ECOFED de betrouwbare Europese Cloud voor het energienet van morgen

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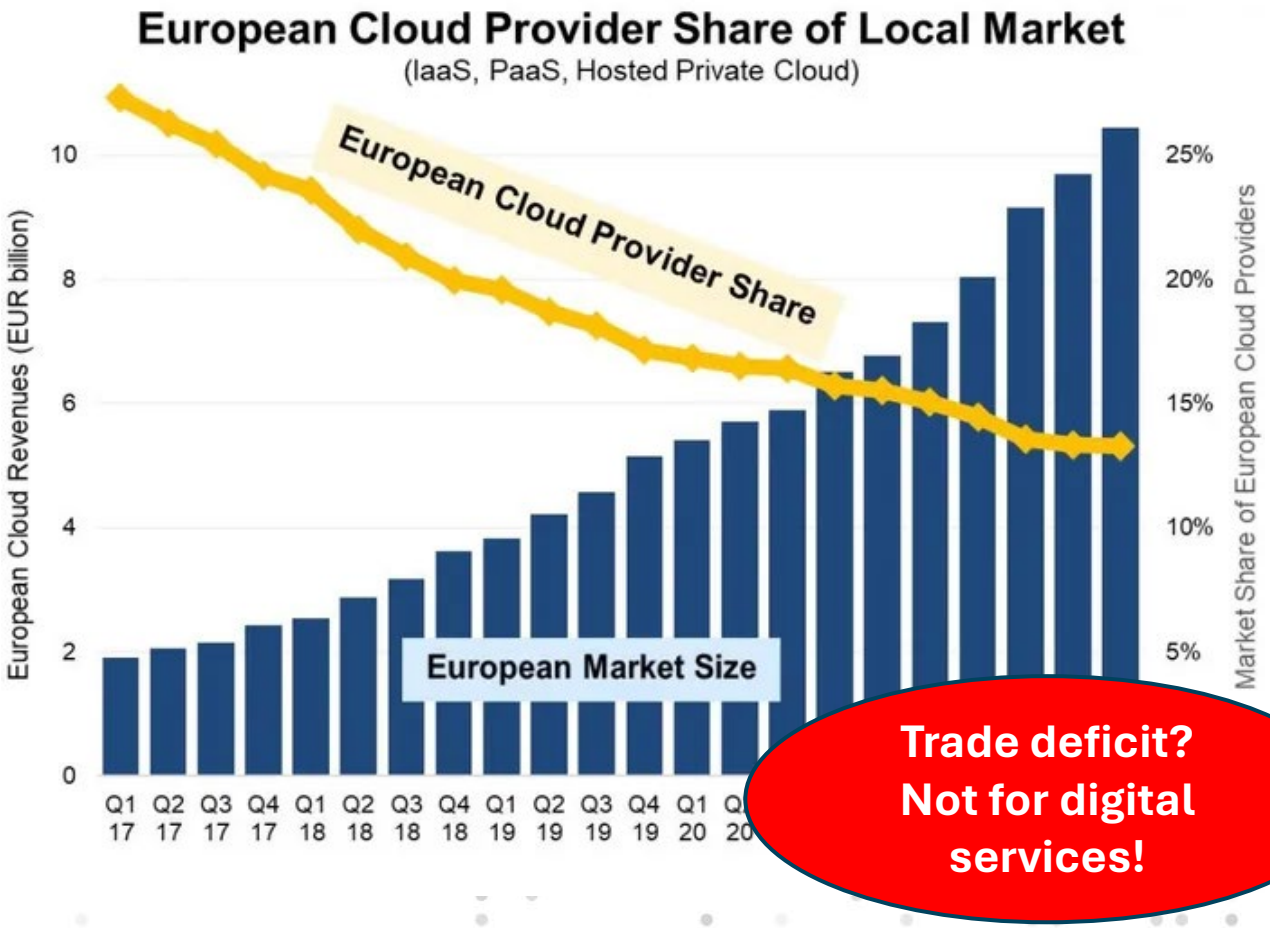
European Cloud services in an Open FEDerated ecosystem

Coming to an open cloud ecosystem based on federation

A data driven society is dependent on cloud



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

→ Legislation and Funding.

