#### Digital Library Federation, November 8, 2006

# Web Archiving Update

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www.loc.gov/webcapture/

# Agenda

- LC Web collections
  - Highlights and observations
- Some current activities of the Library
  - Process and policy issues
  - Tool development
  - Storage and transfer
  - Partnerships and collaborations
- Directions for 2007

#### LC Collections

- Event
  - Elections 2000, 02, 04, 06, Supreme Court nominations, Papal transition, 9/11...
- Topic/Subject
  - Iraq War, Crisis in Darfur...
- Region/Domain
  - Congressional (.gov) . . .
- Genre
  - Legal blogs, still image content ...

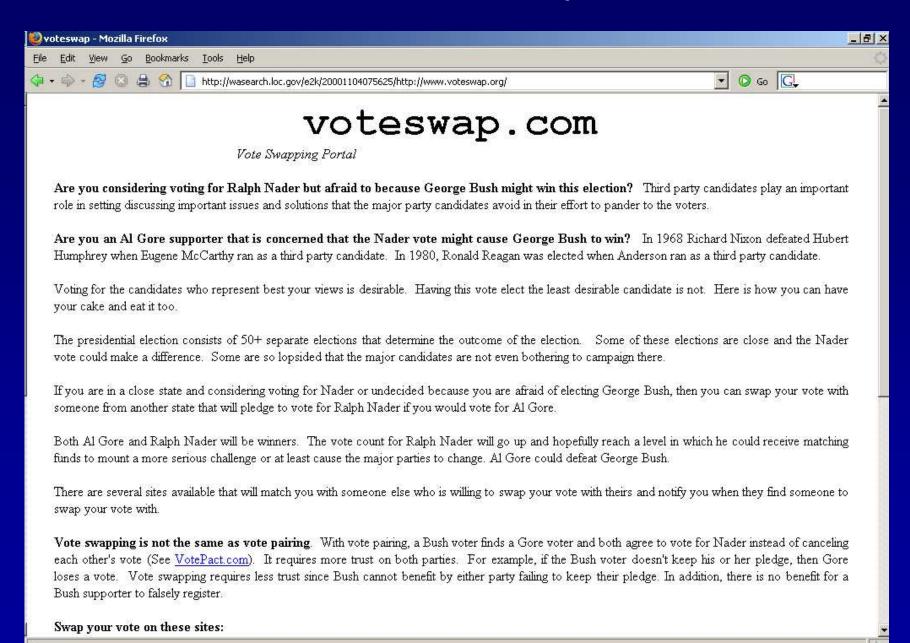
### LC Collections - cont.

- Partnership collections
  - GMU/CUNY—September 11 Digital Archive
  - University of Arizona—Terrorism Web sites
  - CDL & Internet Archive--Hurricane Katrina
- Almost 60 TB of data

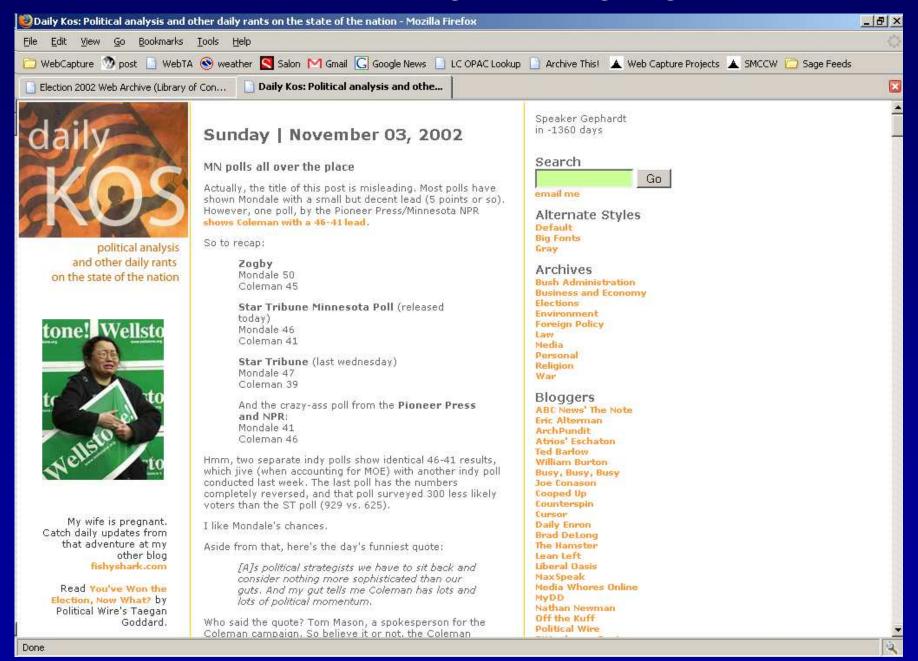
More: www.loc.gov/webcapture/projects.html



