Can Blockchains help Changing the Data Culture?

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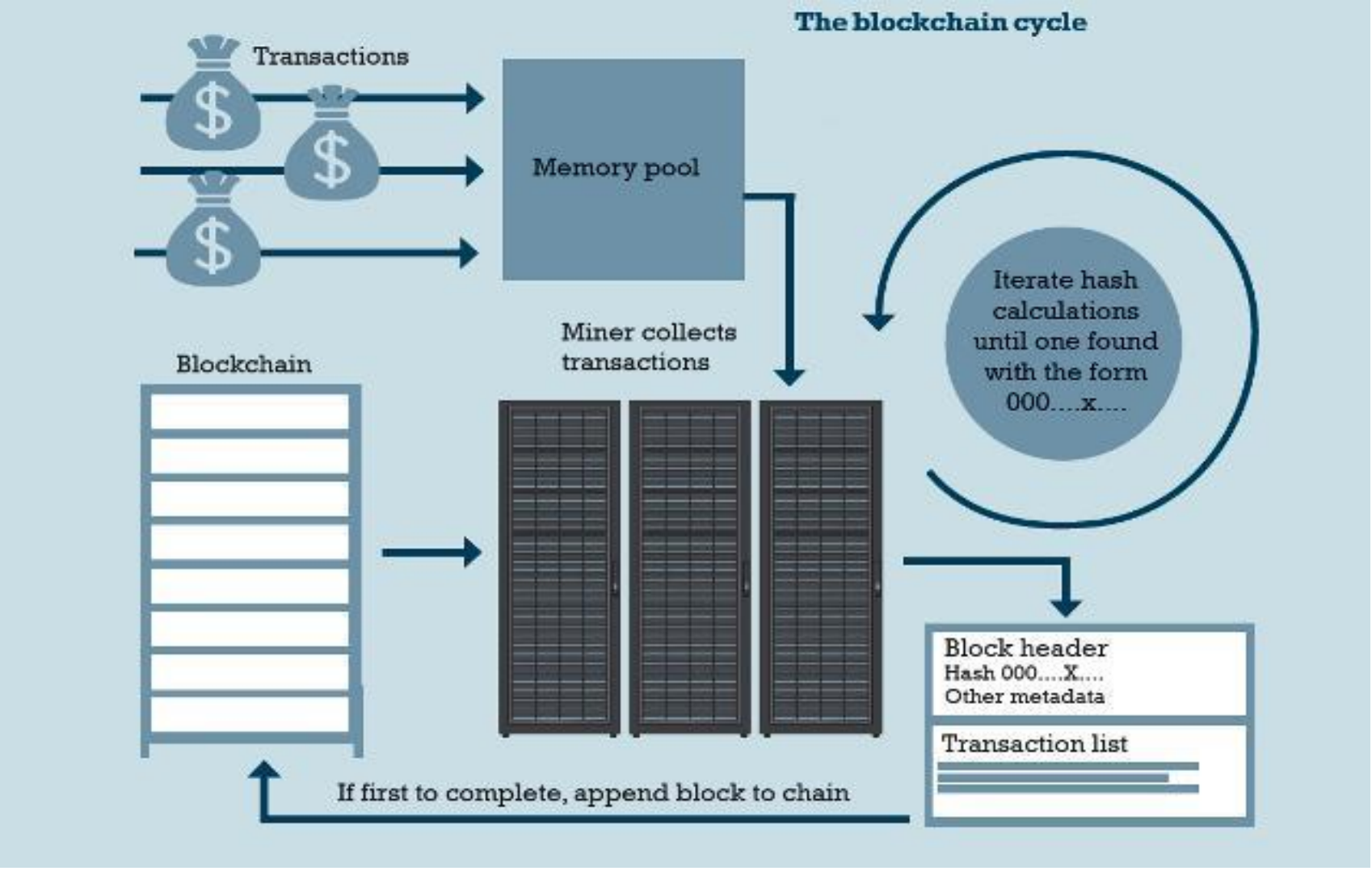
Technology of Trust

Pic: http://maxpixel.freegreatpicture.com/Shaking-Hands-Handshake-Data-Personal-Block-Chain-2850276

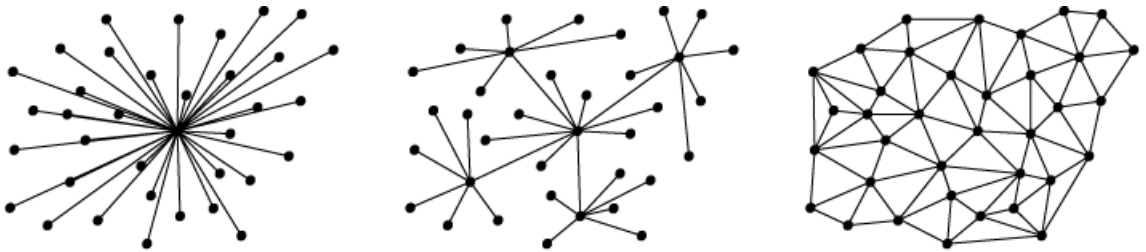
Blockchain



Pic: http://bindudeknock.com/2015/10/01/block-chain-technology-save-music-industry/

What is a Blockchain?

