



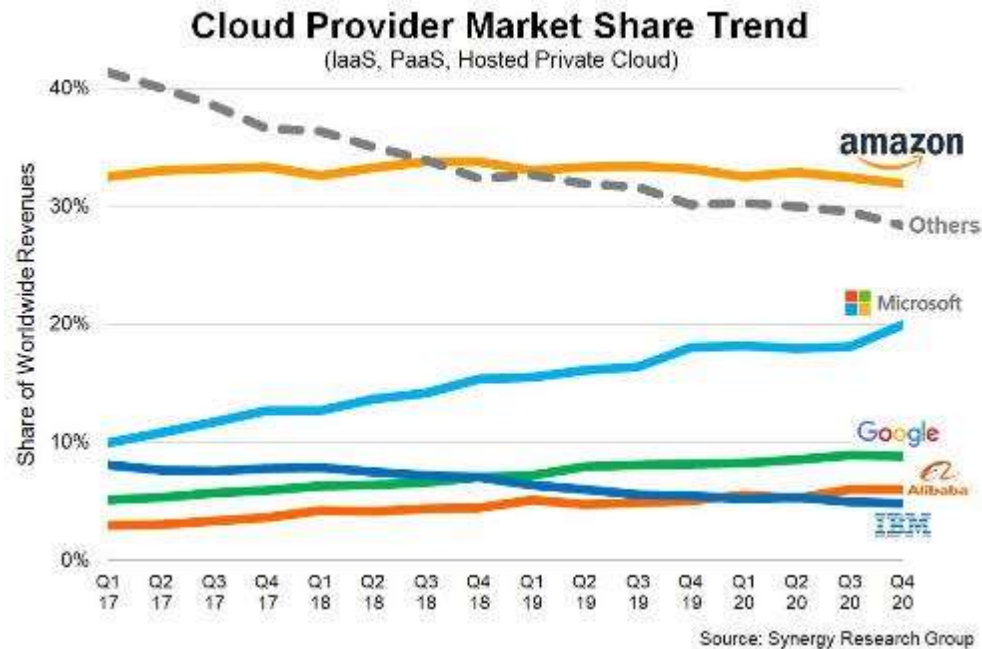
Vision for competitive cloud markets and digital strategic Autonomy

EUCLIDIA, 29 September 2022

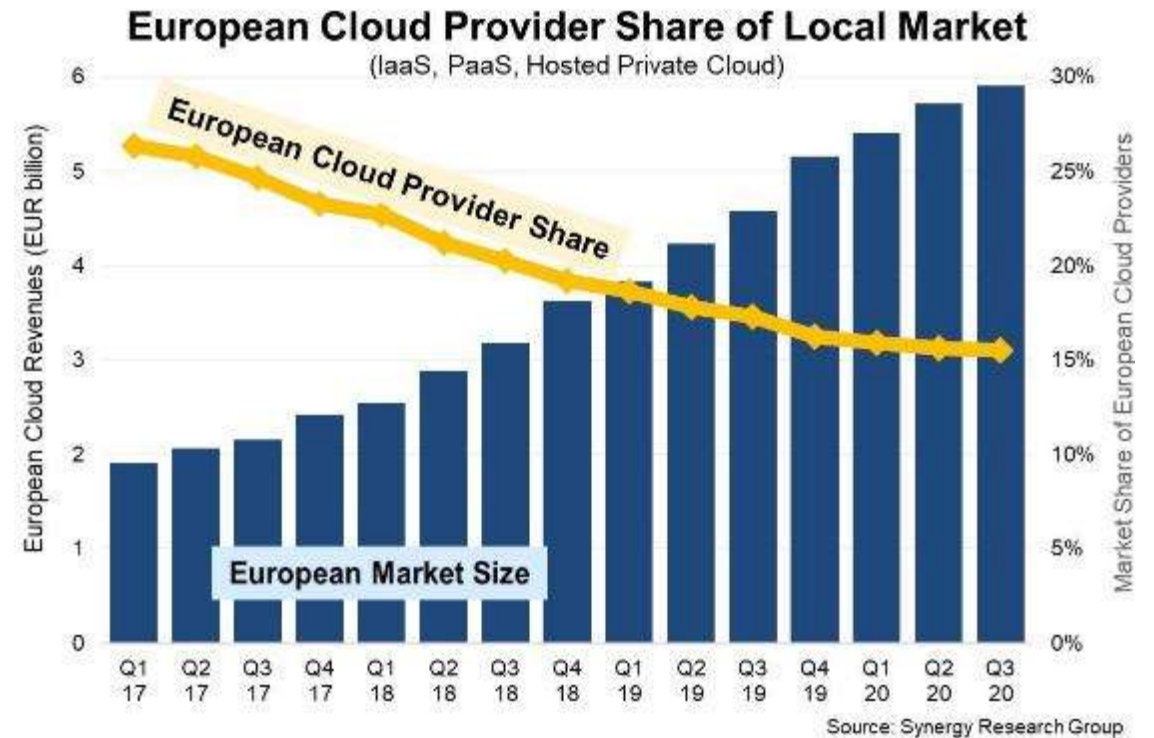
*Pierre Chastanet
Head of Unit – 'Cloud & Software'
DG CONNECT, European Commission*

