# Blockchain Technology and IoT New Challenges

IoT Week

05 June 2018

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Initial EU interest for Blockchain in the financial sector
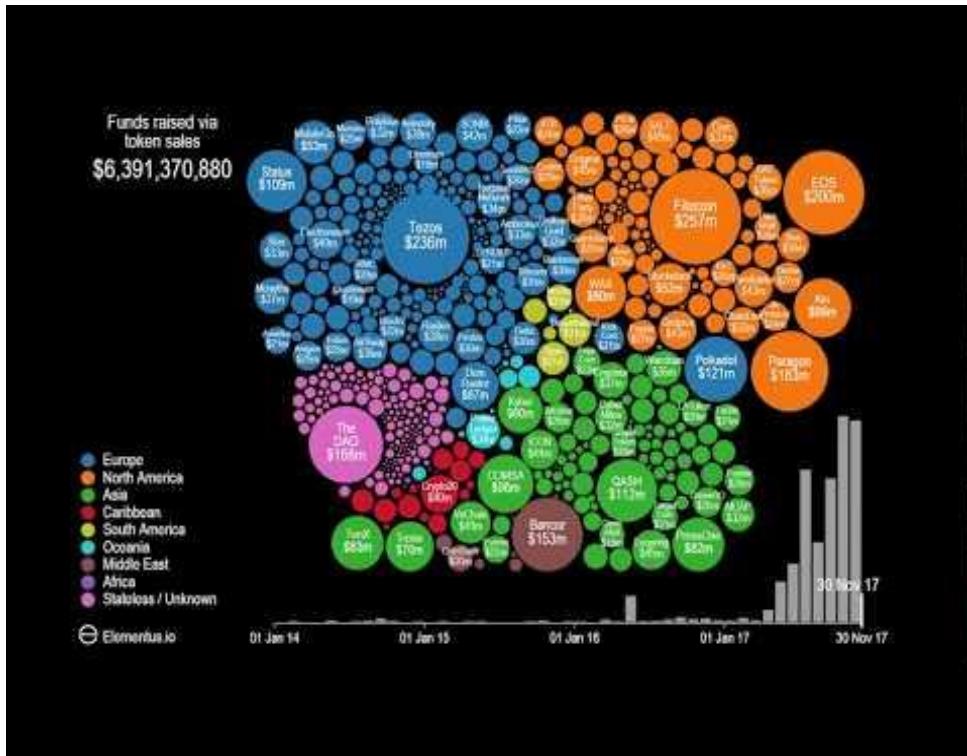
European Parliament report on
- *Cryptocurrencies, 3 Mai 2016*
- *FinTech the influence of technology on the future of the financial sector, 28 April 2017*

EC FinTech Action Plan, 7 March 2018

European Commission

CRYPTOGRAPHICALLY SECURE

TAMPER RESISTANT LEDGER

DISTRIBUTED DATABASE

SMART CONTRACTS

DIGITAL ASSETS
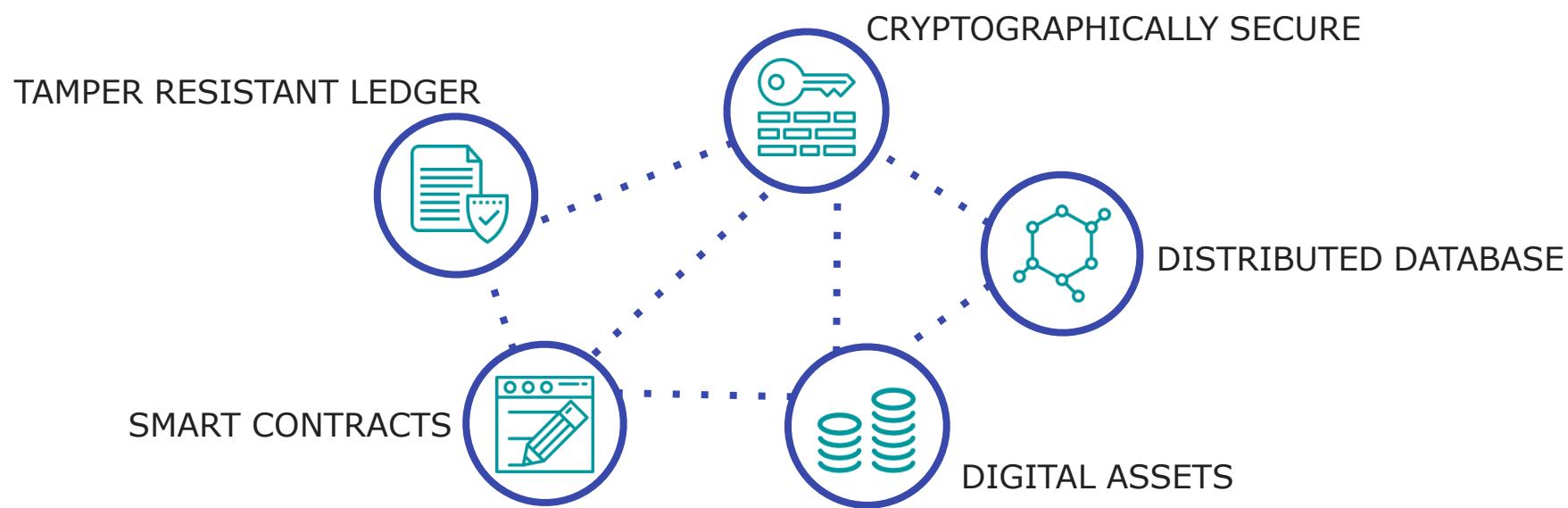
Proliferation of early-stage innovation, across use cases