- Cryptographically protected distributed register of confirmed transactions or contracts.
- Ledger divided into blocks of transactions which are connected through hash chaining.
- For sharing knowledge, resources and power transparently and anonymously in real-time.



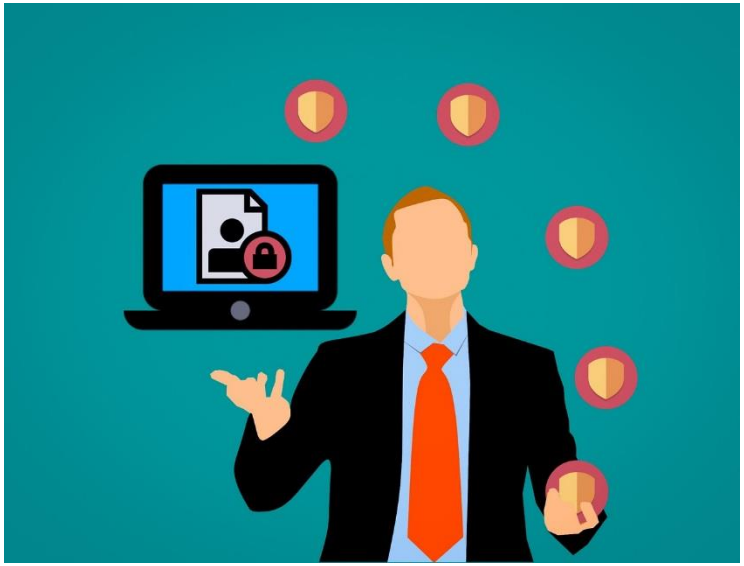
Smart Contracts

- Smart Contracts are special transactions enabled by the second generation blockchains: Ethereum, Hyperlegder, IOTA,
- They are programmed to handle everything automatically under given conditions
- Pre-written logic, stored and replicated on a blockchain, self-executing by running the code, can enforce the code to make payments, update blockchain, transfer ownership, etc

Blockchain & Data

Digital Objects and Persistent Identifiers

- Clear identities are needed for trusted environment.
- All types of digital entities can be Digital Objects
- Digital Objects can be associated with Persistent Identifiers and metadata



Data Contracts

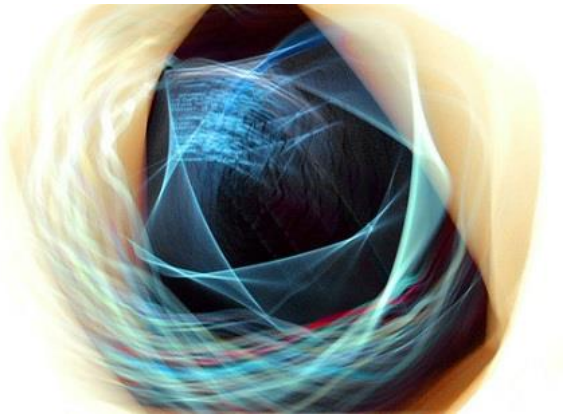
- Data is tradeable good
- Smart contracts allow complicated and automatic trade agreements without the need for trusted third party.
- Creators and users of data have different role.
- Combining DOs with a smart contract would give the possibility to safely document all transactions.

Data marketplace

- Changes in DO ownership can be stored in a blockchain as a transaction.
- Pricing schedule and time-based access control are coded in smart contracts
- The contract can define specific use case for the sold data or subsets of data.
- The transaction contains the PID and pointers to the location of DO and to descriptive metadata

Restricting and tracking the data

- The contract could give new PIDs when traded with subsets of data, specify how it can be used, add penalty for misuse, check if the buyer is trust worthy (whitelist or blacklist).
- With AI's and encrypted data, the all allowed use of data could be coded inside the smart contract and all the queries could be recorded in the blockchain to enable full trust, so the selling and analysing of data would be automatic and fare.



BLOCKCHAIN IS A TECHNOLOGY FOR TRUST

Questions?

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