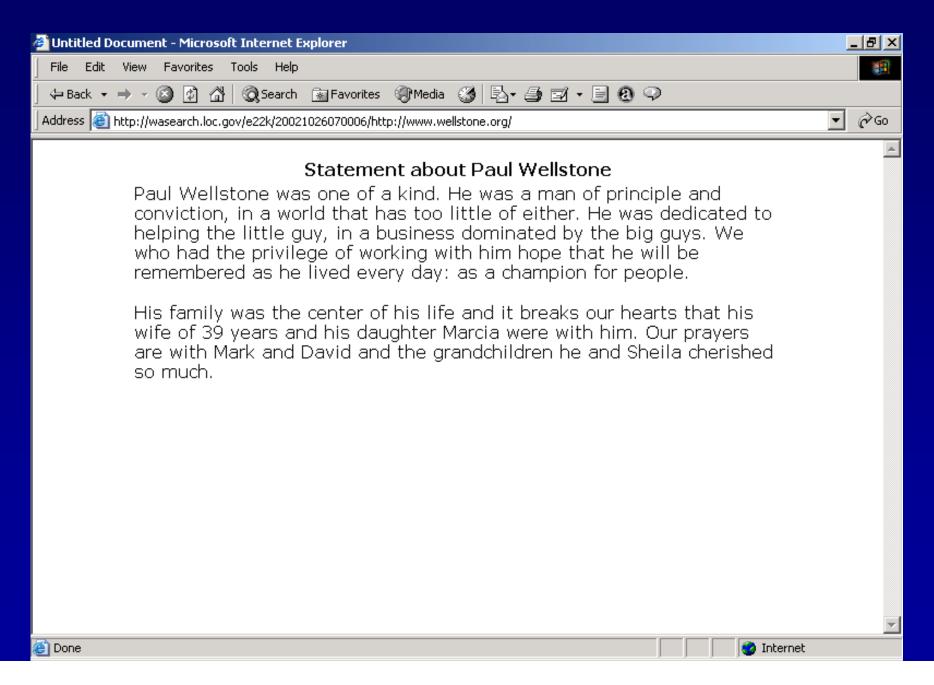
## Election 2000: Vote Swap Sites



#### Election 2002: Blog Collecting Begins



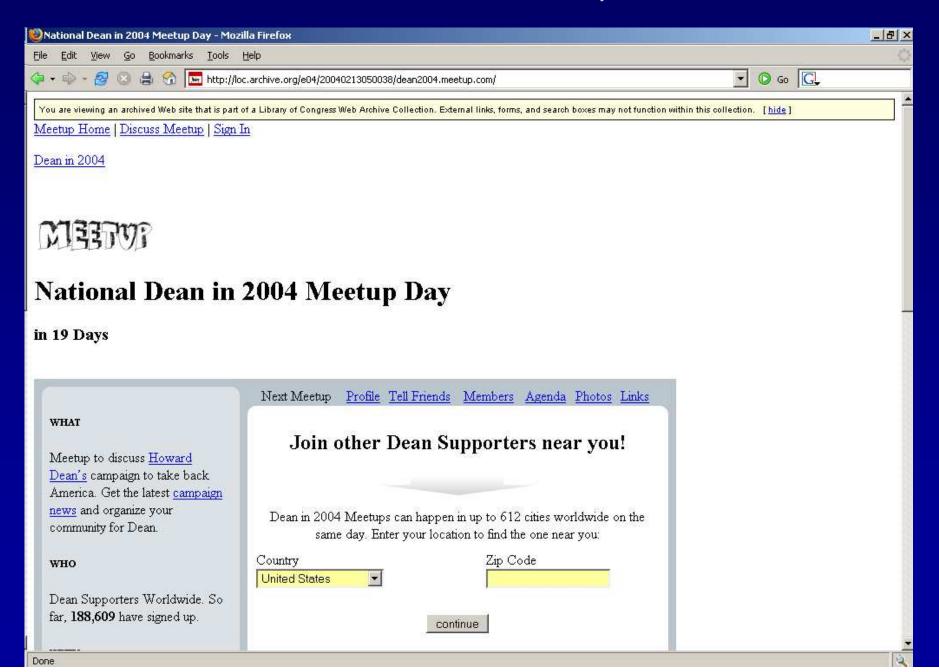
