Blockchain and privacy in GDPR era

Damian Klimas

Uniwersytet Wrocławski

Friend: So what is BITCOIN?

Me: Bitcoin is a digital payment network backed by blockchain technology that....

Friend: Wait... what is blockchain?

Me:

HOW DOES BLOCKCHAIN WORK?

One party requests a transaction.

Requested transactions are funneled into a P2P network and broadcast to each individual computer (or node).

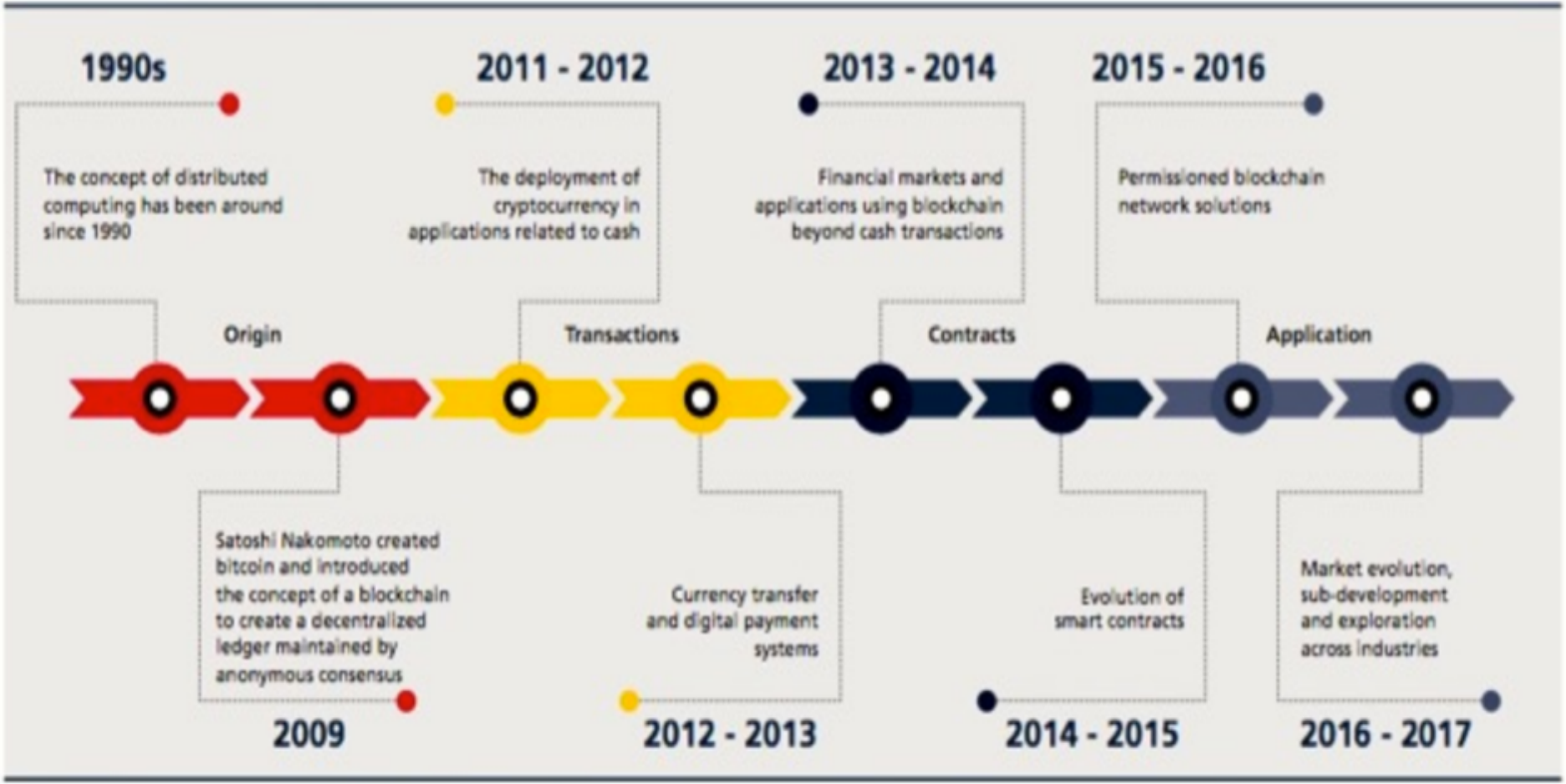
Individual nodes recieve the request and validate the transaction using an algorithm.

