

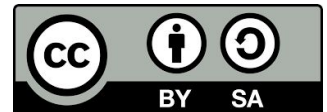
TIB LEIBNIZ INFORMATION CENTRE
FOR SCIENCE AND TECHNOLOGY
UNIVERSITY LIBRARY



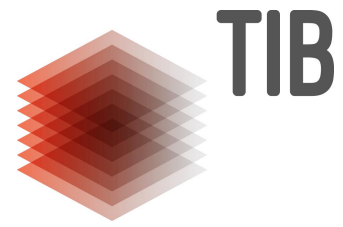
Память говорит

A Memory Institution for the Digital Age

Susanne Arndt, Mathias Begoin, **Mila Runnwerth**
LIBWAY, Irkutsk, Russia
17th September 2019



Introducing TIB: Our mission



The German National Library of Science & Technology
(German: **Technische Informationsbibliothek**)
comprehensively collects scientific information in all
forms with respect to its subjects

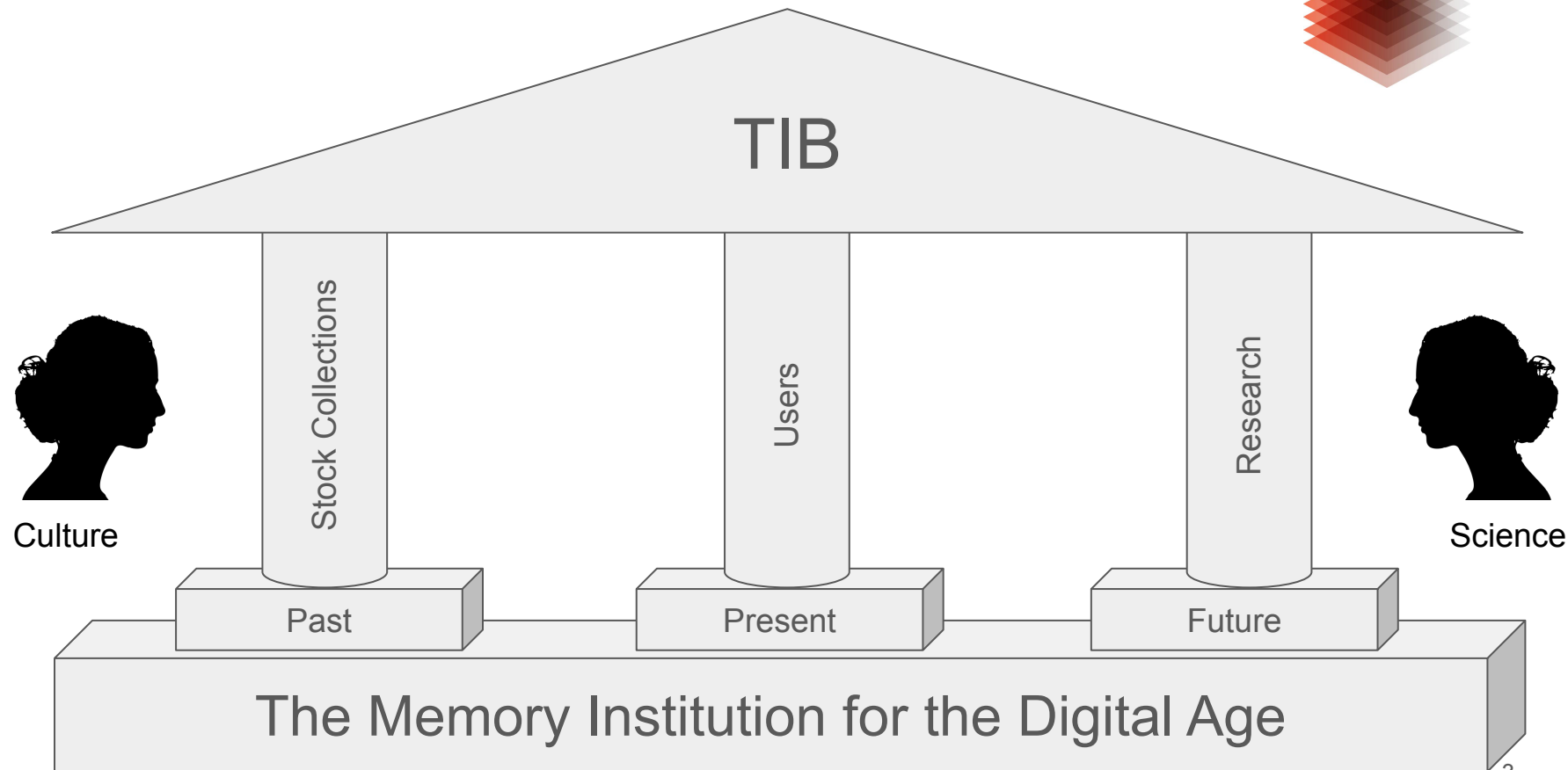
architecture,
chemistry,
computer science,
engineering,
mathematics,
physics.

