OPEN SCIENCE ACTIVITIES AT THE ZBW

LEIBNIZ INFORMATION CENTRE FOR ECONOMICS

ZBW
Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

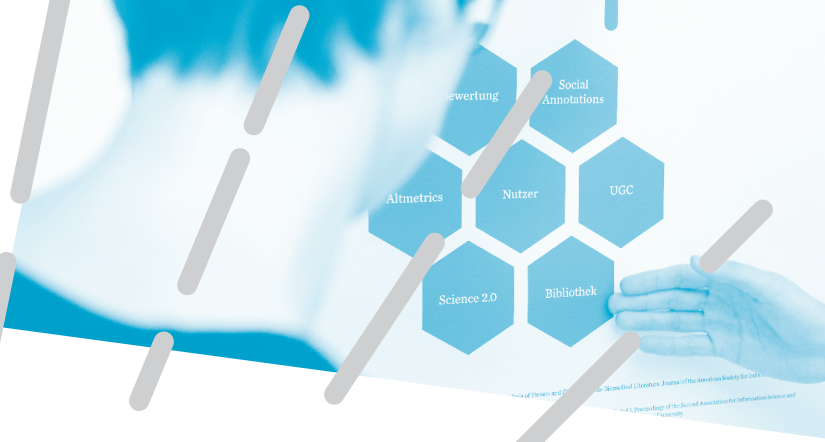
WHAT IS OPEN SCIENCE ABOUT?

The term Open Science bundles strategies and procedures which aim to systematically exploit the opportunities offered by digitisation. The aim is to make all components of the scientific process accessible and reusable via the internet.
On the one hand, this includes making research results accessible through Open Access, Open Data, Open Source. On the other hand, it is about creating transparency in research processes (Open Peer Review, Open Methodology, ...). This should open up new opportunities for science and society to deal with scientific findings.

Download: Leaflet for the exhibition “Open UP! How digitisation changes science”
http://zbw.to/leaflet

OPEN SCIENCE ACTIVITIES AT THE ZBW

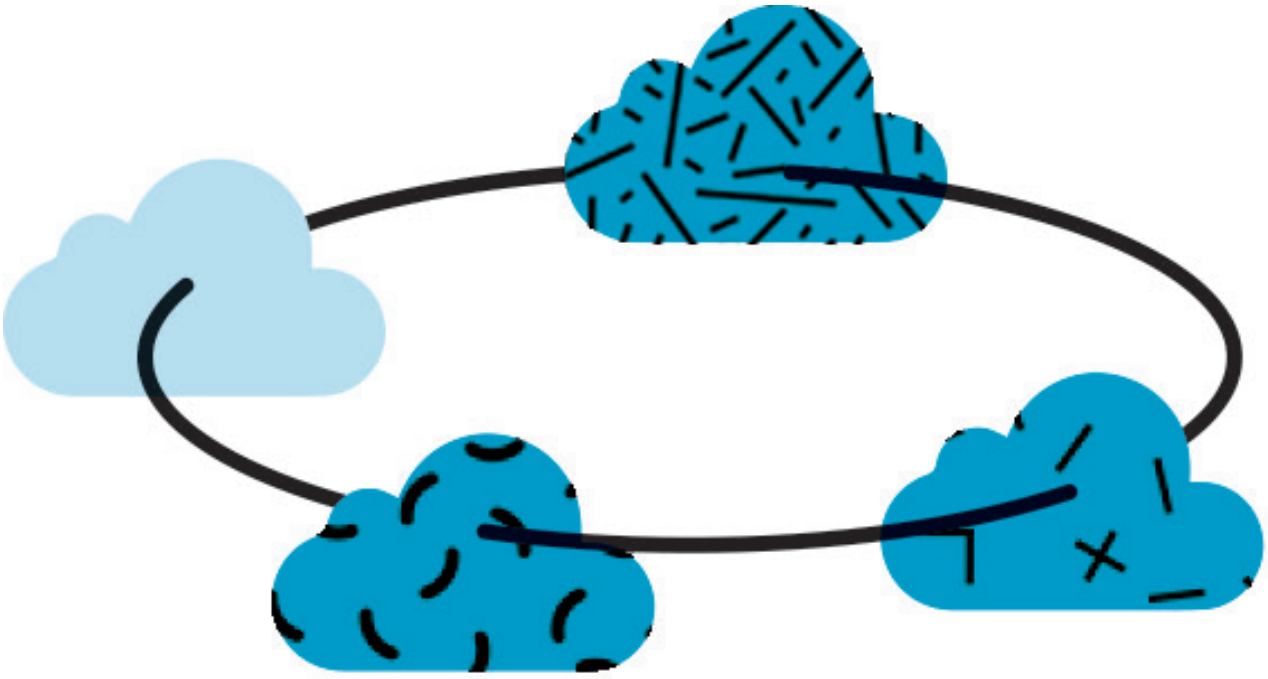
The ZBW – Leibniz Information Centre for Economics deals intensively with the digitisation of science and open science. Based on our findings in the domain of Science 2.0, we have extended our research into the field of Open Science.
Here, the focus is on the management of research data as envisioned in the idea of the “European Open Science Cloud” developed by the European Commission and in the National Research Data Infrastructure (NFDI) recommended by the German Council for Scientific Information Infrastructures.



