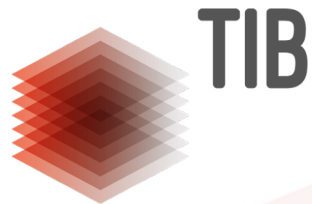
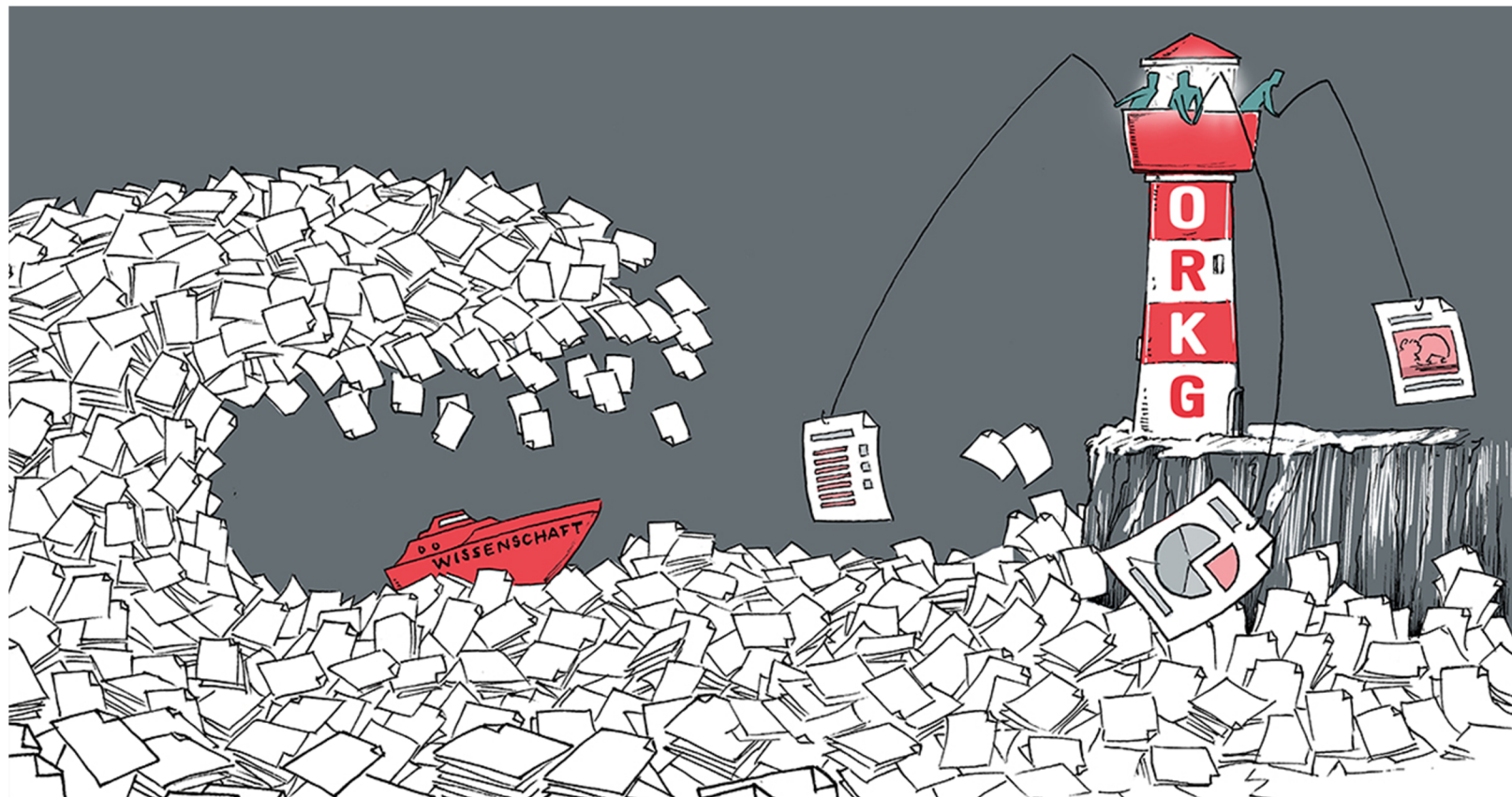