In addition to German and English literature TIB collects
scientific information in the languages of East Asia and
Eastern Europe (including) Russia.

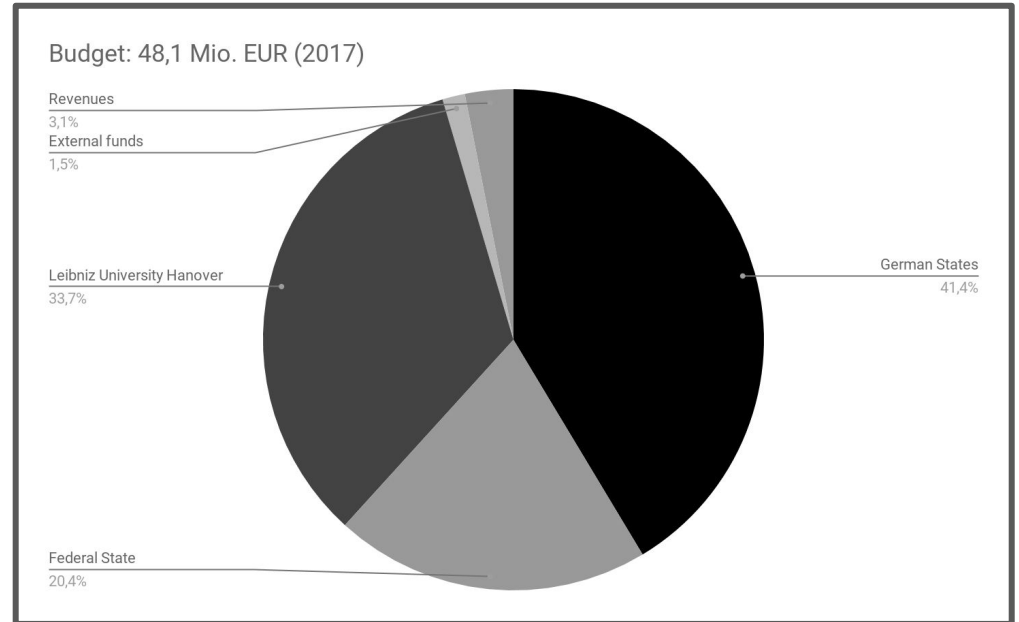
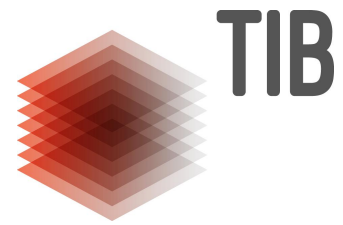


Picture: TIB / C. Bierwagen

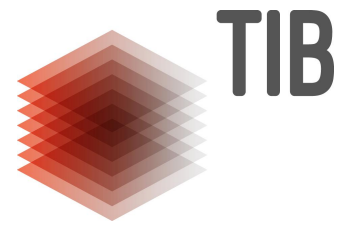
Introducing TIB: Our philosophy



Introducing TIB: In Figures



TIB's History: The Founding Myth



In WW II an ox waggon rescued the last books virtually in the last minute to the Hartz Mountains before the library was destroyed by bombers.

After the war, this stock turned out to be the best retained collection in Germany.

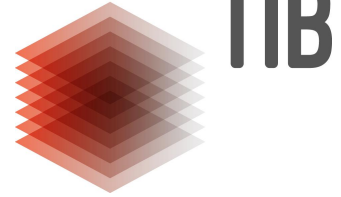
In the arms and science race between East and West TIB was chosen to become the German National Library for Science and Technology including the collection of scientific literature in the languages of Eastern Europe.

Especially the many committed colleagues with Soviet roots maintained a long-lasting friendship between TIB and Russian libraries.