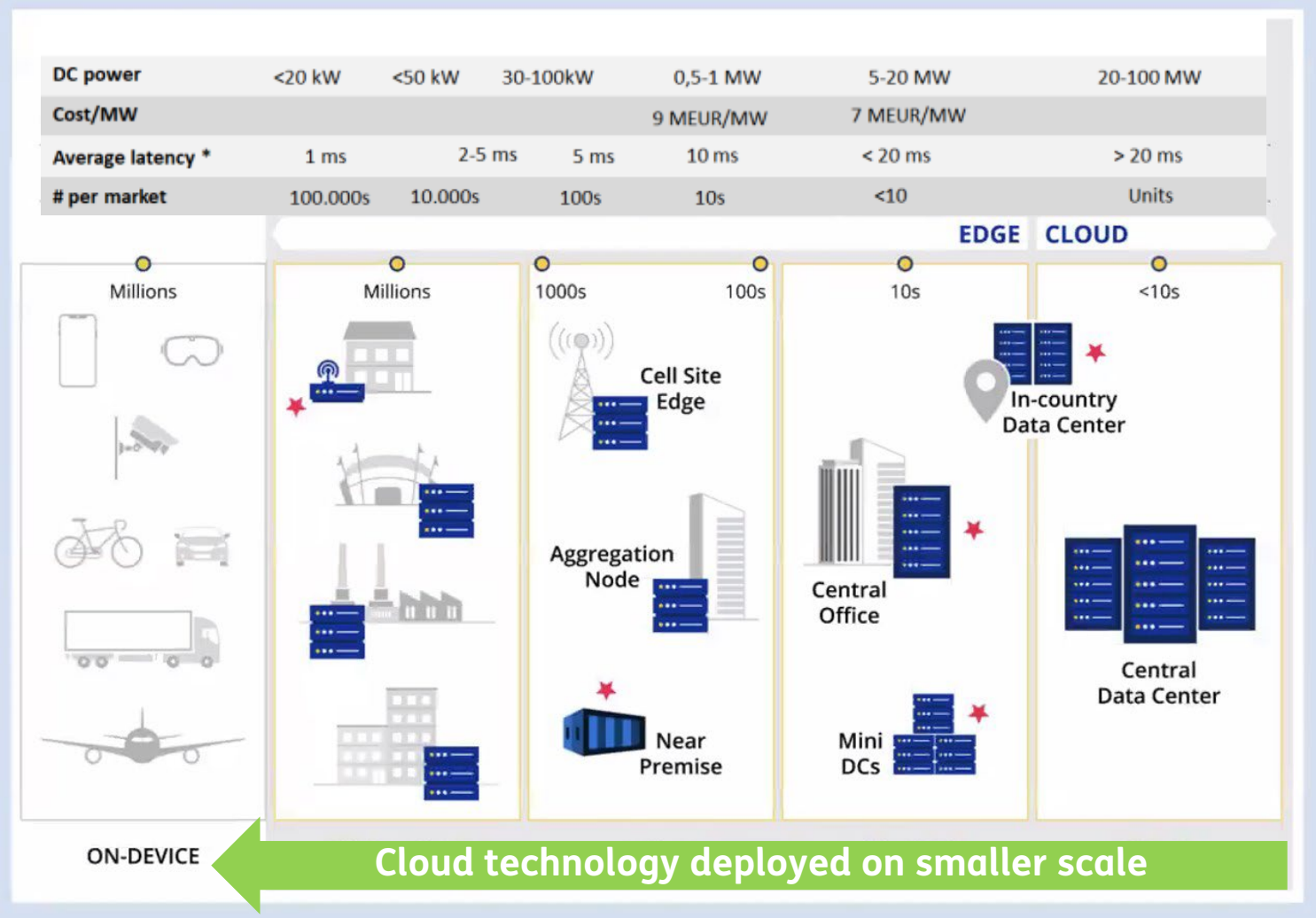
Industry concerns for a healthy European industry and market fairness.

→ Markets and Competition.

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

→ Transparency and Trust.