Tracking, Supply Chain & Workflows

Governance Models & Voting

Self-Sovereign Personal Data

Decentralized Storage, Computing Power and Digital Resources

Exchanges, Predictions & Settlement Without Intermediaries

**Marketplaces for Creative Work and Collectibles**

Certifications & Titles

IoT & Energy Markets

Transparent Accounting, Reporting & Analytics

Real value of the technology - potential to reinvent entire industries

European Commission
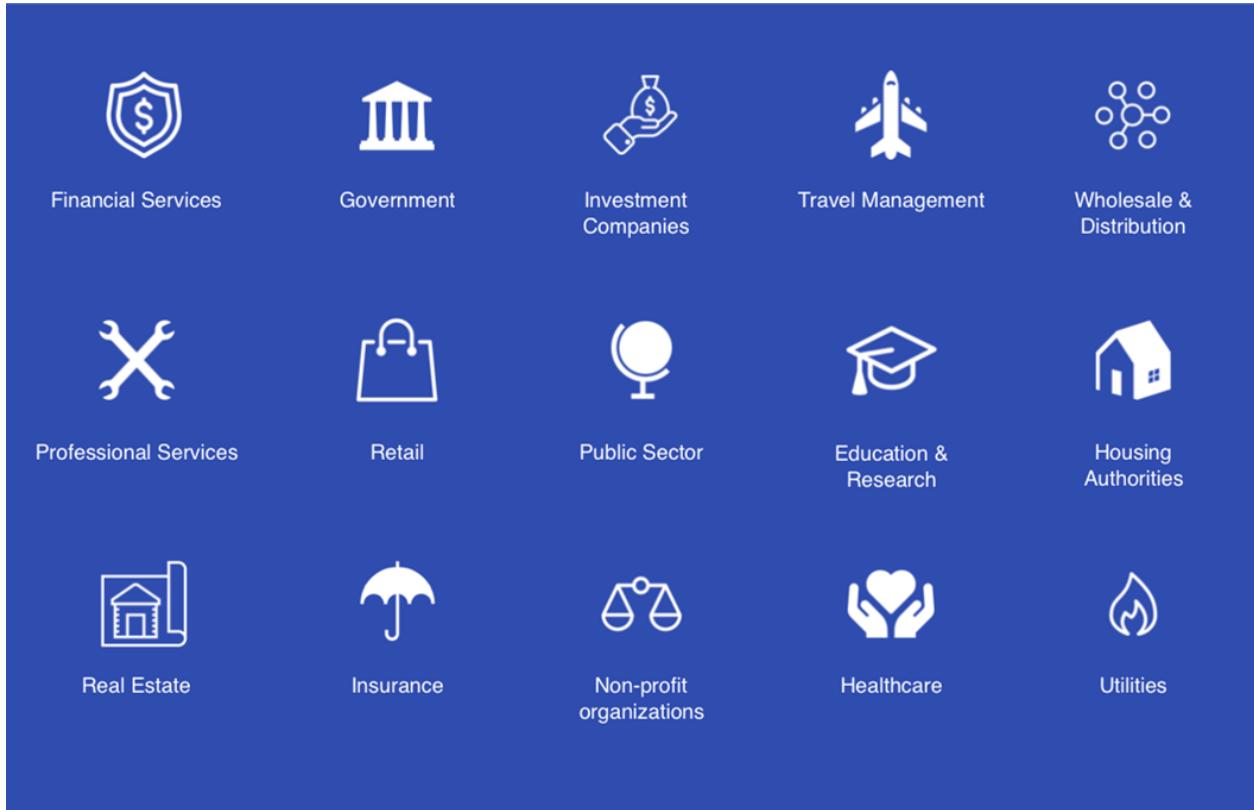
16 May 2018: European Parliament resolution on blockchain

http://www.europarl.europa.eu/news/en/press-room/20180516IPR03622/use-blockchain-model-to-cut-small-firms-costs-and-empower-citizens-urge-meps

Challenges

- *Identification and authentication management*
- *Technical*
  - **Energy consumption (Mining - PoW)**
  - **Scalability**
  - **Interoperability**
  - **Integration with legacy systems**
- *Legal and regulatory*
  - **General Data Protection Regulation**
    - Right to be forgotten, data portability, user consent, etc…
  - **Smart contract - legal enforceability**
  - **eIDAS – eIdentification and Trust services for eTransactions**
  - **Financial regulation**
    - AML, PSD2, MIFID, KYC, etc…
  - **Initial Coin Offerings**
- *Transformation – disintermediation - processes*
- *Governance – permissioned, permission-less*
- *Skills*

