

# Changing the game: The DeFi challenge

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# Contents

- 01 What is DeFi and how is it being used?

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- 02 DeFi and governance under EU law

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- 03 DeFi and EU/German financial regulation

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- 04 DeFi in the UK and practical issues

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# 1 What is DeFi and how is it being used?





*"It has the potential to rewire how the financial system works, with all the promise and perils that entails ... At a time when people live ever more of their lives online, the crypto-revolution could even remake the architecture of the digital economy".*

"Down the rabbit hole | The beguiling promise of decentralised finance"  
The Economist, Sept 2021



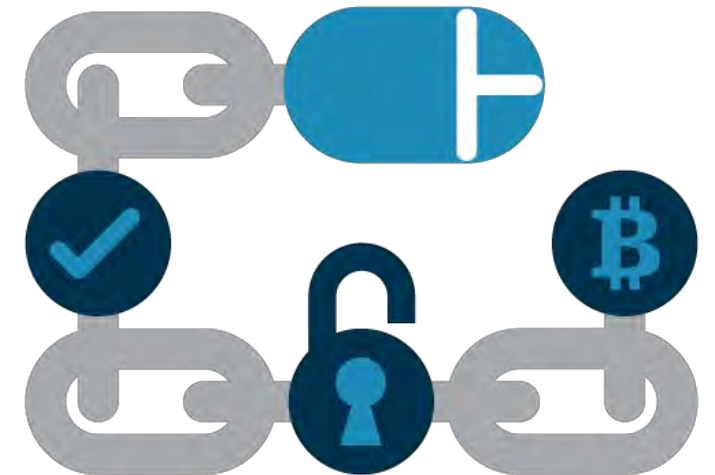
## Building blocks of DeFi: blockchain

Distributed ledger technology:

- a digital database
- distributed
- transparent and auditable
- secured by cryptography

and may also be

- public: decentralised
- private: centralised



## Building blocks of DeFi: cryptocurrency

*"cryptographically secured digital representations of value or contractual rights that use some type of DLT and can be transferred, stored or traded electronically"*

UK Cryptoassets Taskforce



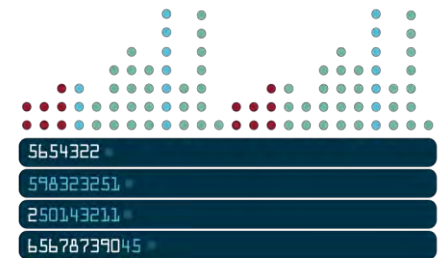
Tokens



Stablecoins



CBDC

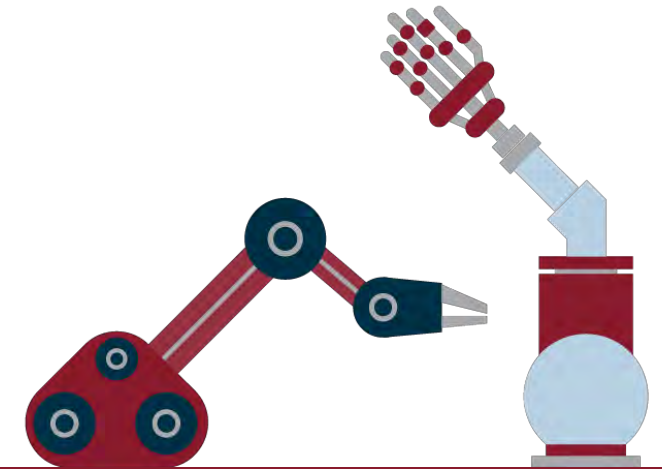


ICOs/STOs

## Building blocks of DeFi: smart contracts

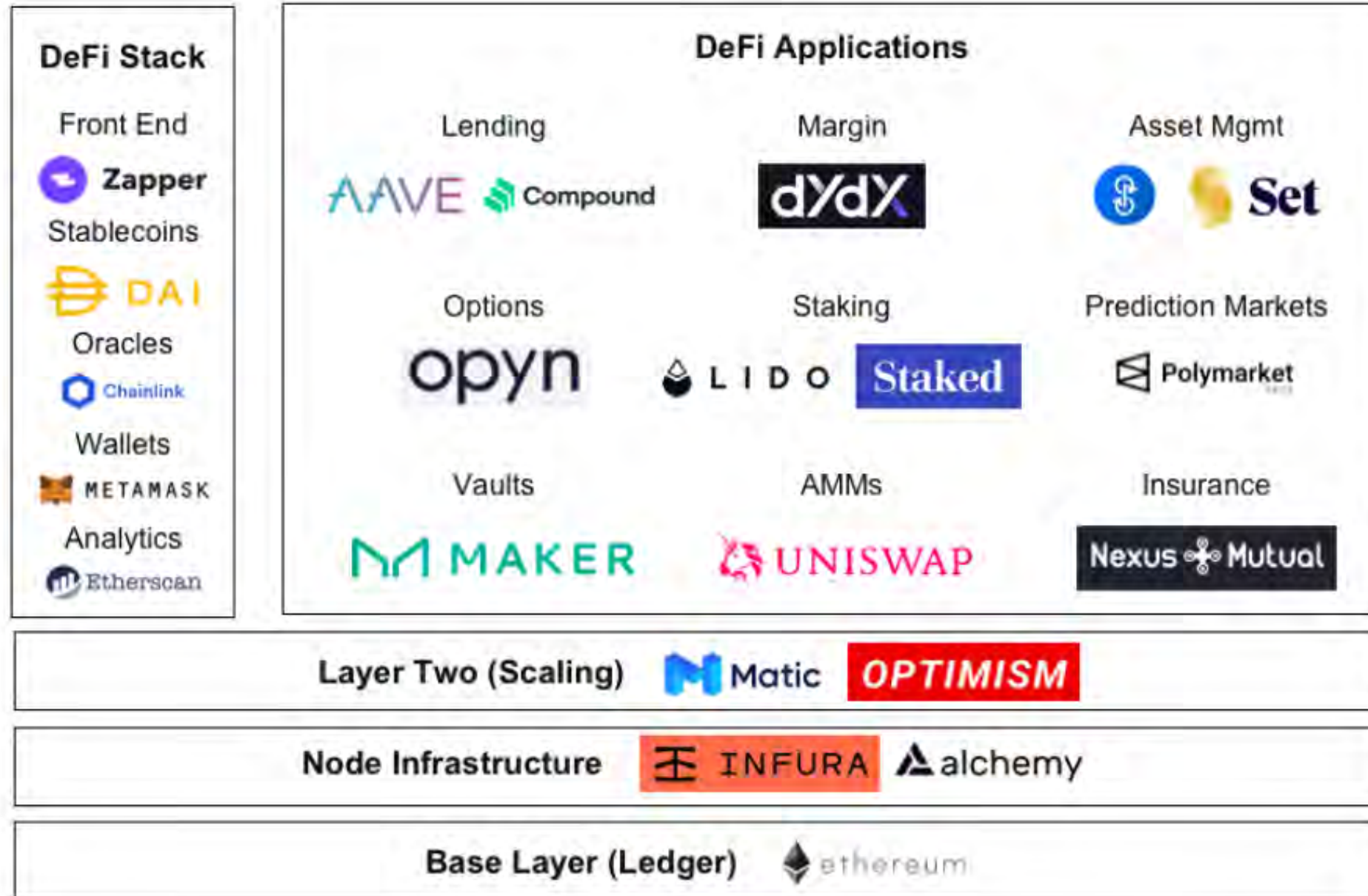
- If A occurs,
- and B is greater than C,
- then D will happen

