

**Quality Control in
Scholarly Publishing.
What are the Alternatives
to Peer Review?**

William Y. Arms
Cornell University

This talk is about:

How can readers recognize good quality materials?

How can publishers maintain high standards and let readers know?

This talk is not about:

What criteria should libraries use in selecting materials?

What criteria should universities use in promoting faculty?

But we must consider:

How can a scientist build a reputation outside
the traditional peer-reviewed journals?

A sample of one: William Y. Arms

Today's students:

(a) High school

Primary sources are *Yahoo Science*
and *about.com*

(b) University

Primary source is *Google*

"Please can I use the web? I don't do libraries."
Anonymous Cornell student, circa 1996.

About Astrology - Home Page - Netscape
 File Edit View Go Communicator Help
 Bookmarks Location: <http://astrology.about.com/science/astrology/mbody.htm>

beliefnet Soul Quiz **How Forgiving Are You?**
You get cut off in traffic...Do you
 A. Chill out B. Tap horn

> [Bank On](#)
 > [Auctions](#)
 > [CreditRe](#)
 > [Free We](#)

You are here: [About](#) > [Science](#) > [Astrology](#)

Astrology
 with [Anthony Peña](#) Your Guide to One of Over [700 Sites](#)

Search for in this topic site

[Home](#) · [Recent Articles](#) · [Visit Forums](#) · [Chat Live](#) · [Contact Guide](#) · [Free Newsletter](#)

Subjects

- [Horoscopes](#)
- [Your Zodiac Sign](#)
- [Love & Romance](#)
- [Oracles](#)
- [Fun and Humor](#)
- [Chart Calculation](#)
- [Free Stuff](#)

Advanced

- [Archetypal](#)
- [Ancient/History](#)
- [Astrologers](#)
- [Basics](#)
- [Books/Reviews](#)
- [Celebrity/Famous](#)
- [Community](#)

In the Spotlight Thu, Feb 1, 2001

[Plato, Reincarnation, and the Zodiac](#)
 Repeat after me: "Plato can be fun." Chances are that when reading this article - you'll discover you knew more about the ancient Greek philosopher, Plato, than you thought. Those who already know Plato might have a few surprises, too.

[Archetypal Astrology](#)
 Map of the Soul - What is "Archetypal" Astrology, and how does it differ from what is considered to be more "traditional" astrology? This is the 1st article in a new series of feature articles on this fascinating subject.
Discussion: [Jung and Astrology](#) - What's your opinion?
More: [Love Journey](#) - Archetypal Look at Love

[Your Zodiac Sign](#)

Related Sites

from About & Partners

- [Alternative Religions](#)
- [Conspiracies and](#)
- [Extremism](#)
- [Dating](#)
- [Hinduism](#)
- [New Age](#)
- [Pagan/Wiccan](#)
- [Religion](#)
- [Paranormal](#)
- [Phenomena](#)
- [Space](#)

Also Recommended

- [Ancient Sign](#)
- [Art Charts](#)

Document: Done

Current Quality Strategy 1: The Reader Looks for Clues

Internal clues can inform an
experienced reader

All that glitters is not gold.

And vice versa.

ACM Digital Library: Journal of the ACM - Netscape

File Edit View Go Communicator Help

Bookmarks Netsite: <http://www.acm.org/pubs/contents/journals/jacm/>

[library home](#) [list alphabetically](#) [list by SIG](#) [search library](#) [register DL](#) [subscribe DL](#) [feedback](#)



ACM Digital Library

Journal of the ACM

(ISSN: 0004-5411)

[access](#) [related SIGs](#) [related conferences](#) [about this publication](#) [subscribe now](#)

The [Journal of the ACM](#) serves as a venue for careful presentation of theoretical research in the core areas of computing: complexity of algorithms, computer architecture, system modeling, AI, data structures, database theory and graph theory, to name a few. The authors are world class scientists, writing to other scientists about advances, methods and findings behind the fundamentals. For more information about the publication, see the [Journal of the ACM home page](#).

Content available in the Digital Library

- ◆ [Volume 47 \(2000\)](#)
[No. 1](#) | [No. 2](#) | [No. 3](#) | [No. 4](#) | [No. 5](#) | [No. 6](#)
- ◆ [Volume 46 \(1999\)](#)
[No. 1](#) | [No. 2](#) | [No. 3](#) | [No. 4](#) | [No. 5](#) | [No. 6](#)
- ◆ [Volume 45 \(1998\)](#)
[No. 1](#) | [No. 2](#) | [No. 3](#) | [No. 4](#) | [No. 5](#) | [No. 6](#)
- ◆ [Volume 44 \(1997\)](#)
[No. 1](#) | [No. 2](#) | [No. 3](#) | [No. 4](#) | [No. 5](#) | [No. 6](#)

Document: Done

Considerations

Publisher, ACM, is a well-known scientific society that follows standard procedures for peer review.

Editor-in-chief is a well-known professor in a strong department.

Papers in theoretical computer science can be reviewed from their content.

