TITLE: Using Virtual Reference to Rule the World
AUTHOR(s): R. David Lankes
PUBLICATION TYPE: Presentation
DATE: 2007
VENUE: Information Online Satellite Workshop, Sydney, NSW, Australia.
ABSTRACT: Covering the operational and strategic aspects of virtual reference.
KEYWORDS: Virtual reference, Web, Librarianship
Using Virtual Reference to Rule the World

R. David Lankes
Slides at:
http://www.DavidLankes.org
A New Twist on Authority Control

R. David Lankes

Slides: www.DavidLankes.org

Director, Information Institute of Syracuse & Associate Professor, School of Information Studies
Syracuse University
• David Lankes: What is the dewey number for books on tattoos?

• A librarian will be with you in about a minute. Please do not use your "back", "forward", or "refresh" buttons, or you will be disconnected.

• [ Librarian - A librarian has joined the session.]

• Librarian: hi. I'll try to find that for you.

• Librarian: The books in our library are at call number 391.65 and 391.6
Librarian: I'm answering your question from a library in Calif. What library do you go to? I could look and see whether there are books there on tattoos.

David Lankes: do you know the corresponding dewey that would be?

Librarian: Would you like for me to do that?

David Lankes: I don't need a specific book, just making a funny graphic for a talk I'm doing.

Librarian: Libraries use the same dewey number for the books. That way you could go to another library and look for a similar book in the same area.
Librarian: And you should find books in your library under the same dewey number I just gave you, if your library has books on the subject.

David Lankes: I know, but I would like to know the actual subject hitting that matches the dewey number.

Librarian: When I searched my catalog, I used the keyword term "tattoos".

David Lankes: Do you know a place on the web, or have access to the Dewey classification system?

David Lankes: Perhaps WebDewey?

Librarian: WebDewey? What is that? I looked up ...

Librarian: tattoos in our online system at Books In Print and found the book "Tattoo Icon" and they list it at 391.65

David Lankes: WebDewey is a way to look up terms in the dewey classification system...in essence the resource they used to assign that book to the number 391.65

David Lankes: It's no big deal. The number was a great help.
Librarian: Another title: "Tattoo Nation: Portraits of Celebrity Body Art" has the dewey number: 391.6/5

Librarian: Is there a site on the internet for WebDewey?

David Lankes: It probably is just called "tattoos" in dewey, but I'll be talking with catalogers and sometimes they actually know what names the actual numbers correspond to. Knowing a little about Dewey it might be either tattoos or body art or something else.

David Lankes: [link](http://www.oclc.org/dewey/versions/webdewey/)

David Lankes: You have to pay for access.

Librarian: I'm not a cataloger. You probably have more knowledge on this than I do at the moment.

David Lankes: No problem. Thanks again. Have a good day.
Librarian: You are right that it could be found under different keywords. I was trying to find the most direct, quick answer to your question.

David Lankes: And I got it. I asked for the number. That's what I needed.

Librarian: You're welcome. Thanks for the challenge. Have a good day, yourself.

David Lankes: The name was just a follow-up if you knew.

David Lankes: bye.
Post Game Summary
# Post Game Summary

<table>
<thead>
<tr>
<th>Total Messages</th>
<th>Librarian</th>
<th>Dave</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>14</td>
<td>15</td>
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</table>
Post Game Summary

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Post Game Summary

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<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Closing Messages</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>Librarian</td>
<td><strong>1</strong></td>
</tr>
<tr>
<td>Dave</td>
<td><strong>3</strong></td>
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</tbody>
</table>

Librarian: 25%

Me: 75%
# Post Game Summary

<table>
<thead>
<tr>
<th>Category</th>
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Librarian's contribution is 75% and Dave's contribution is 25%.
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</tr>
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<td>Reference Questions</td>
<td>5</td>
</tr>
<tr>
<td>Librarian (What is Web Dewey, Site for Dewey)</td>
<td>2</td>
</tr>
</tbody>
</table>

Librarian: 75%
Me: 25%
## Post Game Summary

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<td>Reference Questions</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Librarian: 40%

Dave: 60%

(What is Web Dewey, Site for Dewey)

(Dewey Number, Class and Site for Dewey)
Uncomfortable?

