The Shifting Roles of Academic Libraries in Supporting Digital Scholarship: Implications for East Asian Collections

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The Power & Beauty of Digital Scholarship

- Manipulating massive content—texts, numerical data, visuals, images.
- Enabling quick discovery & findings.
- Creating immersive experiences; eg, VR, 3D.
- Offering vivid data visualization; eg, charts & graphs.
- Providing infinite re-use of content; eg, text mining.
- Serving dynamic publishing & sharing platforms.
- Aggregating knowledge content through linking.
- Allowing machine interpretation & machine learning.
Challenges for Sustainability

- How long can digital content be preserved—25, 50, 100, 1000 years?
- Orphan works, by authors who no longer exist or no longer control content.
- Organizing, integrating, & publishing different kinds of data sets from different sources in different languages with different functionalities.
- “Digitization is digital preservation” is a misconception.
What’s New?
From Print to Digital
Digital Life Cycle

- Content creation
  - Selection (harvesting): conversion: curation

- Organization
  - Analysis: integration: aggregation (linking): interpretation (metadata & cataloging)

- Preservation
  - Storage: duplication: checksum: repair: data migration

- Access & publishing
  - Pushing-out: navigating: discovering: rights management
What’s Not New?
From Print to Digital
The Print Life Cycle
Block Printing
Movable Type
Standards for Printing & Publishing
Variety in Printing & Publishing
Collecting
Preservation & Conservation of Content
Circulation & Dissemination
Functional Similarity between Print & Digital Life Cycles

Print life cycle (1,000+ years)  Digital life cycle (40+ years)
Digital Content Life Cycle

Selecting
Creating
Describing
Managing
Preserving
Discovering
Discovering
Using & reusing

Life Cycle Models for Digital Stewardship | The Signal
Library of Congress Blogs: http://makeit.digitalnz.org/
Digital Life Cycle

Functional Entities

ACCESS

MANAGEMENT

PRESERVATION
OAIS (Open Archival Information System)

Platforms/Systems

• DAM
  o OTMM (Open Text Media Management)
  o TMS (The Museum System)
  o TIND, CollectionSpace
  o CONTENTdm

• Digital preservation
  o LOCKSS
  o DSPACE
  o PORTICO
  o DPN
  o Chronopolis

• Publishing & sharing
  o IIIF
  o DuraSpace (Dspace, Fedora)
  o Digital Public Library of America
  o eMuseum
Solutions in developing & maintaining digital content to enable digital scholarship: Experience from Digital Dunhuang

All Dunhuang images provided by The Dunhuang Academy
以精美的壁画和彩塑闻名于世
物，记录了一个精彩的整体文明
Creating Digital Content

- 100+ caves photographed
- 14,000+ square meters of murals captured
- 100+ terabytes of data
- 87+ caves in complete QuickTime Virtual Reality
- 20+ years of climate monitoring data for 87 caves
Data Ingestion
Content Integration

Data feed

- Raw images
- Cave QTVRs
- Historical photos
- Videos
- Digitized texts
- Manuscripts
- Artifacts
- Reproductions
- Microfilm
- Interactive visuals
- Conservation data

Digital Dunhuang Data
DAM

- Facilitates asset creation & cataloging of image, video, & text files.
- Manages high-resolution master files & original documents.
- Supports version control.
- Tracks digital preservation actions.
- Pushes metadata & content to the delivery platform.
Digital Preservation

Content Ingestion

Preservation Tasks

- Target format conversion
- Checksums & file validation
- Data migration
- Long-term data storage & restoration
Publishing & Display
Supporting Digital Scholarship: What Should East Asian Librarians Do?
Transformation & Change

- From collection managers to collaborators in digital scholarship.
- From managing content to creating content.
- From building collections to building a hub.
- From cataloging materials to developing tools for discovery.
Traditional Roles

- Bibliographer/selector: book selection & acquisition
- Cataloger: processing
- Access & reference services librarian: public services
New Roles

- Digital asset management
  - aggregating & organizing digital assets
  - creating finding aids in preparation for digitization
- Liaising
  - communicating with stakeholders in developing & promoting digital scholarship
- Discovery
  - creating tools for data interpretation & navigation
- Rights & permissions management
Thank you

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