#### Election 2002: Daily Crawls Captured...



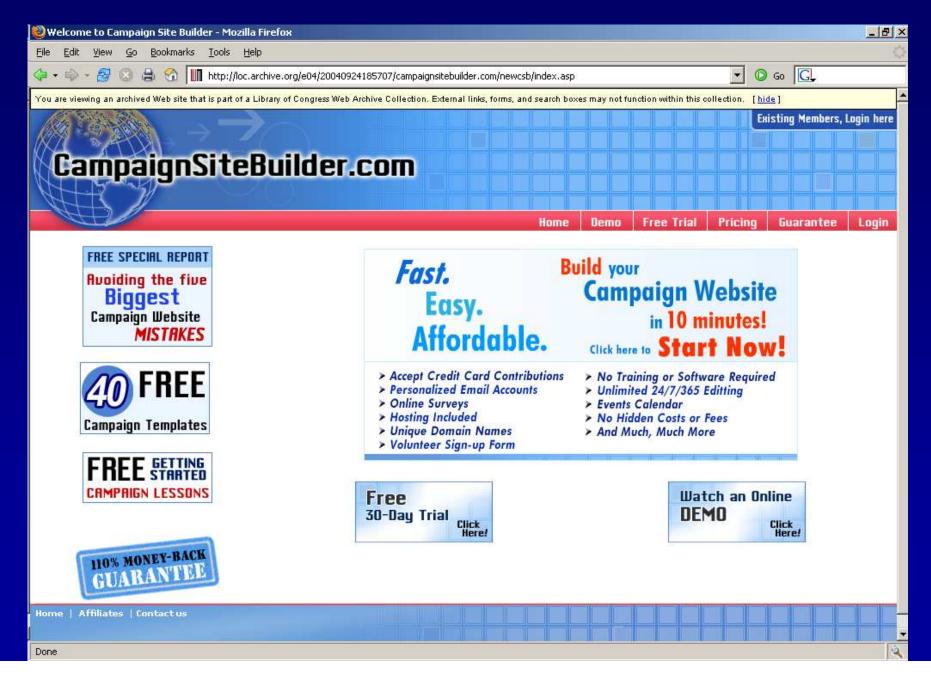
#### Election 2004: Blogging and Online Donations