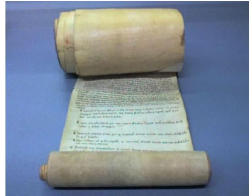
Source: Wikipedia

TIB's History: The Dawn of the Internet

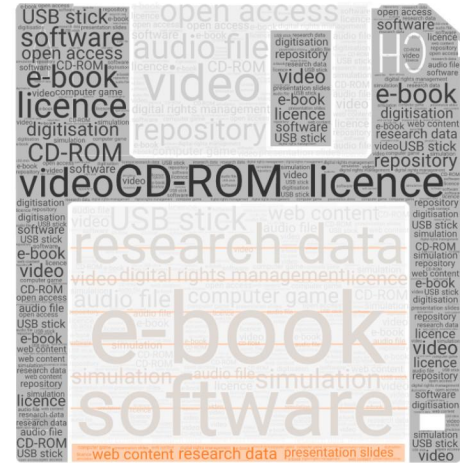
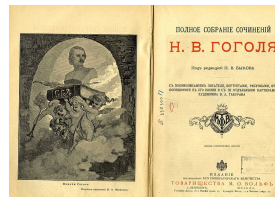


While we all have almost four millenia of library experience before and five centuries after literature became a mass product, we still adapt to extending our original mission to collect, preserve, and provide information in digital manifestations.

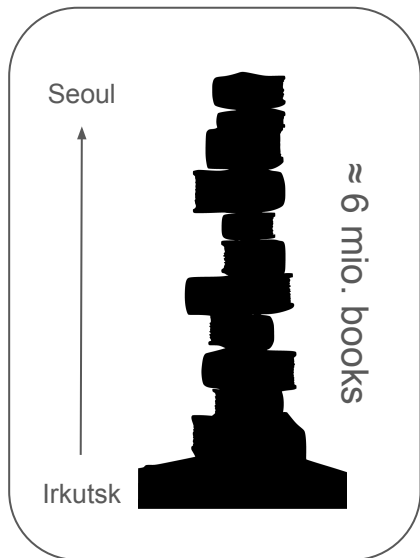
Source: Wikipedia



Source: Wikipedia



The Library: In Figures



DIN

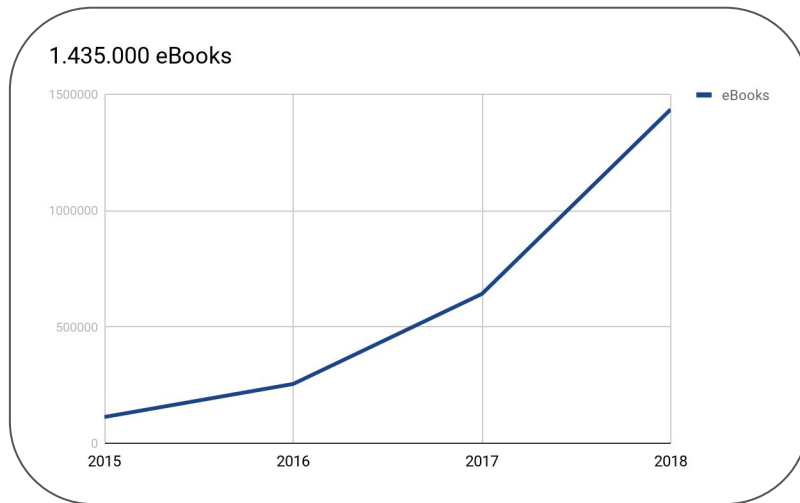
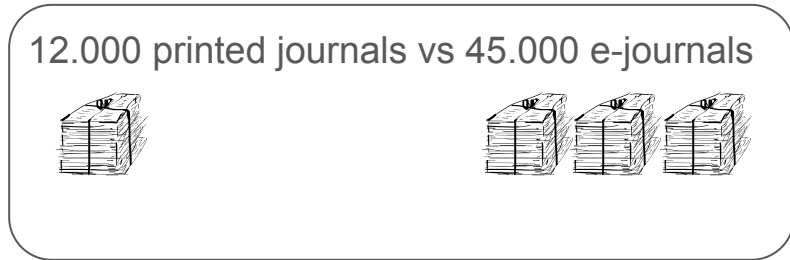


more than 17 mio. standards and patents



arXiv.org

more than 1.5 mio doi

The text 'more than 1.5 mio' is followed by the 'doi' logo, which consists of the letters 'doi' in white on a yellow circular background.