OPEN SCIENCE

COOPERATIONS

Leibniz Research Alliance Open Science



Exploring and shaping the open research system

The Leibniz Research Alliance Open Science is a network of more than 30 research and information infrastructure institutions from the Leibniz Association, university institutes and libraries, non-university-affiliated research institutions, and other partners. It is committed to the research and development of working methods, infrastructures, and tools of Open Science in the following three fields of action: (1) Research & Knowledge Transfer, (2) Infrastructure & Tools and (3) Advocacy & Community Building. The diversity of these institutions and the wide range of science disciplines and competencies make the alliance unique in the German-speaking region and beyond.

Leibniz Research Alliances are a strategic instrument of the Leibniz Association with the aim to bundle the competencies of the Leibniz Institutes to deal with current topics of high scientific and societal relevance. These alliances are open for cooperations with other partners outside the Leibniz Association.

WWW.LEIBNIZ-OPENSCIENCE.DE

SCIENCE POLICY

The expertise of the research group in the area of Open Science and Digitisation of the Science System is increasingly sought after for consulting activities in science policy.

As a Leibniz institute and foundation under public law it is a matter of concern for the ZBW to incorporate its own experiences and research results into the recommendations for policy and society. Consequently, the ZBW is involved in various committees and working groups. Be it with open access strategies on federal state level, with the identification of indicators for the digitisation of science on federal level or with the establishment of research infrastructures on European level, the ZBW strives to provide expert / scientific contributions to support political decision makers and to hold expert discourses.

With these measures the ZBW established itself as a competent partner for political decision makers on international, national and regional levels.

ZBW staff members are engaged in the following expert groups:

- G7 Open Science Working Group
- German Council for Scientific Information Infrastructures
- ITA-Advisory Board of the Federal Ministry of Education and Research, subject area: “Participation in Research and Innovation”
- Working Group Open Access Science Europe
- several LIBER working groups
- several Working Groups of the Alliance Initiative in Germany

In the last years ZBW staff was involved in the High Level Expert Group on the European Open Science Cloud and the Altmetrics Expert Group of the European Commission.

The GO FAIR Initiative

ZBW champions fair handling of research data in Europe

In April 2016, the EU Commission finalised its plans for the establishment of the European Open Science Cloud (EOSC), virtually linking research data centres all over Europe. All European scientists shall be enabled to retrieve, share and reuse research data across disciplines and boundaries. The political aim of this initiative is to put the EU at the head of worldwide efforts to build scientific data infrastructures and to enable European researchers to use the full potential of data-driven science.

The early movers in this context are the Netherlands, Germany and France. In May 2017, Germany, France and the Netherlands decided to join forces to promote the EOSC and the GO FAIR Initiative. FAIR in the context of research data means “findable”, “accessible”, “interoperable” and “reusable”. There are support offices in Hamburg at the ZBW, in Leiden and in Paris..

