How can library materials be ranked in the OPAC?

Prof. Dr. Dirk Lewandowski
University of Applied Sciences Hamburg
dirk.lewandowski@haw-hamburg.de

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The state of the OPAC and the importance of relevance ranking

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What’s wrong with library catalogueues?

- **catalogueues are incomplete**
  - Items from journal article collections, abstracting and indexing databases

- **“Electronic card catalogueue”?**

- **User behaviour changed**
  - Short queries, fast results, one set of results
  - Search engines strongly influence users’ demands

- **Known item vs. topic-based search**
  - OPACs should accomodate both.

Some ideas to improve the OPAC (“catalogue 2.0”)

- **Let users participate**
  - Write reviews
  - Rate titles
- **Enrich bibliographic data**
  - Add reviews
  - Add TOC
- **Improve navigation**
  - Drill-down menus on results pages to combine searching and browsing
- **Extend the database**
  - Federated search

Core of all search appliances: Relevance ranking

- **While Web 2.0 features add value to the catalogue, search is still the core.**
- **“Search must work”**
- **Users’ needs**
  - Users want results quickly.
  - Users are not willing to think too much about formulating their queries.
  - Users are not willing to search for the right database before conducting their search.
  - Users are only willing to view a few results on the first results page before deciding to continue.

Misconceptions about relevance ranking

- **A clear sorting criterion is better than relevance ranking.**
  - Ranking does not reduce the number of results, but puts them in a certain order.
  - Other ordering options can be given.
- **Library catalogues do not apply any form of ranking.**
  - Even conventional OPACs rank the results (according to publication date).
- **Relevance ranking is useless because it simply doesn't work.**
  - "Relevance" is hard to determine and depends on the context and on the individual user. However, a good relevance ranking can at least produce sufficient results lists.
- **Ranking is not that complicated. One must only apply standard measures such as TF/IDF.**
  - For a good ranking, text matching alone is insufficient.

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Ranking factors in web search engines

- **Text matching**
  - Measures matching between query and document.
  - Term frequency, position of search terms within the documents, etc.
  - Text from document fulltexts, anchor texts.
- **Popularity**
  - Measures popularity of the document (overall popularity or topic-based)
  - Link popularity (PageRank etc.), click popularity.
- **Freshness**
  - Fresh documents can sometimes be very useful.
  - Derived from documents or from structural data (e.g., linkage)
- **Locality**
  - Mainly expressed in differing rankings for country-specific search interfaces.

Text matching

- **Factors**
  - Term frequency, inverted document frequency
  - Fields: Title, subject headings, author, etc.

- **Availability of text elements as a ranking factor**
  - Fulltext, TOC, reviews, user comments

- **Problems with text matching**
  - Not enough text in metadata.
  - Amount of text varies considerably (from mere bibliographic data to hundreds of pages of fulltext).

Popularity

- **Popularity of**
  - Item
  - Author/editor
  - Publisher
  - Book series
- **Measures**
  - Number of items (by author, publisher, etc.)
  - Usage (circulation rate, download requests)
  - Average user rating
  - Citations

Freshness

- **Freshness is the most-used ranking criterion in catalogues today.**

- **It is often difficult to determine whether fresh items will be relevant to a certain query.**

- **Need for fresh items can be derived from**
  - Circulation rate for the individual item
  - Circulation rates for items from a certain group (from broad disciplines to specific subject headings)

Locality

- **Availability of item**
  - from the local library; within a certain distance.
  - Item currently available.

- **Physical location of the user**
  - At home (electronic items strongly preferred)
  - At the library

Other ranking factors

- **Size of item (no. of pages)**
- **Document types**
  - – Monograph, edited book, proceedings, etc.
  - – Article vs. Book
  - – Physical vs. online materials
- **User group**
  - – Professor, undergraduate student, graduate student, etc.
- **Personalization**
  - – Individual usage data
  - – Click-stream data from navigation

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Data needed

- **Data from the catalogue**
- **Circulation data**
  - Anonymous
- **Location data**
  - From IP ranges
- **User data**
- **Data from remote resources**
  - Abstracts (and fulltexts) from publishers.