#### Election 2004: Meetups



#### Election 2004: Campaign Site Companies



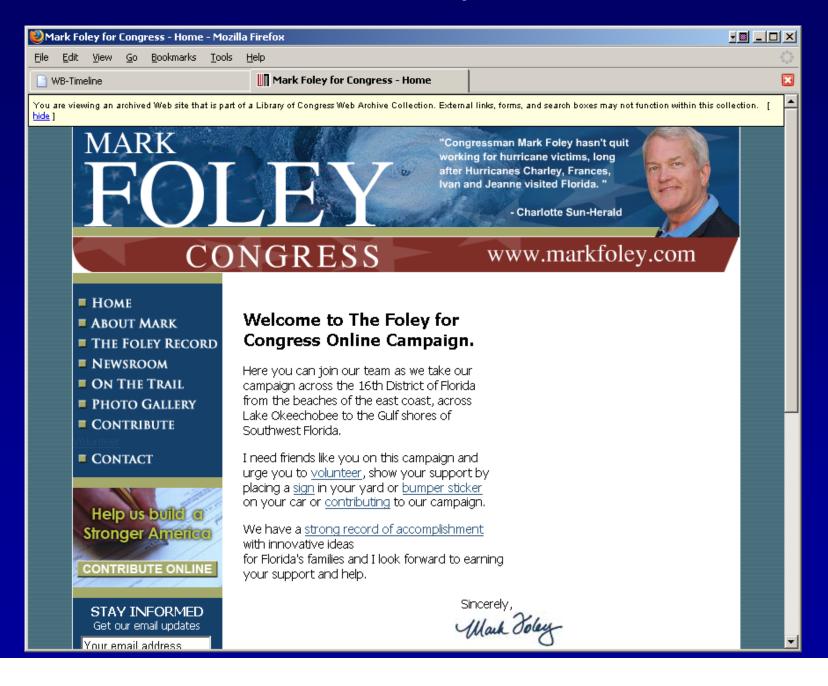
#### Election 2004: Jib Jab Cartoons



#### 2006 Candidate Site Observations

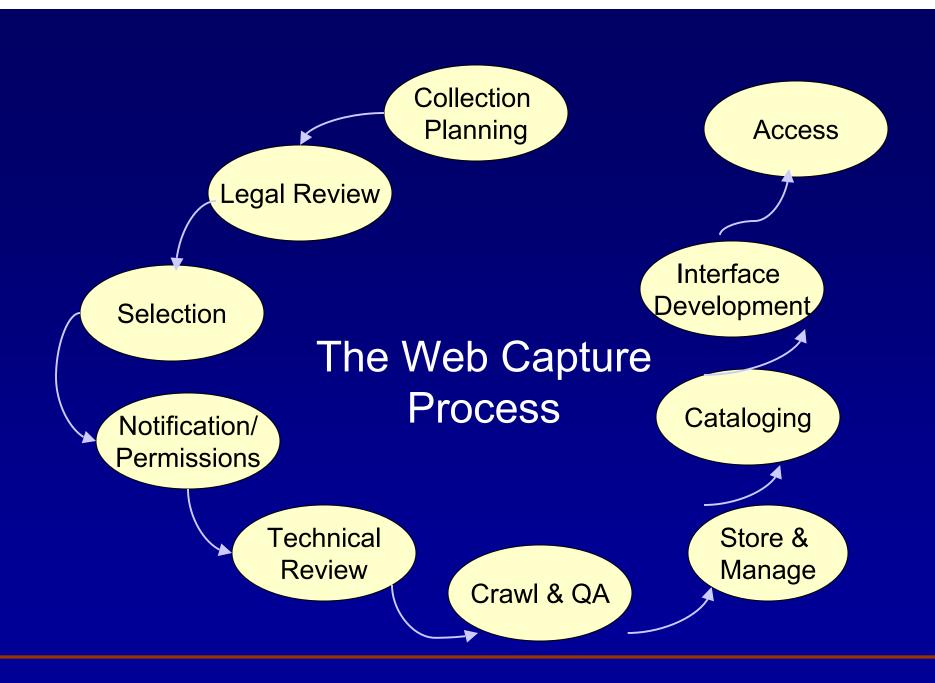
- More complex sites with more bells and whistles, some hosted on external sites:
  - Photos hosted on flickr
  - Stores
  - Myspace pages
  - Video sites
  - Blogs everywhere some as campaign sites
- More targeted companies hosting candidates sites

#### Election 2006: Mark Foley's Site Will Live . . .



#### Election 2006: The Wave of the Future...





# Project with Library Services Staff

- Define roles and responsibilities for life cycle management of archived web content
- Work on clear and consistent intellectual property protocols for crawling
- Explore how technical aspects of Web sites affect selection criteria
- What content should we now be collecting?
   How long should we collect it?

