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TIB

P2P perspectives: Let's connect the dots, agree on standards – and talk about it

Lambert Heller
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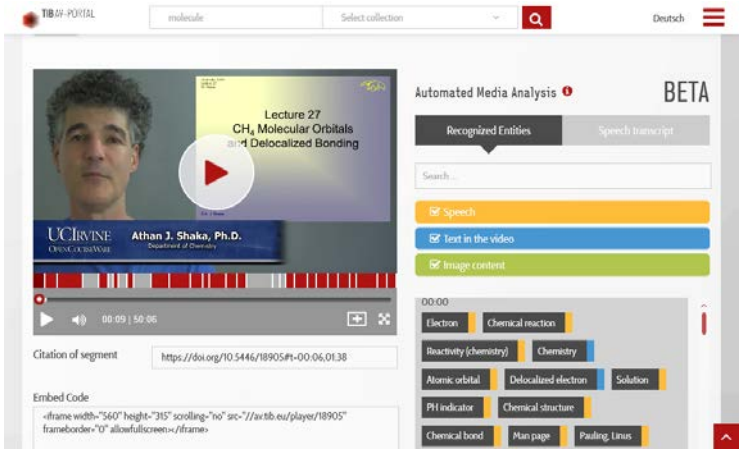
Blockchain for Science Con, Berlin

Leibniz Association

Quick intro: The TIB

- Founded 1959 in Hannover, as the German National Library of Science and Technology
- Leibniz funded
- Also Hannover‘s University Library
- 500+ employees
- 50+ R&D dept.
- 11 of them: Open Science Lab

