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Advanced P2P architectures will set new standards for how we take care for scholarly works & interactions

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BitTorrent based protocols turn the client-server paradigm upside down. But how does that help with scholarly works?

Premise: A researcher's everyday need: to have lots of objects at the same time. *(Think "distant reading" methods, think PDF archive on personal hard drive etc.)*.

Problem: To get hold of scholarly objects today, you have to go through a number of platforms, API (non)standards, "open" policies, business models etc. With each of these levels, the problems multiply.

Approach: BitTorrent sets sharing of objects as the norm. Loading gets easier the more people are interested, not the other way round.

New protocols like IPFS and DAT deliver a web-like experience based on BitTorrent.

Solution: Instead of gatekeeping a database (of supposedly open works) on a server, use nothing but open protocols (like HTTP, BitTorrent) in order to keep stuff available online.

Outcome: More resilient storage of objects (cf. Linux distributions on BitTorrent). Replacing privileged access with permissionless innovation, thereby leveling playing field for business model innovation.

Blockchains allow for exchange of value, following transparent rules, without having to trust any player

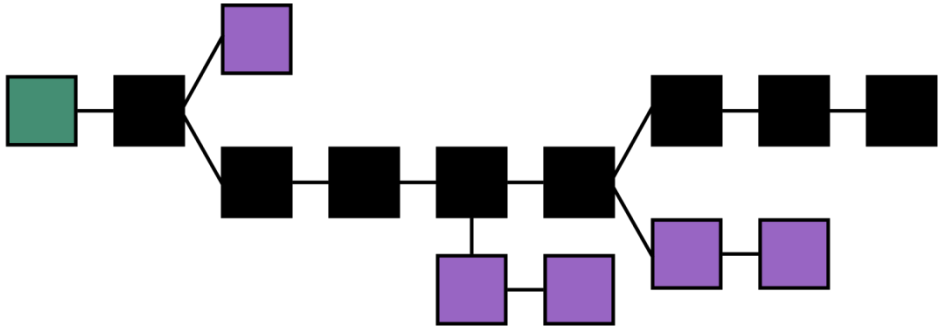
Problem: Researchers and contributors hardly interact directly with the public and with each other, instead routinely putting their trust into intermediaries like journal editors, metadata aggregators etc.

Approach: Blockchain allow them to interact following transparent rule sets. Valuable interactions are directly published by (and tied to) those who are involved. No need to trust 3rd parties.

Solution: People actually involved claim their contribution to a given piece of work, their assessment / review of other persons work etc. directly. Control what information is given away to the public is held by the sender and / or receiver of that information. *(Think educational certificates; blind peer review.)*

Outcome: Permissionless reuse and innovation of the scholarly metadata trail.

Responsible, efficient governance of the scholarly metadata trail.

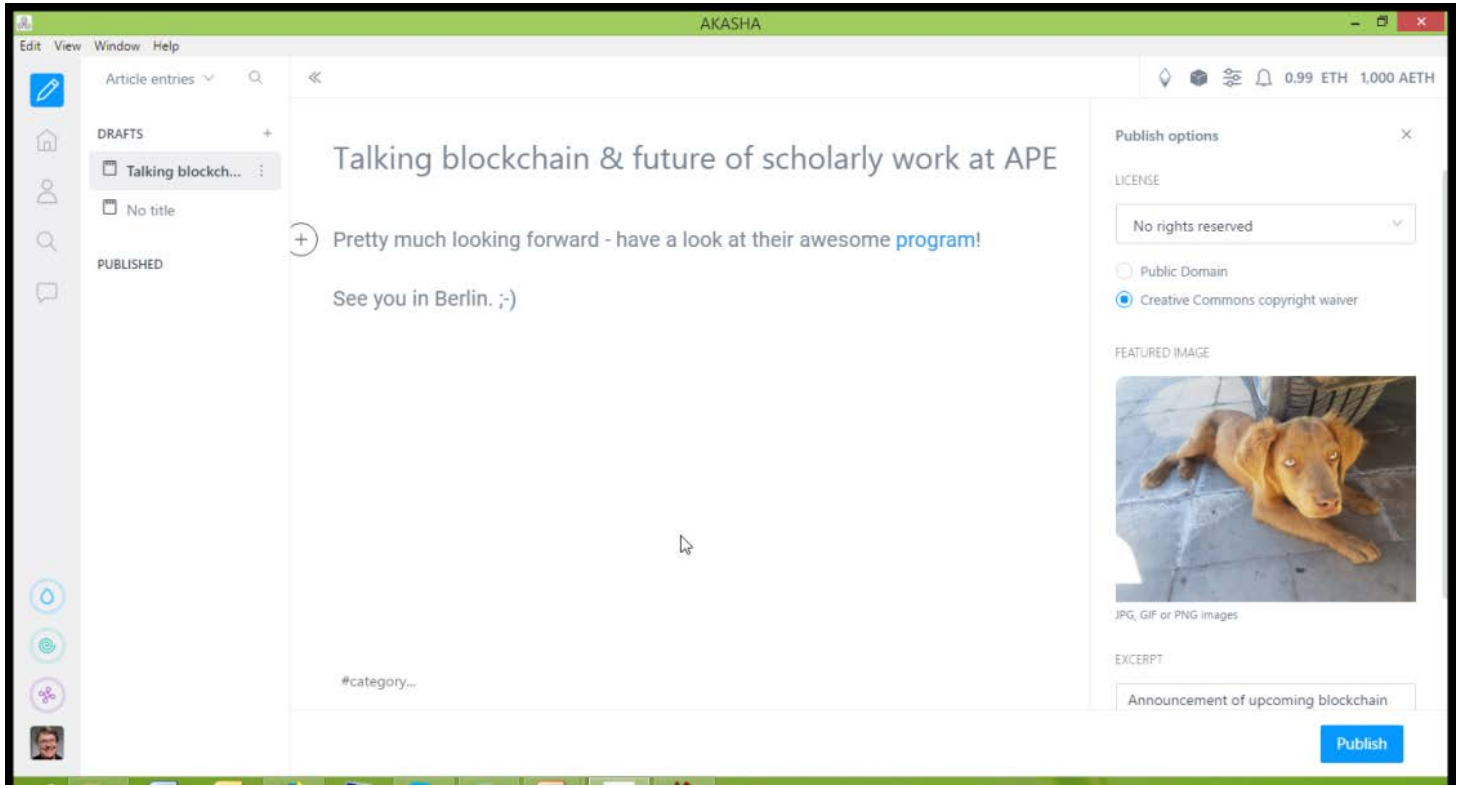


Some things to look for

W3C currently developing standards for self-sovereign identity and decentralized identifiers (DID).

Blockchain based educational certificates since 2016 in use at MIT Media Lab, Open University (UK), the Netherlands etc.

Akasha Project developing a SNS based on Ethereum and IPFS. Think Facebook for researchers with great UX, but this time without nasty platform / business model issues.



Further information

Article version of these slides to be published soon, look for preprint here:
https://tib.eu/Lambo

German version of these slides, somewhat lengthy:

https://doi.org/ch5d

Sönke Bartling's "Blockchain for Science" think tank:
http://www.blockchainforscience.com/

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