# Project with Library Services Staff, cont.

- Document staff resource requirements, time and workflow
- Expand staff participation
- Train larger group of LS staff
- Learn by doing
- Inform and educate other Library staff

# **Tool Challenges**

- Tools to select, acquire and display are not available off-the-shelf
  - Small community of users
- Tools will always be playing catch-up to current Web standards, file formats
  - Continuum for what can be captured
- Tool suite: selection, permissions, crawling, quality review, storage and preservation, access and display

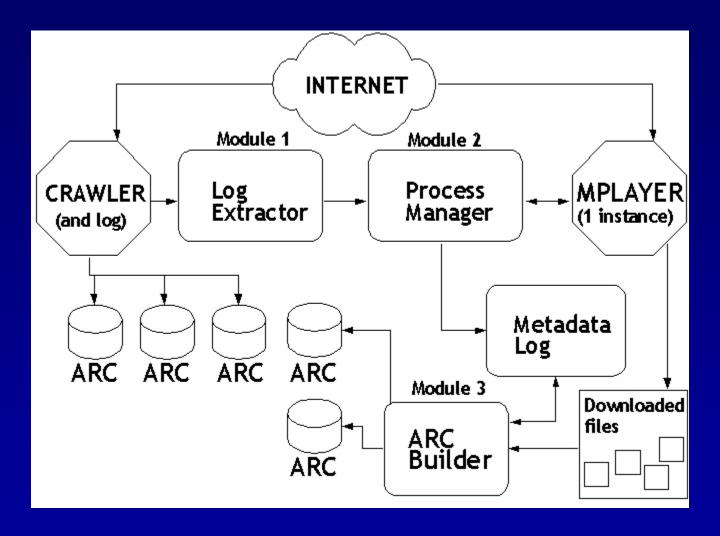
# Selection and Permissions: Web Collection Management System

- Module 1 will support:
  - Web site selection and nomination for multiple collections
  - Site review and limited metadata collection
  - Permissions gathering process
  - Technical review prior to crawling
  - Setting crawl parameters
  - Creating crawl specification and submitting a "work order" to crawler.

# Capturing Streaming Media

- Plug-in for the post crawl process
- Phase 1
  - Review Heritrix's activity and errors logs
  - Extract URLs we assume will lead to video files
- Phase 2
  - Download the video files and bundle them into ARCs
  - Add metadata gleaned from Heritrix and open source application MPlayer
- Phase 3
  - Store the ARCs in relation to the other ARCs in the collection

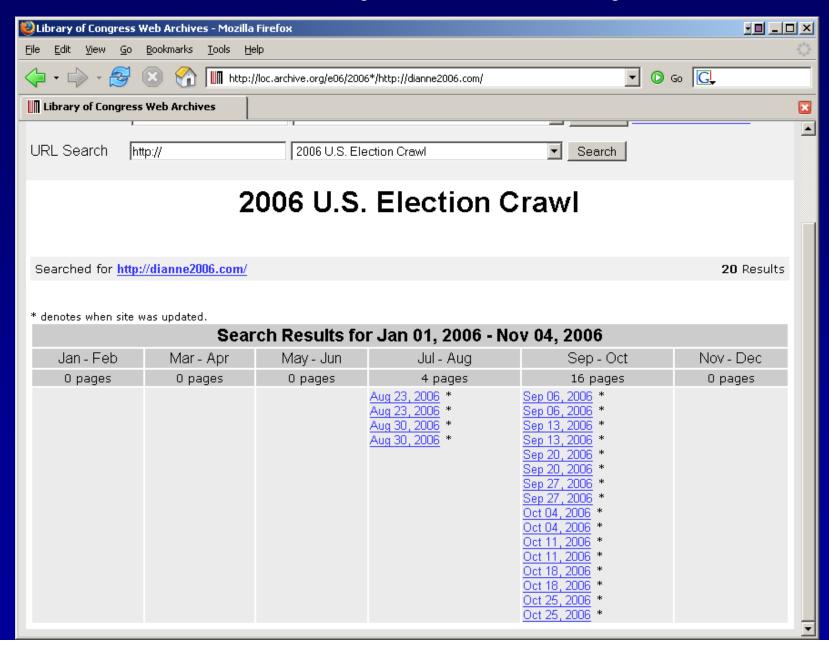
# Capturing Streaming Media, cont.