- Reference is at once both the most public, and private function the library offers
- While we call it public service, we don’t have the same transparency as technical service
Libraries Have it Backwards

- Reference is an Unnatural Act
- Admitting Ignorance is Uncomfortable - the Greedy Librarian Problem
- Self Promotion is Human Nature
Agenda

• Why Virtual Reference
• Basics of Virtual Reference
  • General Digital Reference Model
  • Technical Opportunities
• Expanding Reference Service
Reference by Any Other Name
Reference by Any Other Name

Digital Reference
Reference by Any Other Name

Email Reference
Live Reference
Virtual Reference
Chat Reference
dReference
Digital Reference
Reference by Any Other Name

Email Reference

Live Reference

Virtual Reference

Chat Reference

Online Reference

Digital Reference

V_Ref

AskA

eReference

Dig_Ref
“The use of human intermediation to answer questions in a digital environment”
- The Digital Reference Research Agenda
“The use of human intermediation to answer questions in a digital environment”
- The Digital Reference Research Agenda

An agenda to increase the technical knowledge (and capacity) of libraries and to build bridges (and respect) to the digital library and other communities.
Lankes’ Virtual Reference Perspective

• Reference is an Island of Chaos in a Sea of Library Order...That’s a Good Thing

• Virtual Reference is Different from Traditional Reference - It Creates Artifacts by Default/Design

• Virtual Reference is Beyond Libraries
Purpose, General
Purpose, General

- Answer the Needs of the Constituency
Purpose, General

- Answer the Needs of the Constituency
- Know the Needs of the Constituency
Purpose, Internal
Purpose, Internal

- Organizational Development and “Bonding”
- Develop Group Identity
- Common Policies
- Provide Even Service Distribution
- Provide Innovation Opportunities
- Training
Purpose, External
Purpose, External

- Raise Visibility
Purpose, External

• Raise Visibility
• Demonstrate Innovation
Purpose, External

- Raise Visibility
- Demonstrate Innovation
- Provide Expanded Service
  - Time: Use Time Zones to Your Advantage
  - Expertise: Disconnect Reference from a Physical Collection
General Digital Reference Model
General Digital Reference Model

Question Acquisition
Resource Creation
Triage
Answer Formulation
Tracking
Triage Center
User
Experts
Q&A Archive
Web Resources

Question Acquisition → Triage → Answer Formulation → Resource Creation → Tracking

User → Triage Center → Experts → Q&A Archive → Web Resources
General Digital Reference Model

Question Acquisition -> Triage Center -> Answer Formulation

User -> Triage Center

Experts

Web Resources

Resource Creation -> Q&A Archive

Tracking
Question Acquisition

- How Do Users Ask Questions
- Modes: IM, E-Mail, Web?
- Integrated with Other Reference?
- Web Forms
VR Modes

- Commercial “Chat” VR Software
- E-Mail
- IM
- Blogs
- Custom Web Applications
“Chat”

- Library Centric Software
  - Good: Matches Needs and Expectations of the Library Community
  - Bad: Doesn’t Match Anyone Else’s

Welcome to Live Online Reference.

Please enter the information requested on the right side of your browser window, and click the connect button.

24/7 Reference is a new service that lets you get answers to your questions in real time over the Internet. The service is staffed by reference librarians in Onondaga County and throughout the country.

During your session, please do not do any of the following, or you may be disconnected:

- Type a new URL in this browser window
- Use the forward or refresh/reload buttons on your browser
- Add a site to your favorites or bookmarks list

While you are waiting, you can browse the OCPL website:

- Library Catalog
- Databases
- Internet Links
# Commercial “Chat”

<table>
<thead>
<tr>
<th></th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pros</strong></td>
<td>Meets Expectations of Librarians</td>
<td>Meets No One Else’s Scripts</td>
</tr>
<tr>
<td></td>
<td>Scripts</td>
<td>Scripts</td>
</tr>
<tr>
<td></td>
<td>Archives</td>
<td>Archives on Hosted Servers</td>
</tr>
<tr>
<td></td>
<td>Queuing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statistics</td>
<td></td>
</tr>
</tbody>
</table>
• 58 Million Americans do E-Mail at Least Once a Day - Number 1 Activity

## E-Mail

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part of Daily Workflow</td>
<td>So is Spam</td>
</tr>
<tr>
<td>Accommodates Rich Media Types</td>
<td>Like Viruses</td>
</tr>
<tr>
<td>Well Established Protocols</td>
<td>Set in the 1980’s</td>
</tr>
</tbody>
</table>
Instant Messaging

- 53 million adults trade instant messages and 24% of them swap IMs more frequently than email. IM also gains a following in workplaces.