The Library: Panis noster cotidianus

Collection Development & Metadata

★ Acquisitions & Cataloguing

Conversation & Archiving

Licence Service

Metadata Services

Persistent ID Services

Subject Librarians

University Archives



Specialised acquisition teams:

- Grey literature.
- East Asia.
- Eastern Europe.
- Journals (electronic and print).
- Monographs (electronic and print).

The Library: Panis noster cotidianus

Collection Development & Metadata

Acquisitions & Cataloguing

★ Conversation & Archiving

Licence Service

Metadata Services

Persistent ID Services

Subject Librarians

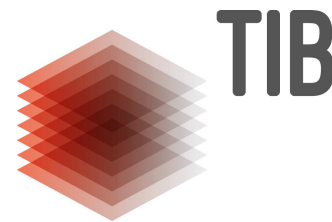
University Archives



“Digital information lasts forever
or five years; whichever comes first.”

Jeff Rothenberg

The Library: Panis noster cotidianus



Collection Development & Metadata

Acquisitions & Cataloguing

Conversation & Archiving



Licence Service

Metadata Services

Persistent ID Services

Subject Librarians

University Archives



Shaping the publishing landscape:

- Negotiating licences for eBooks, eJournals, packages, or databases.
- Administration of 45 national consortia in 2018.
- Negotiating extended terms of use.
- Participation in several consortia.



The Library: Panis noster cotidianus



Collection Development & Metadata

Acquisitions & Cataloguing

Conversation & Archiving

Licence Service

★ Metadata Services

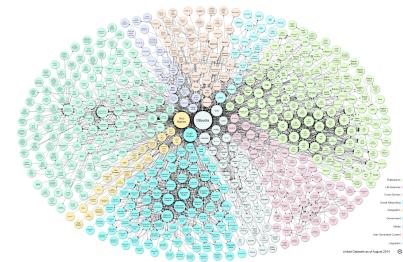
Persistent ID Services

Subject Librarians

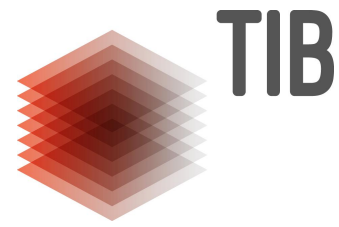
University Archives



- Metadata standards.
- Metadata for non-textual materials.
- Conversion.
- Open Linked Data.



The Library: Panis noster cotidianus



Information Services

Document Delivery

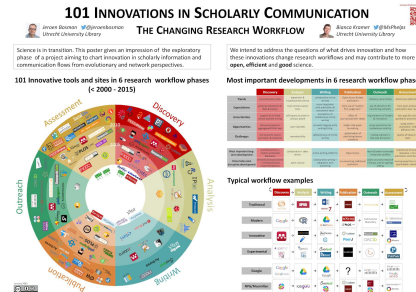
★ Information Literacy

Local Services

Publishing Services



- Teaching effective and critical literature research.
- Teaching scientific writing.
- Creating a stimulating environment for study and research.



The Library: Panis noster cotidianus



Information Services

Document Delivery

Information Literacy

Local Services

★ Publishing Services



“How do I publish Open Access without damaging my career?”

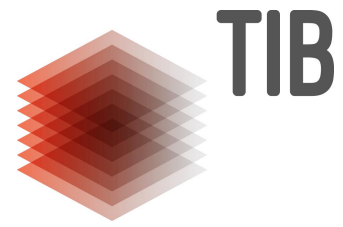
“May I download stuff from SciHub?”

“Did I fall prey to a predatory conference?”

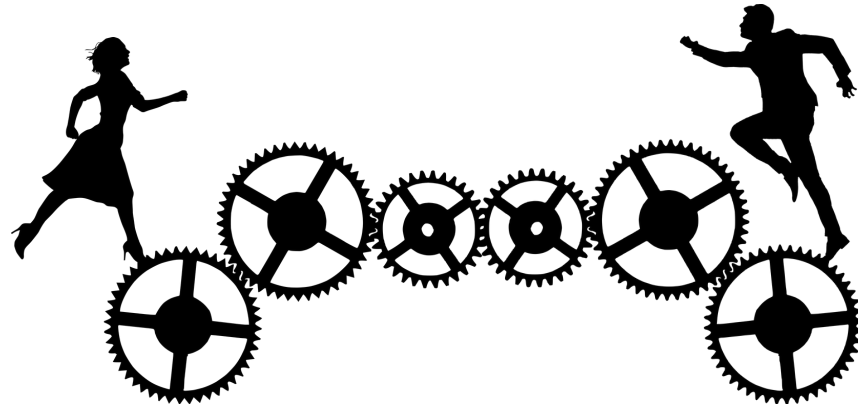
arXiv.org



The Library: Digital Awakening



The wisdom lies in knowing what can be automated and what cannot.