Approved transactions are represented as blocks and added to a public ledger.

Once the block is added to an existing chain, transactions are complete and permanent.

G2 CROWD

BLOCKCHAIN HISTORY



GDPR history

European Commission publishes the legislative proposal

Separate negotiations within Council and European parliament

EP reaches agreement

Negotiations and approval among the three institutions

Regulation published in the Official Journal

Two years implementation phase

Regulation applies from

2012

SPRING 2014

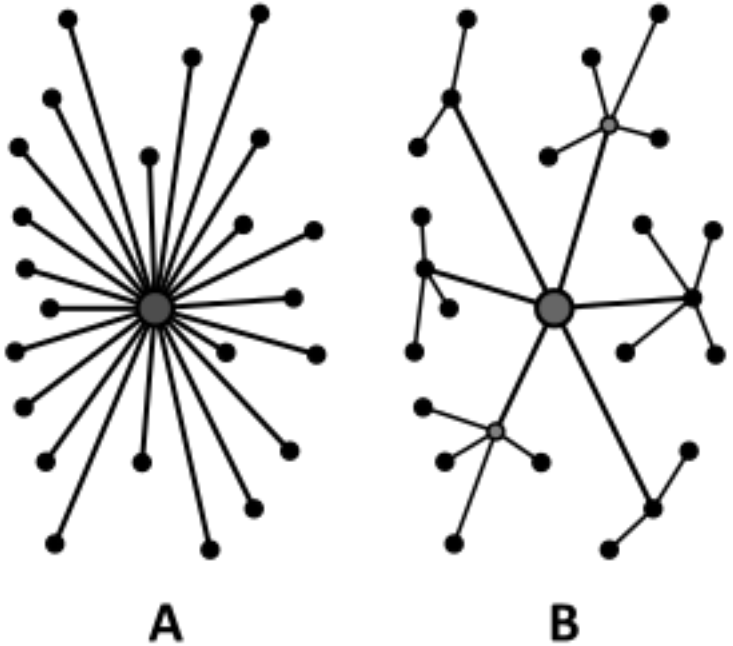
2015

27 APRIL 2016

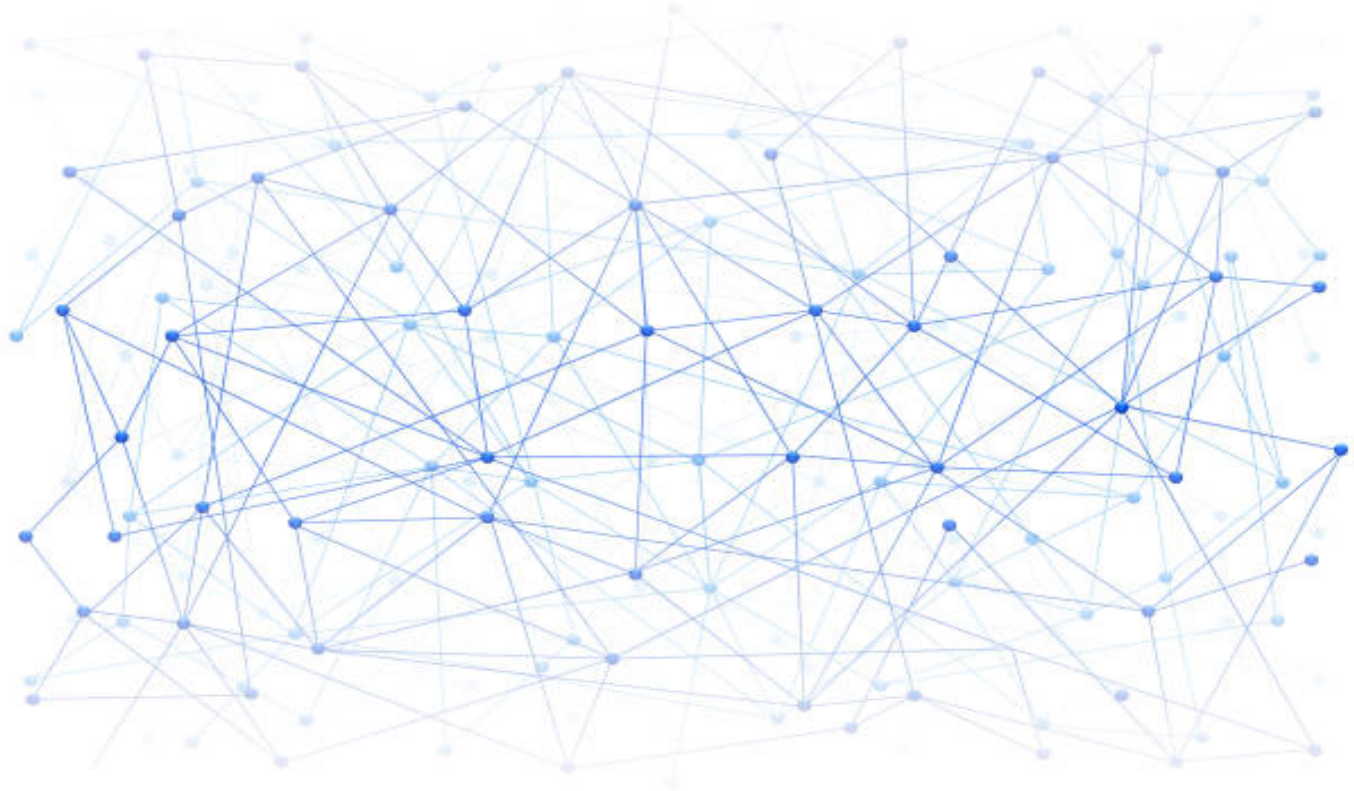
2016 2017

25 MAY 2018

Distributed and centralised systems



Distributed system



