

BLOCKCHAIN AND REGULATION – FROM STANDARDS TO VALUES TO REGULATION

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TECHNOLOGY IS A GAME CHANGER

Alan Greenspan once said that regulators **cannot “lean against the wind of change”**.

In the case of the blockchain economy, **IT is that wind of change**.

In contrast to what Paul Krugman said: **“IT cannot change institutions”**.

That is a questionable statement, as **IT is changing institutions all the time**.



KNOWLEDGE IS NEEDED BEFORE STANDARDIZING OR REGULATING

Universal wallets

What are they exactly and why is it important to understand what is managed through wallets

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Check for updates

CATCHWORD

Universal Wallets

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1 Introduction

The adoption of blockchain-based cryptocurrencies has paved the way for blockchain projects in other applications. In general, cryptocurrencies and crypto tokens are accessed through crypto wallets containing the necessary keys to transfer digital assets securely. The increased density of automation—from smart clothing, homes, and appliances, to smart cars, smart roads, and smart cities—has heightened the need for effective, resilient, and secure access to and communication with these devices. In this context, universal crypto wallets play a key role in authorizing transactions and governing activities.

Digital wallets existed long before the invention of blockchain. *Crypto wallets* are a new type of digital wallet that provide a secure environment for accessing and conducting transactions on blockchains. The next evolution of crypto wallets, *universal crypto wallets*—what we call *universal wallets*—can be considered the browsers used to navigate on blockchain (Matthews 2019; Büttgen et al. 2021, pp. 85–89), even though they are not yet as user-friendly as modern Internet browsers. Universal wallets

have recently gained prominence in a range of sectors. Facebook has announced its cryptocurrency Diem (Libra Association 2020), previously known as Libra (Kastrenakes 2020; Krustemi and Tuchschnid 2020) and accompanying wallet, Novi; this system essentially turns a Facebook account into a wallet that manages not just identity credentials but also other types of tokens. Several banks are investigating the use of wallets for cross-border transactions (Aucr and Boehme 2020), while central banks are exploring wallets for handling central bank digital currency (Engert and Fung 2017). The European Union is developing cross-border services for citizens based on the European Blockchain Services Infrastructure (EBSI); these services will require the use of universal wallets to access resources and manage digital credentials. Finally, the rise of non-fungible tokens (NFTs) (Nadini et al. 2021) representing art and other assets has only been made possible via the use of universal wallets (Wang et al. 2021).

The widespread view that identity is becoming the new currency (Maurer 2020) illustrates the importance of wallets that can securely manage digital identities, identifiers, and credentials. As personal identifiers are increasingly used for trade and to provide digital and physical access to services or buildings, protecting digital identities is becoming even more important. Frequently reported security breaches demonstrate the current vulnerability of customers' data and the need for increased security. Data centers of large companies have seen countless breaches that have enabled identity theft and fraud (Toth and Anderson-Priddy 2019). Hence the focus in this paper is on universal wallets in blockchain systems, which can achieve the desired levels of security and stability. A perspective on the benefits of blockchains for self-sovereign identity can be found in van Bokkern et al. (2019).

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TOKENIZATION IS HAPPENING – AND ITS NOT A NEW THING ANYMORE

2018

European Blockchain Partnership

FOURTH MEETING

18TH OCTOBER 2018

Brussels, Belgium



2017

European interests on blockchain use cases

*Potential need for standing documents that take **European legislation such as GDPR** into consideration.*

*Illustrative use cases which comprise **values important to the EU**, such as giving IP owners control over their data.*

***Identity management** use cases across border to manage refugees as well as to prevent social welfare fraud.*

*Ultimately, there may be the **need for a Eurochain** to support European business and a Crypto-Euro.*

EUROPEAN BLOCKCHAIN CENTER

REGULATORY AND STANDARD ADVISORY

- **United Nations Economic Commission for Europe** Blockchain Expert and Lead of the Blockchain Governance Interoperability Working Group
- **European Blockchain Partnership** – Convenor of Blockchain Ethics Expert Group
- **Erhvervsministeriet** Representative of Denmark at the European Blockchain Partnership Technical Steering Group
- **ISO - International Organization for Standardization** Convenor of ISO TC 307/WG 5 Governance
- **Dansk Standard** Head of Danish Working Group at TC 307 "Blockchain and Distributed Ledger Technologies" at ISO



WHAT MAKES CRYPTOGRAPHIC TOKENS SPECIAL

- Cryptographic tokens represent **programmable assets** or **access rights** managed by smart contracts and distributed ledgers.
- They are accessible only by the person who controls the **private key** for that address and can only be signed using this private key.
- Tokens might affect the financial world in the same way as email affected the postal system.