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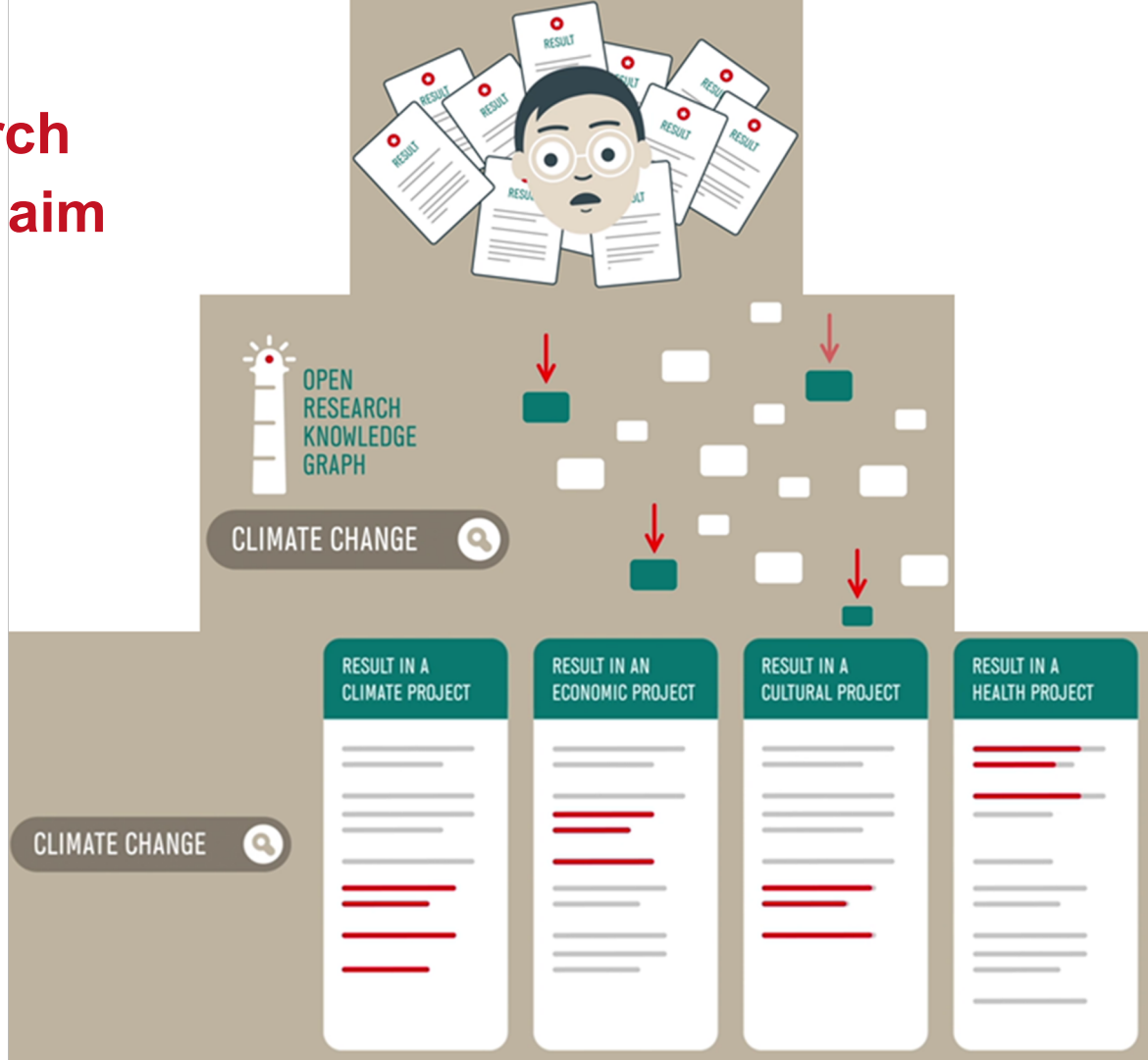
What can University Libraries do for the Open Research Knowledge Graph?