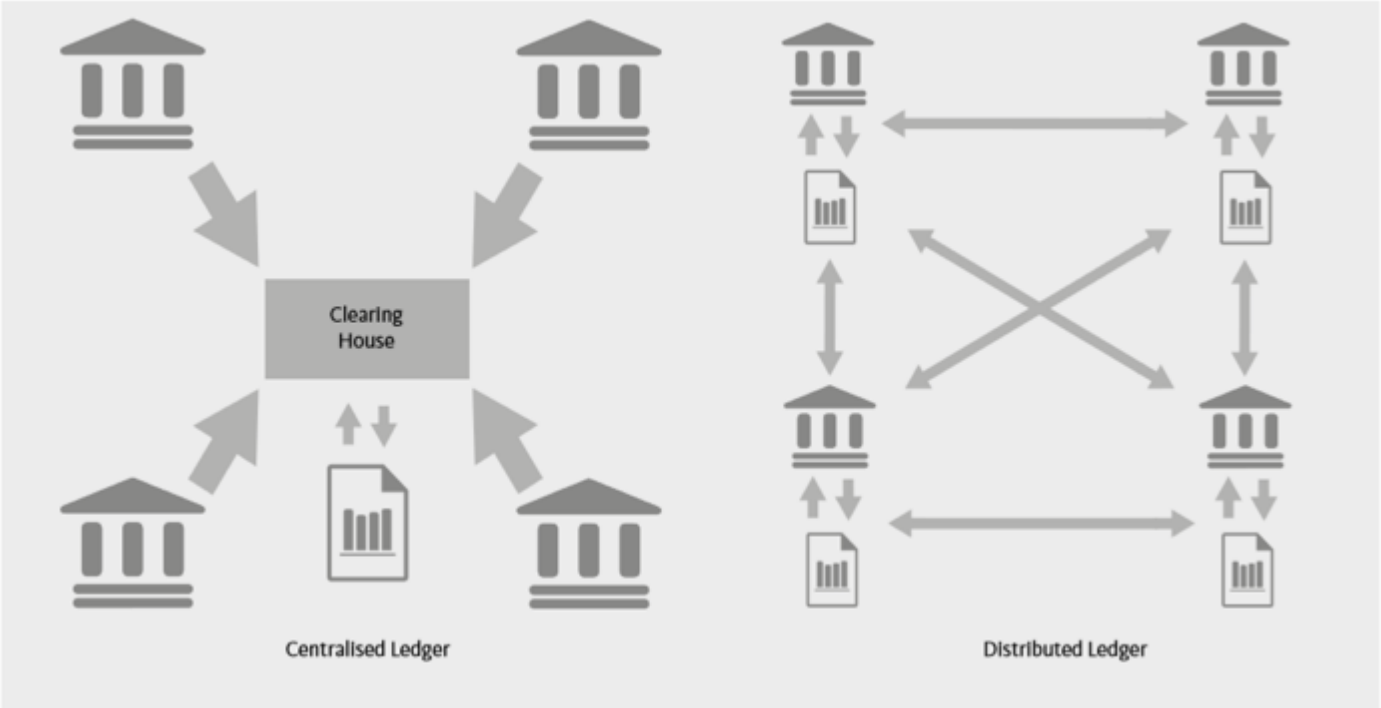
Centralised and decentralised ledger

CENTRALISED

- „trusted third party”
- “overwriting” data (records)
- Conventional data bases, where rules are applied to all data base from central app/other central source

DECENTRALISED

- created by all users
- updated with each transaction
- rules for transactions that are related to it



3 concepts of GDPR scope in regard to blockchain

1. GDPR is not applicable to blockchain
2. GDPR is partially applicable
3. GDPR is fully applicable

Program „Od papierowej do cyfrowej Polski”
Strumień „Blockchain i kryptowaluty”
PRZEGLĄD POLSKIEGO PRAWA W KONTEKŚCIE ZASTOSOWAŃ TECHNOLOGII ROZPROSZONYCH REJESTRÓW ORAZ WALUT CYFROWYCH
2017-01-19