- If £20 is received from X by Insurer,
- and Flight Q100 arrives more than 2 hours later than scheduled,
- then Insurer will transfer £250 to X



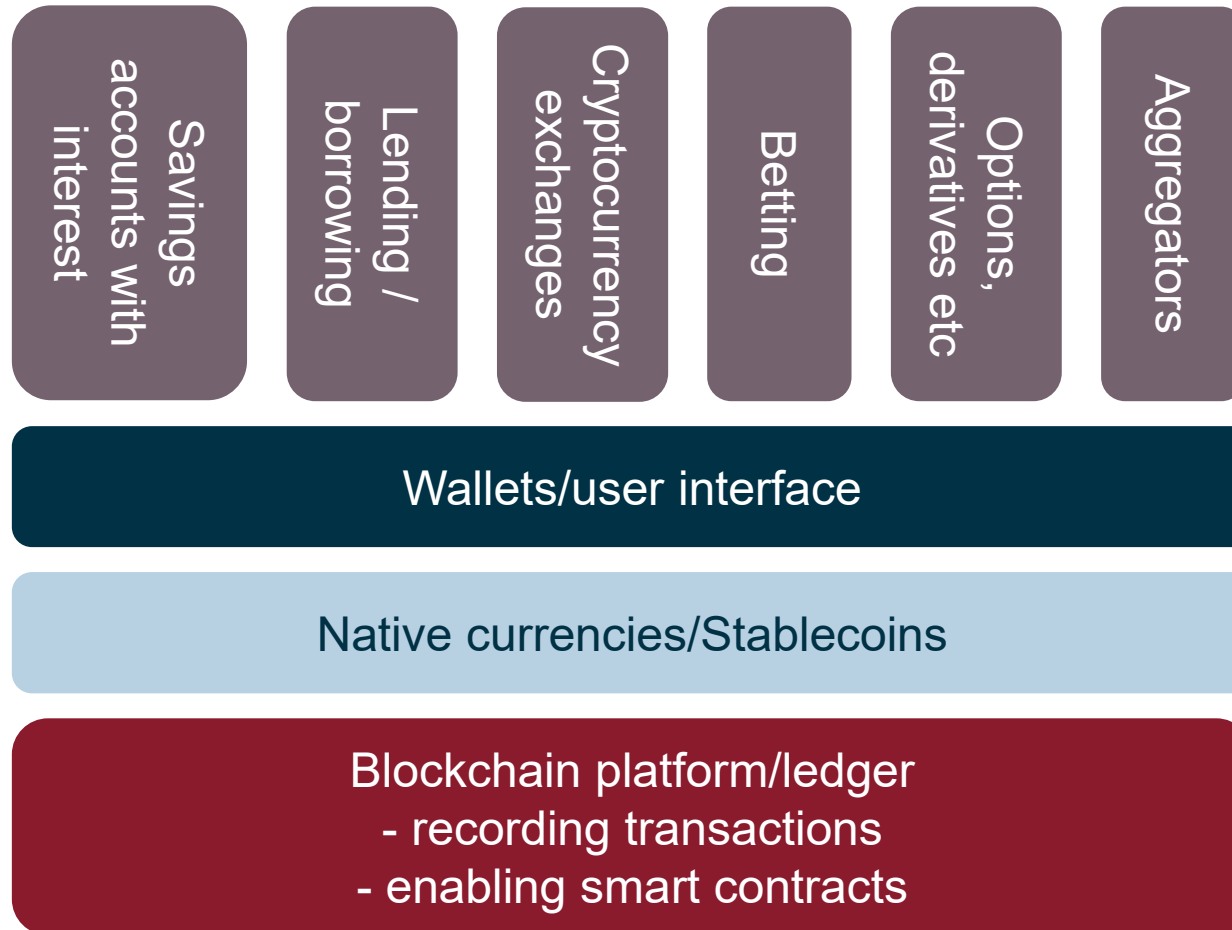
*"Computers that  
can make  
commitments"*

Chris Dixon,  
Andreessen Horowitz





# Decentralised Finance



- Built with open source software
- Fast, flexible
- Locked-down code
- Decentralised
- Available anywhere, any time
- "Composable" and interoperable
- Minimal user interface
- Unregulated