The Research Institution: Organisational Structure

Research & Development

Data Science & Digital Libraries

Lab Non-Textual Materials

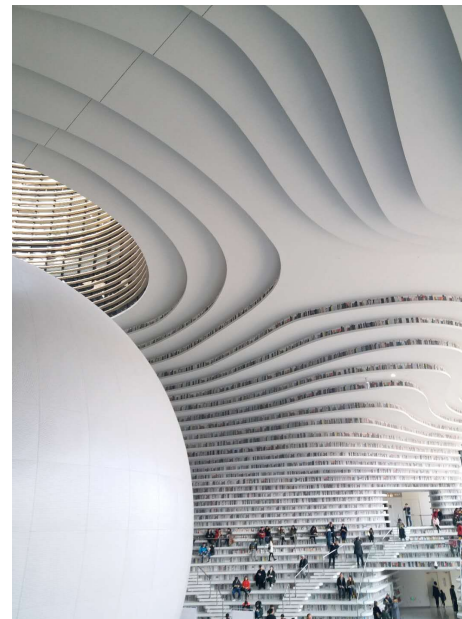
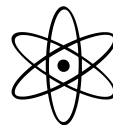
Open Science Lab

Scientific Data Management

Visual Analytics

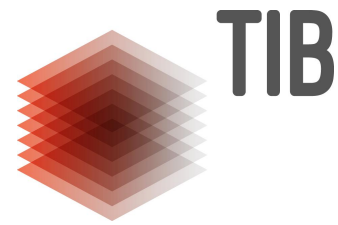
Funding & Transfer

IT Development



Source: Wikipedia

The Research Institution: Data Science & Digital Libraries



What if computer processes read, understood, and contextualised all research literature?



Prof. Dr. Sören Auer

auer@tib.eu

<https://de.linkedin.com/in/soerenauer>

<https://twitter.com/soerenauer>

https://www.xing.com/profile/Soeren_Auer

http://www.researchgate.net/profile/Soeren_Auer

The Research Institution: Data Science & Digital Libraries



Flagship project:

“Knowledge Graph based Representation, Augmentation and Exploration of Scholarly Communication”

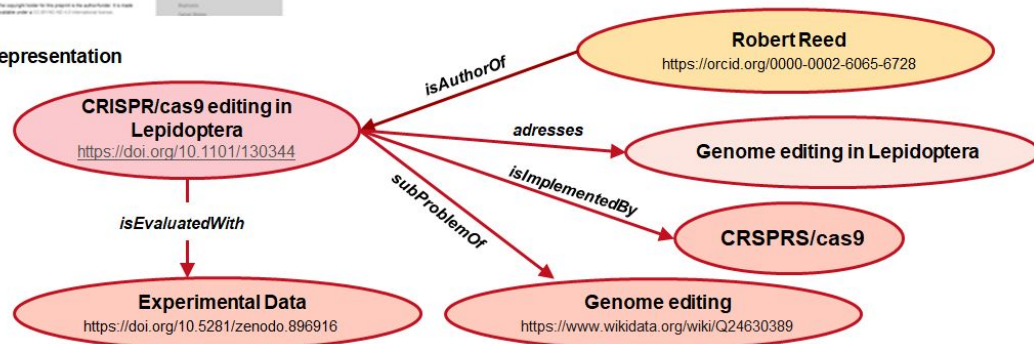
1. Original Publication



2. Adaptive Graph Curation & Completion

Author	Robert Reed
Research Problem	Genome editing in Lepidoptera
Methods	CRISPR/cas9
Applied on	Lepidoptera
Experimental Data	https://doi.org/10.5281/zenodo.896916