ISO - BLOCKCHAIN GOVERNANCE STANDARD

ISO TS 23635 Blockchain and distributed ledger technologies – Guidelines for governance

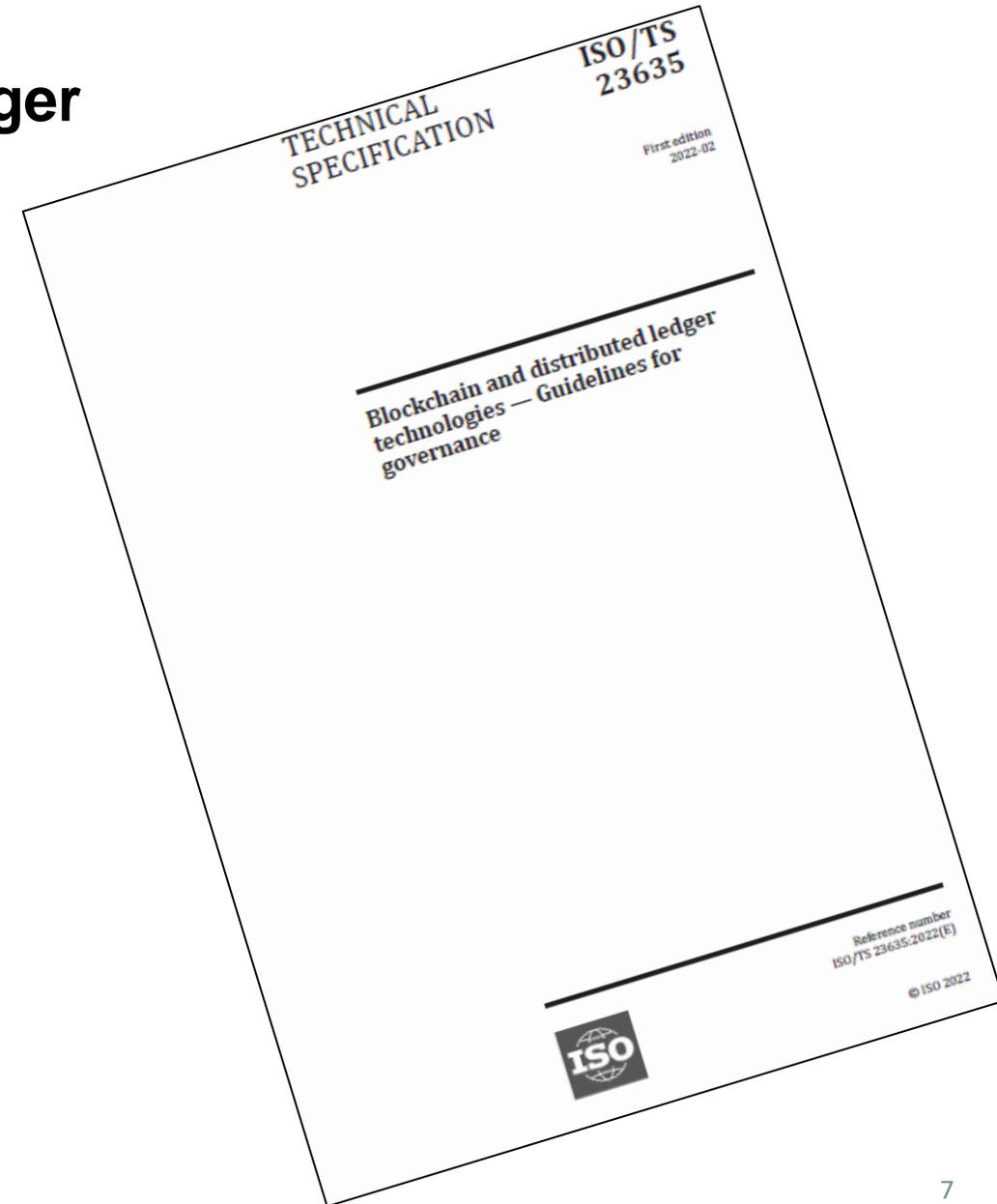
→ (Why), Who, How, What?

Who: Created *for* participants, users, developers, regulators, auditors etc.

Who: Created *by* valued expert/members of ISO TC 307/WG 5 Governance

How: ISO development/process rules, consensus, ballots

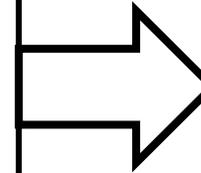
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ISO - BLOCKCHAIN GOVERNANCE STANDARD

Nine action-oriented principles to follow:

- 1: Define identifiers of entities involved
- 2: Enable decentralized decision-making
- 3: Ensure explicit accountability
- 4: Support transparency and openness
- 5: Align incentive mechanisms with system objectives
- 6: Provide performance and scalability
- 7: Make risk-based decisions and address compliance obligations
- 8: Ensure security and privacy
- 9: Consider interoperability requirements



- Framework
- Type: Permissioned/permissionless
- Lifecycle and Context
- Roles
- Instruments (on/off-ledger)
- Risk/privacy
- Interoperability

EUROPEAN BLOCKCHAIN PARTNERSHIP - GUIDELINES FOR BLOCKCHAIN ETHICS

In 2021 European Blockchain Center initiated the **EBP Expert Group on Blockchain Ethics (EGBE)**.