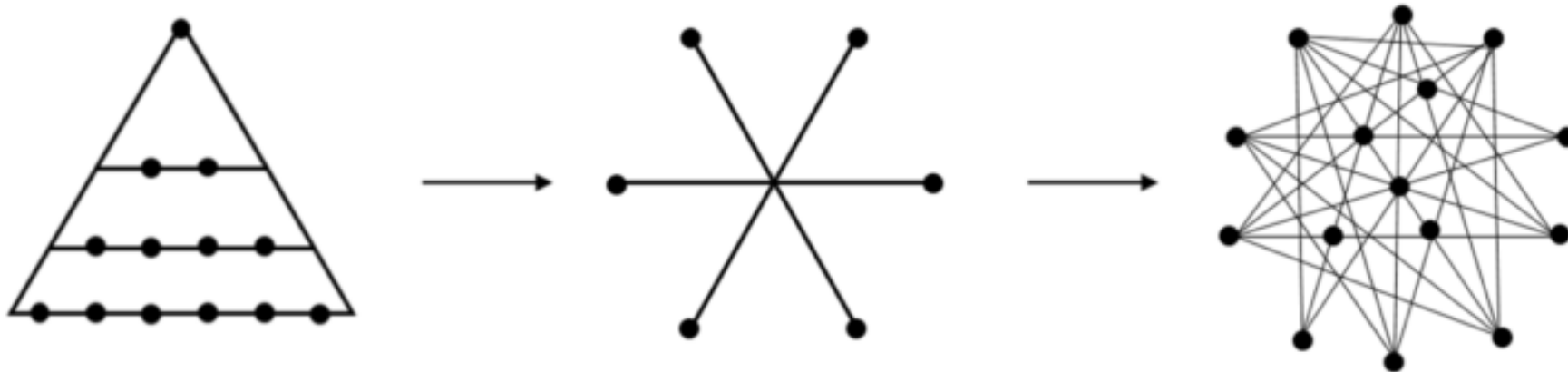
# 2 DeFi and governance under EU law



## DeFi and decentralised governance

“The potential for blockchain lies in its architectural ability to shift, and potentially upend, traditional economic systems – potentially transferring value from shareholders to **stakeholders** as distributed solutions increasingly take hold.”

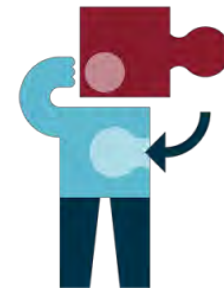
*-The World Economic Forum, Fourth Industrial Revolution for the Earth Series*



# DeFi and decentralised governance

## Decentralised Autonomous Organisations

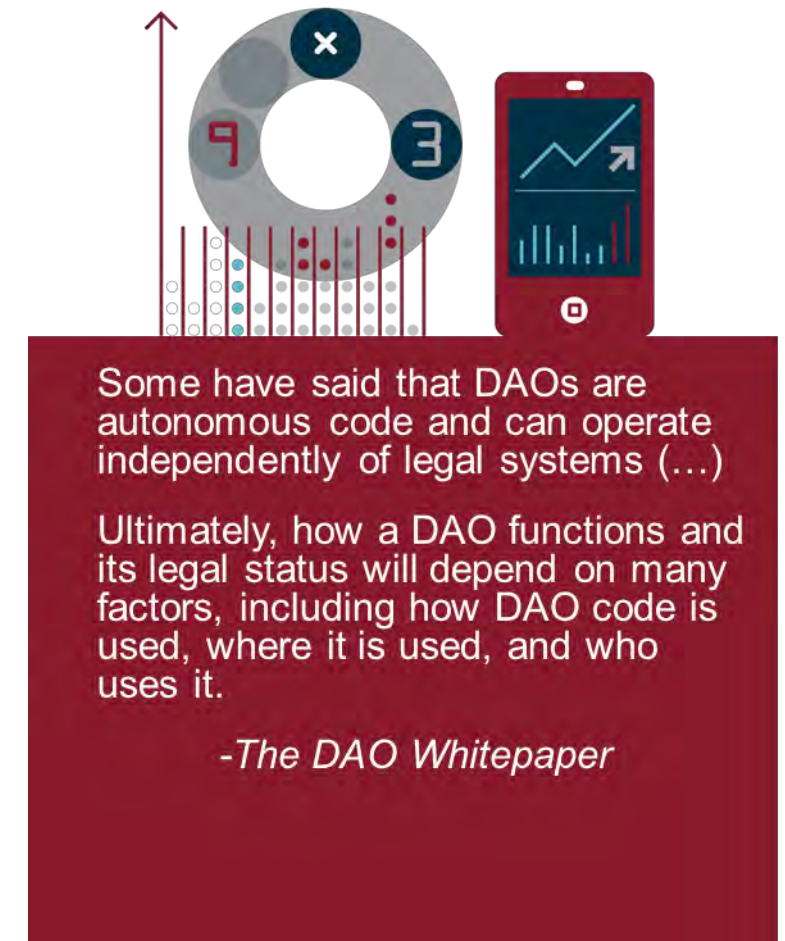
- Concept
- Examples
  - The DAO
  - MakerDAO
  - ...





# DeFi and decentralised governance issues under EU law

- Legal status of DAO
  - Jurisdiction and applicable law
  - DAO = company/partnership?
  - Liability tokenholders
  - DAO tokens = securities?
- EU Prospectus Regulation
- EU Directive on the use of digital tools and processes in company law
- Code = Code and Law = Law?