The Federal Ministry of Education and Research (BMBF) has assigned the task of establishing the German office to the ZBW – Leibniz Information Centre for Economics. The German GO FAIR office is located at the Hamburg branch of the ZBW, where four people drive the initiative during the next three years. The ZBW coordinates the European GO FAIR Initiative from here and and is fostering the establishment of the FAIR principles in the various scientific disciplines.

About GO FAIR:
GO FAIR is a bottom-up, stakeholder-driven and self-governed initiative that aims to implement the FAIR data principles, making data Findable, Accessible, Interoperable and Reusable. It offers an open and inclusive ecosystem for individuals, institutions and organisations working together through Implementation Networks (INs). The INs are active in three activity pillars: GO CHANGE, GO TRAIN and GO BUILD.

The FAIR principles
The FAIR principles formulate the basic principles needed to maximise the sustainable reusability of data. FAIR stands for Findable, Accessible, Interoperable and Reusable. Their implementation ensures that data can be accessed and used across disciplinary and national boundaries.

Findable (Meta)data can be easily found by humans and machines. Metadata in particular simplify the search for relevant datasets.

Accessible Clearly defined licensing and access protocols ensure that (meta)data can be retrieved, whenever possible in Open Access.

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Interoperabel Humans and machines can use and process datasets.

Reusable Data and metadata are sufficiently well described for both humans and computers, so that they can be replicated or combined by computer-aided methods in future research.

The three pillars of the GO FAIR Initiative

In order to penetrate the science system at all levels, efforts must be made in several activity fields. Within the GO FAIR Initiative, these are described as Go Change, Go Train, and Go Build.

GO CHANGE aims to instigate cultural change to make the FAIR principles a working standard in science and to reform reward systems to incorporate open science activities and acknowledge research data as an important result of the research process.

GO TRAIN is about creating and maintaining the required data expertise. Even before a research project is started, a meaningful description of the research data must be planned to ensure their reusability. Core competencies in data administration (data stewardship and data science) are essential for a responsible handling of data. Data administrators provide mediation between science and the developers of infrastructure. The aim is to have core certified data experts and to have at least one certified institute in each Member State and for each discipline to support implementation of data stewardship.

GO BUILD deals with the need for interoperable and federated data infrastructures. In addition, it is about the harmonisation of standards, protocols, and services, which enable all researchers to deposit, access, and analyse scientific data across disciplines.

GO FAIR Collaboration
Close collaboration and continuous exchange with the numerous initiatives and working groups (e.g. RDA, CODATA, OSPP) at national and international level in the area of research data management is vital to ensure mutual interconnectability and to help build an EOSC accepted by the member states and an internet of FAIR Data and Services.

CURRENT PROJECTS

GeRDI – A model of a linked research data infrastructure

A German contribution to the European Open Science Cloud

Wherever research takes place, data accumulate in the course of experiments, measurements, simulations or surveys. Most scientists at German universities are repeatedly faced with the problem of finding research data from different research domains to answer cross-disciplinary research questions.

The consequence for researchers is that a comprehensive search for research data across several disciplines is is quite time-consuming today. There is no linked national infrastructure for research data.

This is where the project GeRDI comes in. GeRDI aims to develop the necessary infrastructure technology and to create a virtual network of existing and future research data centres all over Germany. In particular, GeRDI wants to support universities in linking up their existing data stores and in establishing new research data stores. GeRDI wants to enable all scientists in Germany, especially those who hold only small amounts of data, to store, share and re-use research data across disciplines. GeRDI pursues the idea of the European Open Science Cloud, supplementing current efforts to implement infrastructures for research data management and taking them a step further.

During a first project phase (2016-2019), a Generic Research Data Infrastructure (GeRDI) was piloted by the applying project partners with the close involvement of various expert communities. The starting point for the developments were typical research questions of the expert communities involved in the project, which were used to examine and analyse existing practices in dealing with research data. Based on these results, common (generic) patterns were identified and implemented in the GeRDI pilot. This pilot links inventories of different disciplinary research data repositories in such a way that metadata of the research data stored there are retrieved, normalised and made available via a central GeRDI search index for an interdisciplinary search for research data. In addition, the GeRDI pilot offers further functionalities: search results can be narrowed down and selectively stored using several facets. The associated data sets can be stored (if supported by the data provider).

