

# De weg naar digitale soevereiniteit

# Agenda

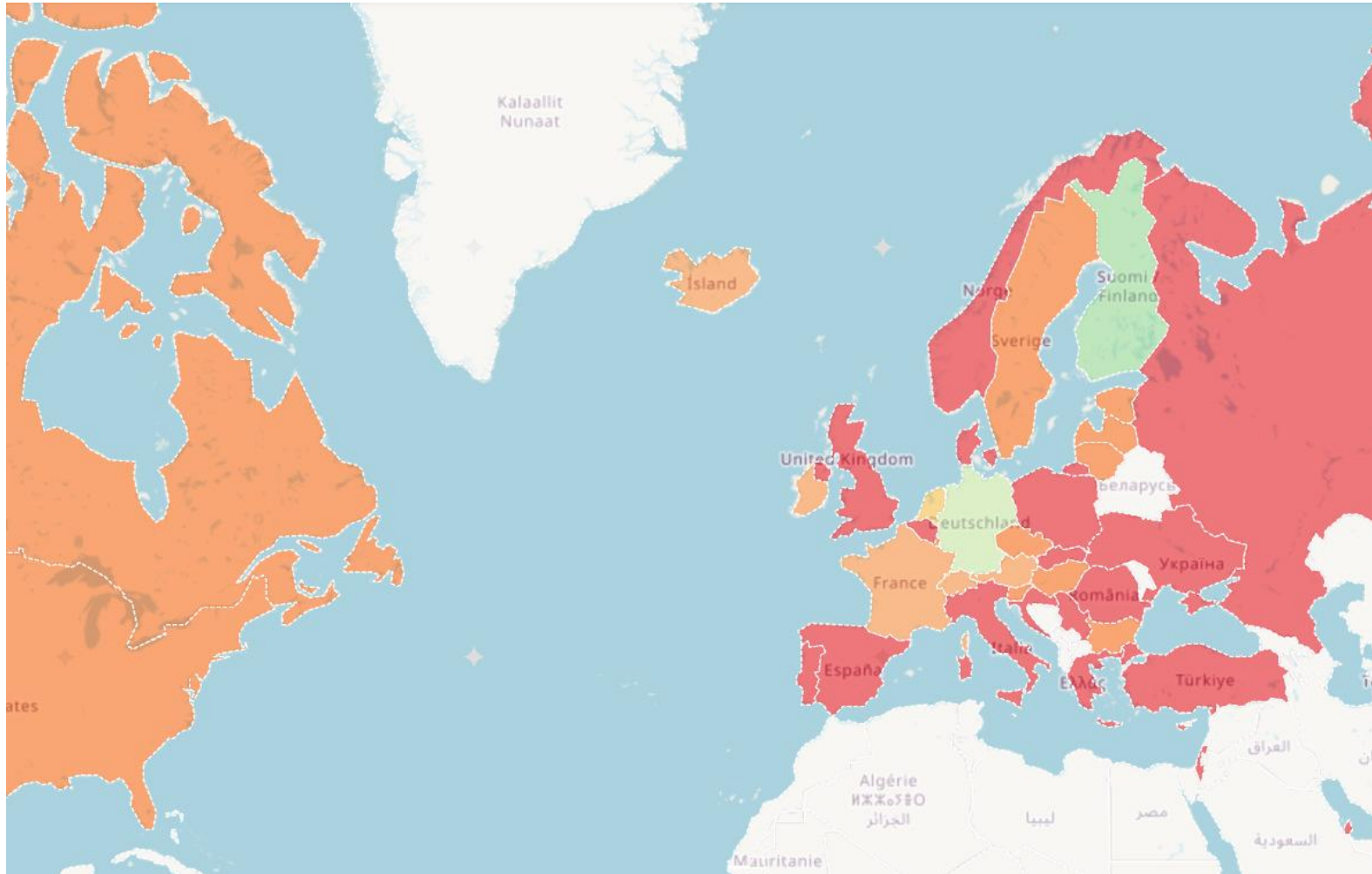
- **Wat is digitale soevereiniteit?**
- **Wat is de actuele stand binnen Europa?**
- **Data soevereiniteit**
- **Cloud soevereiniteit**

