

**THE 21st CENTURY
INFORMATION PROFESSIONAL
CHAOS BREEDS LIFE!**

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WHAT IS PROVOKING NEW THINKING ABOUT THE 21ST CENTURY LIBRARY?

- **Rapidly Shifting User Behaviors/Expectations**
- **Redundant Inefficient Library Operations**
- **Aging Service Paradigms**
- **Increasing Emphasis on Unique Resources**
- **Need to Achieve Scale and Network Effects
Through Aggregation**
- **Acceleration of Collective Innovation**

WHAT IS PROVOKING NEW THINKING ABOUT THE 21ST CENTURY LIBRARY?

- **Mobility of User**
- **Cloud Computing**
- **Semantic Web**
- **Open Content**
- **Globalization**
- **Collective Intelligence**
- **Online Education/MOOC**
- **Assessment**
- **Customization/Personal Web**
- **Economic Context**
- **Radical Collaboration**
- **E-Research**
- **Information Policy**
- **Mutability**
- **The Internet of Things**

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 21ST 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**

DO 20TH CENTURY SKILLS STILL MATTER?

- Information Selection
 - Information Acquisition
 - Information Synthesis
 - Information Navigation
 - Information Dissemination
 - Information Interpretation
 - Information Understanding
 - Information Use
 - Information Application
 - Information Archiving
-
- In Support of Teaching and Learning
 - In Support of Research and Scholarship

ARE NEW SKILLS NEEDED FOR CHANGING LIBRARY ROLES?

- **Libraries as Consumers**
- **Libraries as Intermediaries and Aggregators**
- **Libraries as Publishers**
- **Libraries as Educators**
- **Libraries as R&D Organizations**
- **Libraries as Entrepreneurs**
- **Libraries as Policy Advocates**

THE SHIFTING VISION OF THE LIBRARY

- **Legacy**
- **Infrastructure**
- **Repository**
- **Portal**
- **Platform**
- **Application**
- **Enterprise**
- **Public Interest**

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**

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)**

ADVANCE THE REPOSITORY MOVEMENT

- **Discipline Repositories**
- **Institutional Repositories**
- **Data Repositories**
- **Departmental/School Repositories**
- **Individual Repositories**
- **Learning Repositories**
- **Government Repositories**
- **National Repositories**
- **Publisher Repositories**
- **Research Data 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

SUPPORT THE NEEDS OF RESEARCH

- **Navigate, Analyze, Synthesize**
- **Open Research/Continuous Scholarly Communication**
- **Scholarly Products to Scholarly Process**
- **Expertise Databases/Subject Ontologies**
- **Data Management Consulting**
- **Integration of Disparate Sources/Grey Literature**
- **Special Library/Informationalist Model**

DIGITAL LIBRARIES SOME META ISSUES

- **Massive Surveillance**
- **Security Meltdowns**
- **Network Neutrality**
- **Corporate Control**

RESPOND TO USER EXPECTATIONS

- **Content**
- **Access**
- **Convenience**
- **New Capabilities**
- **Cost Reduction**
- **Participation**
- **Individual Productivity**
- **Individual Control**
- **Organizational Productivity**

ENHANCE THE USER EXPERIENCE

- **Technology Ubiquity**
- **Point-of-Need Information**
- **Web-based Services**
- **Technology Sandbox**
- **Privacy Space**
- **Social Success**
- **Support Services**
- **Information Fluency**
- **Post-graduate Access**
- **Career Assistance**

EMBRACE THE “HUMAN” OBJECTIVES

- Success (turn out well, attain desired end)
- Happiness (well-being and contentment)
- Productivity (achieving results or benefits)
- Progress (forward movement or betterment)
- Relationships (personal connections or attachments)
- Experiences (observation or participation)
- Impact (significant effect)