3. Graph representation

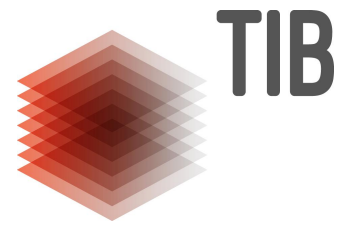


Funded by



European
Research
Council

The Research Institution: Data Science & Digital Libraries



Project website
<https://projects.tib.eu/org/>

Scholarly communication in the last centuries

1620 → 1883 → 2019

Still the same *document-based* format, nowadays only digitally as PDF files

Open Research Knowledge Graph (ORKG) - Paper comparison demo

203 Auftrufe

Paper comparison demo
https://www.youtube.com/watch?v=mbe-cVyW_us

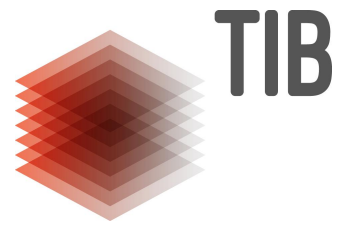
The Research Institution: Data Science & Digital Libraries



Nursing AI



The Research Institution: Lab Non-textual Materials

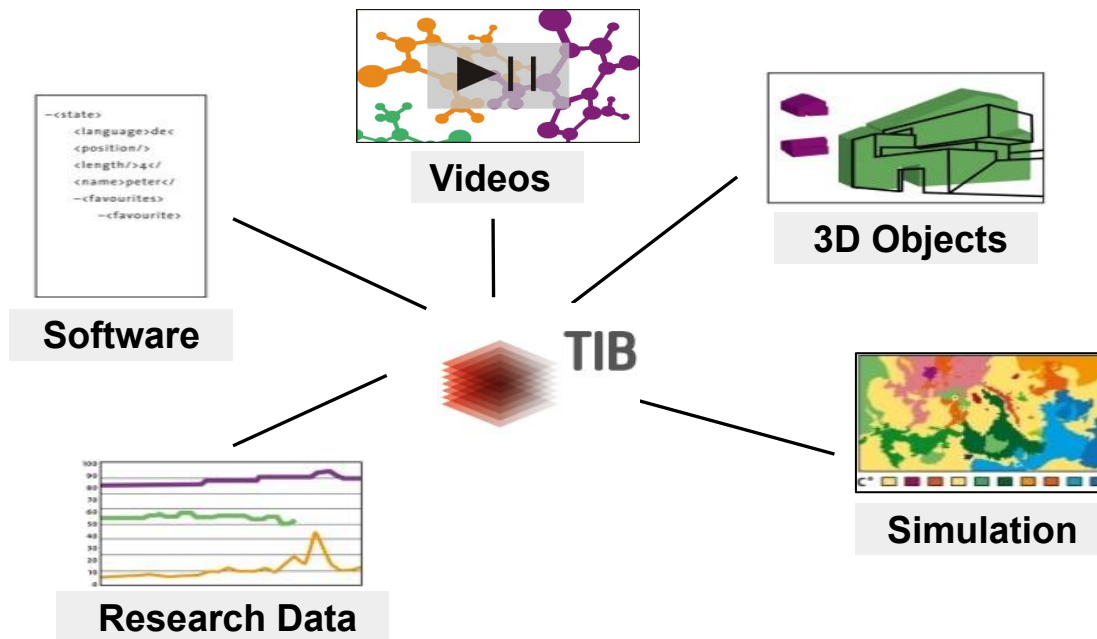


What if films, audio recordings, software, and research data felt as natural as books and articles in science?



Margret Plank

The Research Institution: Lab Non-textual Materials



The Research Institution: Lab Non-textual Materials



SUBJECTS PUBLISHER OPEN DATA FAQ CONTACT WATCHLIST UPLOAD DEUTSCH LOGIN

TIB AV-PORTAL Search for people, places, topics... Search

PHYSICS
Wie weit fliegt ein Skispringer, der mit 72 km/h abspringt?
03:07

MATHEMATICS
The roles of imbalances for divergent and rotational modes in
16:36

COMPUTER SCIENCE
Information Governance algorithmischer
11:01

ENGINEERING
Magnetically guided multi-coordinate positioning system
02:00

CHEMISTRY
Wie lesen wir Phasendiagramme von Mehrkomponentensystemen?
11:54

ARCHITECTURE
Begrüßung Nachmittag
09:12

Content
The TIB AV-Portal provides access to high grade scientific films from the fields of engineering, architecture, chemistry, computer science, mathematics and physics.

Searching
Innovative searching and analysis tools assist your search.

Citing
A Digital Object Identifier (DOI) enables you to cite scientific films and film segments as easily as you would cite text.

Uploading
Through the TIB AV-Portal you make your films and additional material available in the long-term for Education and Research.

