

Research Data Management

Institutional Perspective



Introduction

Research Changes...

- Radical Method Change in Research
 - From „real“ experimental lab and printed material to a variety of digital artifacts & tools
- New Infrastructures & Services Required
 - Subject-specific data models and virtual tools, storage, computing, funding consultancy
 - > „Knowledge Infrastructures“

Situation: International

- Research Data is a „hot topic“
 - EU: e-Infrastructures
 - Australian National Data Service (>100M\$\$)
 - US: Data Management Plan of NSF
- Infrastructure partly existing
 - WDC-System, CERN, EBI, UKDA/GESIS...
- Institutional strategies just starting...
 - Cornell: CISER / Data Staging Repository (Collab.)
 - ETH Zürich (Request for Collaboration)

Situation: National

- *Primärdaten als Grundlagen für Veröffentlichungen sollen auf haltbaren und gesicherten Trägern in der Institution, wo sie entstanden sind, für zehn Jahre aufbewahrt werden.*

DFG -Richtlinien „Guter Wissenschaftlicher Praxis“ 17. Juni 1998

- *Wenn aus Projektmitteln systematisch (Mess-)Daten erhoben werden, die für die Nachnutzung geeignet sind, legen Sie bitte dar, welche Maßnahmen ergriffen wurden bzw. während der Laufzeit des Projektes getroffen werden, um die Daten nachhaltig zu sichern und ggf. für eine erneute Nutzung bereit zu stellen. Bitte berücksichtigen Sie dabei auch – sofern vorhanden – die in Ihrer Fachdisziplin existierenden Standards und die Angebote bestehender Datenrepositorien.*

DFG –Leitfaden für Antragsteller August 2010

Situation: Local Strategy

- Rectorate supports and encourages research data management plans
 - Part of the future concept
 - German Excellence Initiative
 - In house-funding for pilots
 - Many infrastructure projects in the library
 - also focused studies on subject-specific req.s
 - Colloquium „Knowledge Infrastructure“

Research Data Challenges

Needs

Questions Researchers Ask About Research Data Management

- How do I prepare a “data management plan” for a grant proposal?
- Who is paying the extra work for data curation and who can actually do it?
- Who can tell me, if any other research group has solved my data problem?
- Are there institutional products and prices for resources (e.g. servers, cloud computing)?
- How do I store and archive my data now and differentially for 1, 2, 5 or 10 years?
- Is there an institutional data policy, I can refer to in my proposal?
- Who is the person or institution to answer my questions for data management?
- Are there legal implications with share and re-use or with respect to patents and industry?
- Are there ethical implications of my way to handle data?
- Who do I approach, if I need subject specific data modeling or technical development?
- ...

A new quality of research services

- *Transcending boundaries between research disciplines and methodologies by data/tool re-use and sharing through flexible access policies*
- “Bielefeld Data Informium”
 - Distributed service-concept for research and education jointly developed by researchers, library, computing centre, mgmt. ...

Objectives

- Build a role model for institutional services supporting research data management
 - A matrix, connecting disciplinary and internationally
 - Bottom-up approach with departmental control
 - Central support and services without intervening, conflicting and contradicting existing subject specific practices

The Bielefeld Situation

Situation: Local Research

- Strong data-driven research all over Bielefeld University – a few examples:
 - Biotechnology: CeBiTec (BRF) > next week here
 - Cognitive Interaction: CITEC
 - Data-Service-Center for Microdata
 - ... (many, many others)
 - Plus IWT etc.
 - Reflexive treatment of research practices

e.g. CITEC

- Massively interdisciplinary
 - Technology, Biology, Psychology, Sports, Linguistics, Sociology ...
- Virtual Faculty, intl. connections
- Central Lab with mgmt. and social tools for sharing of knowledge, data and tools
- Awareness for data management
- Collab. with Library in EU-project OpenAIRE

e.g. DSZ-BO

- Data Center for company & organisation data
 - Profs. Diewald & Liebig as drivers
 - Sharing of study results among research community for re-use and archiving
 - First among research-centric service centers in Germany
- BMBF-Funding for 4FTEs over 3 years
- Close cooperation with central services
 - Library builds DDI-Environment

e.g. SFB882

- **INF-Project: dedicated SFB-infrastructure**
 - Virtual Research Environments for the SFB
 - From calendar to instrument sharing
 - Combination of qualitative & quantitative methods
 - Contribution to methodological development
- **Beyond SFB882: eSociology-Infrastructure?**
 - E.g. Atlas-Ti, MaxQDA etc. for CITEC and Arts
 - Library involved in concept and realization

e.g. The Future Library

- Library as participant in ambitious knowledge infrastructure projects
 - BASE, DRIVER, OpenAIRE, PEER, Text-Mining, Data, PubLister, ...
 - Colloquium „Knowledge Infrastructure“
- Library as partner in knowledge computing rather than book administrator
 - Make promises of 1989 come true ;)