# 3 DeFi and EU/German financial regulation



# DeFi and EU/German financial regulation

## DeFi – a legal *carte blanche*?

Answer: **it's complicated!**

- ⇒ as a rule subject to existing regulation (like all new innovations)
- ⇒ however, regulatory financial frameworks **not tailored to specifics of DeFi**
- ⇒ **two (main) issues from regulatory view:**
  - ⇒ DeFi offers = regulated activity? („**Issue 1**“)
  - ⇒ DeFi: who is addressee of (any) regulation? (“**Issue 2**”)



# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

### applicable law?

- general: BaFin's marketing approach (*vertriebsbezogener Ansatz*)
  - company behind DeFi network based in Germany
    - ⇒ as a rule German financial regulation applicable
  - DeFi-specific-issue: as a rule no *real* company behind DeFi network
    - ⇒ however, German financial regulation still applicable
    - ⇒ if *targeting* of German market





# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

### applicable law?

- BaFin criteria for targeting German market
    - German language of website
    - German domain (".de")
    - German product description
    - Germany-specific customer information
    - naming of German contact persons
    - activities vis-à-vis clients domiciled in Germany etc.
- ⇒ each only indications
- ⇒ for example: also an English language website can target German market
- ⇒ overall picture decisive



# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

### example from our work

⇒ *MakerDAO* (2019)

= decentralised stablecoin

- ⇒ pegged to US Dollar as fiat currency (DAI 1 to USD 1)
  - ⇒ *not directly* backed by USD (or any other fiat currency)
  - ⇒ aims to keep its value as close to 1 USD as possible
    - ⇒ automated system of smart contract on ETH
    - ⇒ continuously corrects upwards / downwards
- ⇒ DAI value also supported by deposit of collateral in ETH
- ⇒ goal: stable digital substitute currency („**DAI-Token**“)



# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

Question: **DAI-Token = financial instruments?**

Answer: **it's complicated (again)!**

- no securities (*Wertpapiere*)
  - ⇒ no (sufficient) contractual pecuniary rights
- no money-market instruments (*Geldmarktinstrumente*)
  - ⇒ no maturity date of maximum 397 days
- likely no derivative instruments (*derivative Geschäfte*)
  - ⇒ no (sufficient) claim
- no emission allowances (*Emissionszertifikate*)
  - ⇒ no relation to greenhouse gas emission allowances
- no options to subscribe securities (*Rechte auf Zeichnung von Wertpapieren*)
  - ⇒ do not grant right to subscribe securities
- no e-money (*E-Geld*)
  - ⇒ presumably MakerDAO no central issuer of monetary value



# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

- however: DAI-Token = units of account (*Rechnungseinheiten*) = financial instruments (*Finanzinstrumente*)?
  - ⇒ value units intended to have function / are used as means of payment
  - ⇒ BaFin: all virtual currencies, especially if available on many crypto exchanges
    - ⇒ DAI-Token = crypto currency
    - ⇒ DAI-Token = available on many crypto exchanges
      - ⇒ (+)
      - ⇒ DAI-Token = units of account (*Rechnungseinheiten*) = financial instruments (*Finanzinstrumente*)

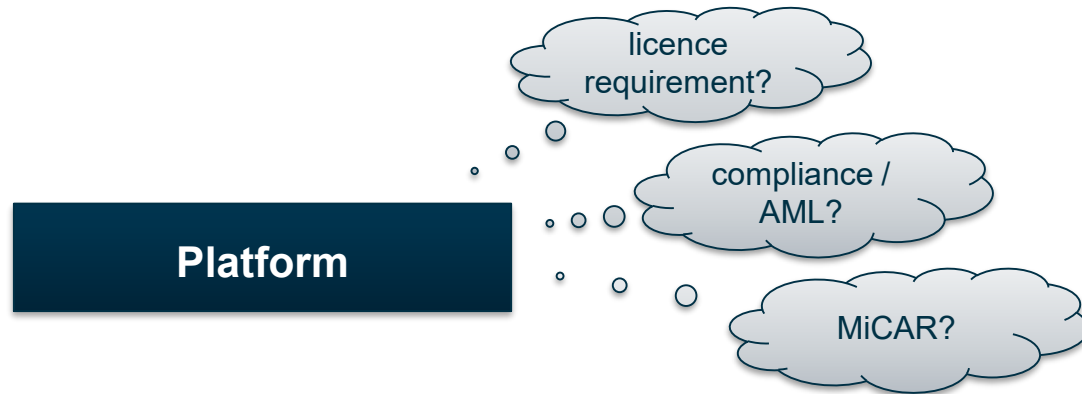




# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

Question: **services with DAI-Token = regulated activity?**



Answer: **depends on services – for example**

- investment brokering (*Anlagevermittlung*)
  - ⇒ brokering of transactions re purchase / sale of DAI-Tokens
- operation of multilateral trading system (*Betrieb eines multilaterales Handelssystems*)
  - ⇒ automatic matching of purchase / sale orders from market participants re DAI-Tokens  
(via smart contract)



# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

### other examples

- decentralised exchanges („DEXs“)

*“born from the desire to address the vulnerabilities of centralized platforms”*

ESMA, 2019

= peer-to-peer crypto marketplace

- exchange / trading of crypto assets against other crypto-assets
- without third-party as intermediary (who holds wallet's private keys / often also custodian in centralized exchanges)
  - ⇒ no centralized controller
  - ⇒ no transfer / storing of crypto-assets on centralized exchange
  - ⇒ but
    - ⇒ trading directly from wallets / users keep control over their wallet's private keys
    - ⇒ transactions executed via smart contracts



# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

### DEXs = licence requirement?

- crypto assets = financial instrument (*Finanzinstrument*)?
  - utility token
    - ⇒ no financial instrument
  - security token / payment token (for example Bitcoin)
    - ⇒ financial instrument (+)
- DEXs = regulated services?
  - investment brokering (*Anlagevermittlung*)
    - ⇒ brokering of transactions re purchase / sale of financial instruments
  - operation of multilateral trading system (*Betrieb eines multilaterales Handelssystems*)
    - ⇒ automatic matching of purchase / sale orders from market participants (via smart contract)



# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

### other examples

- **lending / borrowing services – for example Aave**
  - decentralized platform for lenders and borrowers
  - lenders contributing crypto assets to lending pools and earn interest
  - borrowers can collateralise crypto assets to receive crypto asset loans from lending pools
    - ⇒ must pay interest to lenders
    - ⇒ collateralised crypto assets are released when crypto asset loan is paid back
  - no peer-to-peer lending
    - ⇒ crypto-assets *not* directly lent between individual parties
    - ⇒ rather: borrowers contribute to lending pool / lenders obtain crypto asset loans from lending pool