Scene
recognition

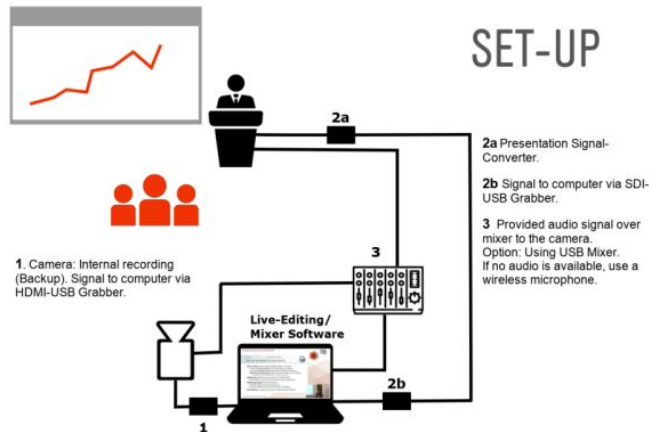
Speech
recognition

Text
recognition

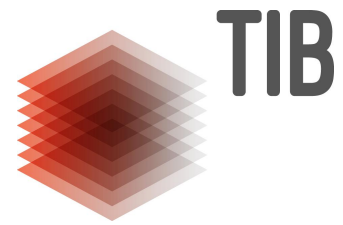
Image
recognition

NE
recognition

The Research Institution: Lab Non-textual Materials



The Research Institution: Open Science Lab



What if access to all sources and instruments for research were freely accessible for everyone all over the world?

Lambert Heller



The Research Institution: Open Science Lab

FAIR research information.

Nurturing communities who take care of our common
digital cultural heritage.

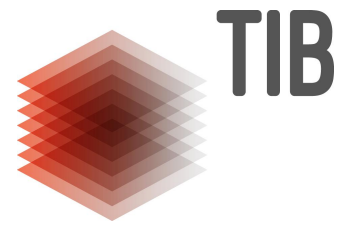
Exploring new ways of knowledge transfer in
academia and beyond.



{CODING DAVINCI}



The Research Institution: Scientific Data Management

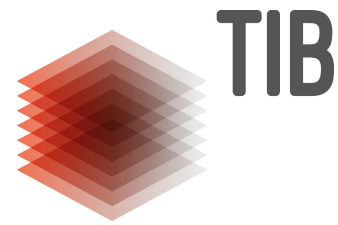


What if diseases could be detected more easily and be treated more quickly on the basis of (an ethical use of) big data?



Prof. (Univ. Simon Bolivar) Dr. Maria-Esther Vidal

The Research Institution: Scientific Data Management

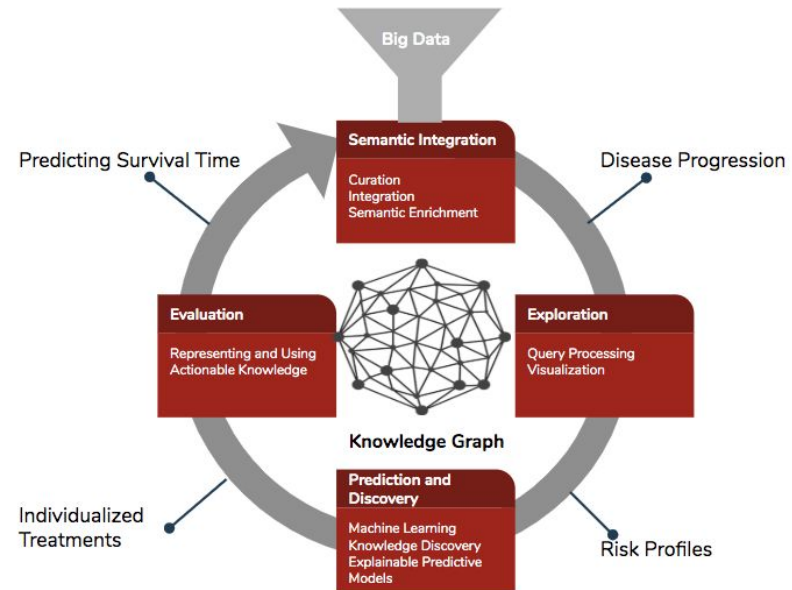


Semantic Big Data Integration

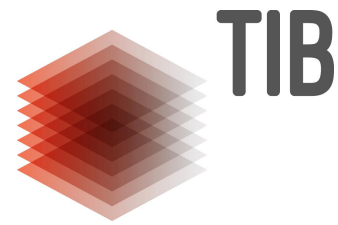
Knowledge Extraction

Query Processing at scale

Explainable Machine Learning



The Research Institution: Visual Analytics

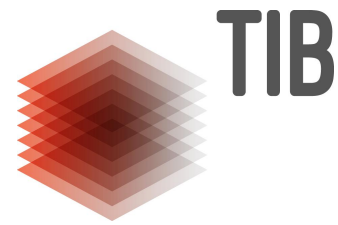


What if an image was literally as meaningful as a thousand words?