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>Proprietary</td>
</tr>
<tr>
<td></td>
<td>(are you violating terms of service?)</td>
</tr>
<tr>
<td>Real Time</td>
<td>No Queuing</td>
</tr>
<tr>
<td>Cross Platform</td>
<td>Limited Media Types</td>
</tr>
<tr>
<td>Can Create Trascripts</td>
<td>Data Stored by Company</td>
</tr>
</tbody>
</table>
Blogs

- 7% (8 million people) of the 120 million U.S. adults who use the internet have created a blog
- 27% of internet users say they read blogs
- 5% of internet users say they use RSS aggregators or XML readers
- 12% of internet users have posted comments or other material on blogs.

http://www.pewinternet.org/pdfs/PIP_blogging_data.pdf
## Blogs

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to Update</td>
<td>Built for Diaries</td>
</tr>
<tr>
<td>Built in Comments</td>
<td>Comment Spam</td>
</tr>
<tr>
<td>RSS</td>
<td>Hard to Highlight Comments</td>
</tr>
<tr>
<td>Modifiable</td>
<td>PHP Knowledge Needed</td>
</tr>
</tbody>
</table>
Custom Web Apps

- Do not be Afraid
- Rise of Open Source and LAMP

Costs on a Curve
Costs on a Curve

- Development
  - XML, RDF

- Cost

- Time
Costs on a Curve

Development
XML, RDF

Early Adoption
Metadata, Portal, Digital Reference

Cost

Time
Costs on a Curve

- **Development**
  - XML, RDF

- **Early Adoption**
  - Metadata, Portal, Digital Reference

- **Adoption**
  - Web Servers, OPACS

---

Cost

Time
Costs on a Curve

Development
XML, RDF

Early Adoption
Metadata, Portal, Digital Reference

Adoption
Web Servers, OPACS

Laggards
WYSE Terminals, Text-Based OPACS

Cost

Time
Learning Curve
Learning Curve with Web Development Environments
Learning Curve with Web Development Environments?

- OS Integration
- Database
- Web Server
- Scripting Engine
Proprietary Solutions

Microsoft
- .ASP, .NET
- OS: Windows
- Database: MSSQL, Access
- Web Server: IIS
- Scripting Engine: ASP

Macromedia
- ColdFusion
- OS: Windows, Linux, Unix
- Database: Various
- Scripting Engine: Coldfusion
Advantages

• Software Reuse

• Basic Services: Security, Backup, Statistics, etc.

• Built-in Functions: Database Connectivity, Display, XML, etc.
Disadvantages

• Locked Into Vendor Design Path and Timeline
• OS Lock-In
• Limited Ability to Disseminate Product
  • Expensive to Replicate Environment
Open Source Advantages

• A Great Deal of Pre-Existing and Diverse Work
• Large Scale Distributed Building Community
• Increasingly Sophisticated Systems
• Increasingly Standardized Development/Implementation Environment
LAMP Emerges

- Linux - OS Integration
- Apache - Web Server
- MySQL - Database
- PHP, PERL, or Python - Scripting Engine
So What Will Your Form Look Like?

- Your Face on the Internet IS the first Step in a Reference Interview
Typical

Onondaga County Public Library
447 South Salina Street, Syracuse, NY 13202-2494

Telephone: (315) 435-1900
Email: reference@onlib.org

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- Internet Links
IPL Ask A Question Form

Need an answer fast? Hundreds of our most popular questions and answers are listed on our Frequently-Asked Reference Questions pages.

Want to know more about how the IPL "Ask a Question" Service works?