# DeFi and EU/German financial regulation

## Issue 1 – DeFi offers = regulated activity?

### **lending / borrowing services = licence requirement?**

- crypto assets = financial instrument (*Finanzinstrument*)?
  - utility token
    - ⇒ no financial instrument
  - security token / payment token (for example Bitcoin)
    - ⇒ financial instrument (+)
- crypto lending / crypto borrowing = regulated services?
  - credit business (*Kreditgeschäft*)
    - ⇒ only money loan (*Gelddarlehen*)
    - ⇒ crypto loans not covered
  - crypto custody business (*Kryptoverwahrungsgeschäft*)
    - ⇒ if crypto assets stored (+)



# DeFi and EU/German financial regulation

## Issue 2 – who is addressee of (any) regulation?



# DeFi and EU/German financial regulation

## Issue 2 – who is addressee of (any) regulation?

What does this mean for DeFi-practice?

- „Fully Decentralized“ DeFi
- “Semi-Decentralized” DeFi



# DeFi and EU/German financial regulation

## Issue 2 – who is addressee of (any) regulation?

### Fully Decentralized

- ⇒ no legal / natural person behind DeFi network
- ⇒ nature of decentralization
- ⇒ in fact no addressee of regulation

### Semi-Decentralized

*“applications or platforms are often run on a distributed ledger but still usually have a central party with some measure of involvement, such as creating and launching an asset, setting parameters, holding an administrative “key” or collecting fees“*

Financial Action Task Force (FATF), 2020

- ⇒ legal / natural person behind DeFi network
- ⇒ DeFi often only Semi-Decentralized
  - ⇒ for example *Lykke* (cryptocurrency exchange)
  - ⇒ Lykke Corp UK, Lykke Netherlands B.V. and Lykke Switzerland AG
  - ⇒ potential addressees of regulation

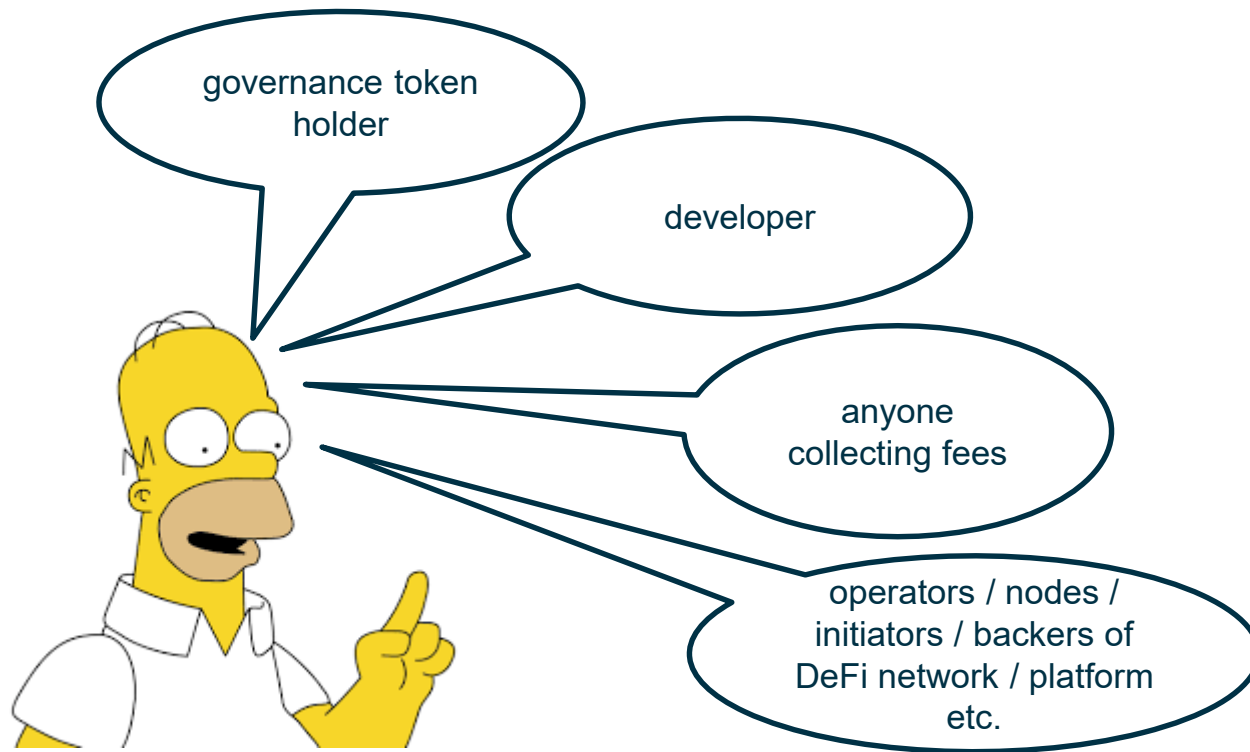


# DeFi and EU/German financial regulation

## Issue 2 – who is addressee of (any) regulation?

### Expected approach

- ⇒ we expect: broad (BaFin-)definition of terms to cover DeFi (where possible)
- ⇒ for example:



