Challenges and opportunities for research data management in Chinese library community

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Challenges and Opportunities for Research Data Management in China Library Community

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IFLA ILDS 2019
Beyond the paywall: Resource sharing in a disruptive ecosystem
Chinese Academy of Sciences

- More than 100 Research Institutes
- 3 Universities
- Over 130 National laboratories
- Over 210 field observation stations.
- More Than 68,000 Formal Employees
- Over 52,000 Graduate Students.

National Science Library, CAS

System of National Science Library

National Science Library,
Chinese Academy of Sciences

Over 100 research institution’s libraries
Focus in this presentation

1. The gap between research data management and new research paradigm demand
2. China’s research data management policies and features
3. National research data management and sharing platforms
4. Universities’ data repositories
5. Journal data publishing
6. Libraries’ RDM patterns and SWOT analysis
7. Suggestions
growth spurt of the amount of research data, total amount of research data effectively managed and preserved in China is approximately 80PB

New research paradigm, more depend on big data and data mining

First National level “research data management” was issued very recently at 2018

Library’s role, strategy, deployment for data management and service remains vague

8 national research data management and sharing platforms, several university data repositories and 3 specific data publishing journals, China have 2879 universities and colleagues.
The State Council

Research data management measures 2018.3 milestone
Interim sharing and management measures for government information resources 2016.9
Action plan for promoting big data development 2015.9
Outline of the national program for medium and long-term scientific and technological developments (2006-2020) 2006.2

State Oceanic Administration, Ministry of Transport, Ministry of Land and Resources, The Ministry of Agriculture, National Marine Information Center, China Meteorological Administration, China Earthquake Administration

Chinese Academy of Sciences

Research data management and open sharing measures for the Chinese Academy of Sciences 2019.2
Most of the policies are issued by the state council and ministries.

It is predictable that there will be more policies will be released by funding institutions and research institutions to make supplementary to those polices issued.

The complementary policies should ensure DMP be carried out with projects, make more clear on assignment of responsibilities, operational process, share and access.
National research data management and sharing platforms

- agriculture
- forestry
- meteorology
- oceanography
- earth science
- seismology
- population and health
- optimization
- adjustment

20 national science data center
National research data management and sharing platforms

1. http://www.ncmi.cn
2. http://www.geodata.cn
# National research data management and sharing platforms

<table>
<thead>
<tr>
<th>GOOD</th>
<th>NOT GOOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ One stop discovery</td>
<td>• Not true data fusion</td>
</tr>
<tr>
<td>✓ Data resources link</td>
<td>• Without name data entities with URI</td>
</tr>
<tr>
<td>✓ Discipline-specific metadata standards</td>
<td>• Not adopted common standards like Dublin or Datacite Schema</td>
</tr>
<tr>
<td>✓ Keywords are searchable</td>
<td>• Free word indexing</td>
</tr>
<tr>
<td>✓ Support life cycle data management</td>
<td>• Lack DMP functions</td>
</tr>
<tr>
<td>✓ Support discovery and access</td>
<td>• Limited services with non-registered users, especially for download and API</td>
</tr>
<tr>
<td>✓ Data volume is TB level</td>
<td>• Data service volume is GB level</td>
</tr>
</tbody>
</table>

## Three types of Standards and Regulations:
- Regulations related to the operation of platform
- Regulations set of data management standards
- Regulations involve platform development and user services
- Formed 18 national research data standards (Like Soil Science Data Metadata)
Libraries’ data Service patterns

- Data management platform
- Data resource discovery system
- Consulting and training
- Data analysis and visualization
- Open access data integration and navigation

Data Conservancy of John Hopkins University Library
Pre middle post research stage data management services in York University
DOI registration service of German National S&T Library
Dryad data knowledge base of German National Library of Medicine
Innovation demand

- Data growth spurt

- Underdeveloped Data publishing

- Attach importance

SWOT-External opportunities
SWOT-External Challenges

- Not well prepared to transform for new research paradigm
- Library’s role is not reach an agreement in all levels
SWOT-Internal advantage and disadvantage

**Advantage**

- Realize and act
- Rich experience on Inf infrastructure
- Rich experience on Inf organization
- Existed commercial platforms

**Disadvantage**

- Lack of talent
- No precise role awareness
- No corresponding strategy and deployment
Recommendations and Suggestions

- Subject DS platform
- Research service priorities
- Strengthen dialogue
- Data repository
- Data localization
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