Gold



[library home](#)

[list alphabetically](#)

[list by SIG](#)

[search library](#)

[register DL](#)

[subscribe DL](#)

[feedback](#)

ACM Digital Library

← International Conference on Digital Libraries

Proceedings of the fifth ACM conference on ACM
2000 digital libraries

June 2 - 7, 2000, San Antonio, TX USA

[access](#)

[related SIGs](#)

[related conferences](#)

Table of Contents

For full text in PDF, use [Adobe Acrobat Reader](#).

The psychology of multimedia databases

Mark G. L. M. van Doorn and Arjen P. de Vries

Pages 1 - 9

[metadata:](#)

[index terms](#)

full text: PDF 1397
KB

[[Discuss this Article](#) | [Find Related Articles](#) | [Add to Binder](#)]

Considerations

Looks the same as the *Journal of the ACM*.

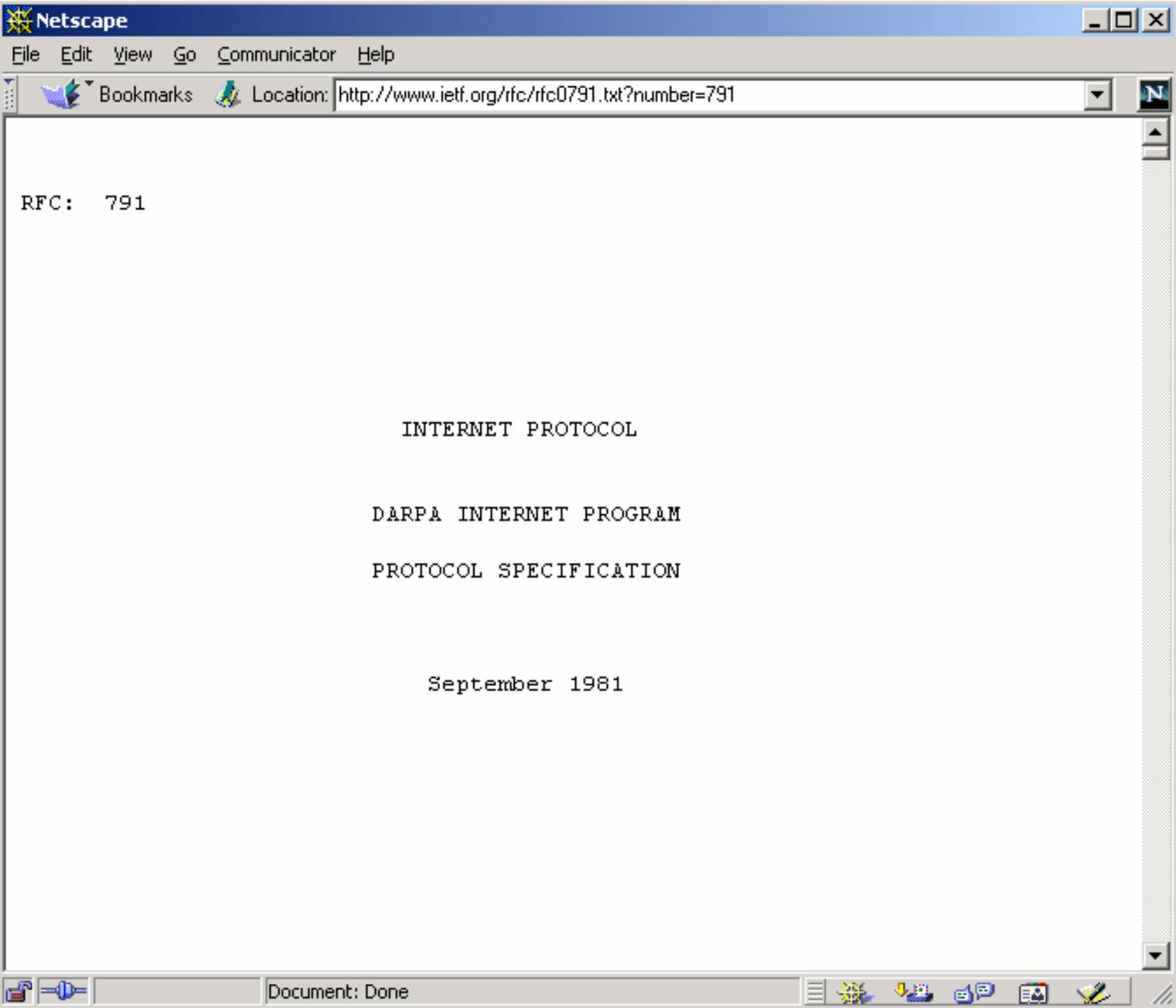
but ...

Procedures for selecting and reviewing conference papers are loosely controlled.

Papers in applications research are difficult to evaluate by superficial reading.



Not gold



Considerations

The appearance looks like a draft.

Nothing technical from 1981 is current.

Who is DARPA anyway?

yet ...

This is the official definition of IP.

