



# The Roles of Digital Reference in a Digital Library Environment

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- “The use of human intermediation to answer questions in a digital environment”
- An Active International Community, Primarily Library-Based, of Practitioners and Researchers
  - Digital Reference as a Peer-to-Peer Library Service
- Philosophy that Every Digital Library needs a Digital Librarian

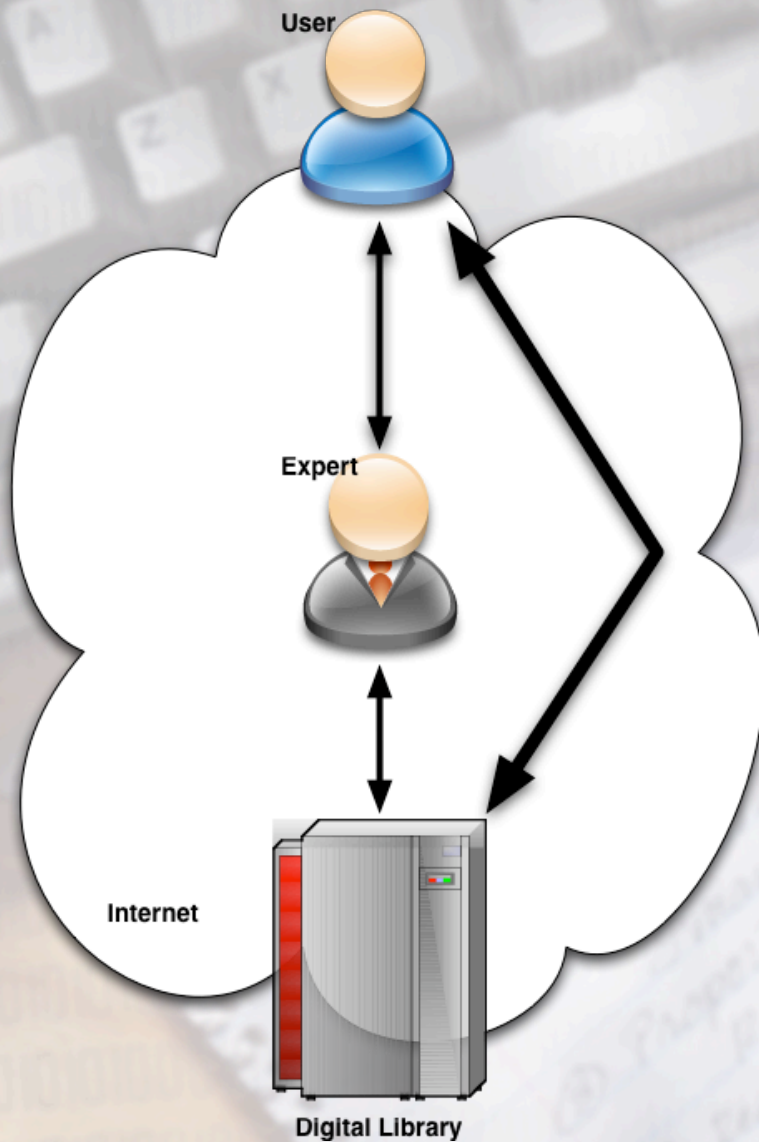
What is Digital Reference

- Technical Standards
  - QuIP -> NISO AZ
- Quality Standards
  - Quality Study
- Education Initiative
  - DREI
- Research Agenda
- Software Market Place