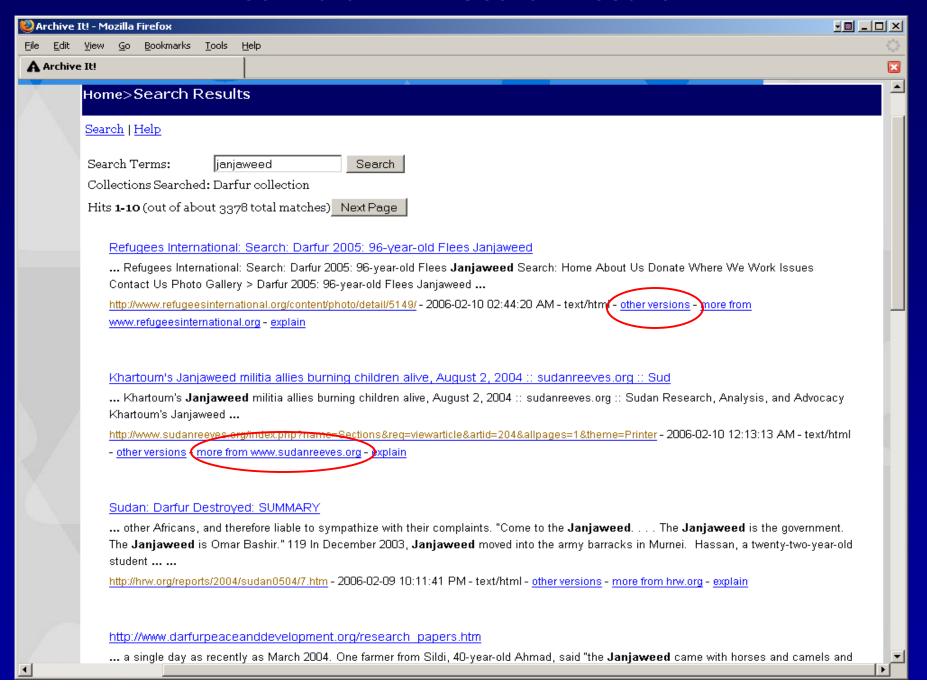
# Access and Display

- Access tools necessary so crawled content is viewable
  - Multi-dimensional nature of archived web sites
  - Fixing links in content to point back into the archive rather than out to the live Internet
- Current tools do the basics, but more work needed
  - LC public collections use IA/Alexa Wayback Machine, under restricted license, with no search features
  - IIPC working on NutchWAX: integrates Nutch/Lucene search tools with Web Archive EXtension
  - IA rewriting Wayback Machine as open-source