# Wat is digitale soevereiniteit?



# Controle over het ontwerp en gebruik van digitale systemen

# Er is nog geen robuuste digitale soevereiniteitsindex

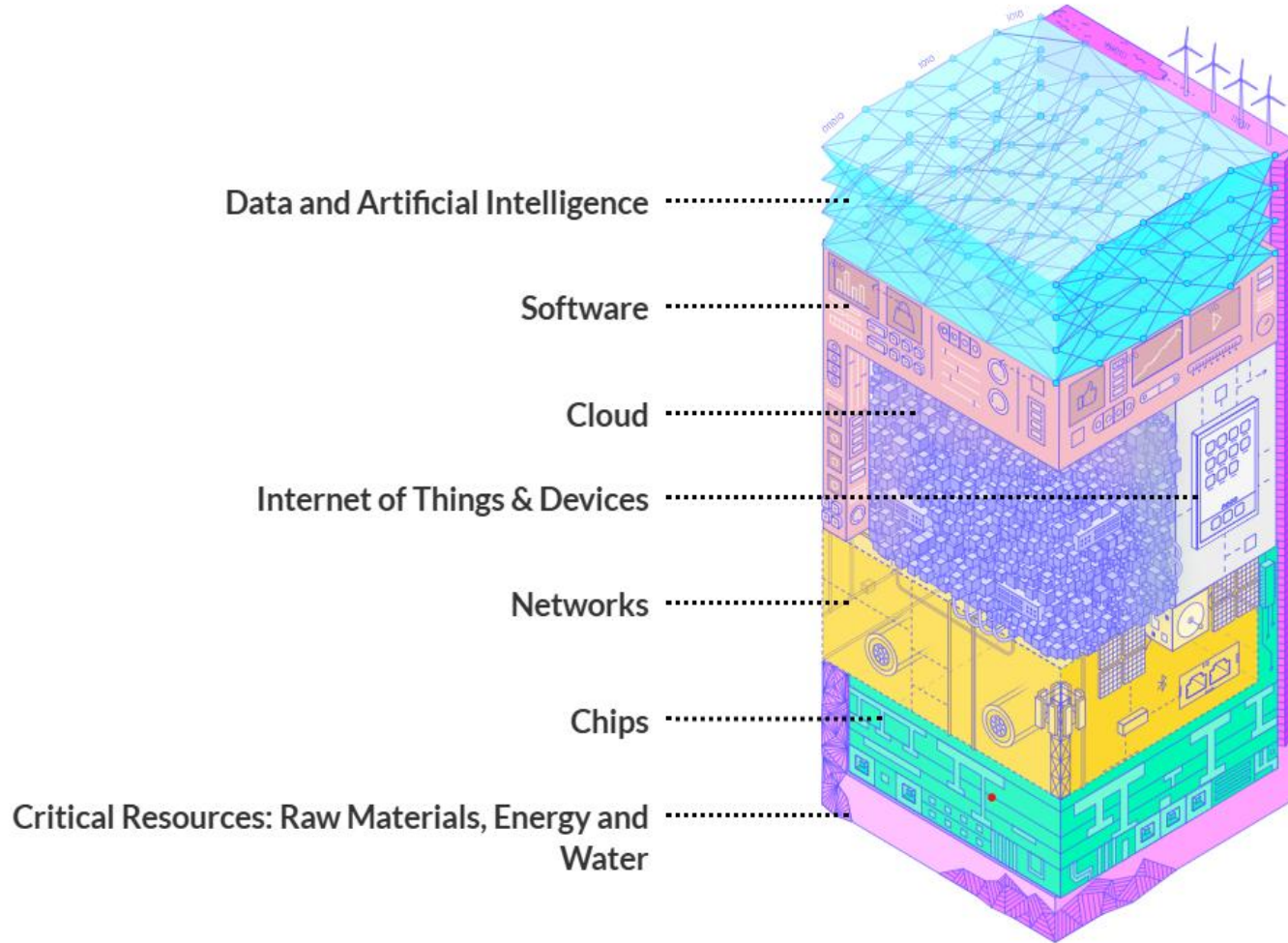


Voorbeeld Nextcloud:





















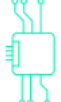








Adoptie van digitale soevereine infrastructuur (op de schaal van 0-100):

- Finland (64,5) - groen
- Duitsland (53,8) – groen
- Nederland (36,3) – oranje

# Hoe afhankelijk zijn we?



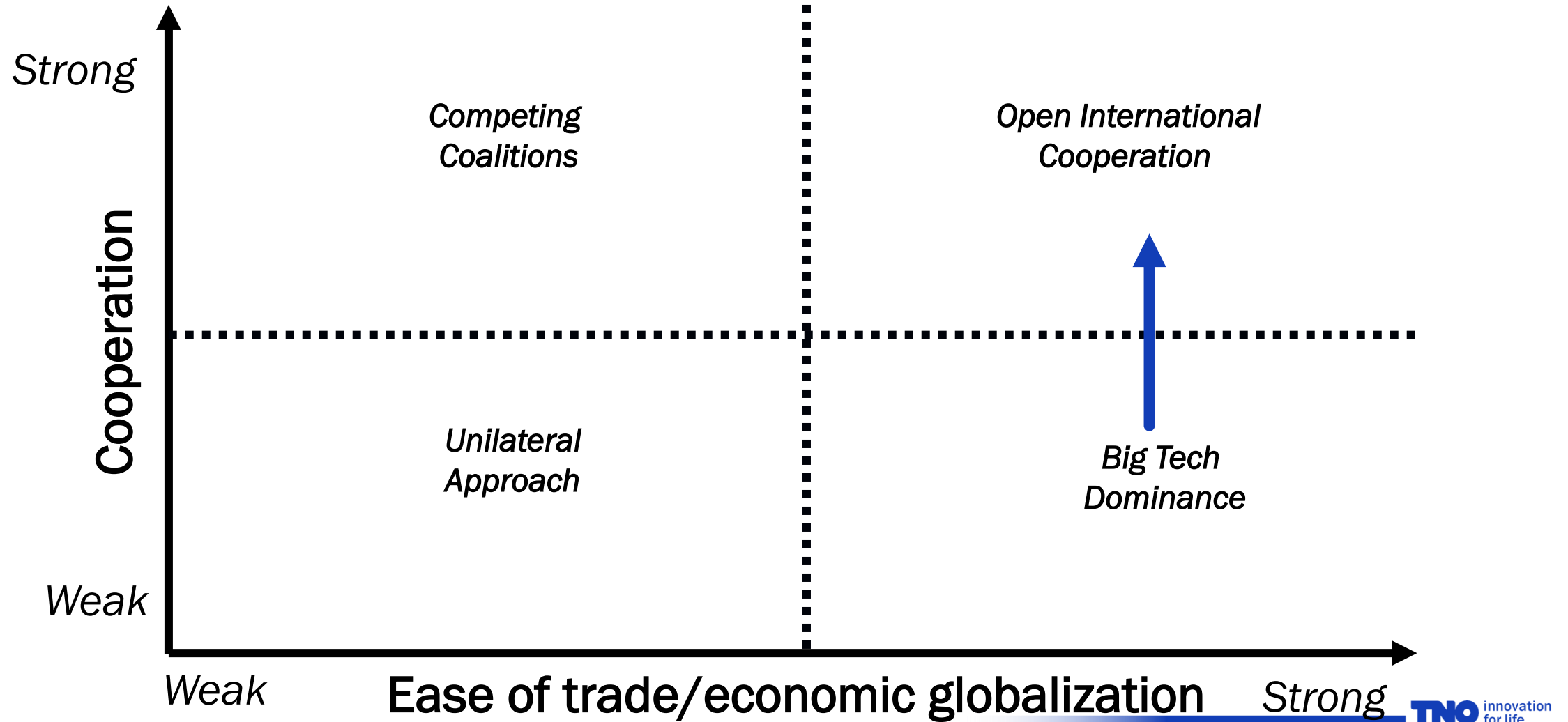
# Hoe afhankelijk zijn we? – belangrijke spelers