# DeFi and EU/German financial regulation

## MiCAR – first attempt to regulate crypto markets at European level





# DeFi and EU/German financial regulation

## MiCAR – potential impact on DeFi?

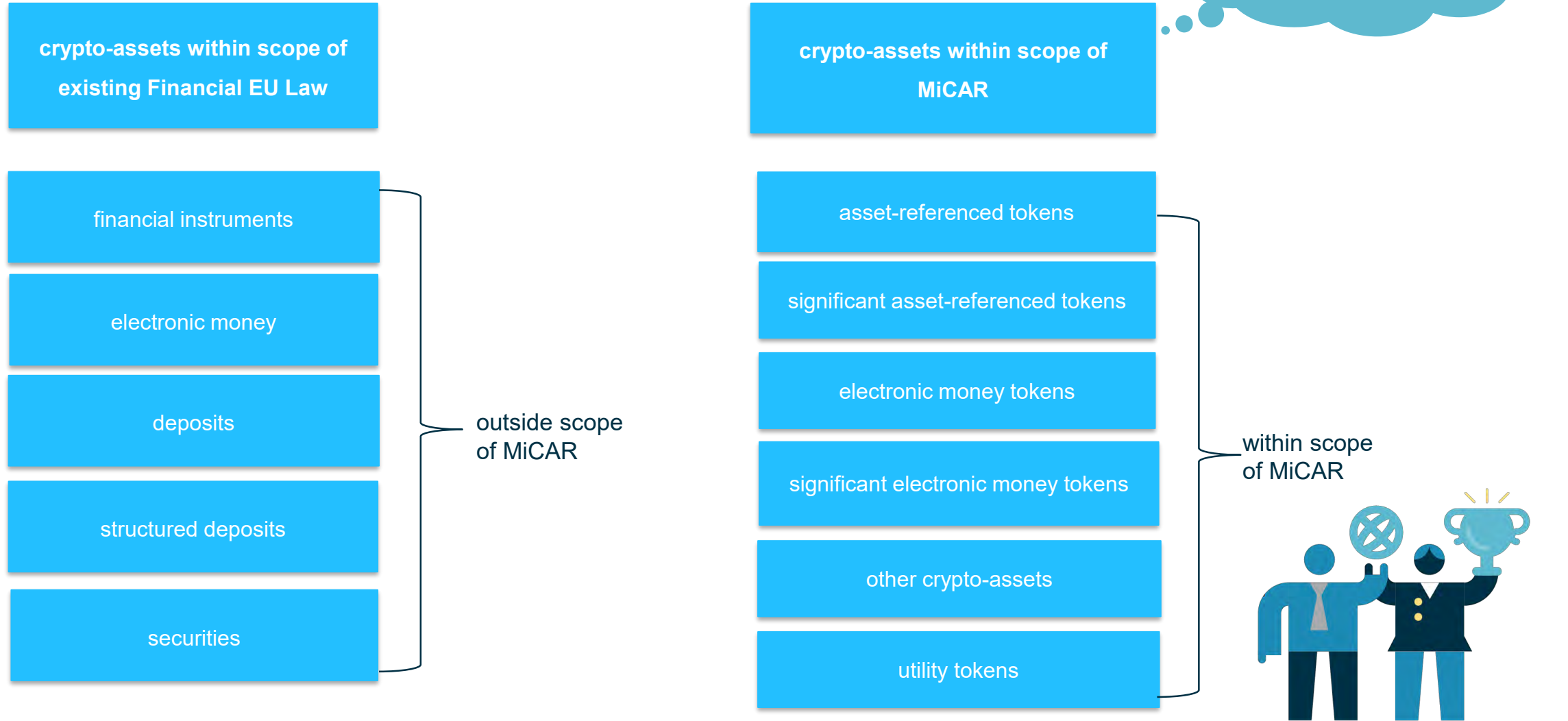
### MiCAR applicable?

- ⇒ DeFi not expressly referred to in MiCAR
- ⇒ Idea of MiCAR: address unregulated crypto-assets
  - ⇒ extensive scope by defining term "crypto-asset"
    - = digital representation of value or rights which may be transferred and stored electronically
    - ⇒ using DLT / similar technology
  - ⇒ MiCAR currently only a draft
  - ⇒ final scope not clear
  - ⇒ more than 1,000 amendment proposals



# DeFi and EU/German financial regulation

## MiCAR – potential impact of MiCAR on DeFi?



# DeFi and EU/German financial regulation

## MiCAR – potential impact on DeFi?

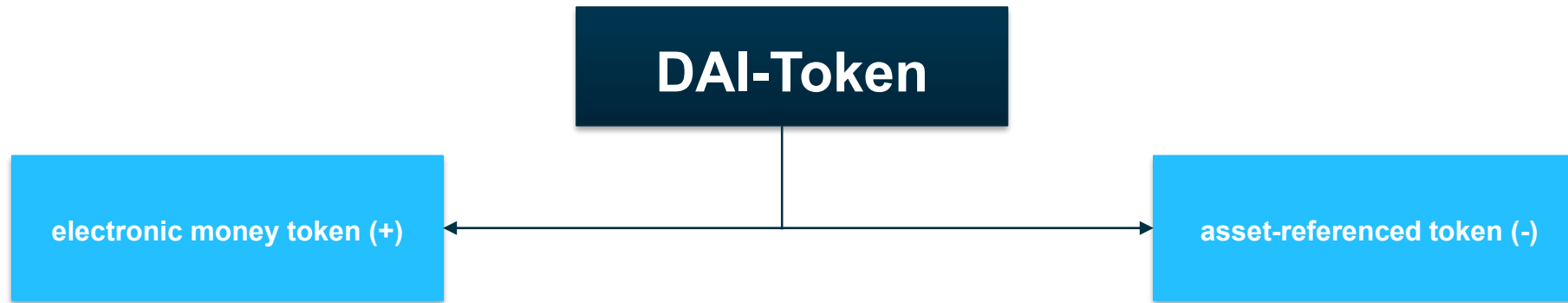
### crypto-assets of MiCAR

- (significant) asset-referenced tokens
  - ⇒ crypto assets with stable value by referring to value of:
    - *several* fiat currencies,
    - one or several commodities
      - ⇒ for example: Gold
    - one or several other cryptocurrencies
      - ⇒ typical asset-backed stablecoins
- (significant) electronic money tokens
  - ⇒ crypto assets with (mainly) exchange purpose and stable value by referring to value of *one* fiat currency
    - ⇒ for example: fiat-backed stablecoins
- other crypto-assets



# DeFi and EU/German financial regulation

## MiCAR –potential impact on DeFi?



# DeFi and EU/German financial regulation

## MiCAR –potential impact on DeFi?

### DAI-Token

⇒ highly controversial due to unclear wording of MiCAR – especially because of Recital 26 MiCAR on *algorithmic stablecoins*

*“So-called algorithmic ‘stablecoins’ that aim at maintaining a stable value, via protocols, that provide for the increase or decrease of the supply of such crypto-assets in response to changes in demand should not be considered as **asset-referenced tokens**, provided that they do not aim at stabilising their value by referencing one or several other assets.”*

Recital 26 MiCAR

⇒ DAI-Token = algorithmic stablecoin?