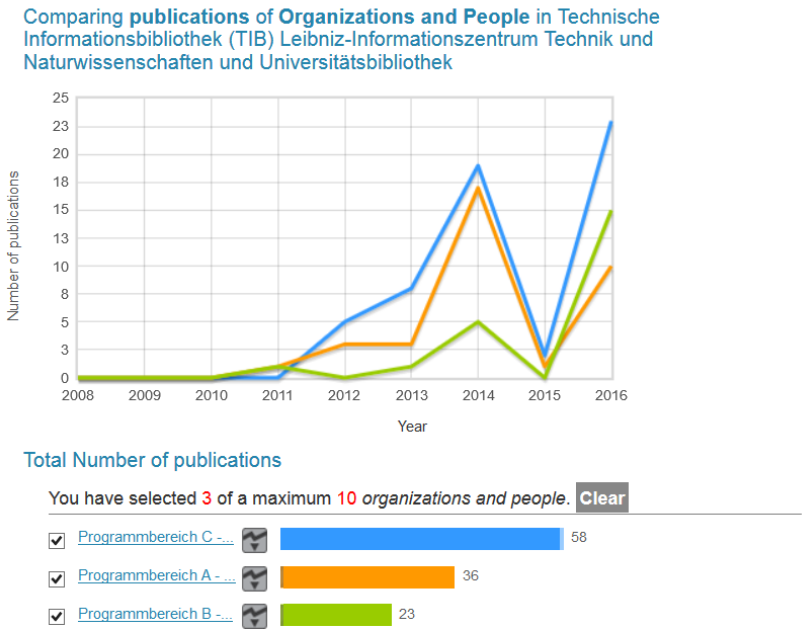


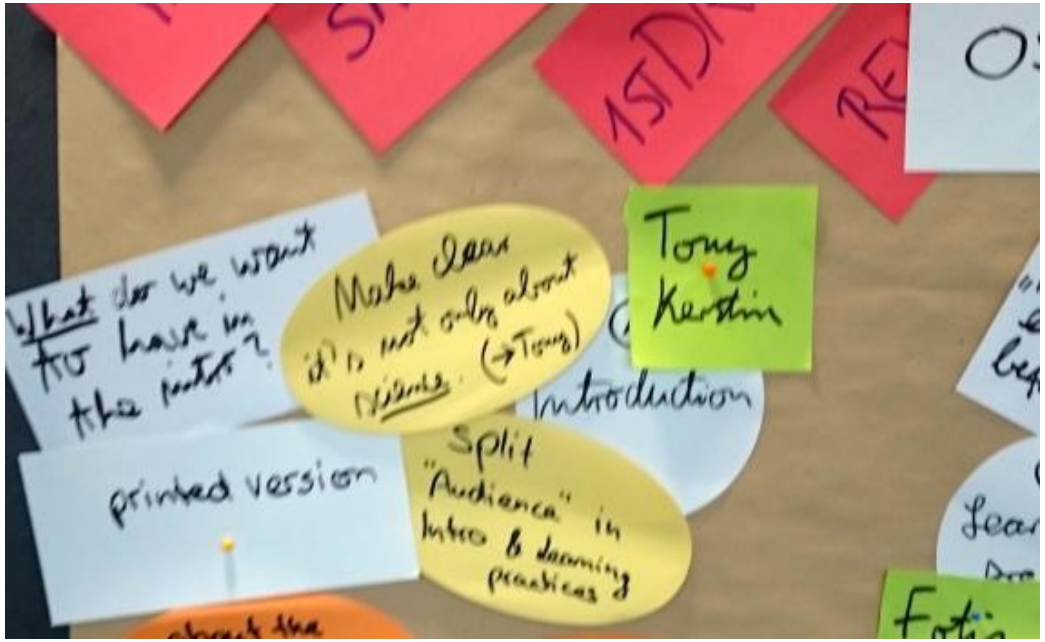
DataCite
FIND, ACCESS, AND REUSE DATA

Where I‘m coming from: Promoting Linked Open Data in Research Infrastructure, pioneering Open Science Learning, etc.

Two examples from TIB Open Science Lab’s work:

- Co-developing and consulting on VIVO as a Linked Open Data approach to „current research information systems“ (CRIS)