Market vulnerabilities and strategic dependencies

Globally



In Europe



A new paradigm for EU action on cloud and edge: high ambition & coordinated approach



Feb. 2020
European Strategy for Data
aims to build a single market for data



May 2020
Recovery and Resilience Facility
20% Digital EU Flagship
“Scale-up”



Oct. 2020
Member States Declaration for European cloud



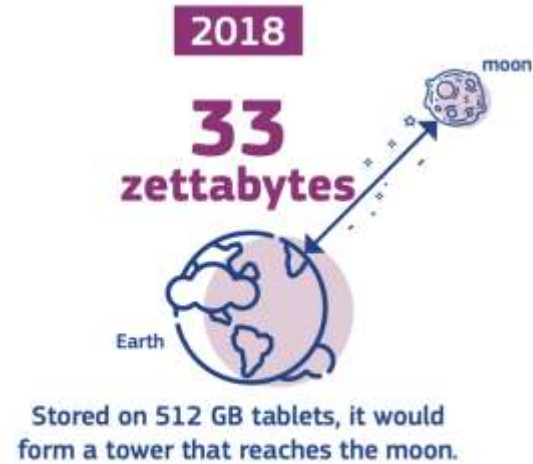
March 2021
Digital Decade Strategy sets targets on edge and cloud for 2030



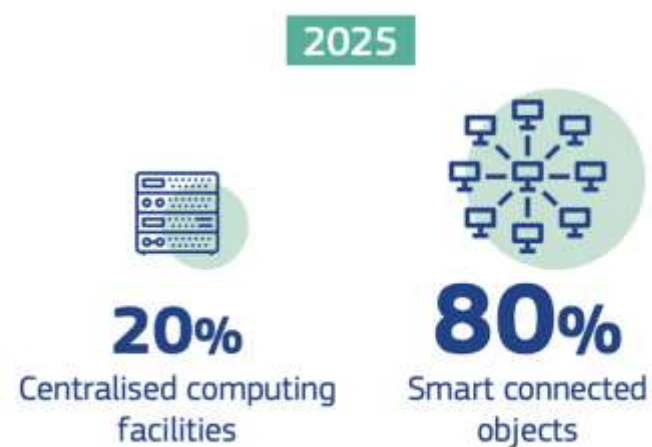
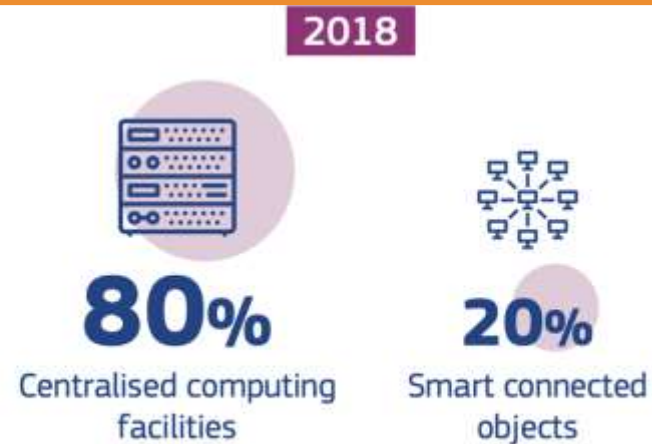
May 2021
Updated EU Industrial strategy
evidences strategic dependencies