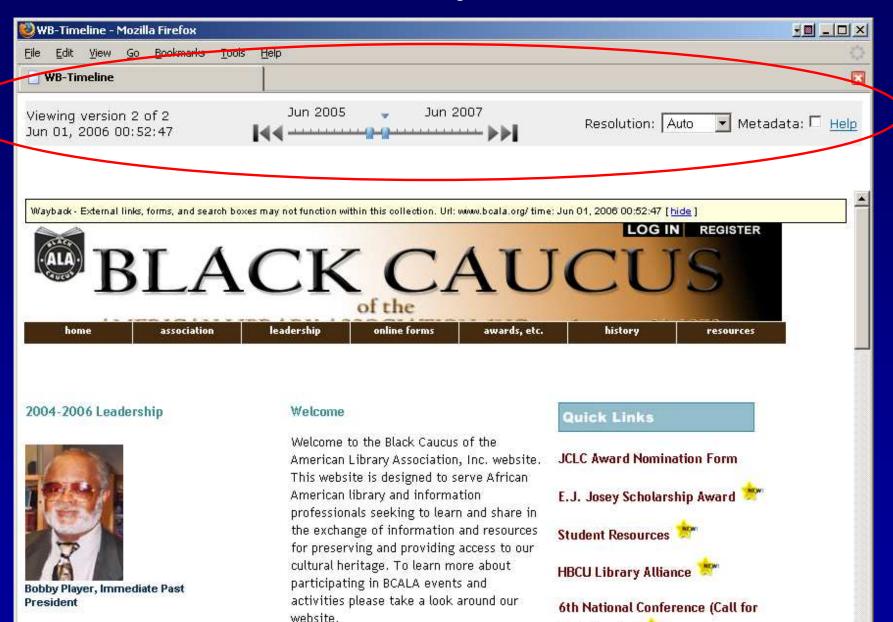
# "Classic" Wayback View by URL



#### Test NutchWAX Search Results



# New Wayback



Participation) 🎏

## Election 2006 Archive Display



## Storage and Transfer

- San Diego Supercomputer Center (SDSC)
  - One-year project to test a trusted third party to store large quantities of data
  - 6 TB of data transferred by shipment and over Internet 2 to SDSC
  - Testing remote management, including the ability of LC users to upload, download, delete, modify, and generate data reports
- At the Library
  - Transferring data into archival storage
  - How often are checksums, reports and inventory needed?
- Practice and policies will emerge from efforts

# Partnerships and Collaborations - NDIIPP

- University of California Digital Library
  - The Web at Risk: A Distributed Approach to Preserving our Nation's Political Cultural Heritage
    - Collecting CA government information
    - Tool suite
    - Partnership building
- University of Illinois at Urbana-Champaign, OCLC
  - The ECHO DEPository how digital resources will be identified, archived and preserved
    - AZ State Library selection rationale using an archival approach
    - OCLC tool suite
    - Repository evaluation

## Partnerships and Collaborations, cont.

- Internet Archive: 20th Century Archive Project
  - Further development of NutchWAX suite for indexing and searching large-scale Web collections
- San Diego Supercomputer Center
  - Testing remote management of Library's data
- Information sharing with other US government agencies
  - Government Printing Office
  - National Archives and Records Administration

# International Internet Preservation Consortium (IIPC)

- Collect and preserve a rich body of Internet content from around the world
- To foster the development and use of common tools, techniques and standards
- Share experiences and best practices with libraries everywhere
- 12 members during the charter period July 2003 - July 2006

#### **IIPC Charter Members**

- National Library of France, Lead
- National Library of Italy, Florence
- Royal Library, Denmark
- Helsinki University Library, National Library of Finland
- University and National Library of Iceland
- Internet Archive, USA
- Library and Archives Canada
- National Library of Norway
- National Library of Sweden
- National Library of Australia
- British Library, UK
- Library of Congress, USA

#### **IIPC** Future

- Next consortium phase 2007-2009
- Continue sharing information and facilitating tool development
- Open to any library, archive or heritage/research organization with experience in or commitment to Web archiving

More information in early 2007: netpreserve.org

#### Directions for 2007

## Collecting

- Should there be a core set of regularly collected events and/or sites?
- How do we build infrastructure and what are the triggers to support "spontaneous" events, such as terrorist attacks, natural disasters, etc.
- Monitor Section 108 Study Group developments

## Directions for 2007, cont.

- Improving selection tool
- Full-text indexing of collections
- Survey of access needs
- Large-scale collection storage

More: www.loc.gov/webcapture