		KEY COUNTRIES	KEY FIRMS
Data and artificial intelligence		 US  China	OpenAI, Microsoft, Google, Meta, Anthropic, XAI, Amazon, Baidu, Tencent, Alibaba, DeepSeek
Software		 US  China  Germany	Microsoft, Apple, Alphabet, Meta, Amazon, Salesforce, SAP, ByteDance, Tencent
Cloud		 US  China	Amazon, Microsoft, Alphabet, Alibaba
Internet of things & devices		 US  China  Korea  Germany	Amazon, Google, Apple, Samsung, Huawei, Bosch, Siemens, Xiaomi
Networks		 US  China  Europe  Japan	Huawei, Nokia, Ericsson, ZTE, SpaceX, NEC
Chips		 Taiwan  Korea  US  Netherlands	TSMC, Samsung, Intel, NVIDIA, AMD, ASML
Raw materials, energy, and water		 US  China  Russia	Chinese government (through SOEs e.g., China Rare Earth Group), ExxonMobil, Gazprom

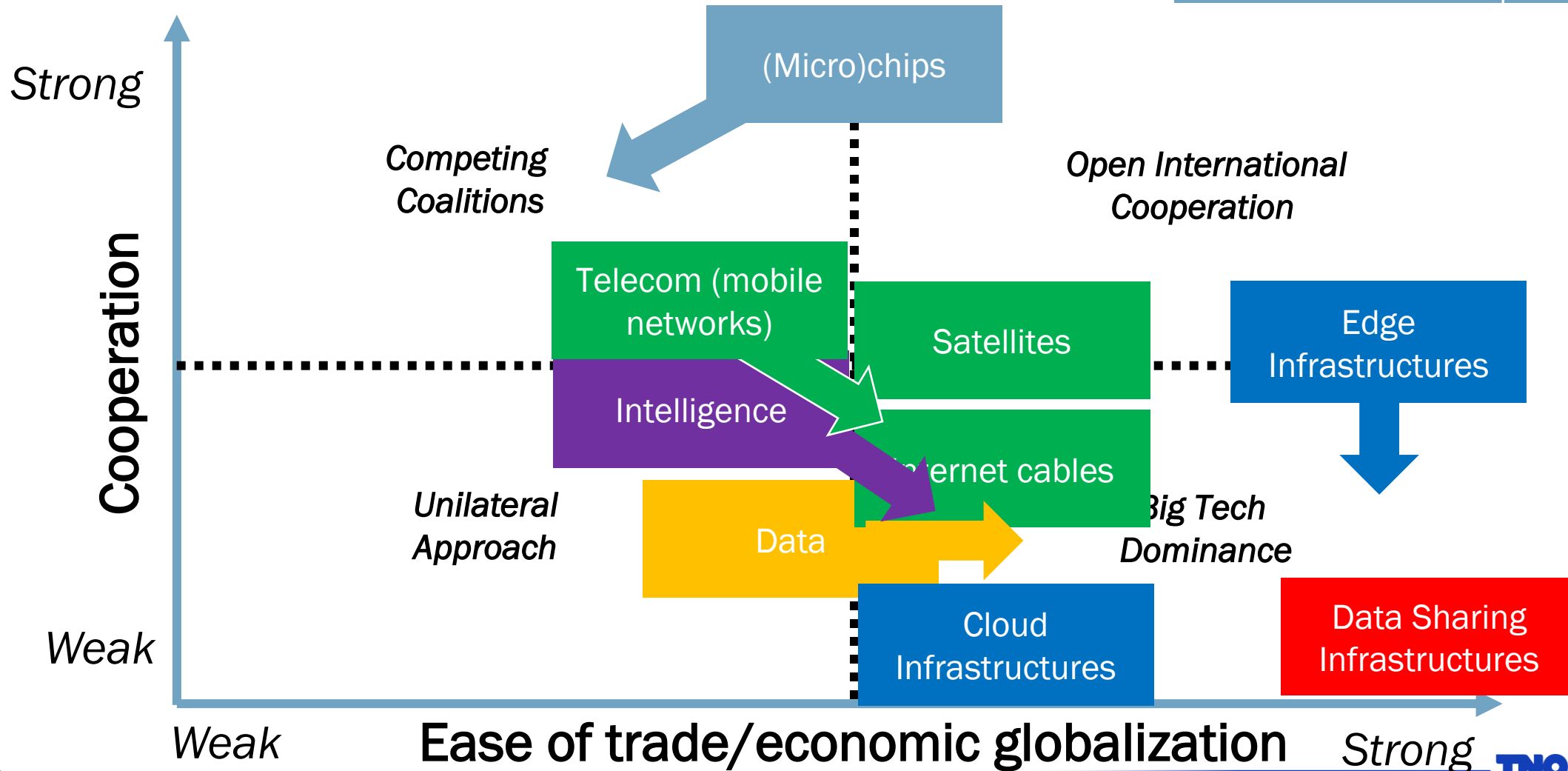
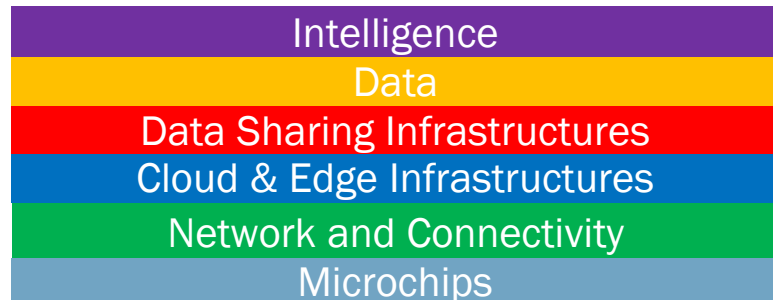
# De impact van deze afhankelijkheid