The German Research Foundation (DFG) funds the first project phase of GeRDI with 3 million Euros. 1.6 million Euros have been allocated to the ZBW – Leibniz Information Centre for Economics and the University of Kiel. The other partners are renowned institutions in computer science such as the German National Research and Education Network (DFN), the Leibniz Supercomputing Centre of the Bavarian Academy of Sciences and Humanities and the Centre for Information Services and High Performance Computing at the Technical University of Dresden.

By the way: GeRDI is the first project to be jointly developed by the ZBW and the Software Engineering Group of the Kiel University at KOLab.

The ZBW and Kiel University have opened the Kiel Open Software and Data Lab (KOLab) in 2017. KOLab is a joint lab which provides the technical infrastructure (e.g. high performance computing) for joint research data management projects of ZBW and Kiel University.

Check out the prototype of GeRDI:
https://www.staging.gerdi.org/#/

WWW.GERDI-PROJECT.DE

COMPLETED PROJECTS

EEXCESS

"Enhancing Europe's eXchange in Cultural Educational and Scientific Resources"

(Concluded in 2016)
The large EU-funded project EEXCESS used a completely novel approach to information dissemination. It aimed to link web content, such as images, videos, infographics, statistics or texts from social media channels and blogs, with cultural, educational and scientific content in a personalised and contextualised manner.

"Take the content to the user, not the user to the content" was the basic idea of the project according to Professor Klaus Tochtermann, ZBW director.

The ZBW – Leibniz Information Centre for Economics cooperated with ten other European partners in EEXCESS. Within this project, the ZBW was primarily concerned with the design of novel, linked and multidisciplinary information landscapes and with the technical integration of its search engine EconBiz into these environments. The ZBW also ensured that the project's research findings became part of the public debate and find sustained use.

WWW.EEXCESS.EU

LibRank

(Concluded in 2016)
The LibRank research project engaged in the analysis and optimisation of search results in library information systems. It was funded by the German Research Foundation (DFG). Given the fact that the search habits even of scientists and researchers are characterised by the heavy use of commercial search engines, the project aimed to analyse resp. implement the effects and adaptions for library information systems.

WWW.ZBW.EU/EN/RESEARCH/SCIENCE-2-0/LIBRANK/

MOVING

(Concluded 2019)
MOVING – Training towards a society of data-savvy information professionals to enable open leadership innovation is an interdisciplinary EU Research and Innovation Action (RIA) focussed on computer and media sciences. The project partners were based in Greece, Germany, Austria, Slovenia, Poland and the UK. The partners from academia, business and research transfer developed a working and training platform that on one hand enables users from academia, business and society to handle and to understand large amounts of documents and data, and on the other hand fosters the skills of researchers and users in digital information and innovation management. The project was funded with 3.5 million Euros for a duration of three years.

http://www.moving-project.eu

OPEN SCIENCE COMMUNICATION

Open Science Conference

The annual international Open Science Conference has been held since 2014 and is organised by the Leibniz Research Alliance Science Open Science and ZBW – Leibniz Information Centre for Economics.

It is dedicated to the Open Science movement and provides a unique international forum for researchers, librarians, practitioners, infrastructure provider, policy makers, and other important stakeholders to discuss and exchange ideas and practical experiences to further develop an open research system.

The Barcamp Open Science is traditionally conducted as a pre-event one day before the Open Science Conference. It is open to everybody interested in discussing, learning more about, and sharing experiences on practices in Open Science.

WWW.OPEN-SCIENCE-CONFERENCE.EU

ZBW MediaTalk – The Open Science Blog

Open Science does not only disrupt the way researchers work in their fields, but also how libraries process, store, and distribute information. The ZBW MediaTalk blog takes a closer look behind the curtain to show how libraries and information infrastructures embrace and advocate openness. Frequently published news, reports, and interviews keep the readers up to date on recent developments in Open Science and outline innovations and technologies that offer new ways of information access.

ZBW MediaTalk publishes its content in both German and English language and offers a weekly free newsletter that covers the most recent developments. Guest writers are also welcomed!

WWW.ZBW-MEDIATALK.EU

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