# Digital Reference Initiatives

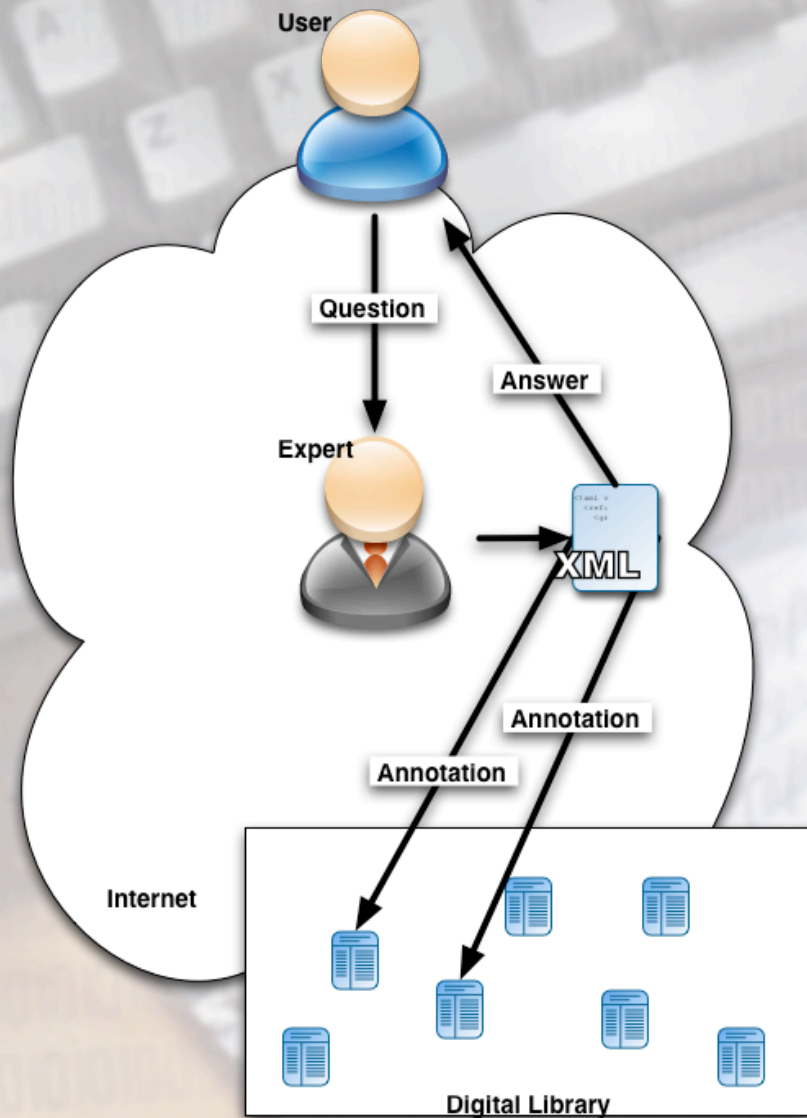
- Traditional Model
- Annotation Model
- Accretion Model

## Models of Integration with DL



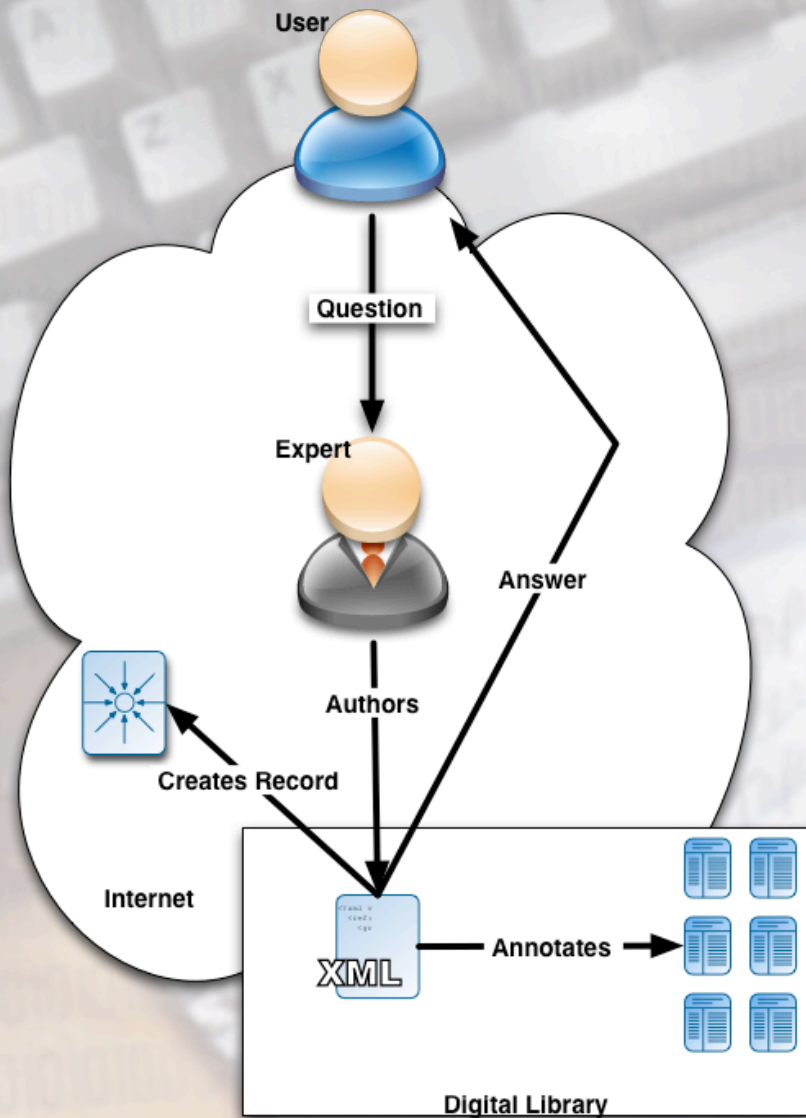
- Information & Referral
- Expert Serves as “Advocate” to the Collection
- Expert can Synthesize and Span Collection Limitations
- Intermediation and Direct Access are Equivalent in Reach