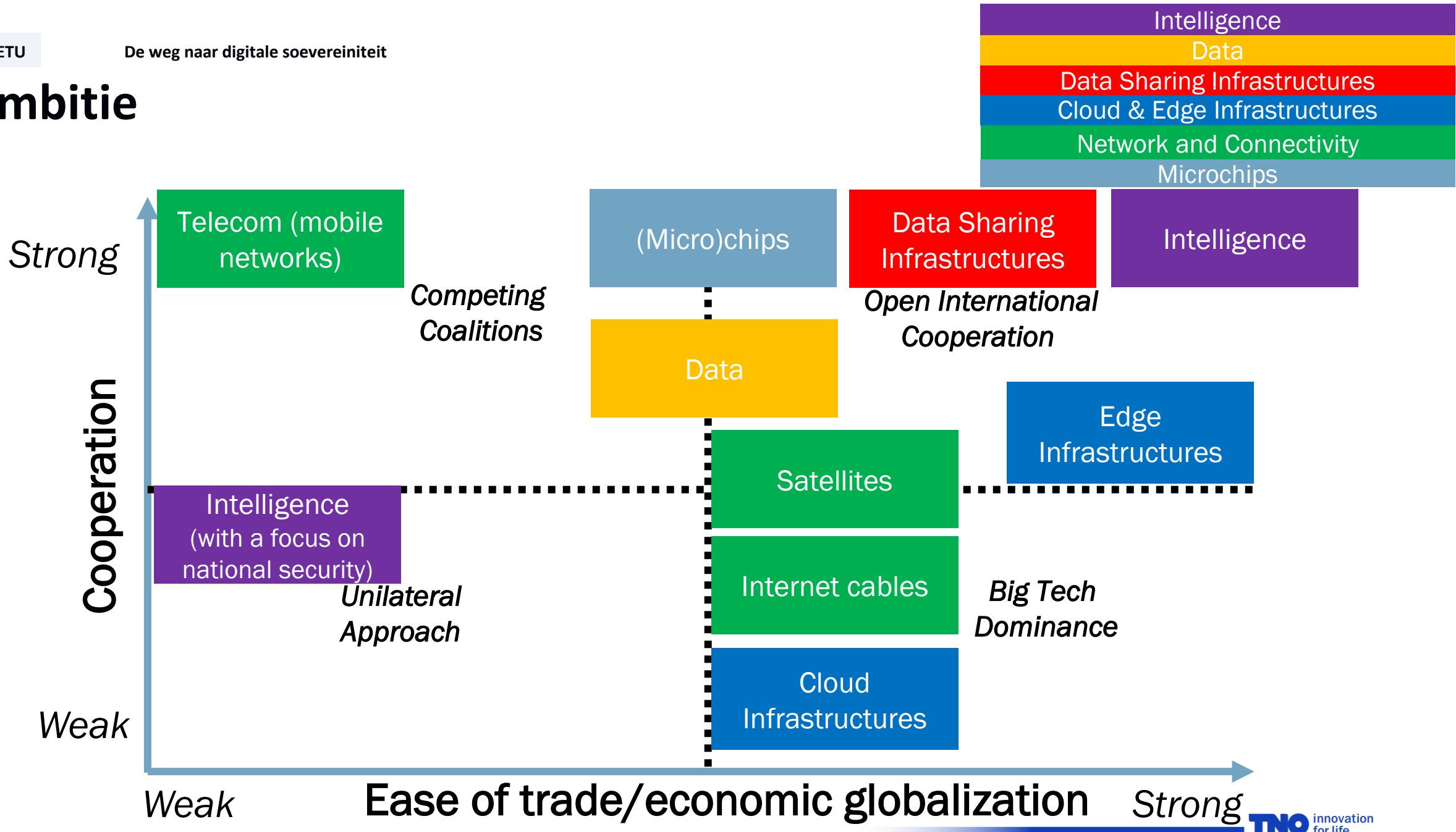
# Van het huidige naar het gewenste scenario