Gold



CS 430 Information Discovery Spring 2001

Professor William Y. Arms

Lectures: Tuesday and Thursday, 12:20 to 1:10 pm Thurston Hall 203
Discussion class: Wednesday 7:30 to 8:30 p.m., Hollister 110

3 Credit Hours

- [Notices](#)
- [Code of practice](#)
- [Syllabus](#)
- [Assignments](#)
- [Readings and references](#)
- [Slides](#)
- [Laptop computers](#)

Check the **Notices** file regularly for information about schedule, assignments, etc.

Considerations

Course materials from a well known university.

but ...

Is the faculty member an expert in this field?

How carefully have these materials been developed?



arXiv.org e-Print archive - Netscape

File Edit View Go Communicator Help

Bookmarks Location: <http://xxx.lanl.gov/>



arXiv.org e-Print archive

Automated e-print archives at arXiv.org:

6 Jan '00: Cumulative ["What's New"](#) pages
Guide to the perplexed: Read these [PROFESSIONAL HELP](#) pages before sending fan mail.
ROBOTS BEWARE: [indiscriminate automated downloads from this site are not permitted.](#)

Physics

- [Astrophysics](#) ([astro-ph new](#), [recent](#), [abs](#), [find](#))
- [Condensed Matter](#) ([cond-mat new](#), [recent](#), [abs](#), [find](#))
includes: [Disordered Systems and Neural Networks](#); [Materials Science](#); [Mesoscopic Systems and Quantum Hall Effect](#); [Soft Condensed Matter](#); [Statistical Mechanics](#); [Strongly Correlated Electrons](#); [Superconductivity](#)
- [General Relativity and Quantum Cosmology](#) ([gr-qc new](#), [recent](#), [abs](#), [find](#))
- [High Energy Physics - Experiment](#) ([hep-ex new](#), [recent](#), [abs](#), [find](#))
- [High Energy Physics - Lattice](#) ([hep-lat new](#), [recent](#), [abs](#), [find](#))
- [High Energy Physics - Phenomenology](#) ([hep-ph new](#), [recent](#), [abs](#), [find](#))
- [High Energy Physics - Theory](#) ([hep-th new](#), [recent](#), [abs](#), [find](#))
- [Mathematical Physics](#) ([math-ph new](#), [recent](#), [abs](#), [find](#))
- [Nuclear Experiment](#) ([nucl-ex new](#), [recent](#), [abs](#), [find](#))

Document: Done

Considerations

The appearance looks like a joke.

"xxx" in the URL is suspicious.

Why does it have a ".gov" name?

yet ...

This is the working literature of physics research.

Gold

Current Quality Strategy 2: The Publisher as Creator

Materials are written by authors or selected by curators who are employed by the publisher.

Quality is tied to the reputation of the publisher.

Nat'l Academy Press, The Digital Dilemma: (2000), Front Matter - Netscape

File Edit View Go Communicator Help

Location: <http://books.nap.edu/books/0309064996/html/R1.html#pagetop>

open book view

chapter selector ▶ Front Matter, pp. i-xvi GO! page selector ▶ GO!

go to [TABLE OF CONTENTS](#) chapter [◀BACK](#) | [NEXT▶](#) page [◀BACK](#) | [NEXT▶](#)

The Digital Dilemma

Intellectual Property IN THE INFORMATION AGE

Committee on Intellectual Property Rights and the
Emerging Information Infrastructure

Computer Science and Telecommunications Board
Commission on Physical Sciences, Mathematics, and Applications
National Research Council

THIS PAGE
i

PAGE
NEXT

CHAPTER
NEXT

TABLE OF CONTENTS

SEARCH

SEARCH ALL TEXT
SEARCH THIS BOOK
SEARCH THIS CHAPTER

SEARCH BUILDER

ZOOM PRINT

? HELP ! ERROR REPORT

This book is also available in:

HTML FORMAT

Document: Done



The New York Times

ON THE WEB

CLICK HERE
education
A SPECIAL REPORT
life

[Login/Register](#) | SATURDAY, FEBRUARY 3, 2001 5:44 PM ET | [Personalize Your Weather](#)

SEARCH

Latest News
 Archives
Search [Tips](#)

- [Jobs](#)
- [Real Estate](#)
- [Shopping](#)

NEWS

- [Business](#)
- [Editorial/Op-Ed](#)
- [International](#)
- [National](#)
- [New York Region](#)
- [NYT Front Page](#)
- [Obituaries](#)
- [Politics](#)
- [Quick News](#)
- [Health](#)
- [Science](#)
- [Sports](#)
- [Tech/Internet](#)
- [Weather](#)

Corrections

FEATURES

- [Arts](#)
- [Automobiles](#)
- [Books](#)
- [Cartoons](#)
- [Crossword](#)

The Making of a Suspect: The Case of Wen Ho Lee

By MATTHEW PURDY
FROM SUNDAY'S TIMES

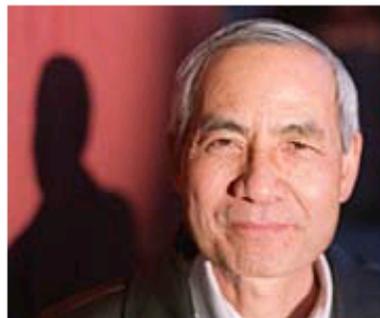
A re-examination of the case against Los Alamos scientist Wen Ho Lee indicates that investigators took ambiguous evidence about Dr. Lee's behavior and Chinese atomic espionage and wove it into a case that eventually collapsed. The first of a two-part series. [Go to Article](#)