⇒ DAI-Token aims at stabilizing their 1:1 USD value via ETH protocols

⇒ ETH protocols follow algorithm

⇒ possibly algorithmic stablecoin

⇒ DAI-Token = electronic money token?

⇒ refers to USD as *one* fiat currency

⇒ presumably electronic money token (+)



# DeFi and EU/German financial regulation

## MiCAR –potential impact on DeFi?

### DAI-Token

- ⇒ DAI-Token = asset-referenced token?
  - ⇒ refers to USD as *one* fiat currency
  - ⇒ does not refer to
    - ⇒ *several* fiat currencies,
    - ⇒ one or several commodities, or
    - ⇒ one or several crypto-assets
  - ⇒ *generally* asset-referenced token (-)
  - ⇒ however, DAI-Token collateralized by using ETH
    - ⇒ could be seen as reference to crypto-asset
    - ⇒ if so asset-referenced token (+)
- ⇒ **you see:** assessment of DAI-Token under MiCAR remains very unclear!





# DeFi and EU/German financial regulation

## MiCAR – potential impact on DeFi?

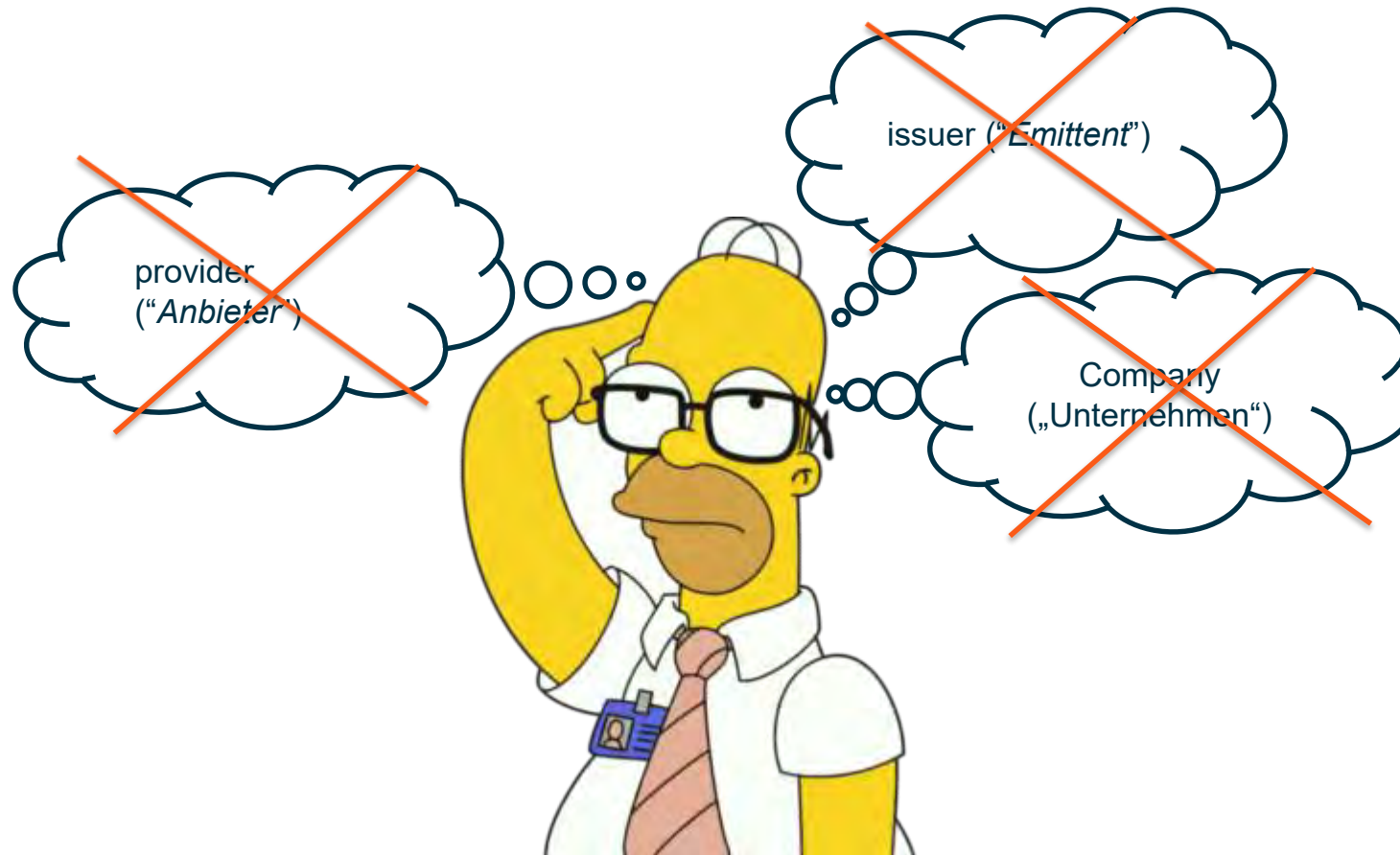
### other examples

- derivatives
  - ⇒ most covered by existing Financial EU Law
    - ⇒ financial instruments (MiFID II)
    - ⇒ MiCAR not applicable
- DEXs
  - ⇒ if crypto assets within meaning of MiCAR are traded
    - ⇒ MiCAR applicable (+)



# DeFi and EU/German financial regulation

## MiCAR – who is addressee of (any) regulation?



# 4 DeFi in the UK and practical issues



# UK Approach to DeFi

- No specific regulation / authorisation regime at this stage
- No published plans: operators are assessed on a case by case basis
- 2020: FCA authorised Aave as an e-money institution
- January 2021, HM Treasury launched consultation into regulation of stablecoins
- December 2021 Law Commission indicated that smart contracts legally enforceable without any amendment to the law
- Cryptoasset Taskforce: who do we regulate?