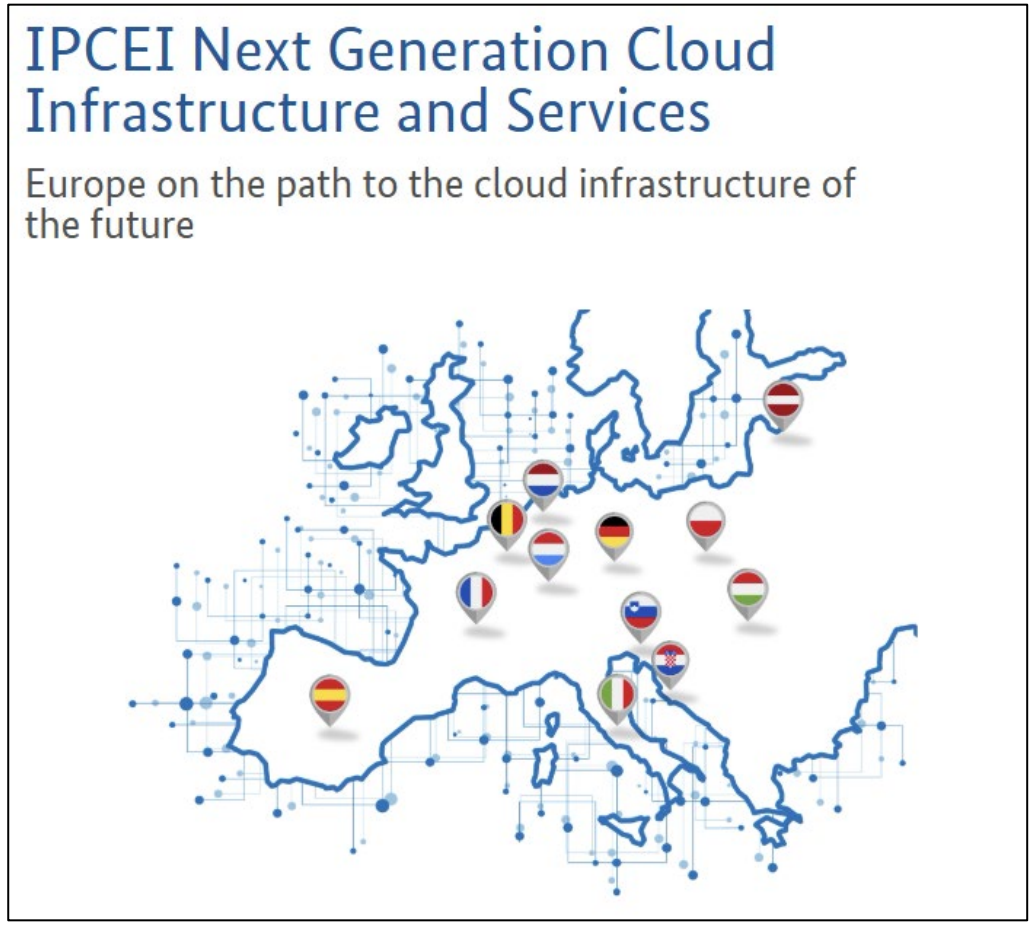
Cloud as defined by *EU Alliance for Industrial Data, Edge and Cloud*



- Expected shift of Cloud/Edge-ratio
  80% / 20% → 20% / 80%
- Ambition of 10.000 Green Edge nodes
- Digital Infrastructure will be more distributed in nature
- Heterogeneous in used technological stacks

Source: European industrial technology roadmap for the next generation cloud-edge offering

What does EU and NL do?



- 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.

