

PEAK

Pricing Electronic Access to Knowledge

- ◆ Document Delivery
- ◆ Pricing Research

PEAK

Pricing Electronic Access to Knowledge

Economics & Use of Digital Library Collections

March 2000

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Background

- Motivation for PEAK
- Structure of project
- System design & constraints

Origins of PEAK

- TULIP experience: 1991-95
- TULIP outcomes:
 - Distribution
 - System design
 - Critical mass
- Economic models?

Pricing Environment: 1996

- E-journals @ 15-40% incremental cost
- Close coupling of print & electronic
- Subscription-based models

Environment Tensions: Library

- Constrained library budgets
- Incremental costs of new delivery media
- Dual formats
- Managing transitions
- Impact on use?

Environment

Tensions: Publishers

- Capital investments: systems, archives
- Re-engineering production
- System design
- Dual formats & managing transitions
- Impact on use...& revenue?
- Threat of bypass publishing

Question?

Do prevailing models for structuring, delivering, and pricing journals make sense in an electronic environment?

PEAK: Pricing Electronic Access to Knowledge

- Deliver 1200 Elsevier journals
 - Large-scale production
 - Local search engine
 - Electronic commerce
- Pricing & use research
 - Creating new value
 - Bundling and nonlinear pricing

Project Structure

- Marketing/system/service:
Library's Digital Library Initiatives
- 12 institutional participants
- Research team: PRIE & Library

PEAK: The Service

- Full text/Boolean/structured search
- Search selected journal groups or article types
- Browse by topic, journal title, journal groups
- Purchase articles online
- Authenticate from remote sites

PEAK: The Research

- Product bundling & non-linear pricing
- Institutional decision making
- User behavior

PEAK Pricing Models

Institutional



Traditional subscriptions



Generalized subscriptions



Per article

Individual



Bundling: PEAK Models

- Traditional subs
 - Unlimited use
 - lowest per-article cost (\$4/issue)
- Per article
 - Pay once for unlimited use by *individual*
 - Highest per article price (\$7/article)

Bundling: PEAK Models

- Generalized subs
 - Upfront purchase of “n” bundles of articles (120 per bundle)
 - User selects contents
 - Unlimited access for *community*
 - Value > traditional
 - \$548 per subscription of 120 articles

Participants

University of Michigan
University of Minnesota
Indiana University
Texas A&M University
Lehigh University
Michigan Technological
University
Vanderbilt University
Drexel University

Philadelphia College of
Osteopathic Medicine
University of the Sciences
in Philadelphia
Dow Chemical
Parke-Davis

Participants

INSTITUTION

ENROLLMENT

Large Research

4 institutions

35,000 - 42,000

Medium Research

4 institutions

6,500 - 10,000

Small College/Professional

2 institutions

1,000 - 2,000

Corporate

2 institutions

—

Participant Models

INSTITUTION

AVAILABLE OPTIONS

Large Research

Institution A

X

X

X

Institution B

X

X

X

Institution C

X

X

Institution D

X

X

Medium Research

Institution A

X

X

X

Institution B

X

X

Institution C

X

X

Institution D

X

X

Participant Models

INSTITUTION

AVAILABLE OPTIONS

Small College/Professional

Institution A

Institution B

Corporate

Institution A

Institution B

Traditional

Generalized

Per Article

X

X

X

X

X

X

X

X

Implementation Constraints

Technical feasibility

Billing

Authentication

Metering

Network

Type of use

Display capability

Experimental feasibility

Enough users?

Enough variation?

Customer acceptance

Institutional approval

Research vs. Service

- Defining the product
- Accommodating authentication
- Tracking individual article use
- Transitions in production/formats

Scope of PEAK

- 7 million pages
- 1,298 journal titles
- 3,519,996,538 words
- 300 Gb of images (compressed)
- Nearly 1 million unique article citations



Location: <https://www.umdl.umich.edu/peak/index.html>

PEAK

Pricing Electronic Access to Knowledge

- ◆ Document Delivery
- ◆ Pricing Research

Welcome to PEAK, a one year experimental service for electronic journal delivery and [pricing research](#), sponsored by the University of Michigan.