Collections and databases

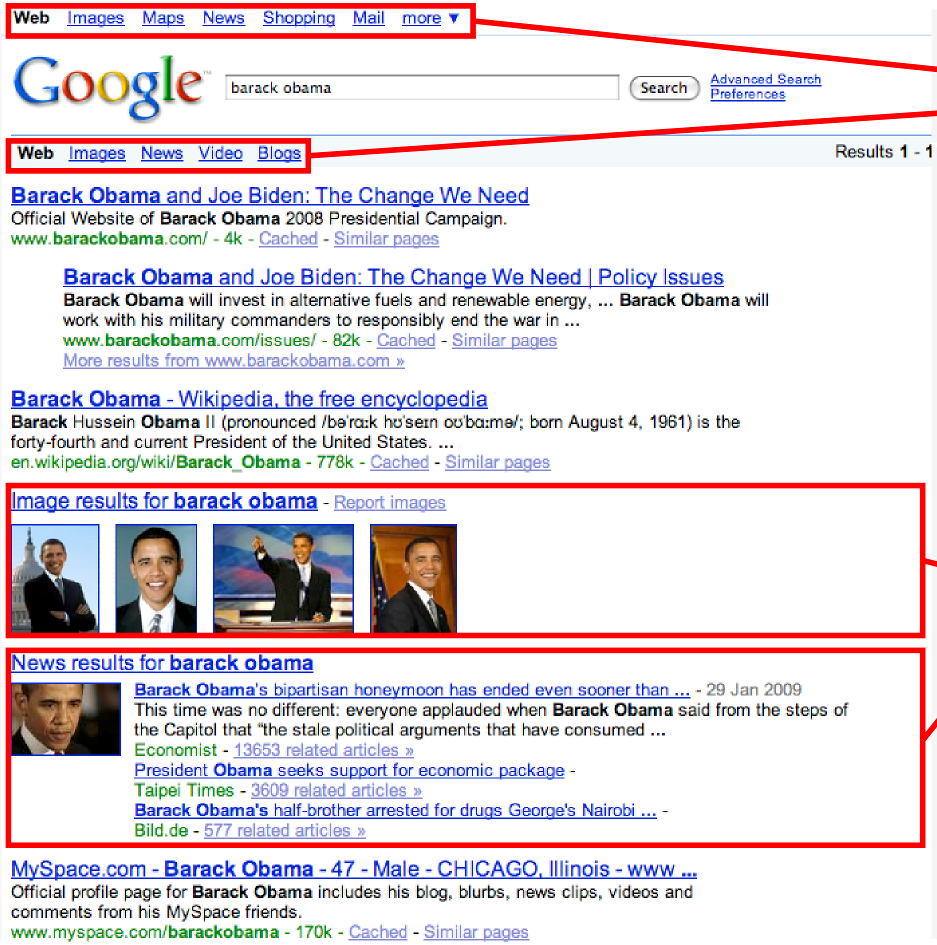
- **Library controlled**
  - catalogue
  - Local digital repositories
  - Course management systems
  - Institutional web sites

- **External collections**
  - A&I databases
  - E-journal collections

Mixed results lists

- **Ranking algorithms prefer "more of the same". This does not satisfy users' needs for a variety of results.**
- **Example for a broad query**
  - Reference works (from subject headings + items from reference collection)
  - Text books
  - Relevant databases
  - Some current items
  - Relevant journals

“Universal Search”



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Official Website of **Barack Obama** 2008 Presidential Campaign.
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Barack Obama will invest in alternative fuels and renewable energy, ... **Barack Obama** will work with his military commanders to responsibly end the war in ...
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Barack Hussein **Obama** II (pronounced /bəˈrɑːk hʊˈseɪn oʊˈbɑːmə/; born August 4, 1961) is the forty-fourth and current President of the United States. ...
en.wikipedia.org/wiki/**Barack_Obama** - 778k - Cached - Similar pages

Image results for **barack obama** - Report images

News results for **barack obama**
Barack Obama's bipartisan honeymoon has ended even sooner than ... - 29 Jan 2009
This time was no different: everyone applauded when **Barack Obama** said from the steps of the Capitol that "the stale political arguments that have consumed ...
Economist - 13653 related articles »
President **Obama** seeks support for economic package -
Taipei Times - 3609 related articles »
Barack Obama's half-brother arrested for drugs George's Nairobi ... -
Bild.de - 577 related articles »

MySpace.com - **Barack Obama** - 47 - Male - CHICAGO, Illinois - www ...
Official profile page for **Barack Obama** includes his blog, blurbs, news clips, videos and comments from his MySpace friends.
www.myspace.com/**barackobama** - 170k - Cached - Similar pages

Additional databases

One box results (e.g., news or images)

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- **Search is the core of the library catalogue.**
  - However, other elements must be considered, too:
    - Usability
    - User guidance
    - Spelling corrections
    - etc.
- **A good ranking is always a mixture of ranking factors**
- **In addition, results lists should be mixed.**
  - Items from different collections.
  - Mixture of direct results and pointers to other collections.
- **Future: catalogue will become more like a search engines.**

Thank you for your attention.

Prof. Dr.
Dirk Lewandowski

Hamburg University of Applied Sciences
Department Information
Berliner Tor 5
D - 20099 Hamburg
Germany

www.bui.haw-hamburg.de/lewandowski.html
E-Mail: dirk.lewandowski@haw-hamburg.de