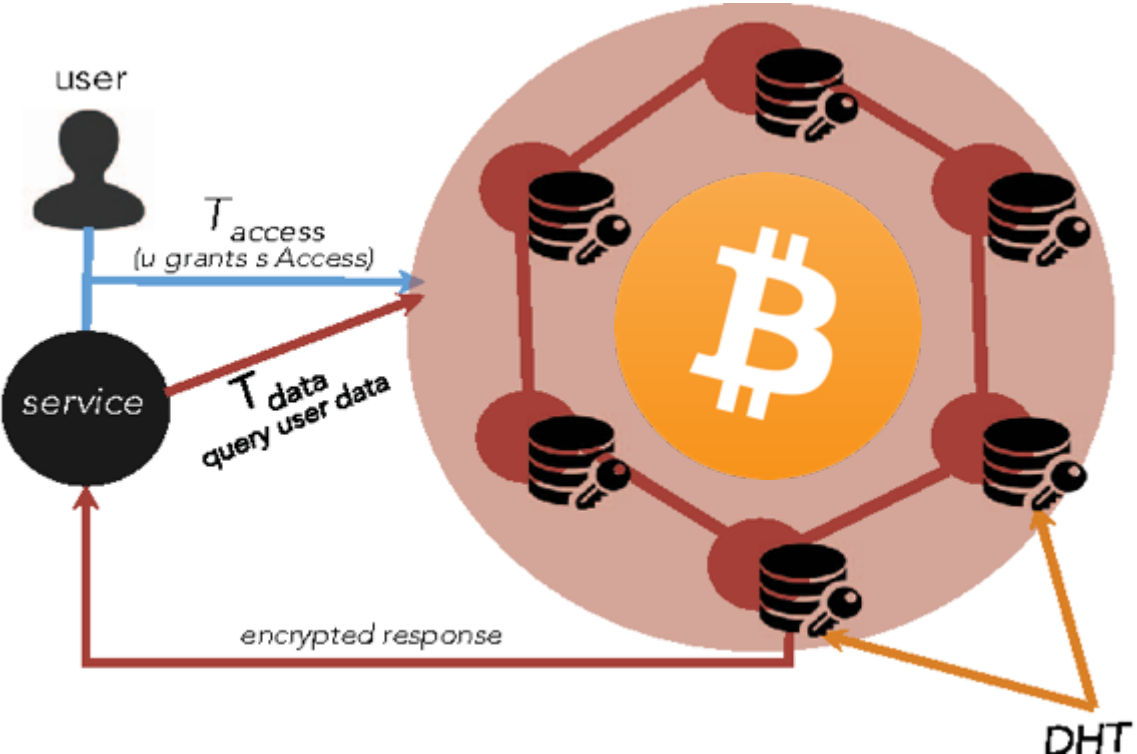
CNIL.
COMMISSION NATIONALE
INFORMATIQUE & LIBERTÉS

BLOCKCHAIN