EU blockchain initiative(s)

FinTech Action   Plan

- *FinTech Task Force – DG FISMA and DG Connect*
- *Published on 7 March 2018*
- *For a more competitive and innovative European financial sector:*
  - **Crypto assets and ICOs monitoring**
  - **Standards and Interoperability**
  - **EU blockchain infrastructure**
  - **EU blockchain initiative**
- *https://ec.europa.eu/info/publications/180308-action-plan-fintech_en*

EU Blockchain & Forum — Observatory

European Commission
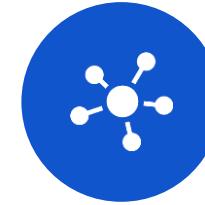
Goals

Accelerate
Blockchain innovation and ecosystem development in Europe

Enable
Citizens and businesses, particularly SMEs, to benefit from the technology's socioeconomic potential

Take advantage
Of blockchain technology to foster the digital single market and promote cross-border interoperability

Produce and share knowledge

Analyse blockchain developments and trends

Identify relevant existing blockchain initiatives

Activities

Create an attractive and transparent forum

Highlight opportunities and issues at stake regarding the technology

Launched on 1st February 2018

EU Blockchain Partnership

GOAL: EUROPE TAKES A GLOBAL LEAD IN THE ROLL OUT AND UPTAKE OF BLOCKCHAIN TECHNOLOGY

23 Member States and Norway have signed a declaration where they agree to cooperate on the development of a **European blockchain services infrastructure**, *that can support the delivery of cross-border digital public services by public authorities*

The *European blockchain services infrastructure* will:

- Be fully compliant with the EU acquis (privacy, security and others),
- Leverage relevant EU tools such as eID, e-authentication etc.
- Support interoperability and "open source"
- Be built through innovation procurement

Blockchain Partnership Initiative

Research and innovation: H2020 Info Day on Blockchain

- On 19 December 2017

- 5M€ Horizon Prize on Blockchains for Social Good
  - **http://ec.europa.eu/research/eic/index.cfm?pg=prizes_blockchains**
  - **Deadline for applications: Q2 2019**

- Potentially up to EUR 340 million could be committed from 2018 to 2020 in
  - **Transport**
  - **eGovernment**
  - **Energy**
  - **Next Generation Internet**
  - **IoT**
  - **...**

- https://ec.europa.eu/digital-single-market/en/news/information-day-horizon-2020-blockchain-distributed-ledger-technologies-topics-and-fintech

Standards and interoperability

- *Why do we like (open) standards?*
  - **Avoid a « winner takes it all » situation**
  - **Avoid customer lock-in**
  - **Promotes competition – brings more SMEs on the market**
  - **Driver of interoperability**
  - **Accelerate adoption of innovation and technologies**
- ISO TC 307 – Blockchain and Distributed Ledger Technologies
  - **European Commission liaison A – experts contributions**
  - **WG2 Identity, Security and Privacy**
  - **WG3 Smart Contracts**
  - **SG6 Governance**
  - **SG7 Interoperability**
- *CEN-CENELEC Focus Group on Blockchain*
  - **Deliver an EU White Paper on Blockchain standardisation**
- *ITU-T Focus Group on Application for DLT*
- *ETSI Workshop on Blockchain (14-15 June 2018)*

And on IoT...

The importance of IoT

- IoT - **key growth area** to be addressed at a global level.

- Huge **opportunity** for Europe but also for international cooperation. Growing need for stronger cooperation.

- IoT market in Europe will exceed one trillion € by 2020.

- **IoT Focus Area** at EU level as part of the Horizon 2020 Programme with **Large-Scale Pilots (LSPs)**

- Part of the **Next Generation Internet Initiative**

Existing H2020 projects addressing IoT and blockchain

- *IoTCrawler*
  - **Develop the next generation of Internet search engines that support crawling, discovery, search and integration of IoT data.**

- *SOFIE*
  - **to define and implement a technology-agnostic approach to federate existing IoT systems, using distributed ledger technologies (DLT).**

- *CHARIOT*
  - **a unified approach towards Privacy, Security and Safety (PSS) of IoT Systems coupled with blockhain to notarize transactions.**

- *SerIoT*
  - **use DLT to keep immutable record of the history of smart devices and improve the security and trust with smart contracts**

o *Leading Startups and SMEs*

o *Conclusions:*

o *Need for*

   o **Cooperation across industry to support a performant and scalable infrastructure**

   o **Testing from an open community to address (security) vulnerabilities and build trust**

o *H2020 focus area digitising and transforming European industry and services*

Timeline:

- Call opening: 31st October 2017
- Call deadline: 17th April 2018, 17.00h
- Budget: up to 1,5 MEUR

Specific Challenges:

- Internet of Things (IoT) technologies and applications are bringing fundamental changes to all sectors of activity and are therefore an essential element of the Next Generation Internet.

- The challenge is to leverage EU technological strength to develop the next generation of IoT devices and systems that build on enhanced sensing/actuating, reasoning capabilities and computational power to the edges, but also new capabilities such as artificial intelligence, deep semantic interoperability and novel contractual arrangements like Blockchains.

Thank you !

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