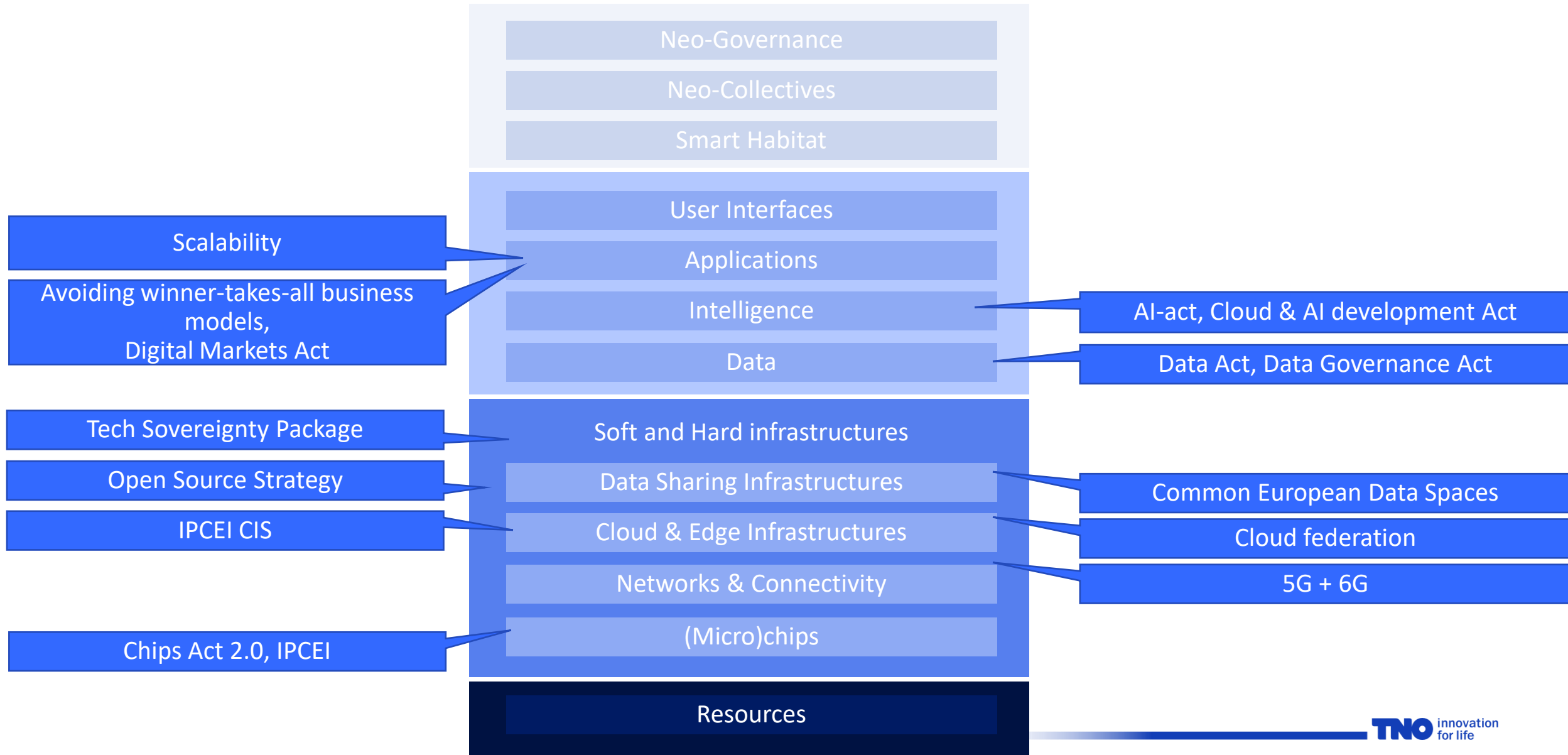
# Geen maatregelen



# Ambitie



# Wat doet de EU met deze afhankelijkheid?



## Digitale soevereiniteit voor bedrijven

- >75% van de organisaties hebben dit niet in hun strategie, maar men is er wel mee bezig
- Toegevoegde waarde van data delen is de belangrijkste driver
- Strategische autonomie ten opzichte van toeleveranciers steeds belangrijker



# Data soevereiniteit

# 80% of industrial data is never used



**530% increase of global data volume\***

from 33 zettabytes in 2018 to 175 zettabytes in 2025



**€829 billion\***

value of data economy in the EU27

From €301 billion (2.4% of EU-GDP) in 2018

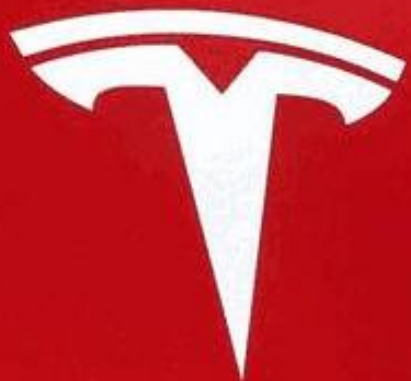
\*projected figures 2025 (European Commission)

## AI calls for the biggest amount of data possible



Companies could use this data to add value, but they don't

**Data Spaces with Data Sovereignty built in can fuel AI and make data economy happen.**



TESLA

## Wie stuurt?

Verkeersveiligheid en automatisering in  
het wegverkeer



- 1 – 2 TB of data per day (raw sensor data)
- ~ 40 TB of data per year (raw sensor data)
- 30 – 300 GB of per month shared with Tesla's servers

A large iceberg with a prominent peak floats in the ocean under a clear blue sky. The water is dark blue, and the sky is a lighter blue. The iceberg's surface is textured with various shapes and shadows.

# Companies only share 2% of their data

because they don't trust each other

Data Spaces provide the trust they need

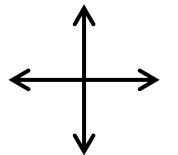
# Van data → delen → waarde

Interoperability  
Data Exchange  
"Sharing Economy"  
Data Centric Services

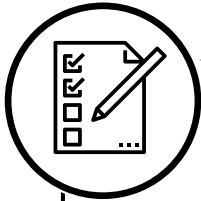
Data Ownership  
Data Security  
Data Value

## Data Sovereignty

is the ability of a natural or legal person to exclusively and sovereignly decide concerning the usage of data as an economic asset.