- DIAGRAM: [Building a Smaller H-Bomb](#)

U.S. Tries Defusing Allies' Opposition to Missile Defense

By MICHAEL R. GORDON
FROM SUNDAY'S TIMES

Defense Secretary Donald H. Rumsfeld, the first senior Bush administration official to visit Europe, tried today to defuse opposition to the administration's antimissile plans by offering to help European nations and other allies to deploy missile defenses.



(NYT)

After a five-year investigation, Dr. Wen Ho Lee, pictured here in December, was all but threatened with execution for not admitting spying. But prosecutors were never able to connect him to espionage. [Go to Article](#)

NATIONAL
[Field Guide? Check.](#)
[Binoculars? Check.](#)
[Lobbyists? Soon.](#) (12:00 a.m.)

INTERNATIONAL
[Flames Consume the Dead, but Not the Anguish of India](#) (12:00 a.m.)

INSIDE

[More](#)

TRAVEL

[Spring-Summer Cruise Special](#)



Tahiti, Antigua, Murmansk. Cruise ships set sail for distant ports. Also in Travel: [Deal of the Day](#).

ABUZZ

Stocking the Shelves?

CLG815 asks: What are the twenty most essential items to have in the pantry? [Add your suggestions.](#)

- [discuss](#)
- [ask](#)
- [answer](#)
- [review](#)

MARKETS

At Clos

Dow	10864.10	-119.53
Nasdaq	2660.50	-122.29
S&P 500	1349.47	-24.00
Russell 2000	501.50	-7.44

Northern Great Plains, 1880-1920



Search on: [Threshing](#) | [Threshing Machines](#) | [Threshing Crews](#)

National Oceanic and Atmospheric Administration



National Weather Service Homepage



[[Organization & Services](#) | [Mission Statement](#) | [Strategic Plan](#)]

Espanol

online

Direct Access to U.S. OFFICIAL WEATHER FORECAST PRODUCTS & OBSERVATIONS

Search

this site

NATIONAL

[Weather Data](#)

[Warnings](#)

[Forecast Products](#)

[Current Conditions](#)

[Weather Maps](#)

[Storm Prediction](#)

[Marine Weather](#)

[Extended
Forecasts](#)

INTERNATIONAL

 <p>LATEST RADAR IMAGE</p> <p>has Site Radar Links</p>	 <p>IWS Internet Weather Source</p> <p>SELECT A STATE GRAPHICAL</p>	 <p>LATEST RADAR LOOP</p> <p>10 frame animation</p>
--	--	---

National Weather Service REGIONS

[Web Sites](#) (map)

[Alaska](#)

[Central](#)

[Eastern](#)

[Pacific](#)

[Southern](#)

[Western](#)

Interactive Weather Information Network



HIGHLIGHTED PRODUCTS

[Storm Prediction Center's
Watch/Warning Display](#)
(20 minute update)

[Hydrometeorological Prediction
Center's
24 Hour Surface Forecast Chart](#)
(twice daily)

SPECIALIZED CENTERS

Current Quality Strategy 3: External Readers Chosen by the Publisher

Publishers ask external experts to
review materials

Digital Libraries - Netscape

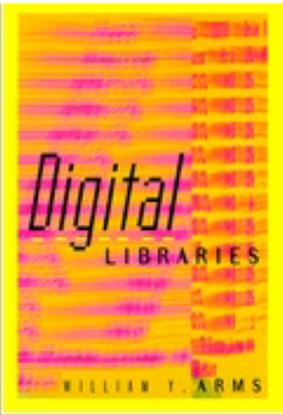
File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: <http://mitpress.mit.edu/book-home.tcl?isbn=0262011808>

 **The MIT Press Books**

NEW BOOKS DIGITAL PROJECTS JOURNALS



Digital Libraries
by [William Y. Arms](#)

JOIN MAILING LIST
COMMENT ON BOOK
PURCHASE

1999
ISBN 0-262-01180-8
344 pp., 8 illus.
\$45.00/£30.95 (cloth)

[Table of Contents](#)

"Bill Arms offers a comprehensive look at Digital Libraries from many perspectives. He's right: we're just at the beginning of this story. The best is yet to come."
-- **Vint Cerf**, Senior Vice President,
Internet Architecture and Technology,
MCI WorldCom

The emergence of the Internet and the wide availability of affordable computing equipment have created tremendous interest in digital libraries and electronic publishing. This book is the first to provide

Document: Done



Journal of Digital Information

A peer-reviewed Web journal supported by the British Computer Society and Oxford University Press.