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

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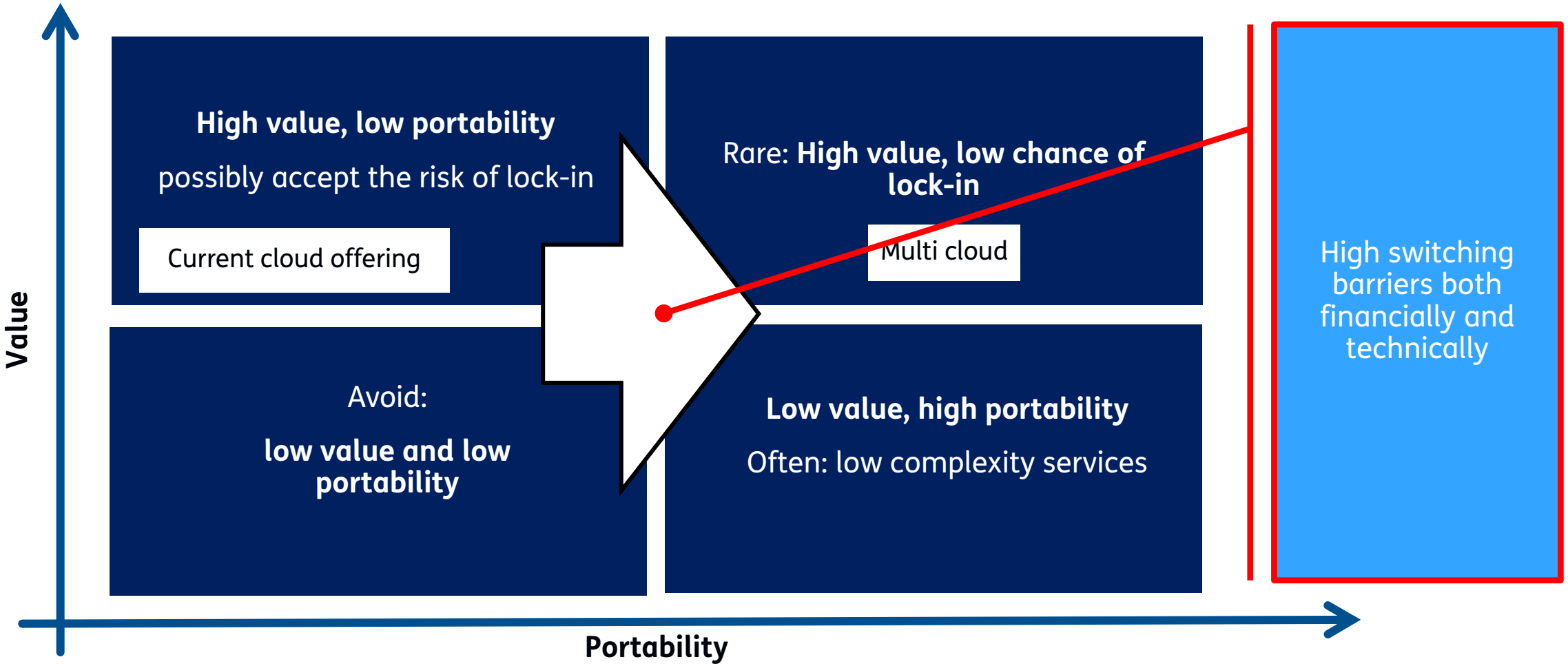
  - **European Cloud Campus**: Development of European Cloud Infrastructure and Services.

    leaseweb reliable hosting

What needs to be solved for an open cloud ecosystem?



Modified from: [Managing technical lock-in in the cloud - GOV.UK (www.gov.uk)]

What will the ECOFED project do?

- Develop a technical basis for a more open cloud usage model, facilitating interoperability, federation and switching between providers.

- Vertical decomposition: disentangling cloud infrastructure and applications

- Enable cloud service providers to build more flexible, scalable and federated cloud

- Lower risk of lock-in effects due to easier cloud switching and more flexible capacity scaling

