THE BORN-DIGITAL REVOLUTION
FAILURE OR OPPORTUNITY
FOR THE GLOBAL LIBRARY COMMUNITY

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BUILDING THE DIGITAL LIBRARY
QUALITY=CONTENT+FUNCTIONALITY

• Published/Licensed Content
• Primary Content
• Open Web Content
• Institutional Content
• Research Data Content
• Multimedia Content
• Integrated Services
• Software Tools
PRESERVE AND ARCHIVE THE CONTENT

• Archive as Repository HOLD
• Archive as Persistence ACCESS
• Archive as Curation SECURE
• Archive as Steward CARE

• Analog
• Digital Conversion
• Born Digital
• Disaster Preparedness
NEW TECHNOLOGIES AND THE 21ST CENTURY LIBRARY

- Mobiles and Tablets (single, portable multi-purpose device)
- Cloud Computing (distributed processing and applications)
- Geo-Everything (geolocation and geotagging)
- Personal Web (customized management of online content)
- Linked Data (connecting and relating structured information)
- Semantic-Aware Applications (meaning to provide answers)
- Smart Objects (links physical world with information)
NEW TECHNOLOGIES
AND THE 21\textsuperscript{ST} CENTURY LIBRARY

• Open Content (wide distribution and repurposing)
• MOOC (massive open online courses)
• Electronic Book (platforms, applications, redefinition)
• Data/Big Science (research information management)
• Games As Learning Tools (participation and interaction)
• Visualization and Simulation (more meaningful and intuitive)
• 3-D Printing
DIGITAL CONTENT
SOME INTERESTING CHALLENGES

• Form/Text/Function
• Content=Format
• Importance of Context
• Executable Content/Renderability
• Data Formats/Versioning Over Time
• Physical/Format Obsolescence
• Authenticity/Provenance
• Standards/Globally Unique Identifiers
DIGITAL CONTENT
IMPORTANT CHARACTERISTICS

- Accessibility
- Availability
- Searchability
- Currency
- Researchability
- Dynamism/Fluidity
- Collaborative
- Multimedia/Sensory
- Linkability
- Interactive
- Procedural Qualities
- Spatial Capabilities
- Encyclopedic
- Modular
- Volatile
- Fragile
BREADTH AND DIVERSITY OF BORN-DIGITAL CONTENT

• Licensed/Published Works (E-Journals, E-Books) (Commercial, Academic, Independent, Self-Publishing)
• E-Video and E-Audio
• Digital Government
• Online Learning Materials
• Research Data
• Social Media
• E-Archives (Personal Papers, Organizational Records)
• Web Sites and Web Documents
BREADTH AND DIVERSITY OF BORN-DIGITAL CONTENT

• Visual Images
• Spatial Data (Longitudinal Observations)
• Software/Applications (Proprietary, Open Source)
• Video Games
• Medical Data (Personal Health Records)
• Live Feeds (RSS, News)
• Visualizations/Simulations
• Interoperable Metadata (MARC, BIBFRAME, schema.org)
BORN-DIGITAL CONTENT AND ISSUES OF SCHOLARLY INTEGRITY

• Ability to Consult Evidence/Sources
• Ability to Pursue Research Study When Primary Sources Gone/Changed
• Repository Chaos/Research Study Deposited and Accessed in Multiple Sites

Integrity: adherence to code or standard of values complete and unimpaired and undivided
DIGITAL LIBRARIES
REPOSITORY CHAOS

• Discipline Repositories
• Institutional Repositories
• Format Repositories
• Departmental/School Repositories
• Individual Repositories
• Learning Repositories
• Government Repositories
• National Repositories
• Publisher Repositories
• Research Data Repositories
• Preservation Repositories

THE RIGHT TO TEXT AND DATA MINE
SUPPORT THE NEEDS OF BIG DATA

- Federal/Funding Agency Mandate
- Massive Data Sets
- Unstructured Data/Curation
- Extraction
- Distribution
- Collaboration
- Visualization
- Simulation
- Preservation
DIGITAL LIBRARIES
FORUMS FOR COOPERATION

• Library Systems
• Local and Regional Cooperation
• State Projects
• Multi-State Projects
• National Consortia/Projects
• International Partnerships

• Researcher Collaboration
• Publisher Collaboration
• Collaboration with Technology Organizations
• Corporate Partnerships
• Business Partnerships

REACHING OUT TO CULTURAL COMMUNITY
PROMOTING NEW COMBINATIONS THRU PUBLIC-PRIVATE PARTNERSHIPS
RADICAL COLLABORATION

• Centers for Excellence
• Mass Production
• New Infrastructure
• New Initiatives

Quality/Productivity/Innovation
DIGITAL LIBRARIES
ADVOCATE THE INFORMATION POLICY AGENDA

• INTELLECTUAL FREEDOM
• PRIVACY
• CIVIL LIBERTIES
• EDUCATION PROGRAMS
• RESEARCH PROGRAMS
• INTERNET DEVELOPMENT
• TELECOMMUNICATIONS
• GOVERNMENT INFORMATION
• APPROPRIATIONS
• WORKFORCE POLICY

• FIGHTING THE COPYRIGHT WARS

HOPE/POWER/ACTION THROUGH COLLABORATION
DIGITAL CONTENT
IMPORTANCE OF NEW THINKING ABOUT COPYRIGHT

• Law Out of Sync With Technology and User Needs
• Issue of Orphan Works
• Importance of Transformative Uses
• Licensing Trumps Copyright
• Issue of Preservation Exception
• Issue of Open Content and Proprietary Rights
• National vs. International Legal Context
• Where/What Is the Public Interest?
• Lack of Agreement on Interpretations/Court Role
• Business Erosion/Commercial Exploitation
DIGITAL CONTENT 2020
AREAS FOR ATTENTION

• Mobile and Adaptable Technologies
• Accessibility and Support for Print-Disabled
• Publishing Explosion: Mainstream/Independent/Self
• Radical Collaboration and Systemic Strategies
• Rigorous Assessment: Quantitative and Qualitative
• Mass Digitization Meets Open Access: New Business Models
• Human Computer Interaction: Gaming and Virtual Reality
• Open Source Software and Open Source Hardware
• New Organizational Models
• Transformation of Library Space
• Importance of Standards
DIGITAL CONTENT 2020
AREAS FOR ATTENTION

• Network: Connectivity, Reliability Capacity, Performance, Security
• Digital Preservation: Persistence and Curation
  Issue of Executable Content
• Open Web Content: Issues of Scholarly Integrity
• Repository Chaos: Issues of Discovery and Version Control
• Metadata Chaos: Issues of Quality, Currency, Accuracy
• Library as Publisher/Distributor/Incubator
• Library and Maker Culture/Digital Fabrication and 3-D Technologies
WHAT DO WE MEAN BY INNOVATION?

- new method, idea or product
- systematic application of new knowledge to new resources to produce new goods or new services

MARKET
- process of lowering the costs or increasing the benefits of a task

VALUE
- result of thinking deliberately about existing problems and unmet needs

SOLUTIONS

EVOLUTIONARY (incremental)
REVOLUTIONARY (disruptive/discontinuous)
WHAT DO WE MEAN BY TRANSFORM?

• to change in composition or structure
  WHAT WE ARE/WHAT WE DO

• to change the outward form or appearance
  HOW WE ARE VIEWED/UNDERSTOOD

• to change in character or condition
  HOW WE DO IT