- Editors & Editorials
- What's new
- About JoDI
- Submissions
- Calls for papers
- Noticeboard
- Help
- Registration
- Contacts
- Search

Quick search

New papers | Past Issues | Index of papers

THEMES

SPECIAL ISSUES

DEPARTMENTS

Journal of Digital Information

Publishing papers on the management, presentation and uses of information in digital environments

Join

The journal welcomes first time readers. Please join - *it's free* - to gain access to the full-texts of all papers and to receive our alerts of future issues.

IP Access for Libraries

Want to avoid user log-in? Find out about our service for libraries.

What's New

Regular users check this page for updates and the **latest papers**.
Call for Papers for [special issue on Distributed Information Management](#)

Current Issue

Order by: [date](#), [author](#), [title](#). This page ordered by **author**.

Volume 1

Issue 7 - Hypertext Criticism

S. Tosca (January 2001)

Editorial: [Hypertext Criticism: introduction to a special issue](#)

M. Engebretsen (December 2000)

[Hypernews and Coherence](#)

A. Miles (December 2000)

[Hypertext in the Dark: cinematic narration with links](#)

A. ... (December 2000)



Observations about Peer Review

At its best, it is superb.

At its worst, it validates junk.

Some topics can be reviewed from a paper, e.g., mathematics.

Some topics cannot be reviewed from a paper, e.g., computer systems.

"Whatever you do, write a paper. Some journal will publish it." Advice to young faculty member, University of Sussex, 1972.

Current Quality Strategy 4: Independent Reviews

Reviewers, hopefully independent of the author and publisher, describe their opinion of the item.

Value of the review to the user depends on (a) the reputation of where the review is published and (b) how well it is done.

D-Lib Magazine

ISSN: 1082-9873

Vol. 7 No. 1

January 2001

EDITORIAL

[Free and Fee: Future Information Discovery and Access](#)

by Peter Hirtle

[To the Editor: Letters](#)

BOOK REVIEW

[The Intellectual Foundation of Information Organization](#)

Elaine Svenonius. MIT Press, 2000

Reviewed by: Caroline R. Arms, Library of Congress

"...This book about cataloging certainly deserves to be read outside the community whose principles and traditions it describes and illuminates."





Editorial Reviews

Amazon.com

These days we seem to be creating information faster than we can store it, but the near future is looking bright. Cornell professor William Y. Arms offers a program for that future in *Digital Libraries*, a synthesis of library and computer sciences that presents the history and current developments in each field with special emphasis on their interactions.

Visit the [New Cars Store](#)



2001 Jetta
[2001 Jetta by Volkswagen](#)

Since the book necessarily must appeal to a broad spectrum of professionals, any given reader will find some parts elementary, but Arms clearly maps the common ground and much of the text will appeal to all. Chapters covering the basics of information management, the Internet, security, archives, and retrieval bridge the traditional books-and-shelves library systems and the often jury-rigged information architecture developed over 40 years of computer use.

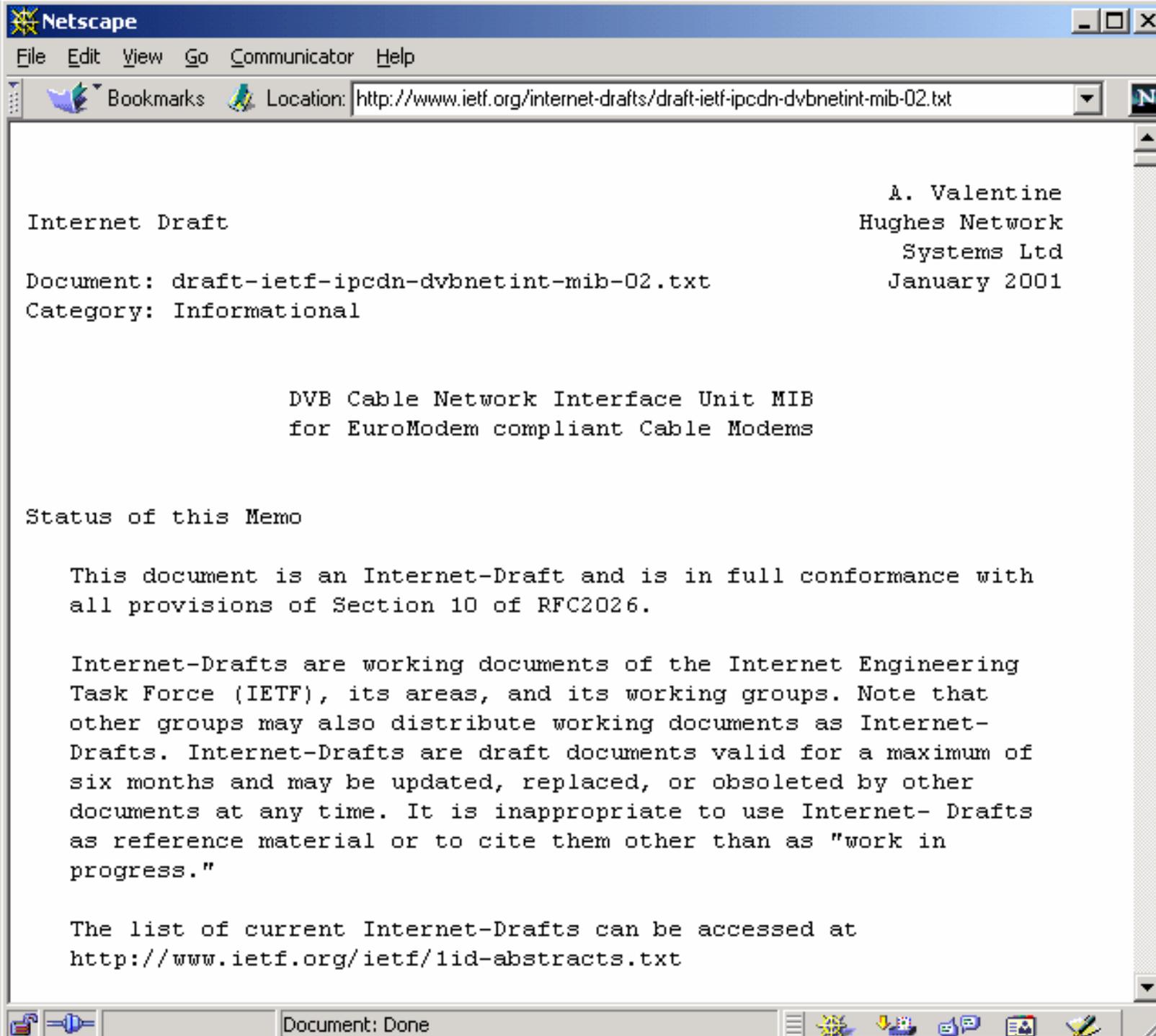
Visit the [Music Store](#)