# Traditional Model



- Digital Reference Enriches the Collection
- Persistent Annotations
- Annotations Consist of Pointers and Comments
- “Reference Review” as New Form of Quality Assessment

# Annotation Model



- Reference Authoring
- Answers are Part of the Collection
- Annotations to Resources Outside Existing Collection Creates Stub Record


# Accretion Model



The Educator's Reference Desk: Resource Guides

http://www.eduref.org/ Google

MyYahoo Dave's World Resize Page News Institute Stuff Quartz Stuff Development Look at



# the Educator's Reference Desk<sup>sm</sup>



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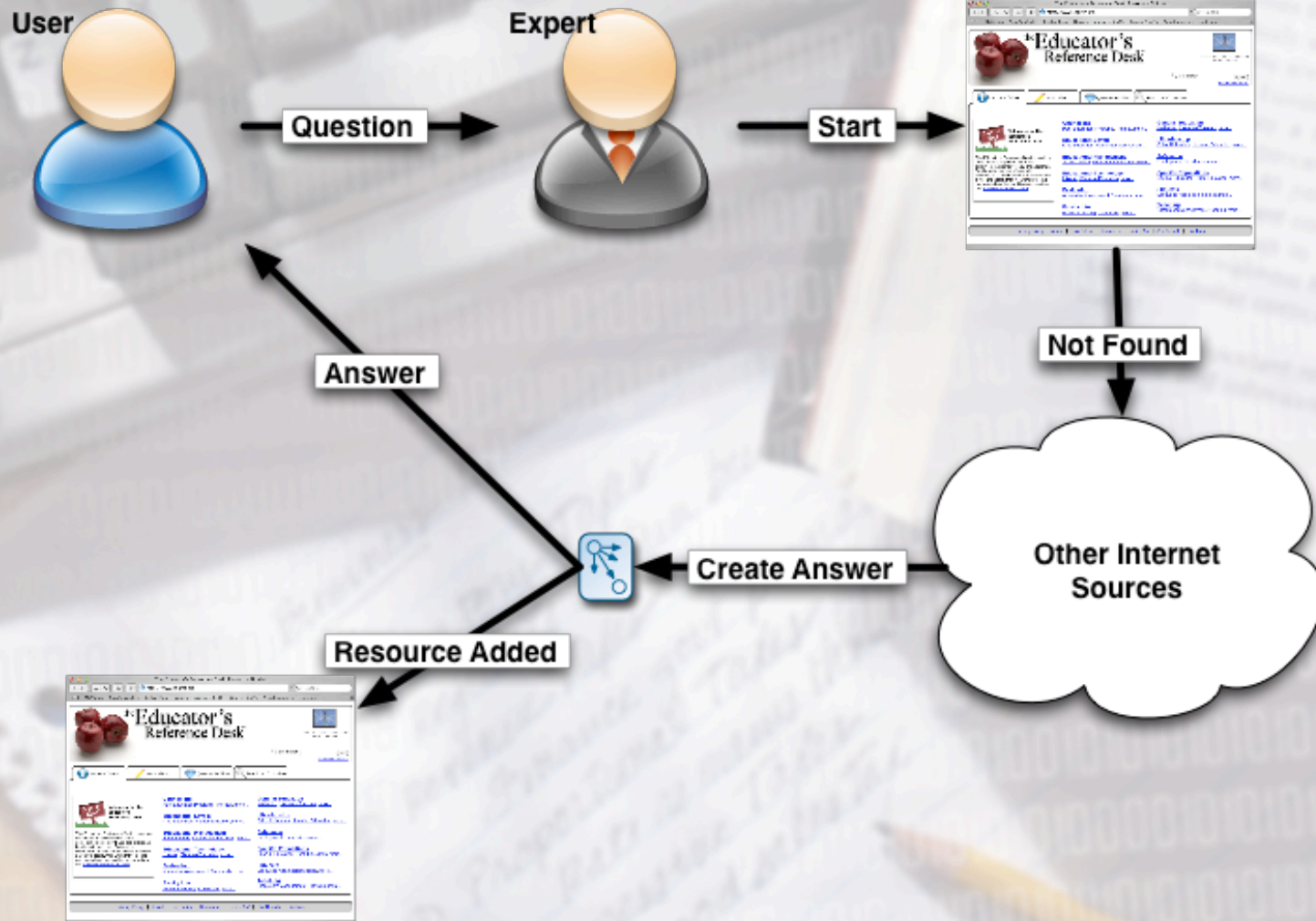
**Volunteer for the Educator's Reference Desk**