- Facilitating the book sprint that resulted in the “Open Science Training Handbook”, have a look https://book.fosteropenscience.eu/





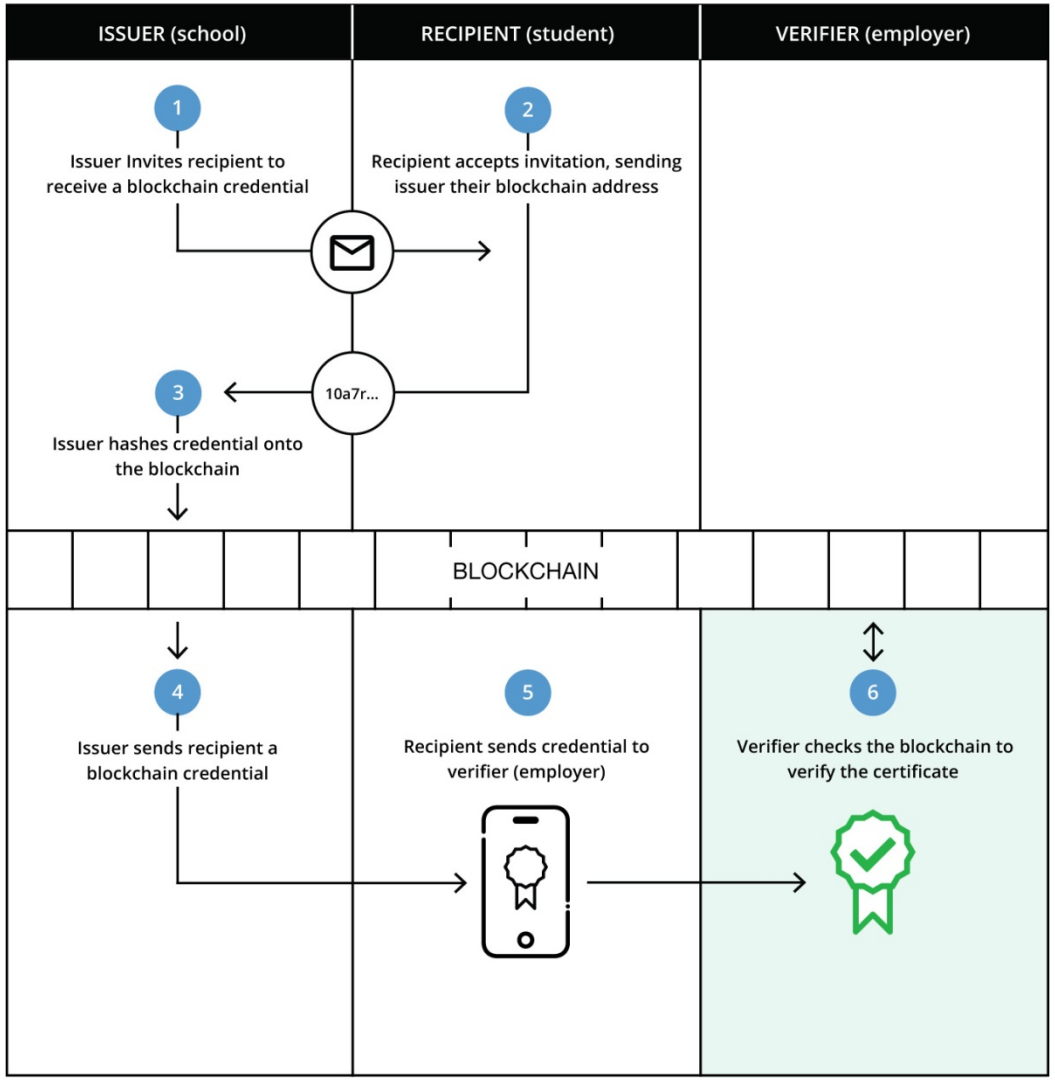
We are partners of the H2020 funded project QualiChain, starting 2019, which is about supporting learners and employers by validating educational certificates on a blockchain.