The PEAK Information Service provides access to the 1100+ journals published by Elsevier Science. These journals include much of the leading research in the physical, life and social sciences. The project provides an opportunity for universities and other research institutions to have electronic access to a large number of journals, access that allows for fast sophisticated searching, nearly instantaneous document delivery, and new possibilities for subscriptions.

Please enter your user id and vPIN:

User ID

i.e. john@college.edu

vPIN

Use your vpin NOT your institutional password

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PEAK Search

Simple Full Text Search. Enter a word or phrase

digital Library

OR

Simple Journal Title Search. Enter a journal title or keywords from

Other ways of exploring the collection:

- **Advanced search of the entire collection** : use Boolean search terms and/or search fields.
- **Search a subset of the collection** : select subject areas of search.
- **Browse the titles** : look through journal issues organized by journal title

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Results 21 through 30:

21. **Peak: pricing electronic access to knowledge**
 Machie-Mason, J.K., Jakobovich, A.L.L.
Library acquisition: practice and theory, Vol. 21, No. 3 (1997), pp. 281-295.
[Citation / Article](#)
22. **Computer User Groups: The Advantage of Successful Partnership**
 Buckner, K.
Information journal of information management, Vol. 16, No. 3 (Jun. 1996), pp. 195-204.
[Citation / Abstract / Article](#)
23. **Aspects of multimedia retrieval**
 Abdel-Mottaleb, M., Hsiang-Lung, W., Dimitrova, N.
Pattern journal of research, Vol. 50, No. 1-2 (1996), pp. 227-251.
[Citation / Abstract / Article](#)
24. **The library of the future: an informatics institution**
 Bell, M.J.
Information journal of business/academic computing, Vol. 40, No. 2, Special Issue: Asia Pacific Association of Medical Informatics (APAMI) (Oct. 1995), pp. 85-88.
[Citation / Abstract / Article](#)
25. **Emerging patterns of collection development in an expanding resource sharing, electronic information, and network environment: report of a conference**
 Miller, R.
Library acquisition: practice and theory, Vol. 21, No. 2 (Summer 1997), pp. 211-219.
[Citation / Article](#)
26. **An Expert System to Aid Cataloging and Searching Electronic Documents on Digital Libraries**
 Chandler, P.G., Shinghal, R., Desai, B.C., Radhakrishnan, T.
Expert systems with applications, Vol. 12, No. 4 (May. 1997), pp. 405-416.
[Citation / Abstract / Article](#)
27. **Automatic video indexing via object motion analysis**
 Courtney, J.D.
Pattern recognition, Vol. 30, No. 4 (Apr. 1997), pp. 607-625.
[Citation / Abstract / Article](#)
28. **Face recognition using hybrid classifiers**
 Gupta, S. *Washburn, IL*



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PEAK search

Searching:
ALL JOURNALS

Search for:

in full-text

AND in author

AND in title

AND in abstract

Published between: and: (specify dates as yyyy, yyyy-yyyy)

Search tips

Author search: Enter last name first. Use commas to separate the last name initials. I. E. Curie, M.

Title and Abstract Search : A Title search looks for the desired word any titles or abstracts. If a phrase is entered, the search looks for titles where the word appear within three words of each other.

Full-text Search : A Full-text search looks for the entered words anywhere of the articles. If a phrase is entered, the search looks for titles where the word within three words of each other. **Please note:** The full-text of articles (unlike bibliographic information) is generated from automatic OCR processes and may



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PEAK: PRICING ELECTRONIC ACCESS TO KNOWLEDGE

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INTRODUCTION

Dramatic increases in the capabilities of computers and communication revolutionary thoughts (if not the revolution itself) in the scholarly publishing attention is focused on upstart electronic-only journals, and whether they will competitively discipline the journals managed by traditional professional traditional publishers are developing and testing schemes for electronic access to This paper concerns a controlled field experiment to investigate the effects of pricing structures for electronic access to scholarly literature. Mackie-Mason and his colleagues at the University of Michigan are implementing the field experiment at the time of this writing. The host service team is receiving and preparing digital content. The marketing team is recruiting trial participants. The PEAK team is finalizing the details of the bundling and pricing schemes, and the technical structures necessary to provide authorization and authentication, accounting, and other services are being developed. However, the experimental treatment and data collection have not yet begun. The primary research objective is to generate rich empirical evidence on user behavior and provider results with various bundling schemes and price levels. In this our work will complement

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PRINT:

Peak: pricing electronic access to knowledge

Jeffrey K. Mackie-Mason, Alexandra L. L. Jankovich

Library acquisition: practice and theory, Vol. 21, No. 3 (1997), pp. 281-295.