Future Plans

Developing a Vision

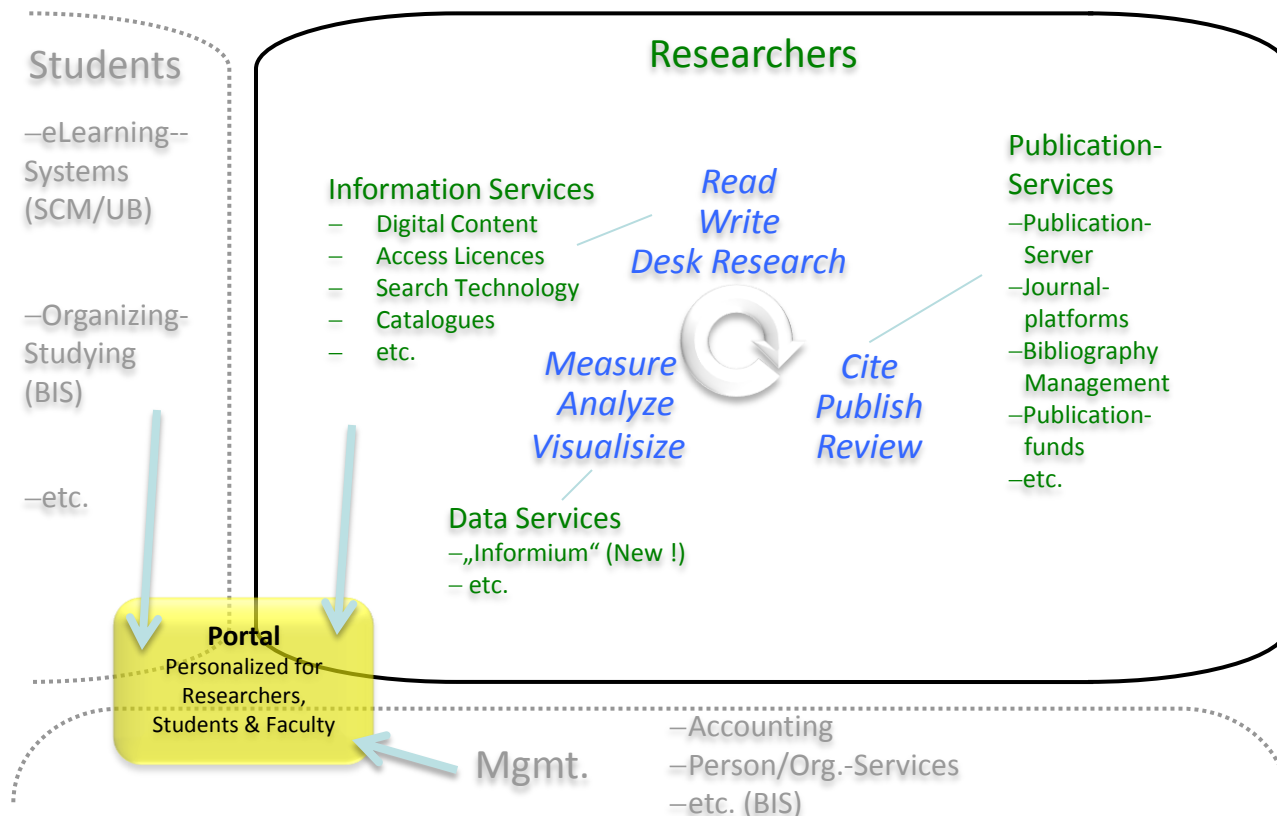
- Focused discussions in summer 2010
 - CITEC, Methods in Sociology, Statistics, IWT...
 - DFG-Projects underway
- Plans for service centers on the table
 - Center for Statistics, Center for qual. Social Science
 - Maybe too many, but blueprint for generic approach
- Practical Pilot „Research Data Management“ with in-house funding of the rectorate
 - Start with DSZ-BO; SFB822 preps., others to come

Developing a Model

- Networked service units of excellent units
 - CITEC, Graduate Sch., SFBs, Clusters, Faculties, Groups...
- Interdisciplinary „School“ for Data and Methods
 - Quantitative & qualitative Paradigms, Modeling, Technology, Data Science, Scientific Computing, ‚Curation‘
- Reflexive scientific discourse
 - Data ethics, legal aspects, Sociology of science
- Institutionalized data task-force (IRIS)
 - Templates for virtual environments, products for storage/computing
 - From proposal to project to operations: specification, customizing, modeling, software, legal issues

Gradual Upgrade of Central Services

Research Life Cycle Support in the Institutional Infrastructure



Conclusion

Expected Results

- Research Data Management requires a novel quality of services that facilitates local and international research across disciplines
 - Close gearing of research and service units
 - Efficient process of consultancy and customization
 - Mixture of permanent and dynamic staff
 - More security, archiving and scalability
 - Training and education for data and methods
 - Coupling with scientific methodology research, computer science and theory of science
- Optimally a big shot ... but ... “little sheep give wool, too”