The Social Aspects of Interoperability

John P. Wilkin
University of Michigan
Introduction

- We hate silos
- We shun sharing
- We define “federation” as “interoperation”
- Creating “A Distributed Digital Library of Mathematical Monographs”
“Why does [Interop] got to be so sad”

- Hard problem because a complex problem
- Cf. Z39.50
- In full text systems …
  - Common metadata?
  - Common results format?
  - Needle in the haystack
  - “transport”
    - sending and receiving a search
    - sending and receiving information about results
    - sending and receiving the actual content
Distributed Search vs. Interoperable Search

• “Distributed” difficult?
  – Single institution distributed
  – Multi-institution distributed
  – Interoperability

• Challenges of “agreement” in interoperability
DLXS: port-based inter-machine communication with architecture-specific language and mediation
DLXS: port- and database-based inter-institution communication with architecture-specific language and mediation
CGM: protocol-based inter-service communication

Query mediating service

Repository A

Repository B

Repository C
Isn’t “Boolean” Easy?

• Documents with (pages including (X and Y))
  – Document includes one page with both X and Y
  – Document includes one page with X and another page with Y
What We Accomplished

• It works [next slide]
Northeast user

Midwest user

Cornell QM service

Göttingen Repository

Michigan QM service

Michigan Repository

Cornell Repository
What Remains to be Done

• Tapping the potential of structured queries
• Implement the DISSEMINATE verb fully
• Improve the production-worthiness of CGM
  – The affect of network latency.
  – … process large numbers of results from multiple institutions.
  – Accommodating different models for ranking or sorting
  – Determining and taking into account outages and partial outages at remote sites.
  – Introducing mechanisms such as scaffolding into search strategies
Conclusion

• http://www.library.cornell.edu/mathbooks/
• Why is interoperability important?
• Not a problem of SOAP, WSDL, SRW or other technologies, but rather the social factors, and CGM is a great foundation

• Contacts:
  – jpwilkin@umich.edu,
  – cgm-feedback@umich.edu