Option 1: Get Adobe PDF File:

Portable Document Format (PDF) is the device independent document format used by Adobe Acrobat(tm). To read or print these files you need a PDF reader such as [Adobe Acrobat Reader](#).

Option 2: PEAK Printing:

First time users: [Download](#) the print helper application

Option 3: Get PostScript Files:

Designed for Unix workstations, may be used by any user who prefers postscript.

Document: Done

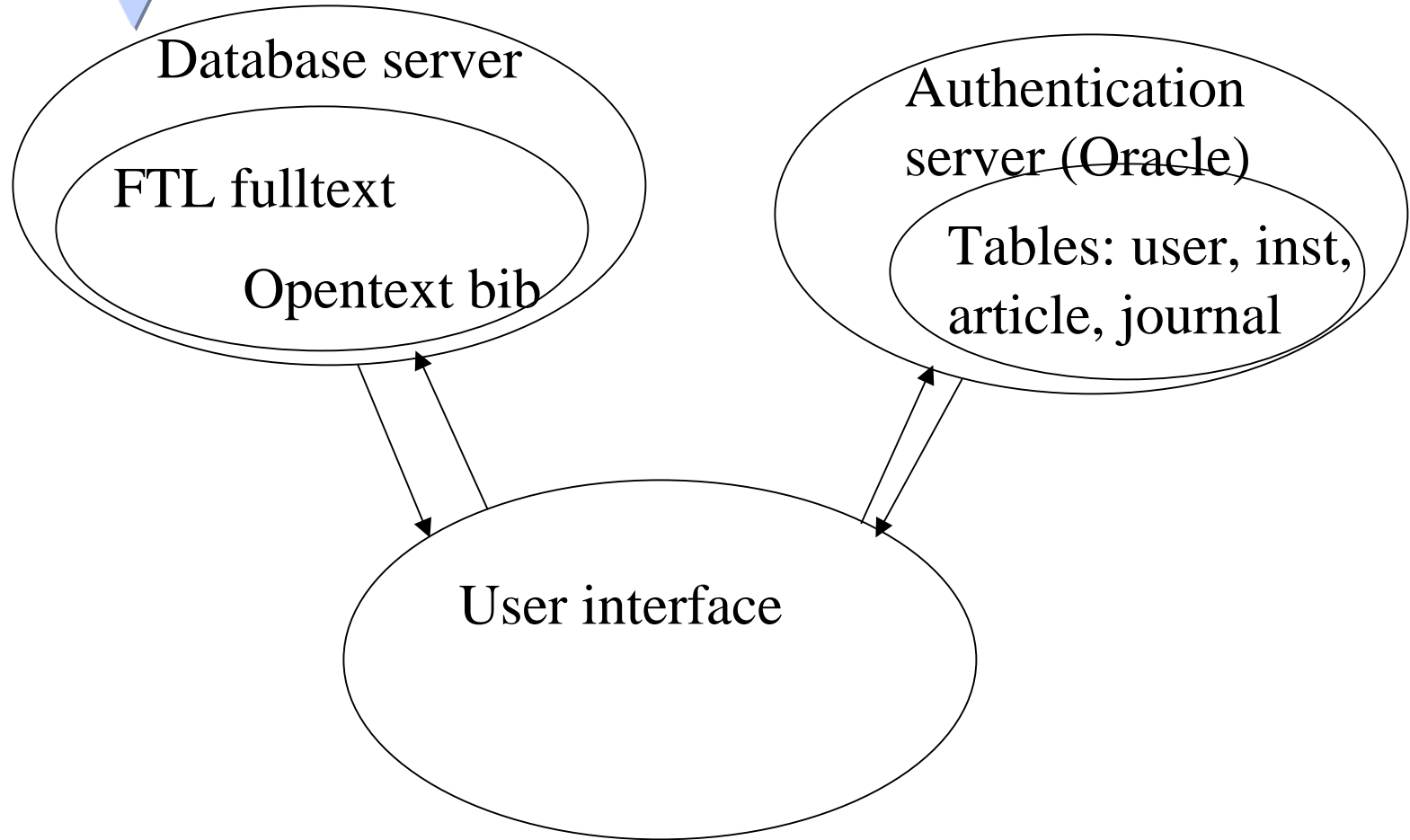


Table person Represents an individual user

userid Internal user number.
Name In "user@institution" form;
dept Department, as entered by the user on the password application.
status Status, as entered by the user on the password application.
div Division, as entered by the user on the password application.
Institutionid Foreign key to the INSTITUTION table.
Pay_per_View number(1),
fullname User's full name, as provided by the institution.
PIN User's password, called a pin for historical reasons.
lastchange Last time password was changed.
survey_level To prevent showing the user survey multiple times.
ADDRESS From password application or credit card use.
PHONE From credit card use.
CARD_TYPE MC, VISA or AMEX. See auth-common for coding.
CARD_NUM Credit card number.
CARD_EXP Card expiration date.
CARD_NAME Name of card holder (may be different from user).

Table institution Represents a customer institution

name Must be as it appears on the password application form.
institutionid Internal identifier.
grouppurchase Non zero if subsidized purchases are done.

Table articleaccess Records every article access except current purchase.

userid Name from person.
articleid As "issn-issueid-articleid".
accessdate Date and time of access.
ipaddr IP address of browser or proxy.
code Form of access, as:
-3, 1997 article in 1999
-2, not a full length article
-1, pre 1997 article
0, no current access
1, already has access
2, subscribed
3, if has a general subscription token available
4, if has a personal general subscription token available