Kyoto University Symposium “Scholarly Publications as Open Data and
University Libraries”, February 15, 2022

Researchers are drowning in the flood of publications

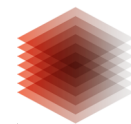
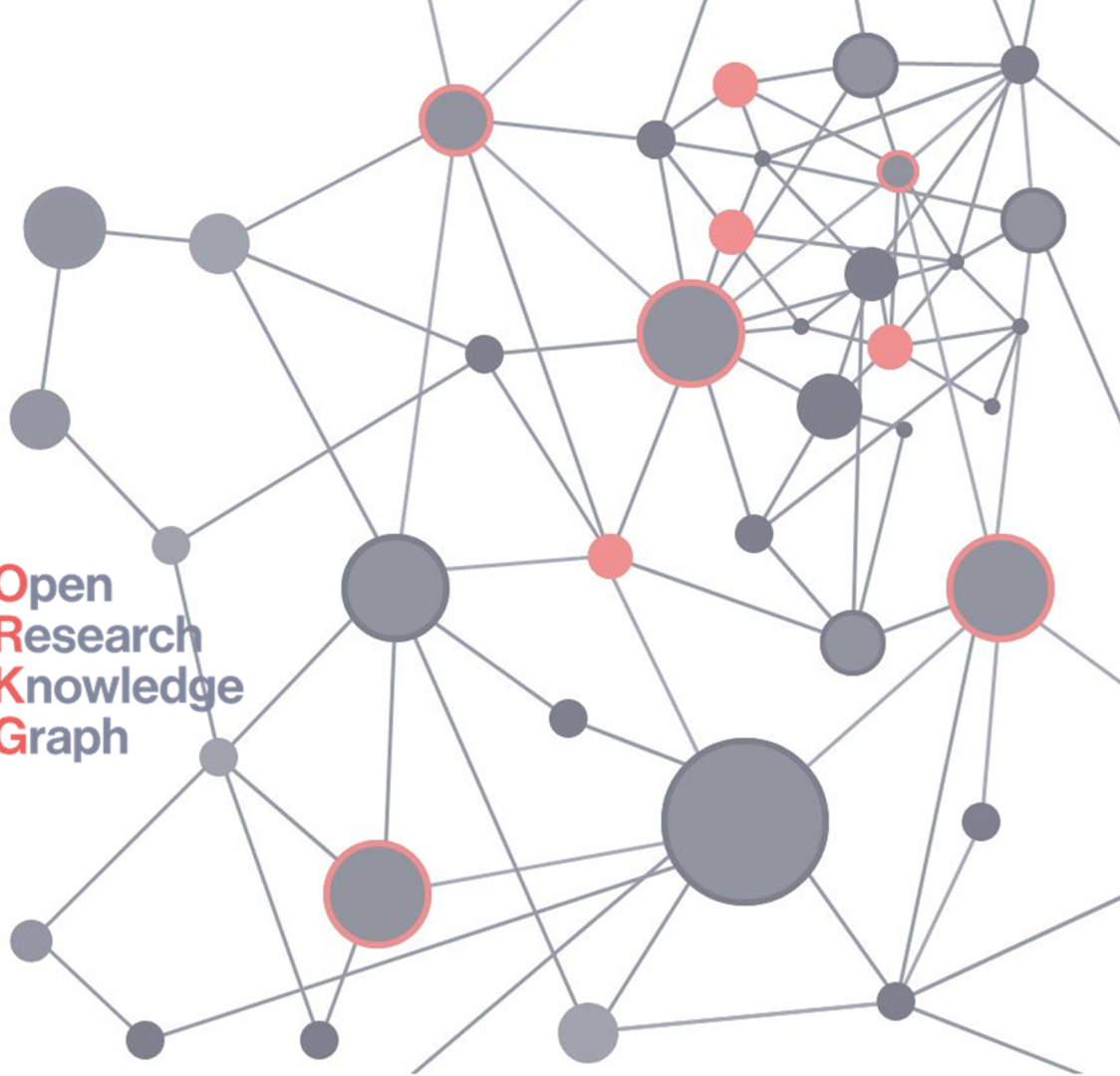


With the Open Research Knowledge Graph we aim to organize research





Open
Research
Knowledge
Graph



TIB

Resources for Research and Development

Global spending on R&D
has reached a record high
of almost US\$ 1.7 trillion:
\$1,700,000,000,000

A large share of this money is
not efficiently used.