(Please look up Open University „Open Blockchain“.)

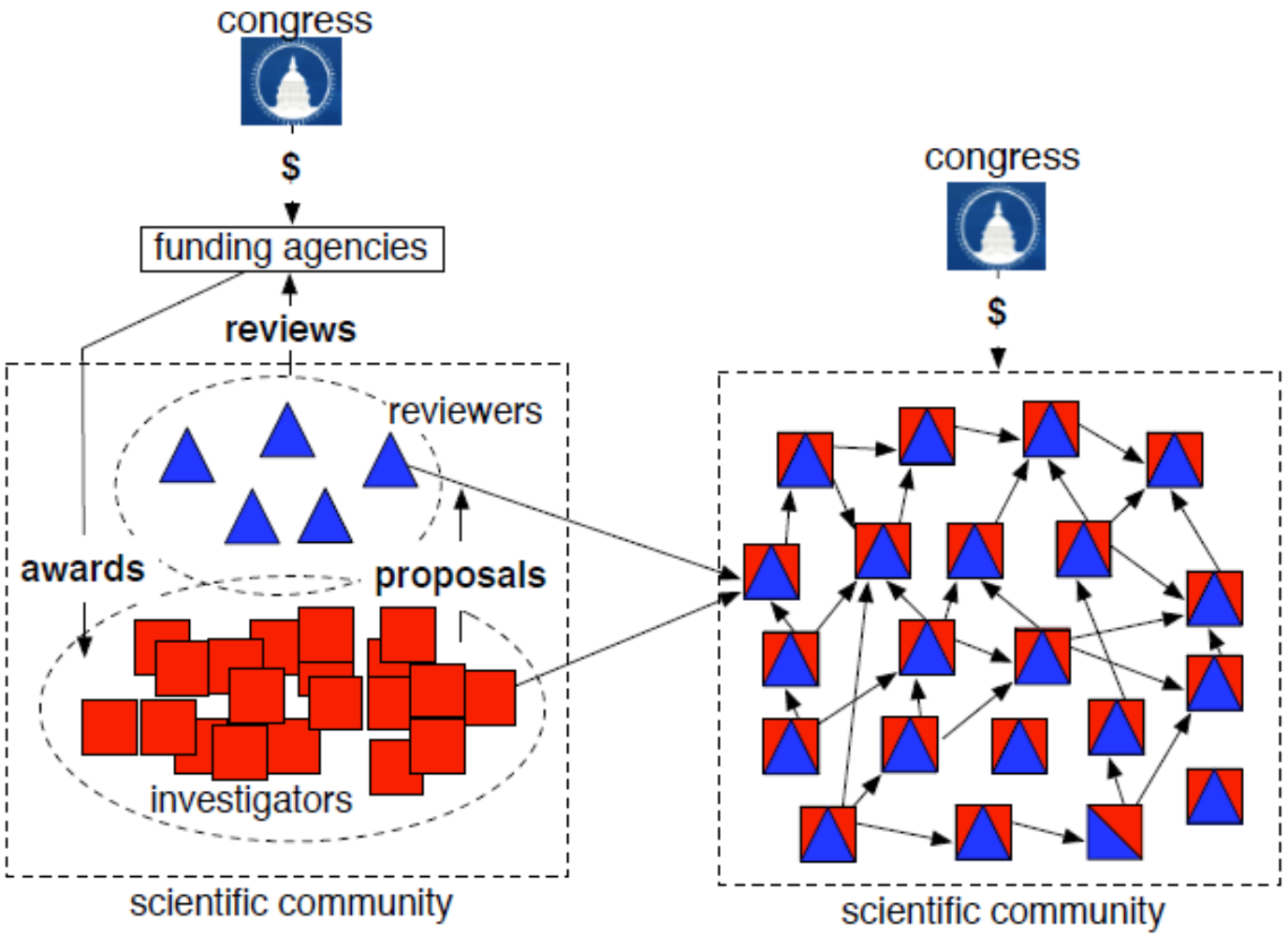
This approach will set new standards in research as well.