5, if institution subsidizes pay per view

Table purchase Record article purchases

Columns:

userid From PERSON table.
instid From INSTITUTION table.
articleid As "issn/issueid/articleid".
transactiondate Date of purchase.
charge Dollars.
ipaddr IP address of browser or proxy.
transactionid Unique identifier.
ADDRESS Credit card data.
PHONE Credit card data.
CARD_TYPE Credit card data.
CARD_NUM Credit card data.
CARD_EXP Credit card data.
CARD_NAME Credit card data.

Table subscription Describes a traditional subscription

Columns:

subsid Userid or Institutionid of owner.
type 0 = person, 1 = group, 2 = Institution.
subdate Not used, could be if we did time limited subscriptions.
JournalIssn ISSN of title in subscription.

Table gensub Describes a generalized subscription

Columns:

gensubid Userid or Institutionid of owner.
type 0 = person, 1 = group, 2 = Institution.
articlemax Number of tokens in generalized subscription.
articlecount Number of tokens used.

Table gensubitem Describes how an individual token was spent

Columns:

instiid Institutionid from institution.
personid Userid from person.
actiondate Date token was spent.
articleid As "issn/issueid/articleid".
ipaddr IP address of browser or proxy.
gensubid From gensub.

Costs of PEAK

- Expenditures reached ~\$400,000
- 40 % on technical infrastructure
- 60 % on staff support

Costs of PEAK

- Staff support
 - system development and maintenance (.5FTE programmer and fraction of Interface Specialist)
 - data loading (~ .25FTE)
 - user support (~ .5FTE)
 - authentication/authorization/security (1 FTE)
 - project management (~.1FTE)

Michigan's experience

- Library host as mediator
 - Currency, quality, coverage
- Immaturity of authentication environment
- Generalized models for products
- Immaturity of pricing models
- Unknowns re: user behavior



PEAK

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◆ Document Delivery

◆ Pricing Research

For more information...

PEAK Project Site

<http://www.lib.umich.edu/libhome/peak/>

D-Lib June and July 1999

<http://www.dlib.org>