[All That You Can't Leave Behind](#)
~ U2

Digital Libraries contains plenty of sidebars detailing historical information as well as definitions primarily suited to professionals entering the interdisciplinary zone (but which would unacceptably break up the text flow, while it's important to understand both MARC codes and TCP/IP protocols, it's best for each reader to decide what supplementary information is needed). *Digital Libraries* is an ambitious and important book--if we are to develop truly efficient and accessible information management systems, everyone concerned must understand their shared technical history and move forward as one. --Rob Lightner

Was this content helpful to you?





Before you buy anything
make an informed decision.

Find: A Loan for Me Powered by GetSmart.com

Refinancing Second Mortgage Debt Consolidation

Search [Sign up!](#) | [Home](#) | [Help](#) | [Sign in](#)

[Home](#) » [Member Center](#) » **rbinck**

Web of Trust

rbinck trusts:

- [hikini](#)
- [tekki](#)
- [alanrus](#)
- [bmcnichol](#)
- [ptiemann](#)

» [View all 62 members whom rbinck trusts](#)

rbinck is trusted by:

- [Daxman](#)
- [LordBalfor](#)
- [j_hipps](#)
- [splace](#)
- [gd134](#)

» [View all 25 members who trust rbinck](#)

rbinck's Profile



Member: **Richard Binckley** Opinions written: **58**
 Epinions.com ID: **rbinck** Products rated: **63**
 Location: **Houston, Texas - Kailua-Kona, Hawaii** Member visits: -
 Member since: **Dec 27 '00** Total visits: -

Part time Hawaii resident that likes Hawaii and Classic Cars.

rbinck's Recent Opinions

Date Written	Opinion Title	Product / Topic	Product Rating	Opinion Rating
Mar 15 '01	Kealakekua Bay - Snorkeling at it's Finest	Kealakekua Bay State Historical Park in Parks	★★★★★	Very Helpful

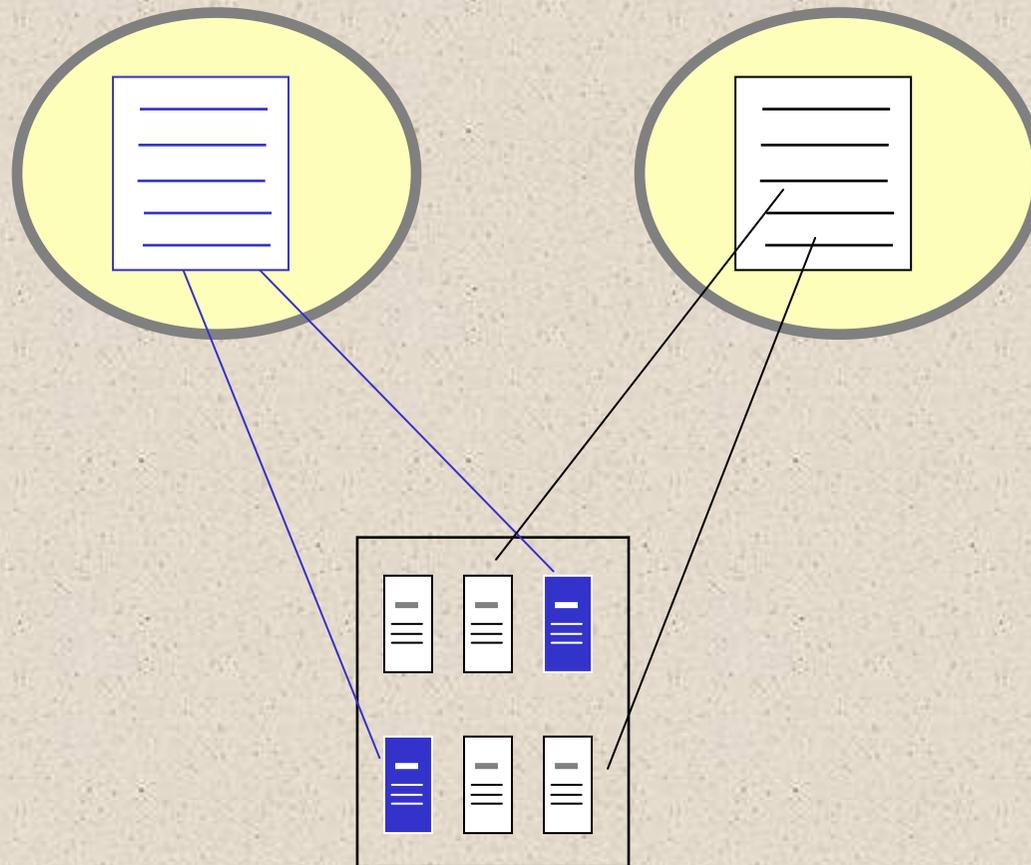
Proposed Quality Strategy 1: Separate Peer Review from Publication