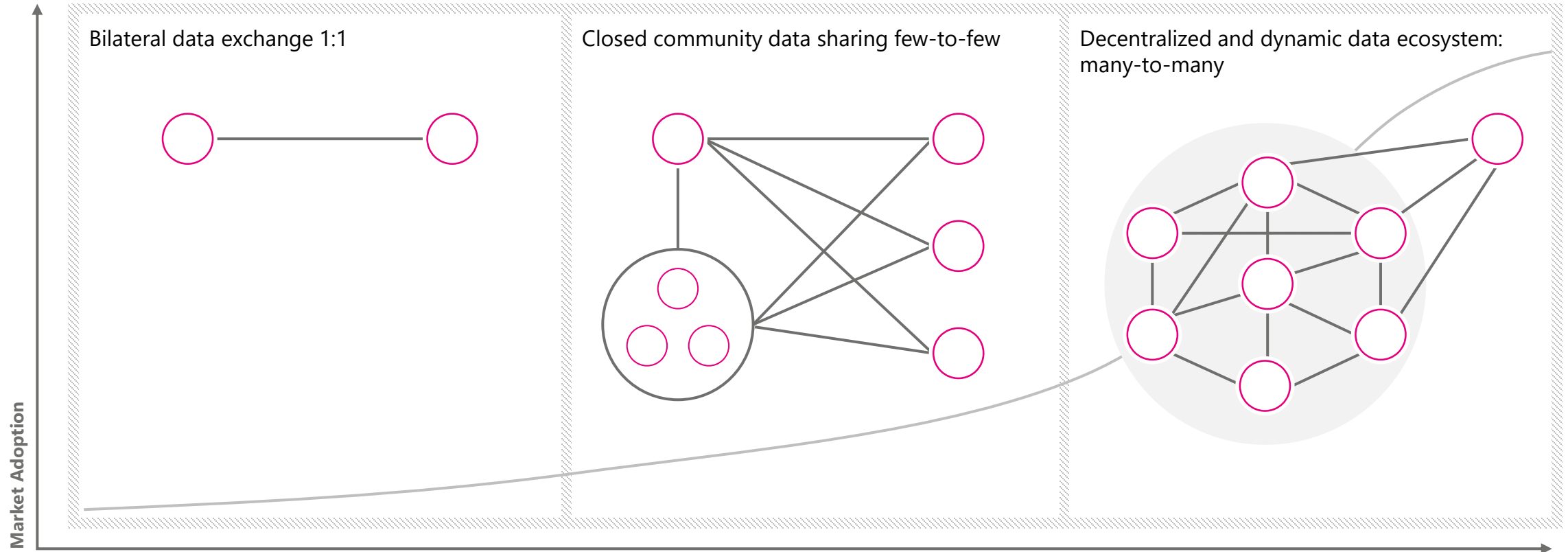
# Het ontbreekt aan een goed raamwerk



**For companies to add value, there is a need for data ecosystems that:**

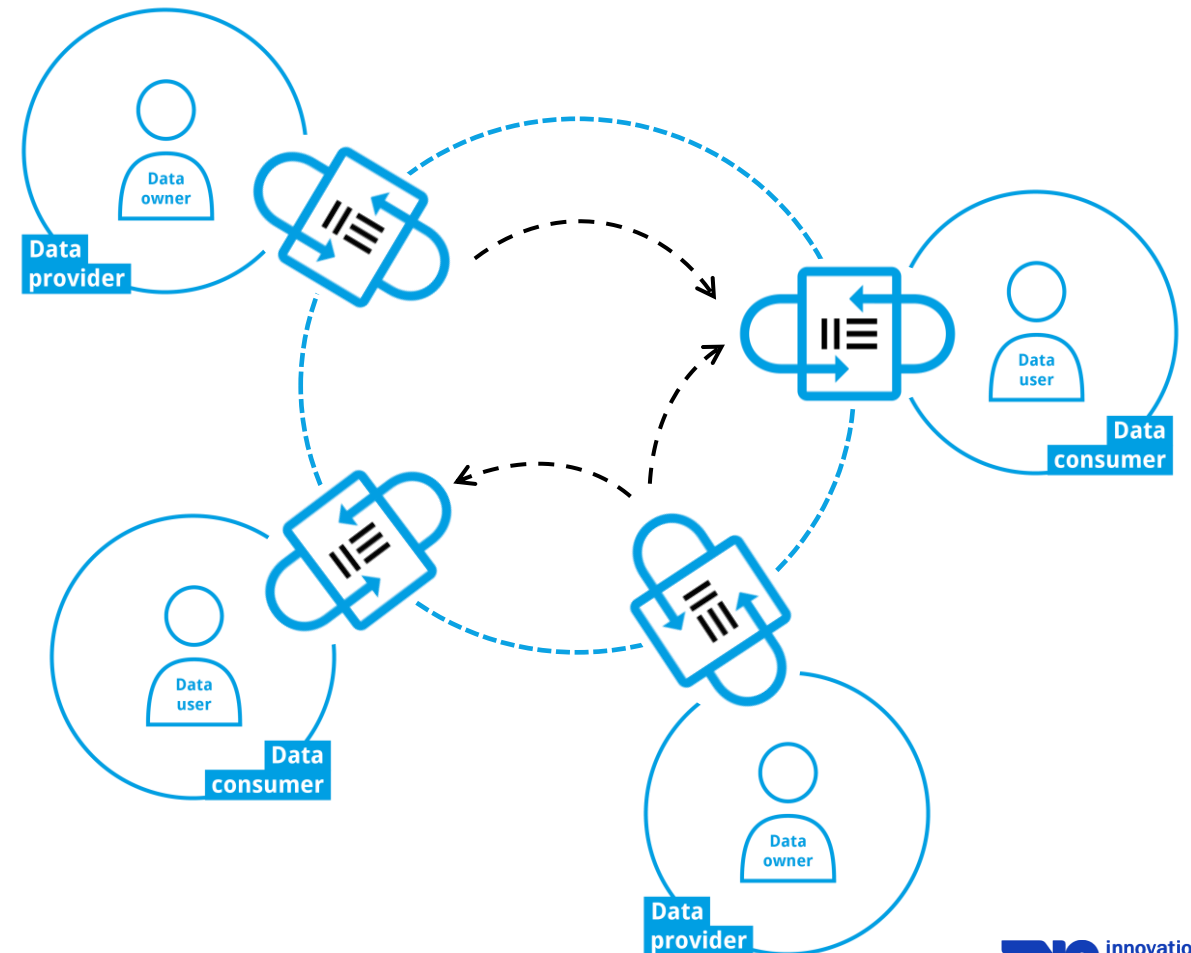
- » are vendor-independent
- » connect platforms
- » are open to all at low cost
- » are easy to adopt and easy to use