PREPARE FOR ACCOUNTABILITY AND ASSESSMENT

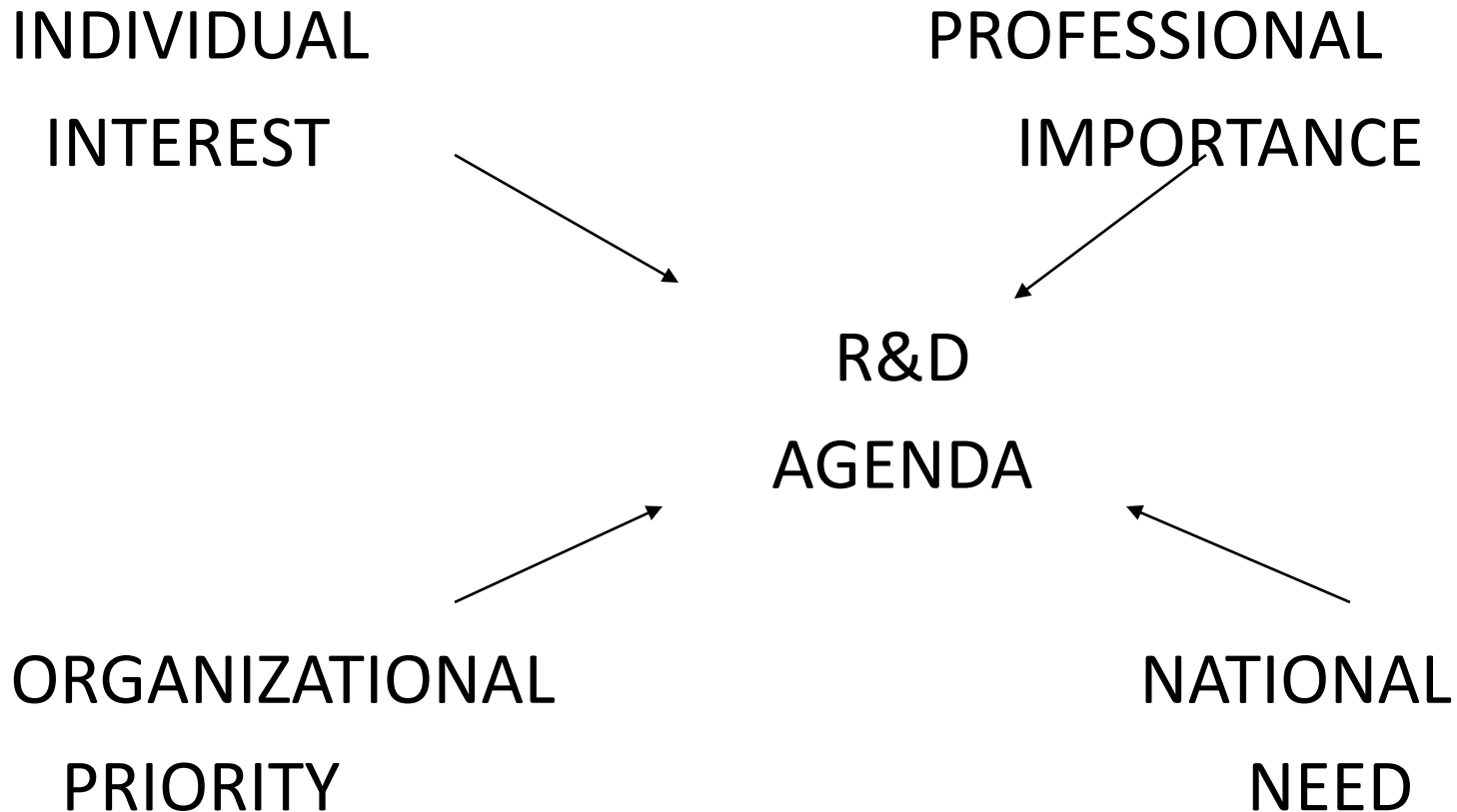
- **Institutional Expectations**
- **Government/Funder Mandate**
- **Measures Of User Satisfaction**
- **Measures Of Market Penetration**
- **Measures Of Success**
- **Measures Of Impact**
- **Measures Of Cost Effectiveness**
- **System Design For Usability**
- **Insanity of Most ROI**

HOW ARE WE ESSENTIAL TO OUR COMMUNITIES AND DECISION MAKERS?

- Student /Citizen Success
- Faculty/Researcher Productivity
- Campus/Community Economy
- Institutional/Community Values
- University/Community Reputation

VIRTUAL/VIRTUOSO/VIRTUOUS

SETTING THE R&D AGENDA



THE R&D ENTERPRISE IN THE LIBRARY

- **New Knowledge Creation**
- **Laboratory for Experimentation**
- **Magnet for New Skills/Capabilities**
- **Venue for Faculty Collaboration**
- **Venue for Corporate Collaboration**
- **Solve Library Problems**
- **Solve Information Problems**
- **Solve Technology Problems**

THE R&D ENTERPRISE IN THE LIBRARY

- **Potential for Capitalization/Technology Transfer**
- **Foundation and Federal Funding**
- **Library Credibility and Visibility**
- **Support for Decision Making**
- **Organizational Culture**
- **Digital Library Program Development**
- **Organizational Risks**

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

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

POLITICAL ADVOCACY

THE LIBRARY ROLE

- **Knowledgeable Resources for the Community**
- **Political and Legislative Advocates for Community Interests**
- **Educators of Community on Priority Issues**
- **Documenters of Impact of Legislative Actions**
- **Promoters of Campus and Community Coalitions**
- **Enablers of Successful Models Which Support Political Agenda**

WHAT ARE THE IMPLICATIONS FOR LIBRARY STAFFING?