Please review our Privacy Statement before submitting your question.

* required information

Name* 

E-mail* 

Provide a complete e-mail address (example: jaspy@holi.com) so that we can reply.

If you have parental or mail controls turned on, please add plr@ipl.org to your allowed mail list.

Confirm e-mail* 

Enter the same e-mail address here as you did above.

This helps to ensure that we have your correct e-mail address, and that you will receive a reply as quickly as possible.

Where do you live? 

Knowing where you live helps us recommend resources that are relevant, and accessible, to your area.

Deadline for reply* 

No Need for Date 

3 days are usually needed for us to reply.

11 days are usually needed for us to reply.

If you need an answer in less than 3 days, please consider these other resources instead of the IPL.

Subject* 

select...

Understanding the context and scope of your information needs helps us to deliver an answer that you will find useful.

How will you use this information? 

Is this for a school assignment? 

A human being will read your question, so please use complete sentences. The more you tell us, the better the answer will be. What do you already know about your subject or question?

Your question* 

Knowing where you've already looked will help us keep from sending you someplace you've already been.

Sources already consulted 

Submit Question

Please review our Privacy Statement before submitting your question.
## Build Your Own

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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</thead>
<tbody>
<tr>
<td>Control</td>
<td>Responsibility</td>
</tr>
<tr>
<td>You Pick Features</td>
<td>You Create Features</td>
</tr>
<tr>
<td>Lots of Open Source</td>
<td>Open Source “Support”</td>
</tr>
<tr>
<td>Not Hosted</td>
<td>Not Hosted</td>
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</table>
Triage

• Who Gets the Next Question? Who Decides?

• Automation Question Routing
  • Sandwich Interface: Question → Search → Expert

• Consortial Level Issues
  • Know who you are “triaging” to
Facets of Quality

User Transactions
- Accessible
- Prompt Turnaround
- Clear Response Policy
- Interactive
- Instructive

Service Development and Management
- Authoritative
- Trained Experts
- Private
- Reviewed
- Provides access to related information
- Publicize
Answer Formulation/Experts

- Are All Librarians Equal
- Including Experts from Across the Academy
- Resources to Use in an Answer
- Answer Policies
  - Types of Answers, Appropriate Use
Tracking/Statistics

- Who Needs What Statistics?
- How Can we Anticipate Trends?
- How Can We Improve Quality?
Quality Standards

- Courtesy: The behaviour of the library or institution’s staff
- Accuracy: The “correctness” of answers provided by a digital reference staff
- Satisfaction: Users determination of their success in interacting with the digital reference service
- Repeat Users: The percentage of users that re-use a service after first encounters
- Awareness: The population user group’s knowledge that the service exists
- Cost: The cost per digital reference
Performance Measures

- Descriptive Statistics and Measures: Statistics and Measures to determine the scale and scope of a digital reference service.

- Log Analysis: Statistics that can be derived from analysis of logs generated by web and digital reference software packages

- User Satisfaction Measures: Statistics and metrics seeking to understand the user view of a digital reference service.

- Cost: Measures that gage outlay of financial resources to run an ongoing digital reference effort.

- Staff Time Expended: Measures to determine staff time dedicated to digital reference
<table>
<thead>
<tr>
<th><strong>Descriptive</strong></th>
<th><strong>Log</strong></th>
<th><strong>User</strong></th>
<th><strong>Cost</strong></th>
<th><strong>Staff</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of digital reference questions received</td>
<td>Number of digital reference sessions</td>
<td>Awareness of Service</td>
<td>Cost of digital reference service</td>
<td>Percent of staff time spent overseeing technology</td>
</tr>
<tr>
<td>Number of digital reference responses</td>
<td>Usage of digital reference service by day of the week</td>
<td>Accessibility of service</td>
<td>Cost of digital reference service as a percent of total reference budget</td>
<td>Percent of staff time spent assisting users with technology</td>
</tr>
<tr>
<td>Number of digital reference answers</td>
<td>Usage of digital reference service by time of day</td>
<td>Expectations for service</td>
<td>Cost of digital reference service as a percent of total library or organizational budget</td>
<td></td>
</tr>
<tr>
<td>Total reference activity</td>
<td>User's browser</td>
<td>Other sources user tried</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of digital reference questions to total reference questions</td>
<td>User's platform</td>
<td>Reasons for use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital reference correct answer fill rate</td>
<td></td>
<td>Reasons for non use</td>
<td></td>
<td></td>
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<tr>
<td>Digital reference completion rate</td>
<td></td>
<td>Satisfaction with staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of unanswered digital reference questions</td>
<td>Delivery mode satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of digital reference questions received</td>
<td></td>
<td>Impact of service on user</td>
<td></td>
<td></td>
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<tr>
<td>Total number of referrals</td>
<td></td>
<td>Additional services that need to be offered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturation rate</td>
<td></td>
<td>User demographic data</td>
<td></td>
<td></td>
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<tr>
<td>Sources used per question</td>
<td></td>
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<td></td>
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<tr>
<td>Repeat users (return rate)</td>
<td></td>
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Resource Creation