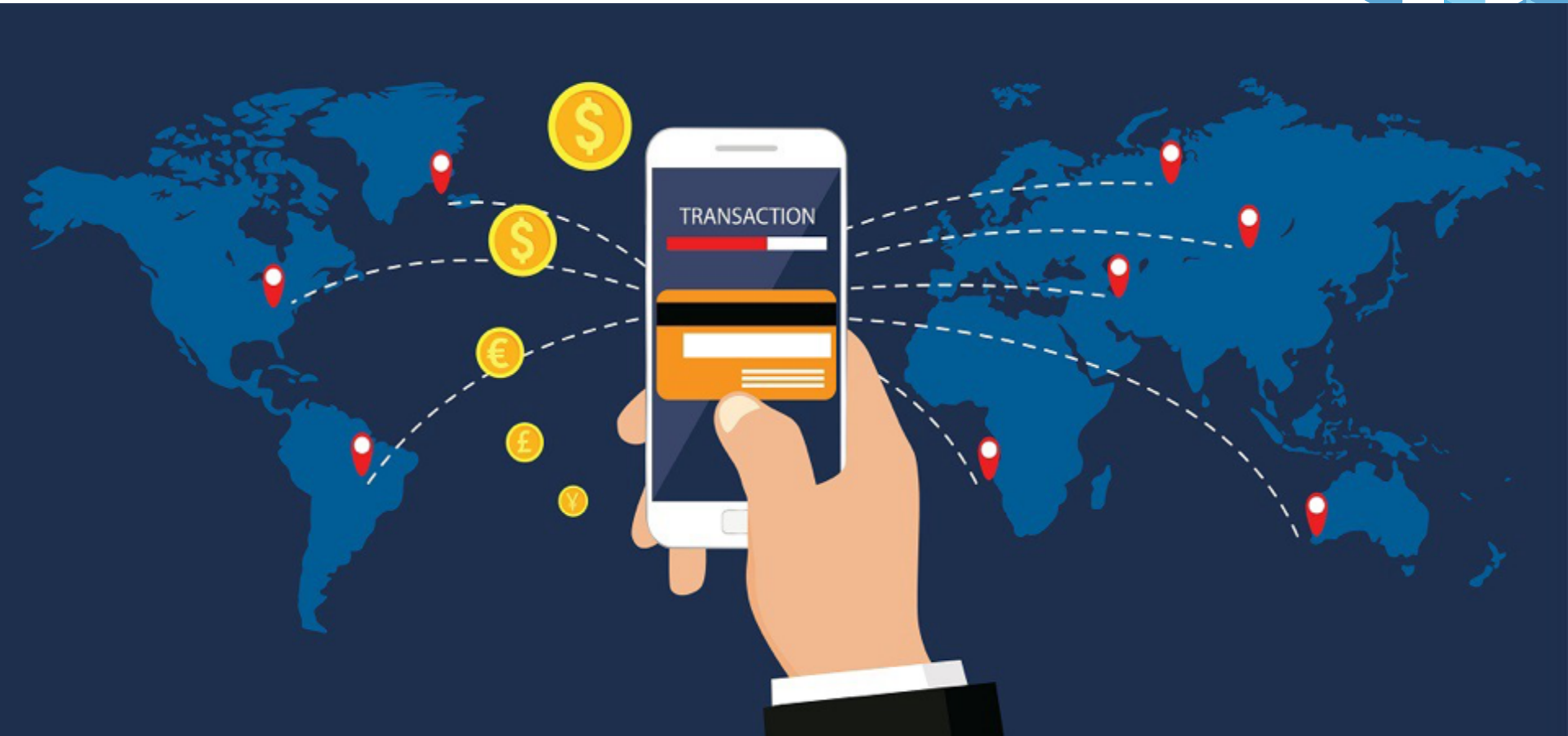
Solutions for a responsible use of the blockchain in the context of personal data