Sources:

<http://uis.unesco.org/apps/visualisations/research-and-development-spending/>

https://en.wikipedia.org/wiki/List_of_countries_by_research_and_development_spending

↕	Country/Region	Expenditures on R&D (billions of US\$, PPP)	% of GDP PPP	Expenditures on R&D per capita (US\$ PPP)	Year
1	 United States	612.714	3.1	1,866	2019
2	 China	514.798	2.2	368	2019
3	 Japan	172.614	3.2	1,375	2019
4	 Germany	131.932	3.2	1,586	2019
5	 South Korea	100.055	4.6	1,935	2019
6	 France	63.658	2.2	944	2019
7	 India	58.691	0.65	43	2018
8	 United Kingdom	51.702	1.8	762	2019
9	 Taiwan	42.945	3.5	1,822	2019
10	 Russia	38.549	1.0	263	2019
11	 Brazil	38.0	1.3	181	2017
12	 Italy	33.840	1.4	561	2019
13	 Canada	26.636	1.5	700	2019
14	 Turkey	24.827	1.1	297	2019
15	 Australia	23.3	2.1	987	2014
16	 Spain	22.468	1.3	473	2019
17	 Netherlands	20.167	2.2	1154	2019
18	 Sweden	17.722	3.4	1,707	2019
19	 Israel	16.888	4.9	1,810	2019
20	 Poland	16.086	1.3	420	2019

What university libraries can do for ORKG?

ORKG is open-science, open source, open-data and open knowledge

University libraries can:

- **Increase the awareness** for the ORKG
- **Create example comparisons** for presenting the state-of-the-art for concrete research
- **Help researchers to curate content** e.g. SOTA comparisons, literature lists, visualizations, SmartReviews etc.
- **Run domain specific ORKG observatories** for specific research questions addressing societal challenges, e.g. climate change, COVID-19 pandemic, renewable energy, circular economy etc.
- **Help integrating the ORKG with other research infrastructures** e.g. open-access repositories, research data management, ...



Implementation of ORKG in humanities and multilingual environments

Currently the coverage of ORKG examples in humanities is still sparse
- much better coverage in natural sciences, engineering and life sciences

However, the ORKG can be a valuable tool for humanities too, but we need more experimentation and examples

Labels in non English languages can already be added, but better support for languages other than English is on our TODO list

ORKG Examples

Observatories

Benchmarks

Literature Lists

SmartReviews

Future development and deployment

We develop the ORKG with a long term agenda

We envision to onboard ten thousands of users in the next years

Planned features include:

- More automation - better use of NLP, AI and ML - combining human and machine intelligence
- Better discussion features, notification and updates
- Integration with social networks
- Integration with other publication and research infrastructures, e.g. OA repositories, research data management
- Embedding of content in personal and organizational websites

The Team

Group Leaders



Dr. Markus Stocker



Dr. Gábor Kismihók



Dr. Javad Chamanara



Dr. Jennifer D'Souza



Dr. Lars
Vogt



Dr. Oliver Karras



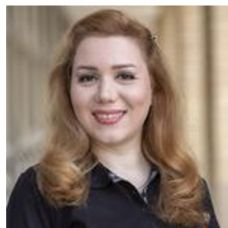
Doctoral Researchers



Allard Oelen



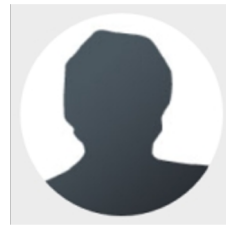
Yaser
Jaradeh



Golsa Heidari



Muhammad Haris

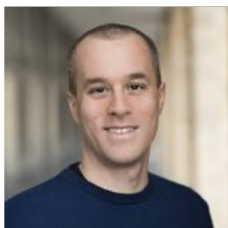


Hassan Hussein



Salomon Kabongo

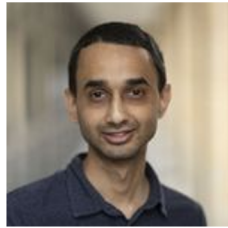
Software Development



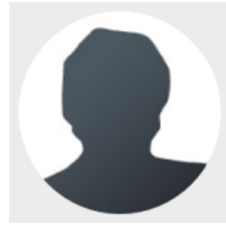
Manuel Prinz



Kheir Eddine Farfar



Suhas Murthy



Anna-Lena Lorenz

Community Management

Administration



Irmtraut Schröder



Simone Matern

Conclusions



- We need to **reinvent scholarly communication**
- **Knowledge Graphs are perfectly suited to capture research contributions in a structured and semantic way making them human and machine interpretable**
- With our **Open Research Knowledge Graph initiative we aim to establish a registry for research contributions**
- Curation and **synergistic combination of human, expert and machine intelligence** is a challenge

Stay tuned

- <https://tib.eu>
- Consider creating an ORKG observatory for your domain
- Mailinglist/group:
<https://groups.google.com/forum/#!forum/orkg>
- Open Research Knowledge Graph:
<https://orkg.org>
- ERC Consolidator Grant ScienceGRAPH on the topic



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

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