# Veel spelers nodig

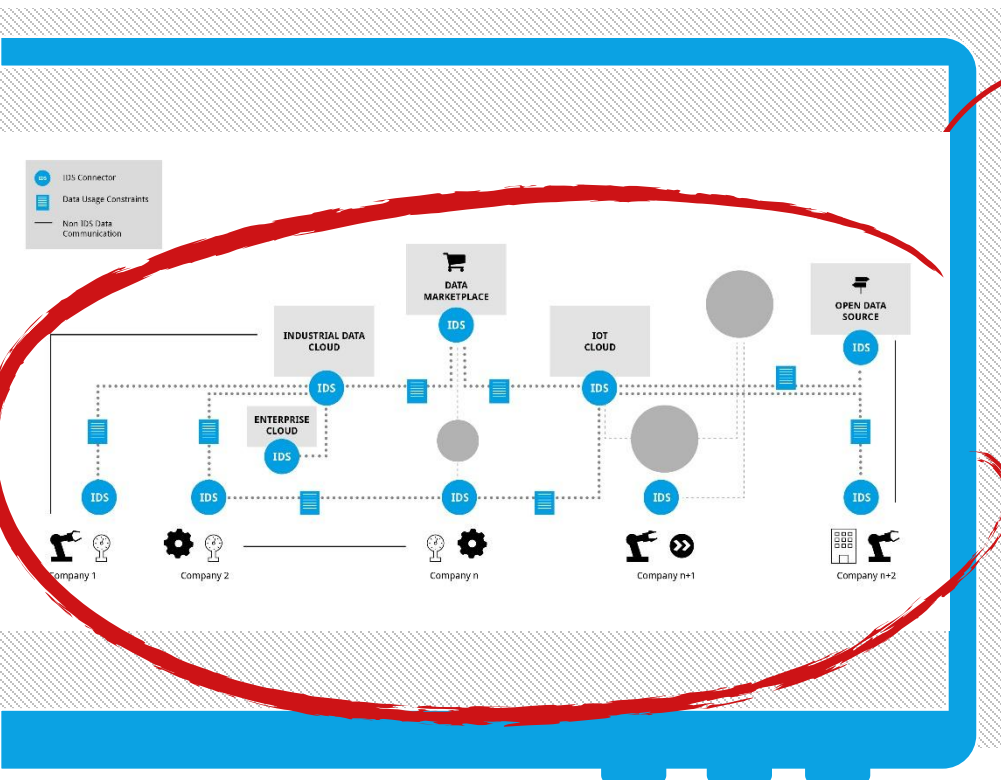


# Vertrouwen organiseren tussen rollen

- » A **data space** is the sum of all data end points that are able to share data
- » Participants in a data space can trust each other, because they all adhere to a common **trust framework**



# Dit is een dataspace



A **dataspace** is a collaboration of participants, adhering to a common rulebook, for the sharing of data.



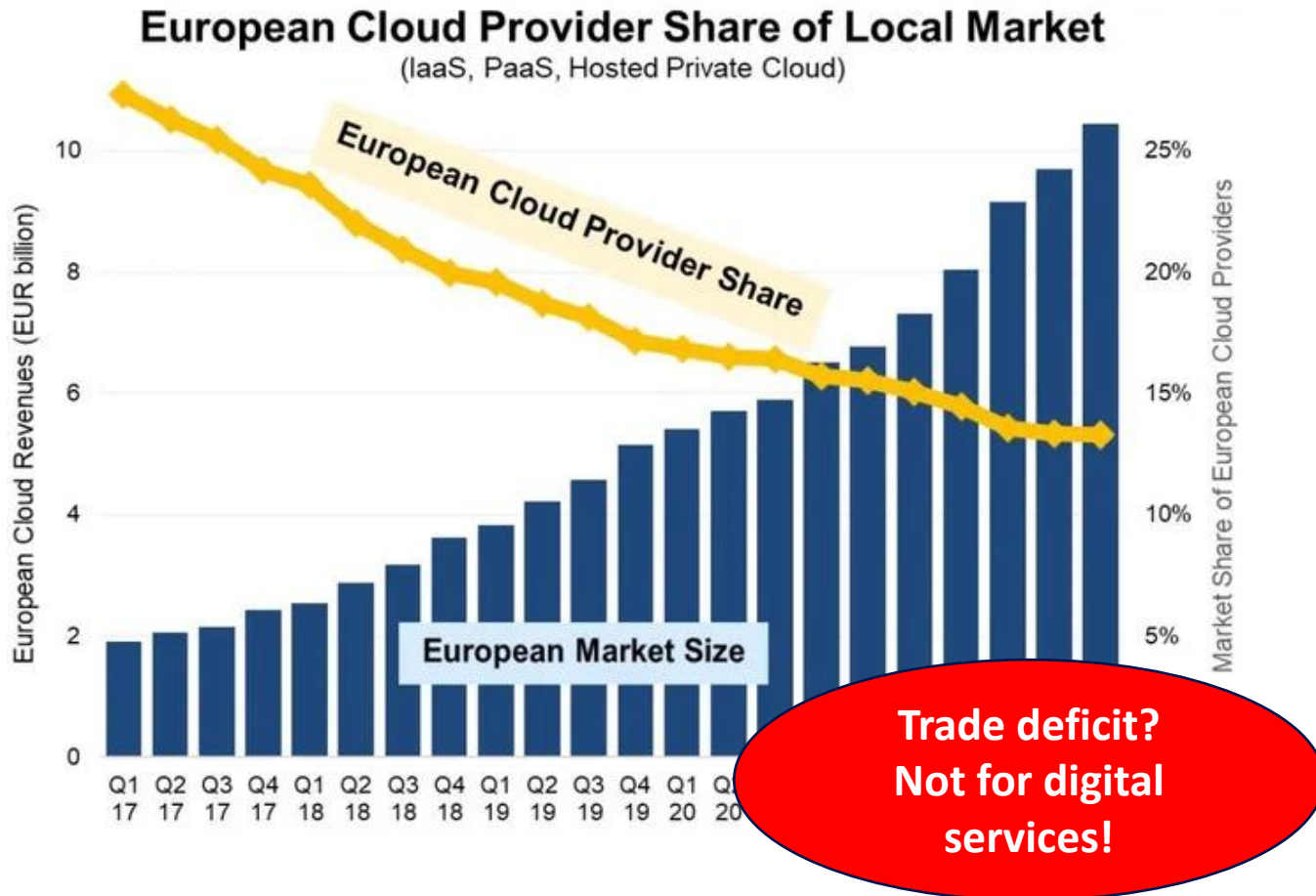
- Federated data architecture: no physical data integration, leave data where it is
- Interoperability: no silos, no vendor-dependency
- Data Sovereignty and traceability
- Trusted participants

# Data Act artikel 33 – de juridische basis

- Denk in termen van data producten → definieer voor ieder data product
  - Beschrijving, inclusief licentie en gebruiksvoorwaarden, datakwaliteit
  - Metadata over datastructuur en formaten (semantiek), inclusief classificatieschema's, vocabulaires en codelijsten
  - Technische toegang: APIs, endpoints
  - Vastlegging van data sharing agreements
- **Deel deze rechtstreeks – of beter nog: maak gebruik van de kaders die een dataspace biedt**
  - Gedeeld rulebook (semantiek, techniek, juridisch/organisatorisch, ...)
  - Gedeeld vertrouwen tussen deelnemers
  - Makkelijker schalen

# Digitale soevereiniteit vanuit het cloud perspectief

# A data driven society is dependent on cloud



EU concerns on Data Sovereignty and non-European cloud dependencies.