From Mono-cloud to Cloud Federation

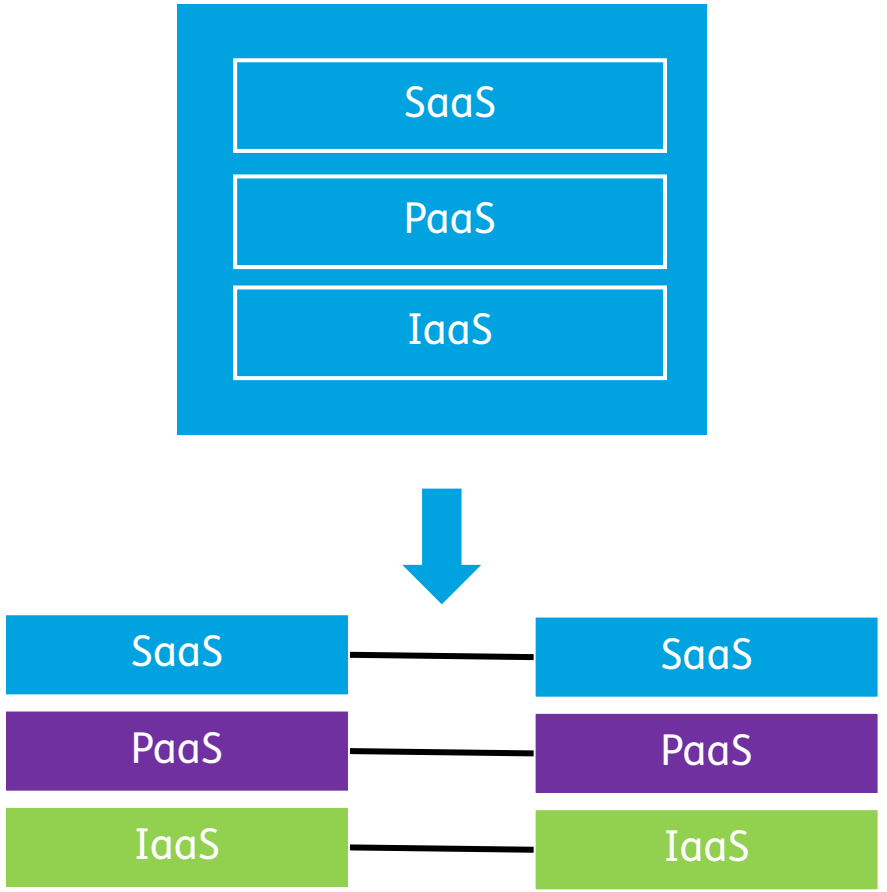
Keep: freedom of choice and unbundling

	Pre-Cloud	Cloud (Native) *Current cloud market*	Federated Cloud
Data & Management			**1+1=3** **Combine advantages of Pre-cloud and Cloud Native**
Application	Atos ilionx CGI centric		
Platform	Red Hat LAMP IBM django		
Hosting	leaseweb transip Dbit EQUINIX		
Virtualisation	vmware CITRIX XenServer Xen PROXMOX Red Hat		
Hardware	IBM Hewlett Packard Enterprise intel DELL SUPERMICRO AMD		
Interconnectivity	eurofiber amsix kpn ndix NLIX		

Keep: simplicity of deployment, integration and management

How? ECOFEDs approach

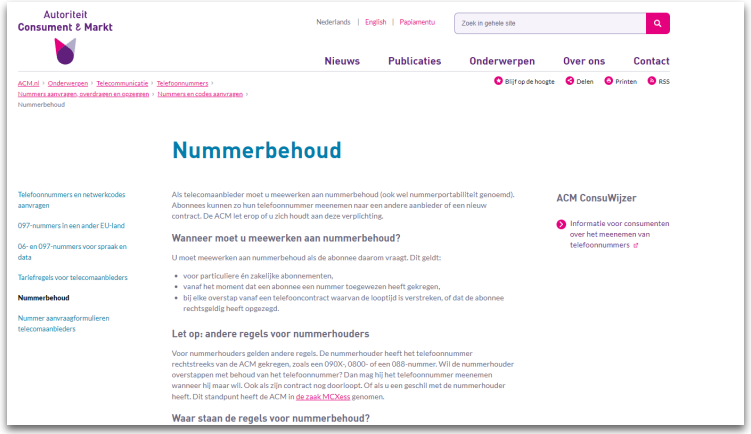
- From mono-cloud to multi-cloud
- “Vertical decomposition” of the cloud stack by disentangling technology stacks
- Make NaaS, IaaS, PaaS en SaaS layers interchangeable to make mix-and-match of applications and infrastructure
- Technology stack agnostic: divers technological landscape
- Technology should not enforce a specific business model



Is Cloud Federation feasible?

A parallel with the transformation of telecom market

- **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 en 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 transformation have been made in Energy market and public transport



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 [illegible] between providers of data processing services

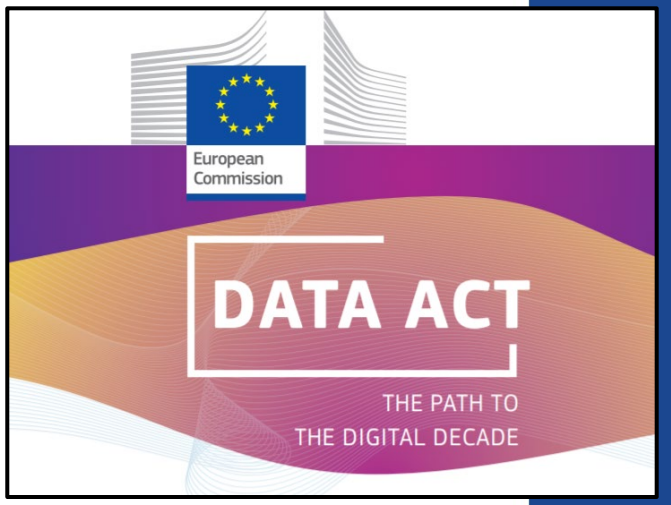
Article 25: Gradual withdrawal of switching charges