Prof. Dr. Ralph Ewerth



A Specialised Information Service for Transportation Science

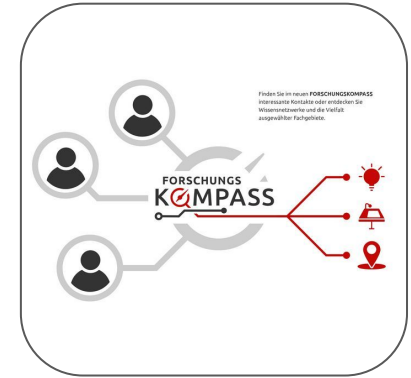
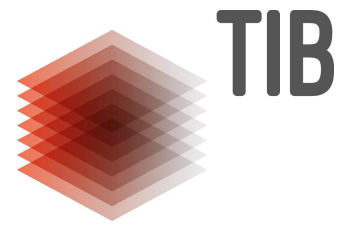


What if research could be systematically optimised by digital information, tools, and collaboration in a specific research area?

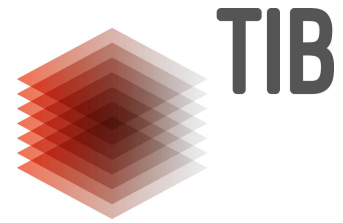
Mathias Begoin



A Specialised Information Service for Transportation Science



A Specialised Information Service for Transportation Science



island

roundabout

rotunda

Круговой перекрёсток



Source: Wikipedia

road circle

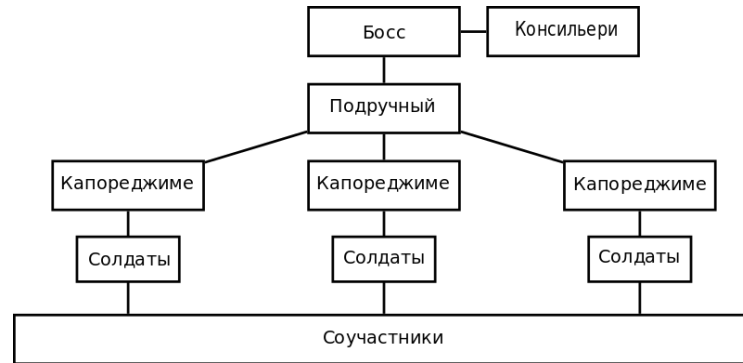
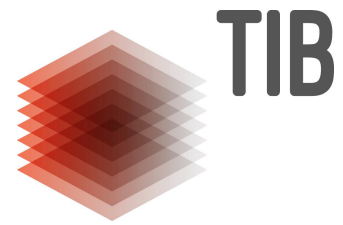
rotary

Kreisverkehr

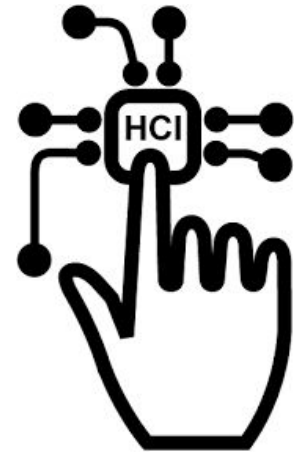
circular intersection

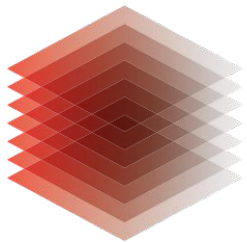
traffic circle

A Specialised Information Service for Transportation Science



Source: Wikipedia





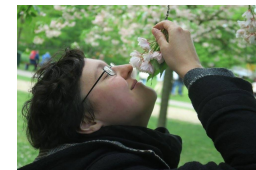
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susanne.arndt@tib.eu



Picture: TIB / C. Bierwagen



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mathias.begoin@tib.eu