*"Defi platforms have groups of stakeholders that take and implement decisions, exercising managerial or ownership benefits. These groups, and the governance protocols on which their interactions are based, are the natural entry points for policymakers".*

# DAO Litigation

- Losses in 2021 nearly \$8bn from nearly 180 incidents
  - *Poly Network*: cross-chain network - \$610m hacked due to poor security protocols
  - *Easy-Fi*: lending protocol - \$81m hacked due to poor security protocols
  - *Vee Finance*: lending-bridge protocol - \$34m lost due to protocols exploit
- Recourse for investors?
  - *Establish liability*: DAO's have no corporate identity
  - *Establish jurisdiction*: DAO's have no defined location
  - *Decide whether to proceed*: Tight-knit industry



## Key reasons for losses:

- Coding mistakes
- developer incompetence
- misuse of third-party protocols
- business logic errors

## Worked example – Indexed.Finance Exploit

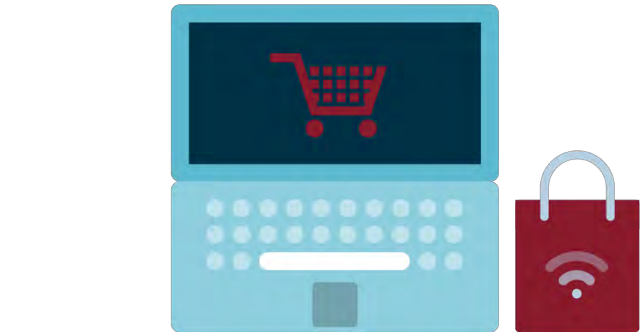
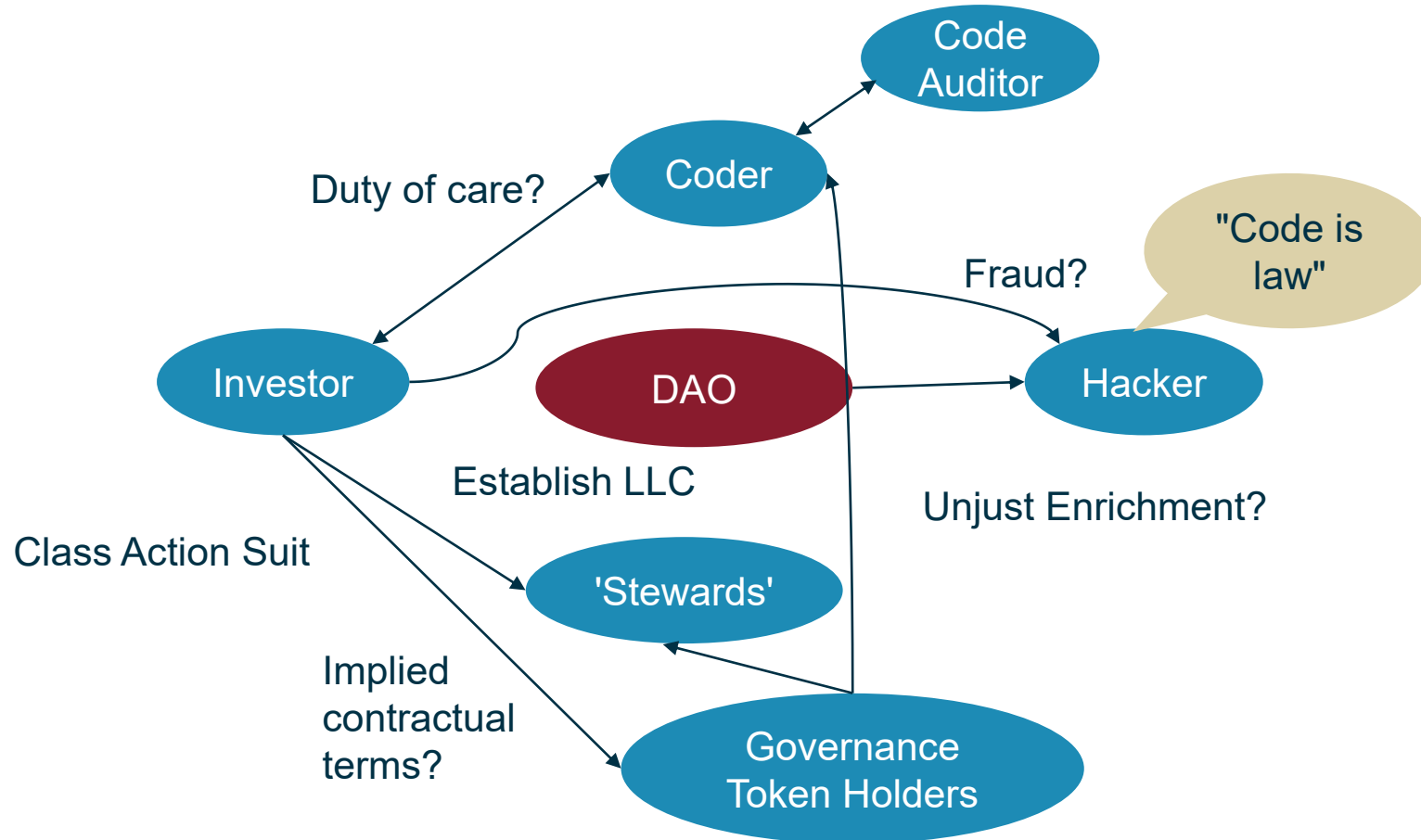
- Flash loan attack
- Unusually public
- Community rallied round development team
- 'Hacker' identified and assets located
- Established an LLC to pursue hacker



"Code is law..." Its not market manipulation if it is not regulated



## Worked example – Indexed.Finance Exploit



- Tracing the assets
- Identifying the jurisdictions
- Establishing a litigation strategy



Questions?



# Thank you

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