The EGBE is supported by the **European Blockchain Partnership (EBP)**.

The EGBE has **12 expert members** who create the **first ethical guidelines for blockchain systems** supported by the European Commission in the world.

These guidelines will influence how blockchain systems are being **developed, implemented, and used**, not only in Europe but also internationally.



BLOCKCHAIN READINESS REPORT FOR DENMARK 2019

- Data collection among **3,030 companies in Denmark** from ESR (Erhvervsregisteret)
- **Response rate 44%** or 1,369 absolute responses
- Largest, most comprehensive **macro-economic study** conducted so far world-wide.

IT UNIVERSITY OF COPENHAGEN

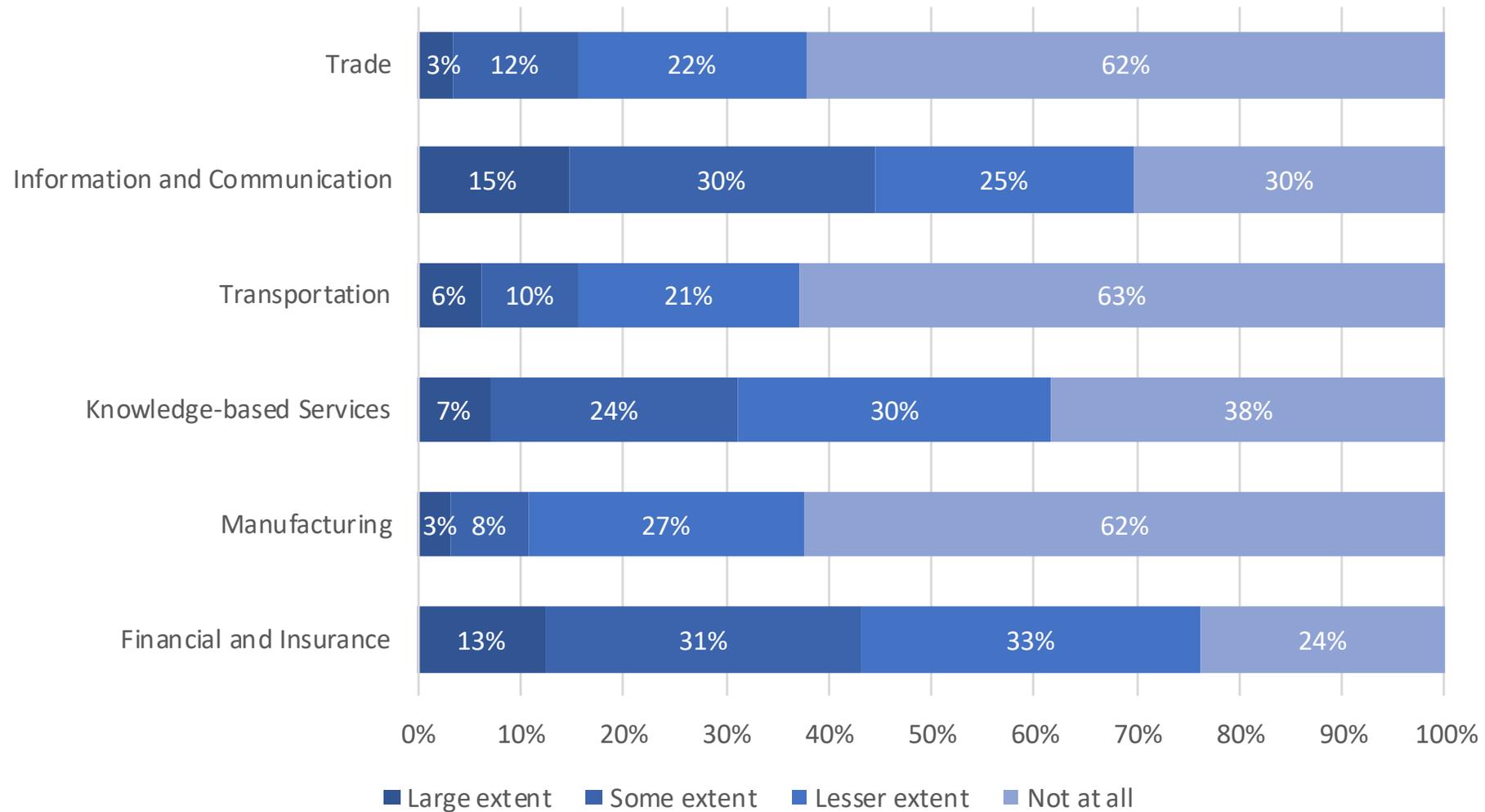


European Blockchain Center

 **Fraunhofer**

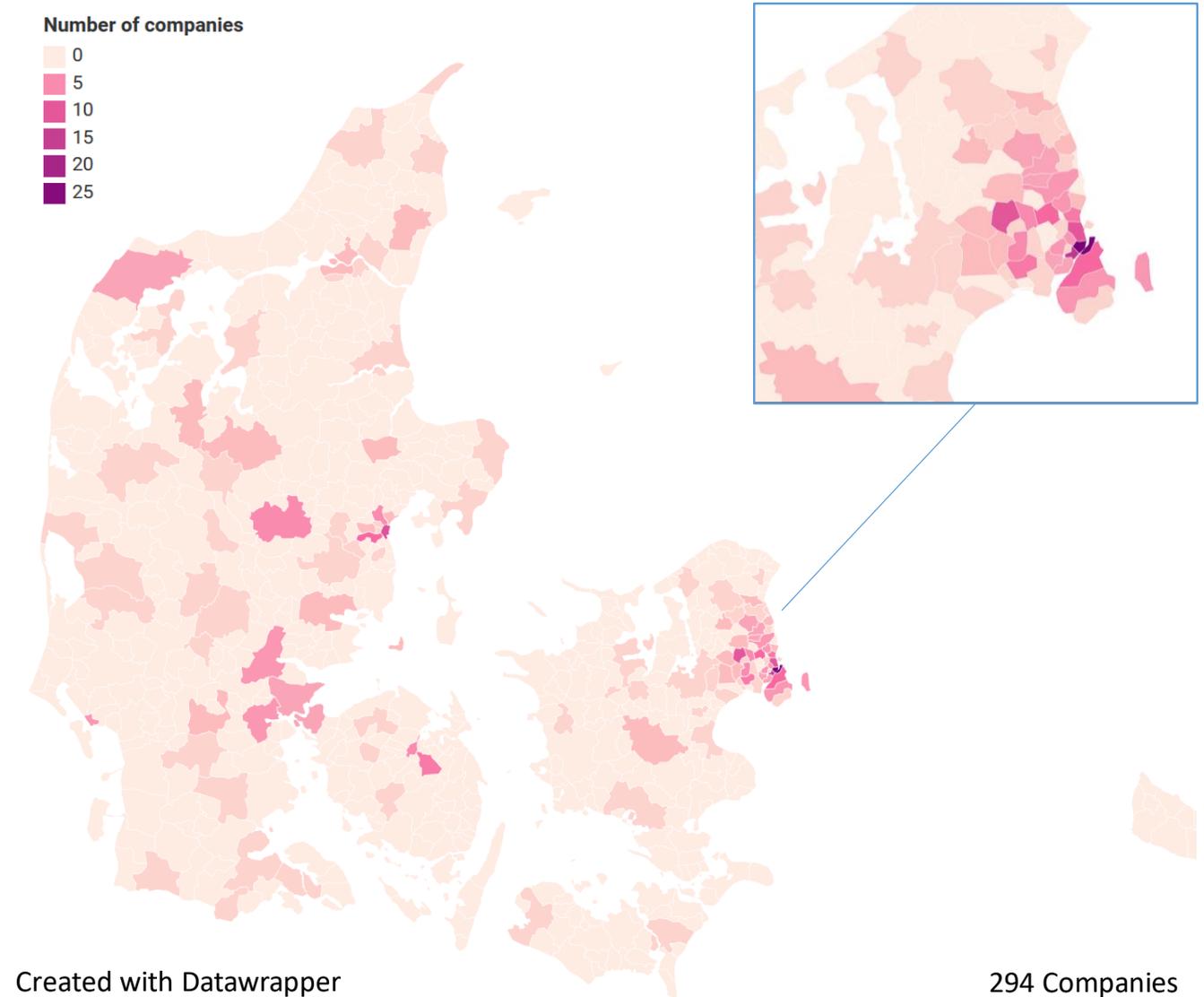

**DANMARKS
STATISTIK**

BLOCKCHAIN KNOWLEDGE BY INDUSTRY IN 2019 (N= 1,114 COMPANIES)



EMERGING BLOCKCHAIN CLUSTERS IN DENMARK IN 2019

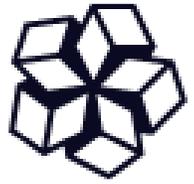
- Companies actively working with blockchain (**62 companies**)
- Companies actively investigating blockchain technology and its potentials (**294 companies**)
- Companies expecting to start a blockchain project (**28 companies**)



MAKROECONOMIC REPORT ON BLOCKCHAIN IMPACT IN DENMARK

SCAN ME





European Blockchain Center

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