Article 26: Technical aspects of switching

Article 29: Interoperability for data processing services

Article 34: Interoperability for the purposes of in-parallel use of data processing services

Several articles related to cloud switching



From the Data Act a **Central Union standards repository will come** containing:

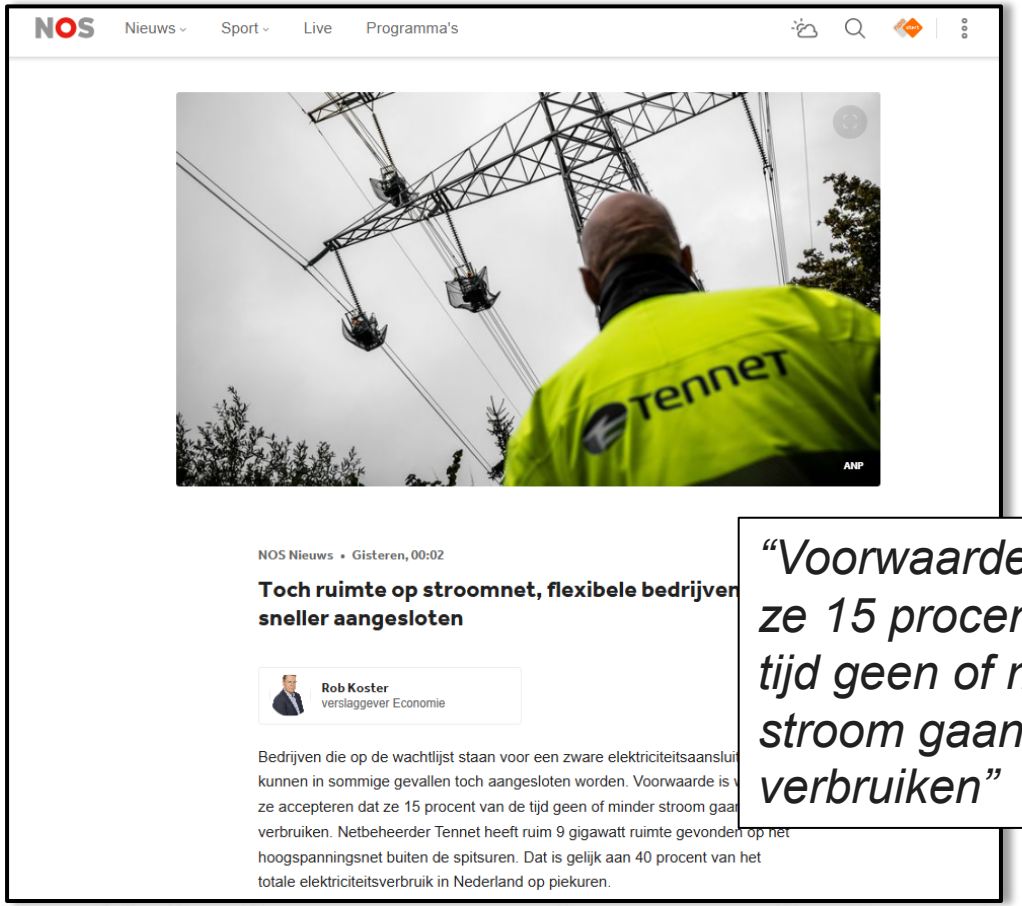
- open specifications
- harmonized standards

Source: legal Data Act text: https://eur-lex.europa.eu/eli/reg/2023/2854

When clouds get more flexible…

- Orchestrators can compose cloud infrastructure based on energygrid data
- Move workloads between cloud providers
- Shift workloads in time and place

NOS 7 april 2025



"Voorwaarde is … dat ze 15 procent van de tijd geen of minder stroom gaan verbruiken"

Questions? Interested to learn more?

NL ECOFED: www.ecofed.eu

EU IPCEI CIS: www.8ra.com

Contact

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