6th of November 2018

Blockchain and personal data



Status of user/participant



Joint controlling in blockchain

Article 26

Joint controllers

1. Where two or more controllers **jointly determine the purposes and means of processing**, they shall be joint controllers. They shall in a transparent manner determine their respective responsibilities for compliance with the obligations under this Regulation, in particular as regards the exercising of the rights of the data subject and their respective duties to provide the information referred to in Articles 13 and 14, by means of an arrangement between them unless, and in so far as, the respective responsibilities of the controllers are determined by Union or Member State law to which the controllers are subject. The arrangement may designate a contact point for data subjects.

Public key/address/identifier

Are they personal data?

Examples:

1MAVwzZQx6HVMH3rna9h6vtUueo7wZ3Qr9

Status of miner

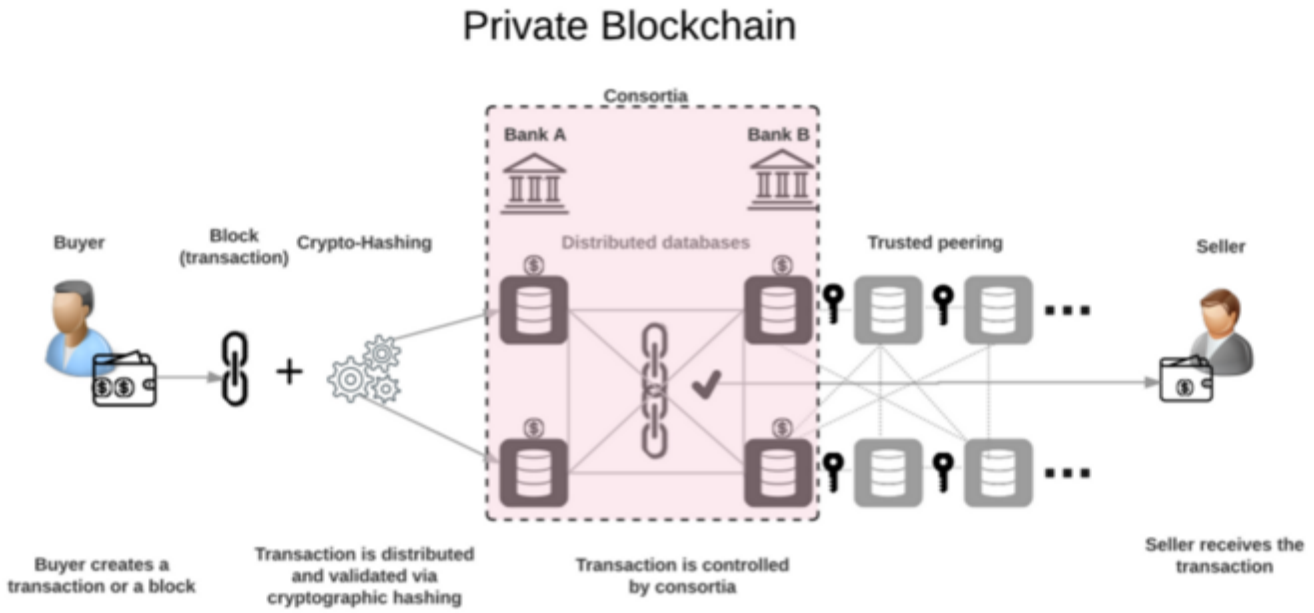
Data retention

„The data minimisation principle requires that the data collected be relevant and limited to what is strictly necessary in view of the purposes for which they are processed.”

Blockchain and the GDPR: Solutions for a responsible use of the blockchain in the context of personal data, CNIL,
06 November 2018

What about this?

Private blockchain and personal data



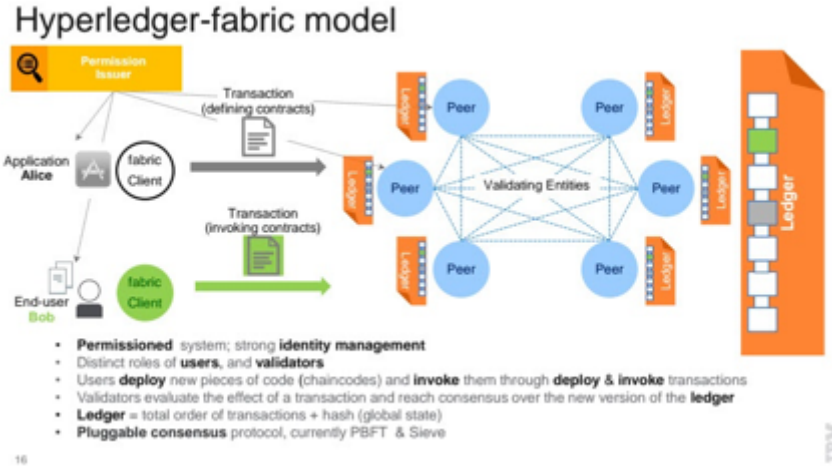