- **Professionals With Diverse Academic Backgrounds**
- **Wide Range of New Professional Assignments**
- **New Roles of Support Staff and Students**
- **Messy/Fluid Organizational Structures**

- **Impact on Values, Outlooks and Styles**
- **Impact on Campus Understanding, Recognition and Respect**
- **Impact on Organizational Relevance and Impact**

CAPABILITIES OF THE 21ST CENTURY LIBRARY INFORMATION PROFESSIONAL

- **Deep Subject, Process, or Technical Expertise**
- **Deep Service Commitment**
- **Commitment to Research and Development**
- **Commitment to Assessment and Evaluation**
- **Communication and Marketing Skills**
- **Project Development and Management Skills**
- **Political Engagement**
- **Resource Development Skills**
- **Commitment to Rigor**
- **Entrepreneurial Spirit**
- **Commitment to Collaboration**
- **Commitment to Social Justice**
- **Leadership/Inspirational Capacity**

FUTURE LIBRARY PROFESSIONAL

- **Clear Sense of Mission**
- **Self Vision**
- **Base of Knowledge**
- **Strategic Positioning**
- **Continuous Improvement**
- **Powerful Professional Voice**

SCHIZOPHRENIC ORGANIZATIONAL MODELS IN LIBRARIES

- **Conventional Administrative Hierarchy
and
Consultative Governance/Bureaucracy**
- **Centralized Planning and Resource Allocation Systems
and
Loosely Coupled Structures
and
Maverick Units and Entrepreneurial Enterprises**

INFORMATION ORGANIZATION AND INNOVATION

- **Redefining the** **Physical**
 Expertise
 Intellectual Infrastructure

- **Understanding the** **Geography**
 Psychology
 Economics of Innovation

RANGE OF ORGANIZATIONAL CHARACTERISTICS

- **Centralization and Decentralization**
- **Hierarchy and Distribution**
- **Bureaucracy and Adhocracy**
- **Simplicity and Complexity**
- **Formality and Informality**
- **Administration and Entrepreneurship**
- **Authority and Collaboration**

EMPLOYEE-ORGANIZATION LINKAGES

- **Two Categories of Linkages**
 - Membership Status
 - Quality of Membership
- **Concept of Exchange Relationship or Psychological Contract**
- **Societal and Profession Trends Affecting Kinds and Depths of Bonds**
- **Organizational Commitment**

ORGANIZATIONAL COMMITMENT

- **A strong belief in and acceptance of the organization's goals and values**
- **A willingness to exert considerable effort on behalf of the organization**
- **A strong desire to maintain membership in the organization**

WHAT IS LEADERSHIP?

- **Setting a direction.**
- **Hiring and developing really great people.**
- **Securing the resources.**
- **Asking the hard questions.**
- **Advancing a professional voice.**
- **Just getting out of the way!!**

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)

CONTEXT FOR INFORMATION WORK

(Marina Gorbis, EDUCAUSE Review, May/June 2016)

- **Smart Machines: Human Machine Symbiosis**
- **Coordination Economics: Social Structured Value Creation**
- **Immersive Collaboration: Blended Reality**
- **Maker Mindset: Democratizing Creation**
- **Opportunities for Globalization and Inclusion**

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

WHERE ARE WE GOING?

RELEVANCE

IMPACT

VALUE

SURVIVAL

EXTINCTION

PHYLETIC - one species evolves into another

TERMINAL - termination of species/no descendants

HOW DO WE FEEL?

- **Anxious** – an abnormal and overwhelming sense of apprehension and fear

“Our age of anxiety is, in great part, the result of trying to do today’s jobs with yesterday’s tools.”

Marshall McLuhan

- **Disrupted** – interruption of normal course or unity, thrown into disorder

“One of the litmus tests is that a disruptive technology enables a larger population of less skilled people to do things that historically only an expert could.”

Clayton Christensen

The Innovator’s Dilemma

- **Chaotic** – state of utter confusion, unpredictability in the behavior of complex systems

“Chaos often breeds life, when order breeds habit.”

Education of Henry Adams