Observations on Advances in Discovery Systems: A Comparison of Platforms for Meteorology Search

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Recently developed discovery systems offer promise for one-stop search and retrieval. In a typical system, the strategy begins by harvesting massive amounts of metadata and by creating a common index. With the presence of faceted elements, users get a convenient way to evaluate and refine searches. Integration, by combining local and licensed resources, builds value and further improves a user's experience. Overall, these discovery systems are efficient, and data visualization exposes highly useful information. Benefits from modern discovery systems are significant, but pools of data and information are often unexploited due to myriad reasons. Native databases and platforms developed by publishers remain a viable and valuable asset. Native database systems and publisher platforms offer different approaches to indexing, depth of coverage, novel presentation of information, and ways to handle special data. Due to complexities of science, some information may not be particularly amenable to a common solution. Quality of innovation and the pace of development are a couple of factors which determine success and competitiveness of contemporary information systems in science libraries.
Observations on Advances in Discovery Systems:

A comparison of Platforms for Meteorology Search

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16 Annual Conference of Atmospheric Science Librarians International (ASLI), Austin, Texas, January 9, 2013
Timeline of Discovery

- Traditional online catalogs - 1970s
- Remote databases & OneSearch - 1970s
- Databases on CD-ROMs - 1990s
- Federated search systems - from about 2003
- Modern discovery tools - from about 2007
## Elements of Modern Discovery Systems

Illustration of Summon™ Service. Source: SerialsSolutions®

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>INDEX</th>
<th>RIGHTS</th>
<th>RESULTS</th>
<th>API</th>
<th>INTERFACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>map and normalize metadata</td>
<td>single unified search index including full text</td>
<td>search appropriate resources</td>
<td>relevance ranked quick reliable</td>
<td>integrate with other systems</td>
<td>clean simple easy to use</td>
</tr>
</tbody>
</table>
EDS Solution (EBSCO)

Local, licensed, and open access
One unified index
Simple interface
Multiple formats
Shallow & deep indexing
Robust faceted navigation
Relevancy ranking

EDS is a discovery software layer.
EDS Added Value (EBSCO)
All-inclusive search. Numerous meteorology sources.

- Lightning response
- Keywords display in context
- Search by field
- Citation management
- Current awareness
- Use of social media
- Ask-a-librarian and library guides

EDS is a discovery software layer.
Issues with EDS (EBSCO)
All-inclusive search. Numerous meteorology sources.

- Vendor control of search algorithms
- Incomplete coverage
- Partial full-text indexing
- Lack some functionality found in native databases

EDS is a discovery software layer.
Targeted scholarly publications
Robust faceted navigation
Search within
Suggested topics sidebar
Advanced search with limit options
Command line search with thesaurus
Look up citation screen
M&GA Added Value (ProQuest)
Meteorological and Geoastrophysical Abstracts - world's literature.

- Multiple formats
- Refine by UDC classification
- Robust metadata
- Citation management
- Indexing for figures and tables
- Cited by
  - keywords from abstract displayed in context
- use of social media

M&GA publisher: American Meteorology Society
Issues with M&GA (ProQuest)
Meteorological and Geoastrophysical Abstracts - world's literature,

- Local catalog and other data not included
- Only content selected by publisher
- Lack of full-text indexing
Query: Variations in Jet Stream and Drought

<table>
<thead>
<tr>
<th>Metadata</th>
<th>Top ranked citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>All keywords present</td>
<td>(EDS)*</td>
</tr>
<tr>
<td></td>
<td>(M&amp;GA)</td>
</tr>
<tr>
<td>Average Number of subject terms</td>
<td>2 out of 5</td>
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<tr>
<td></td>
<td>5 out of 5</td>
</tr>
<tr>
<td></td>
<td>6.0</td>
</tr>
<tr>
<td></td>
<td>23.0</td>
</tr>
</tbody>
</table>

*EDS covers Core titles, Science Citation Index, Academic Search Premier, arXiv, ScienceDirect and more
1) Variations of Indian summer monsoon rainfall induce the weakening of easterly jet stream in the warming environment?

2) Intensification of Summer Rainfall Variability in the Southeastern United States during Recent Decades

3) Dendrochronology and links to streamflow

4) Relationship between NAO and drought disasters in northwestern China in the last millennium

5) Warm Season Variations in the Low-Level Circulation and Precipitation over the Central United States in Observations, AMIP Simulations, and Idealized SST Experiments.
Top 5 Citations from M&GA (ProQuest)

1. Hydrodynamics of the Caribbean Low-Level Jet and Its Relationship to Precipitation

2. Interannual Variation of Summer Precipitation in Xinjiang and Asian Subtropical Westerly Jet Stream

3. Jet streams at 150 mb during a large-scale drought in Indian summer monsoon

4. Recurrent Supersynoptic Evolution of the Great Plains Low-Level Jet

5. Variability of the Caribbean Low-Level Jet and its relations to climate
SpringerLink Solution (Springer)

Springer: a publisher of science content including meteorology.

- Combination of journals and books
- Deep indexing
- Relevancy ranking
- Some faceting navigation
- Automatic wildcard
SpringerLink Added value (Springer)

Springer: a publisher of science content including meteorology.

- Timeliness - ready on publication
- Chapter by chapter presentation
- Buy a print copy
- Search for protocols
- My SpringerLink
Issues with SpringerLink (Springer)
Springer: a publisher of science content including meteorology.

- Coverage of single publisher
- Less faceting searching
- Absence of local resources
Golden age of discovery
Content from a full range of sources
Metadata uncovered and ready to use
Dramatic growth of full text indexing
Value added features well established
Innovation coming from large vendors and publishers
Society publishers strive for competitive advantage
Discovery remains a diverse marketplace