→ Legislation and Funding.

Industry concerns for a healthy European industry and market fairness.

→ Markets and Competition.

User concerns for lack of transparency and lock-in effects.

→ Transparency and Trust.

# What is needed?

## Change in market dynamic

- Economically: cloud is a “failed market”
- Development of Open cloud ecosystem: compose and switch

## Legislation (supports market dynamics)

- EU Data Act. intends to take away barriers
- Cloud will be regulated market, compared to the energy market and telecom market

## Technology development

- EU Investments in technology development
- Cloud-Edge Continuum, Federated Cloud
- Convergence Telco and Cloud

## Data Act

Entry into application 12 September 2025



### Better access to IoT data

Rules for IoT data also frame data sharing in other sectors



Make **business data** available for the common good (B2G)



Tackle **contractual unfairness** in B2B data sharing



Easier **switching** between cloud services



Facilitate data flows through **standards** and **interoperability**

2



***“In the European cloud market of the future, providers will compete on performance, price, and innovation. But no longer on practices of locking in their customers.”***

# Cloud switching in EU Data Act

## CHAPTER VI

### SWITCHING BETWEEN DATA PROCESSING SERVICES

#### Article 23

Removing obstacles to effective switching between providers of data processing services

#### Article 24

Contractual terms concerning switching between providers of data processing services

#### Article 25

Gradual withdrawal of switching charges

#### Article 26

Technical aspects of switching

Autoriteit  
Consument & Markt



#### Article 29

Interoperability for data processing services

Open interoperability specifications and European standards for the interoperability of data processing services shall address:

- (a) the cloud interoperability aspects of transport interoperability, syntactic interoperability, semantic data interoperability, behavioural interoperability and policy interoperability;
- (b) the cloud data portability aspects of data syntactic portability, data semantic portability and data policy portability;
- (c) the cloud application aspects of application syntactic portability, application instruction portability, application metadata portability, application behaviour portability and application policy portability.

# How: from Mono-cloud to Federated Cloud

New: Cloud Federation

Keep: freedom of choice and unbundling

	Pre-Cloud	Cloud (Native) <i>Current cloud market</i>	Federated Cloud
Data & Management			<div style="background-color: #0056b3; color: white; padding: 20px; text-align: center;"> <p>1+1=3</p> <p>Combine advantages of Pre-cloud and Cloud Native</p> </div>
Application	Atos, ilionx, CGI, centric		
Platform	Red Hat, LAMP, IBM, django		
Hosting	leaseweb, transip, obit, EQUINIX		
Virtualisation	vmware, Citrix, XenServer, PROXMOX, Red Hat		
Hardware	IBM, Hewlett Packard Enterprise, intel, DELL, SUPERMICRO, AMD		
Interconnectivity	euromfiber, kpn, ndix, amsix, NLIX		

Keep: simplicity of deployment, integration and management

# EU investment IPCEI-CIS: cloud federation

## IPCEI Next Generation Cloud Infrastructure and Services

Europe on the path to the cloud infrastructure of the future



- IPCEI = Important Project of Common European Interest
- CIS = Cloud Infrastructures and Services
- 100 organizations from 12 member states contribute with projects in this integrated project.
- Government funding of > 1,2 billion euro. Private funding comes in addition to this for a total of 2,6 billion euro.
- The Netherlands is funding 70 million euro in three projects:
  - **MISD**: Modular Integrated Sustainable Datacenter.



- **ECOFED**: European Cloud services in an Open FEDerated ecosystem.

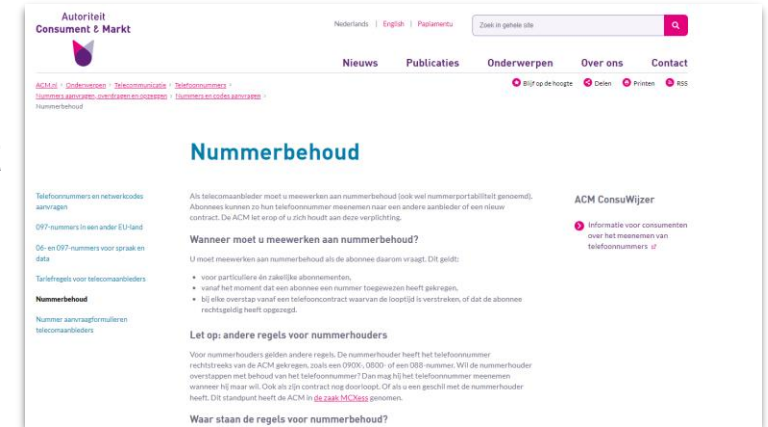


- **European Cloud Campus**: Development of European Cloud Infrastructure and Services.



# Is Cloud Federation feasible?

- Separation on infrastructure and services on top of this infrastructure:
  - Telecom market: by separating telecom infra and telecom services it is possible to be a telecom provider without owning a network (Mobile Virtual Operators, MVO).
  - In NL: 3 telecom networks (KPN, Odido and Vodafone) and over 50 MVOs active (telco services on top of infra of the 3 networks).
  - Infrastructure sharing and infrastructure mixing to reach international coverage.
  - Number portability and roaming: switching doesn't end the service quality.
- Similar transformations have been made in the energy market and for public transport.





**DATA  
DOES NOT FLOW ON  
RAINBOWS**

# Mijn oproep voor vandaag

1. Deel data met een doel
2. Denk in termen van data producten:  
welke data wil ik delen en onder welke condities?
3. Maak gezamenlijke afspraken in een dataspace:  
een gezamenlijk rulebook (semantiek, technisch, juridisch)
4. Maak bewustere keuzes voor cloud-infrastructuur  
– data doesn't flow on rainbows 😊



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