sharing?
  – Profile management, groups
• Sustainability and cost modeling
  – Storage, bandwidth, # Replicas, checksum frequency
• Customized apps
  – Indexes, metadata augmenters, privacy tools
• Organizational schemes
  – Public, private
Thank You

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