The Educator's Reference Desk is seeking volunteers to help build our online collection. Interested? If you are a librarian familiar with sources of education information on the Internet and with an hour a week to spare, then we want you! Find our more about this exciting opportunity at our [volunteer information page](#).

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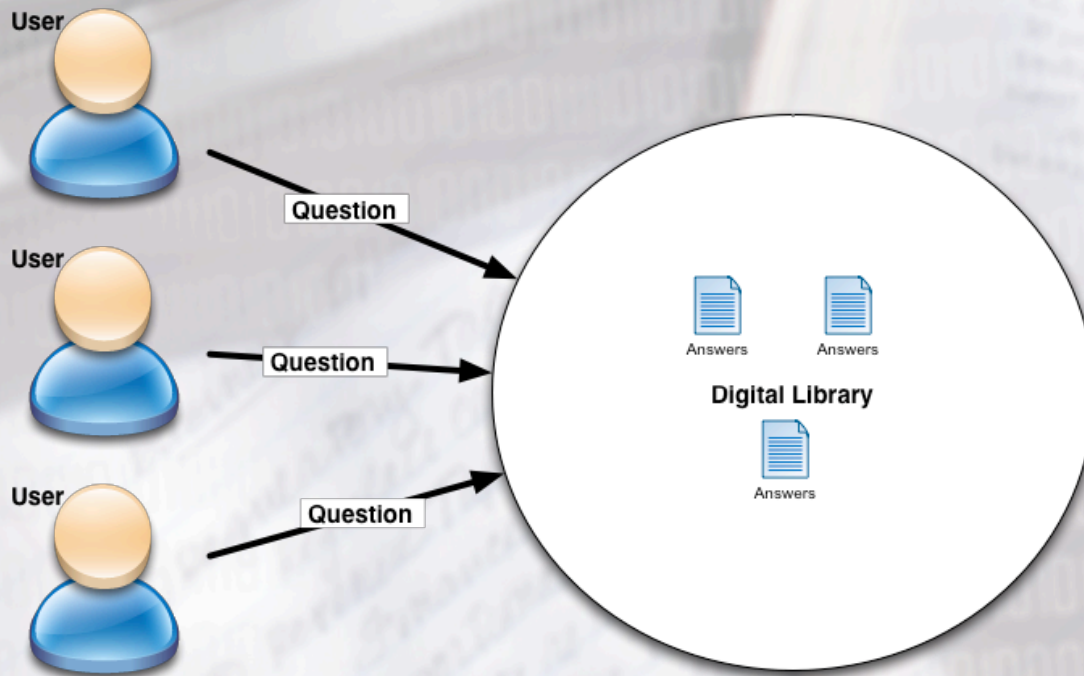
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AskERIC/EduRef as Example