Author publishes article, e.g., on
eprint archive.

Publisher provides reviews,
reputation, indexing, etc.

Overlay Journals

Links show
the articles in
the overlay
journal



Example of an Overlay Journal

A physicist deposits a paper in the Los Alamos arXiv and notifies the XYZ society.

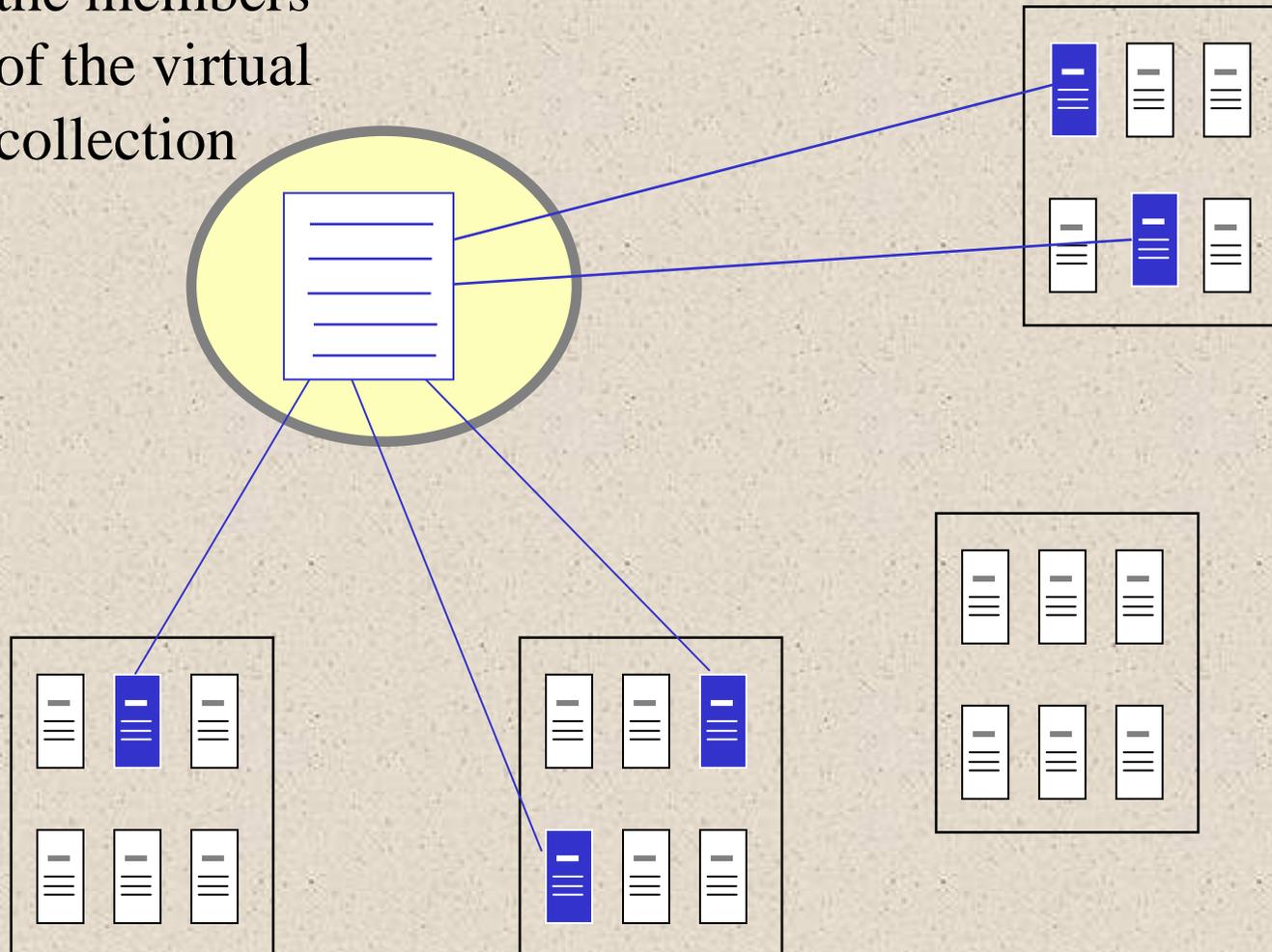
XYZ arranges reviewers who suggest changes.