Decentralised open and permissioned ledgers

OPEN (PUBLIC)

- EVERYONE CAN JOIN
- SOMETIMES ONE SHOULD MEET CERTAIN REQUIREMENTS (SOFTWARE INSTAL)

CLOSED (PERMISSIONED)

- JOIN UPON ACCEPTANCE/INVITATION
- CLOSED LEDGER
- CONTROLLED BY ”THIRD PARTY/OWNER”



GDPR rights that are entirely compatible with a public blockchain

1. **Right to be informed (art. 12-14)**
2. **Right of access (art. 15)**
3. **Right to portability* (art. 20)**

GDPR rights that are not (entirely) compatible with a public blockchain

1. **The right to rectification (art. 16)**
2. **The right to erasure (art. 17)**
3. **The right to restrict processing (art. 18)**
4. **Rights in relation to automated decision making and profiling (art. 22) –** „*right to obtain human intervention*”

Examples of blockchain implementations, where personal data are crucial

A Pioneer in Real Estate Blockchain Emerges in Europe

Wall Street Journal - 6 mar 2018

The **blockchain** technology that underpins cryptocurrencies such as **bitcoin** could change the way property deals are done and recorded more than any other new technology, **real-estate** and technology experts say. And Sweden's nearly 400-year-old land mapping and registration authority is likely to ...

DEC 18, 2017 @ 01:08 AM 97,421 The Little Black Book of Billionaire Secrets

Dubai Sets Its Sights On Becoming The World's First Blockchain-Powered Government

Thank you for your attention