- Take Back the Web!
TAKE THE WEB!

Mrs. Angelina Eberly firing off a cannon
Do You Have Control of the Web?

• Can You Update Information on Your Web Site in 15 Minutes - From any Computer? From Home? From Tokyo?

• How Many “Brands” are on Your Web Site?
  • Library, Academy, EBSCO, ISI, OCLC...

• Is “Your Web Site” and the Academy’s the Same?

• What Does Your Site Promote...Librarians or Buildings?
Key Technologies

- RSS/Blogs
- Web/Wiki
- IM
  - “Chat Reference” is not chat
- E-Mail
- 4 Colour Offset Printers and Large Format Ink Jet Printers
“I'm not a cataloger”
“I'm not a cataloger”
Reference IS Tool Building

- Reference is a Delightful Island of Chaos in a See of Structure
- Pathfinders, Bibliographies
- Websites, Blogs, Wiki’s
- Who is Better Qualified to Design Cross-Content systems?
- Open Source Comes to the Masses
BYOS: Build Your Own Search Engine

- Google “Roll Your Own”
- Lot’s of Good Open Source Search Engine Packages
  - Sphider
  - Nutch
Beyond Reference

• Cataloguing as Customer Service
• Organize Data and Materials for Faculty and Other Units
• Archiving and Preservation
• Document Management
Old Model

- Library as a Separate Process and Collection from the Academy’s Core Business
- Enhance and Facilitate
- Emphasis on External Documents
Old Model

- Library as a Separate Process and Collection from the Academy’s Core Business
- Enhance and Facilitate
- Emphasis on External Documents
Old Model

- Library as a Separate Process and Collection from the Academy’s Core Business
- Enhance and Facilitate
- Emphasis on External Documents
New Model

• Library as Information “Collector” and “Enhancer” of the Organization’s Information

• Institutional Repository

• Emphasis on Synthesis

• Sees the Complexity of the Academy
What Does This Mean for Reference

• Don’t Wait...Burn the Desk
  • or at least use it as cool furniture in your home like the card catalogues you store CD’s in

• Become Part of Core Organizational Activities (Grants, Records Management, etc.)

• Attend Institutional Meetings
Defining the Team

- Core Librarianship: Access, Organization, Design, Conservation
- Extended Family: Coders, Marketers, Content Experts
- Everything Old is New Again - Subject Scholars, Historians, etc...
Some Ideas
Projects and Tactics to Take Over the World
Be an Active Part of the Tenure Process

- Begin an “In Depth” Citation Review Service
- Make It Part of Standing Tenure Practices
Be an Active Part of the Research Process

- Be the Sustainability and Clearinghouse Portion of a Research Project
- Create a Depository Data Program
- Make It Part of Institutional Review
Be an Active Part of the Training Process

- Banish the following: Bibliographic Instruction, BI - Use “Instruction”
- Create Information Instruction Training for the Organization (not just the community)
- Become the Instruction Materials Archive and Data Warehouse
Be an Active Part of the Dissemination Process

• Be the Full Service Web Host for the Community

• More Than Just Space

• Design, Blogs, Content Management, Document Delivery
Questions, Corrections, Arguments