Researchers will be allowed to directly own their identity, as well as their transactions, without any detours. No need to delegate trust to any platform anymore, instead move to permissionless protocols.

How MIT Media Lab et al. came up with blockcerts in 2016 (See also: Open University, “Open Blockchain”)



Johan Bollen et al. (2013), Collective allocation of science funding: from funding agencies to scientific agency (arXiv:1304.1067)



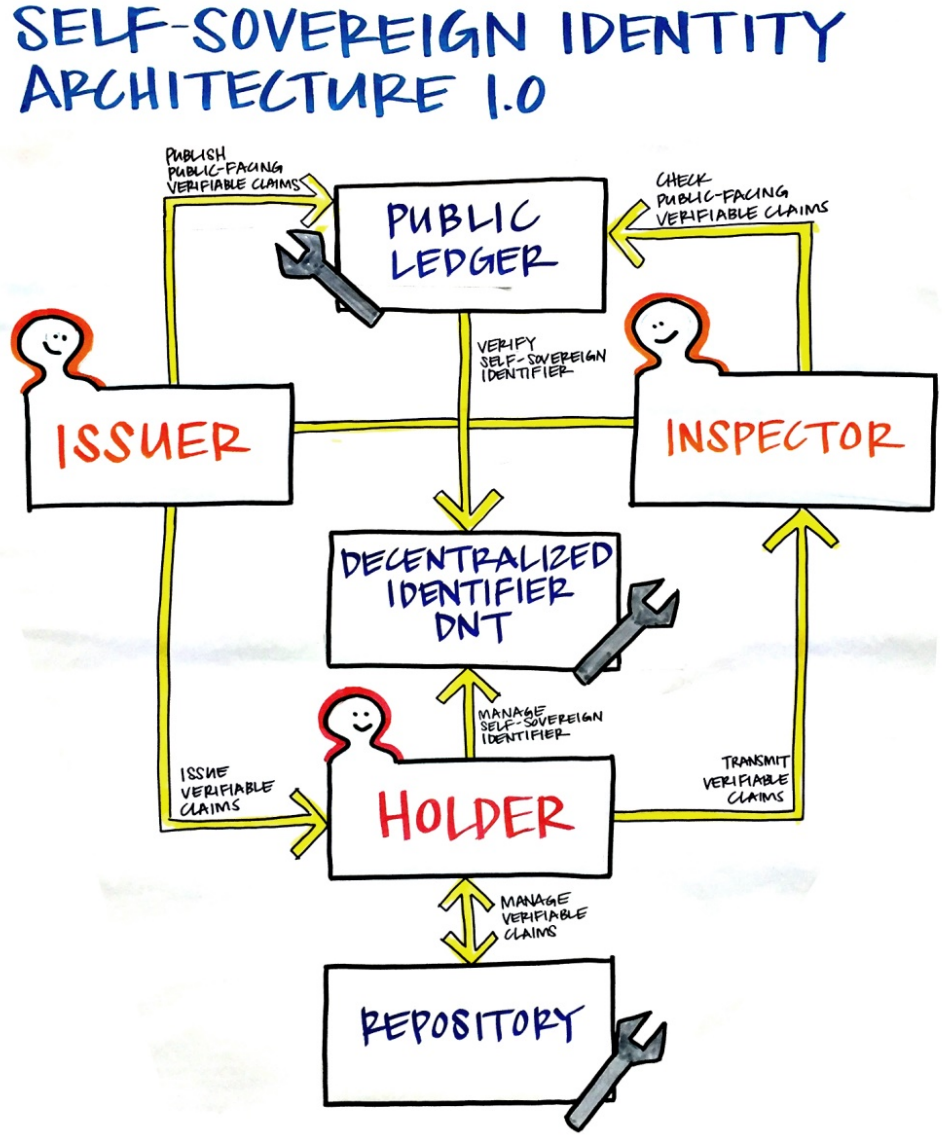
Existing funding system

Proposed funding system

More generalized concepts: Self-Sovereign Identity, Decentralized Identifiers (DID), and Verifiable Claims

- Everyone can join a public peer-to-peer network („blockchain“), setting up a node for a particular transaction (i.e. pull in a prove for some claim)
- …claims are cheap, but not for free – therefore few economic assumptions and dependencies
- „piggybacking“ on a growing ecosystem e.g. of crypto wallet apps, blockchain browsers etc.

(See also: Christopher Allen, Shermin Voshmgir, W3C draft community reports)



Connect the dots…

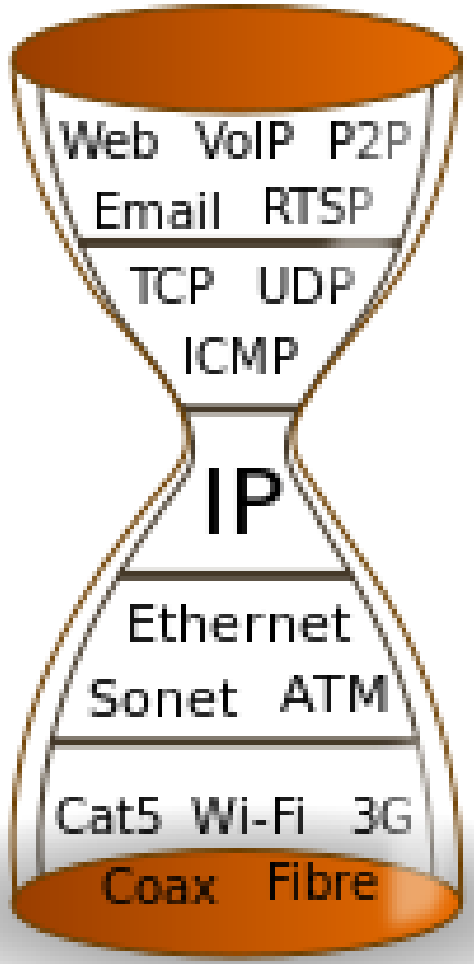
…and develop standards from these connections

Just to name a few more examples for the „dots“ out there:

- **Attribution** of contributions to research needs to be highly granular; good approaches are there, e.g. CASRAI‘s CRediT vocabulary, Daniel Katz‘ „Transitive Credit“ etc.
- The same is true for **research assessment**: We have standards like „Open Badges“ from education, we know different processes and types for peer review, etc.
- We need a standard vocabulary for types of **(research) funding**: Prizes, rewards, grants, fellowships etc., and types of funders

We need to stitch all of the above together; see W3C community draft for „verifiable claims“ as an example. If the goal are e.g. machine readable, executable plans for funding or governing of research, those „dots“ are necessary as building blocks.

Let‘s target for the waist of the hourglass.



Last slide: My wishlist for the Blockchain for Open Science community. Discuss! ;-)

1. Competition can be useful, but ultimately this shouldn‘t be „about winning the race“ for the one comprehensive, branded platform.
2. In order to suceed together: We need **loose consensus on vocabulary and patterns** (independent from any certain chain or language), plus **running code**.
3. Let’s apply Open Science standards to DAO and dApp approaches. Mostly: **Learning and attracting contributions by trying things out, in public.**
4. If blockchain for Open Science is our common goal, how about taking care for our achievements and advocacy together? There are good examples from both the OS and the blockchain „camp“, e.g. SPARC and the Ethereum Foundation.

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MORE INFORMATION

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