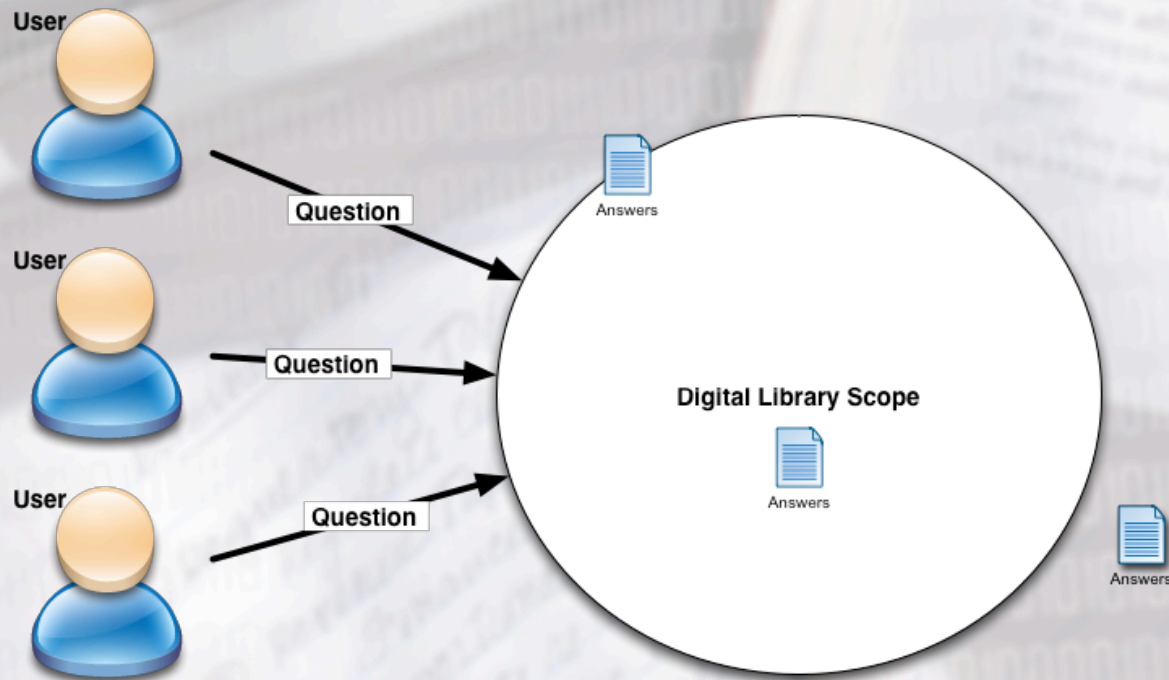
# Accretion Process

- Will the Collection Cluster or Build on the Edges



Issues

- Or do Users Ask at the Edges of their Knowledge



- Possible Utility of Knowledge Bases
  - Alternative Source of Answers
    - Help Desk Model, Saturation
  - Resource for Expert
    - “Brain Box”
  - “First Order” Resource
    - Disconnected from Reference Process

**The Next Frontier: Knowledge Bases**

- All or Edit
  - Either all transactions are searchable or services use an extensive deductive editing process
- Primarily Deductive
  - Context Dependencies
  - Metadata Creation
  - Chunking
  - Fact Shifting and Temporal Dependencies
- Seed and Weed
  - Edit them in, then have to weed the archive

Current Approaches

- Treat the Output of Reference Transactions as Semi-Structured Digital Object
- Semi-Structured Objects have Static and Dynamic Attributes
  - Static: User ID, Expert ID, Content
  - Dynamic: Age, Topicality, Annotations
- Create a “Space” for These Objects/Agents to Interact
- Create Performance Systems for Agents

**A New Approach: Induction**

- Performance System
  - Tags (Object Attributes)
  - Internal Model
    - Weighting Scheme for Object Comparison
  - Geometry
    - Means of Determining Proximity for Clustering
- Attributes of the Environment
  - Means of Comparison (Pairwise? Neighboring Nodes?)
  - Synchronization Scheme

**A Complex Knowledge Space**



- Digital Reference has a Proven Place in Digital Libraries
  - Different Levels of Integration of Human Expertise
- Digital Reference is Increasingly Institutionalized
  - Standards (technical and quality)
  - Software
  - Research
  - Community

Conclusions

- Librarians, not the Collection make a Library

Digital Librarians