The physicist revises the paper and deposits the revised version in arXiv, noting that the paper has been reviewed by XYZ.

XYZ links to the paper.

Virtual Collections

Links show
the members
of the virtual
collection



Proposed Quality Strategy 2: Exchange of Quality Metadata

Given a digital object, how can a reader discover if there is a review or other metadata about its quality?

Metadata Example

<oai-quality>

 <category> internal </category>

 <process>

 peer review

 </process>

 <organization>

 CERN

 </organization>

 <policies>

<http://www.cern.ch/policies/review.html>

 </policies>

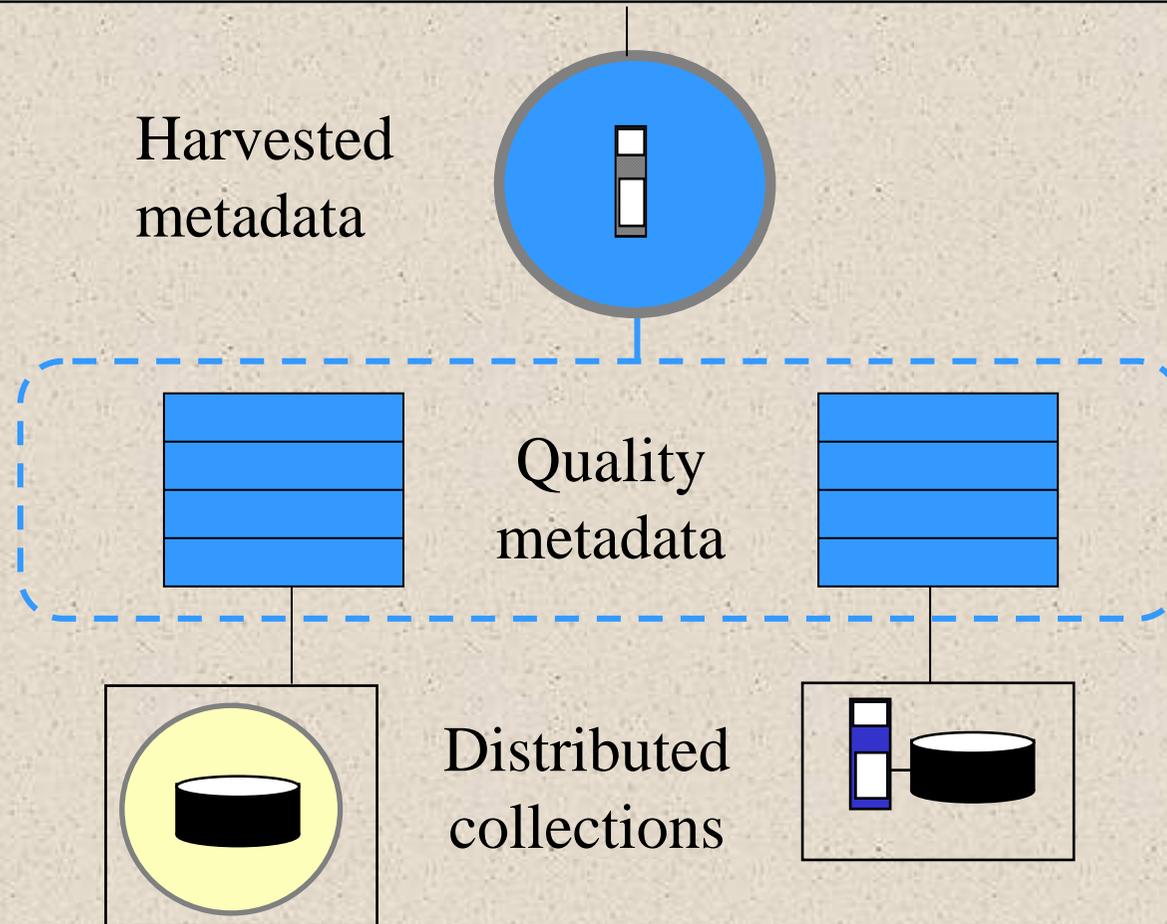
</oai-quality>

Options

- (a) Establish a database of links between digital objects and metadata, e.g., as an extension of CrossRef.
- (b) Make metadata available for harvesting, e.g, as an extension of the Open Archives initiative.

Metadata Harvesting in the NSDL

Central service matches metadata to documents



**Quality Control in
Scholarly Publishing.
What are the Alternatives
to Peer Review?**

William Y. Arms
Cornell University