A single market for data to ensure Europe's global competitiveness and data sovereignty

Data volume will grow



Data processing will change



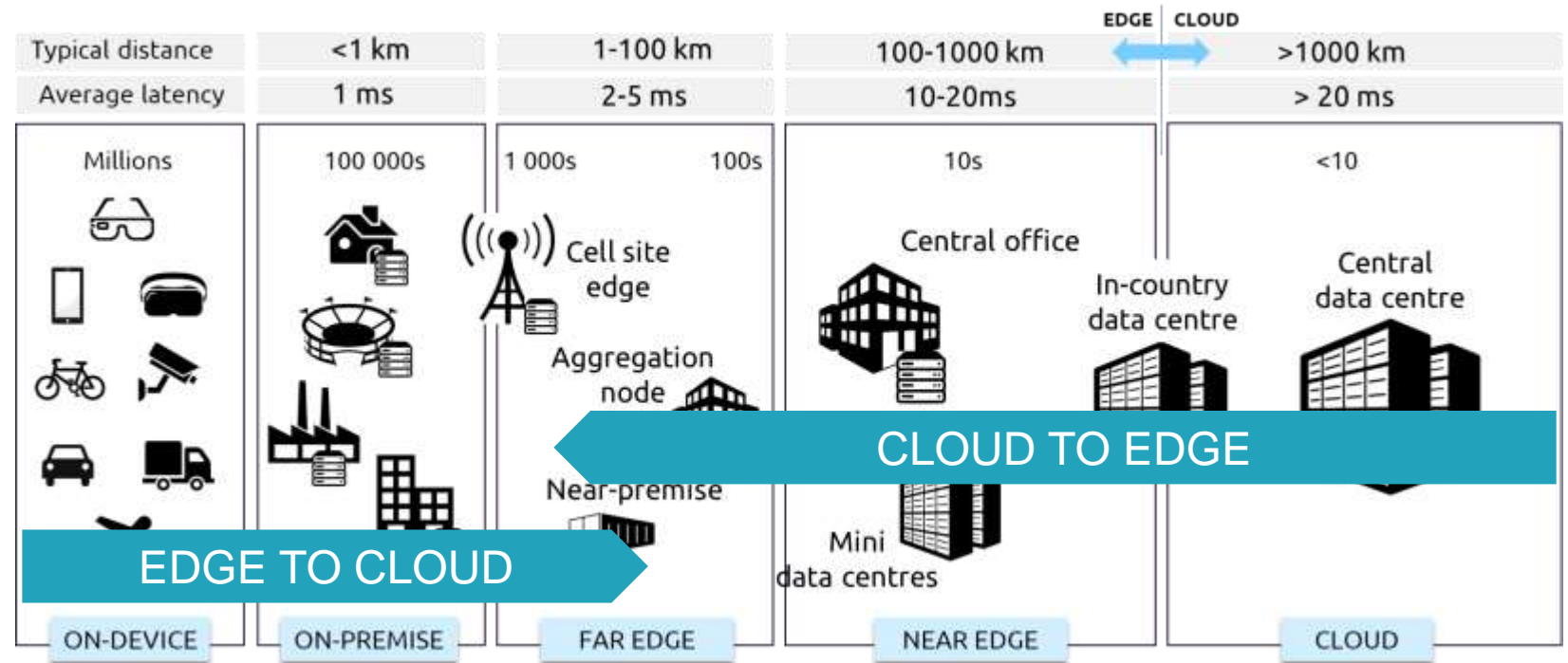
Cloud and edge technologies are becoming a **critical infrastructure and constitute a priority area** for investment and reforms by the EU and its Member States for the coming years...

€4-6 billion to be invested in total
in common European data spaces and a **European federation of cloud infrastructure and services**

Our vision: Digital Decade objectives by 2030



- ✓ >10.000 edge nodes by 2030
- ✓ 75% of cloud uptake by EU enterprises in 2030



Energy

Public
administration

Manufacturing

Health

Aerospace-
defence

Mobility

...

EU legal fundament → GDPR (2016) + Free Flow of Non-Personal Data Regulation (2018): you can store and process your data wherever you want in the EU.



Vendor lock-in

Data Act (2022)

Abuse of market power

Digital Markets Act (2022)

Insufficient EU capacities

Alliance for Industrial Data, Edge and Cloud (2021), Marketplace

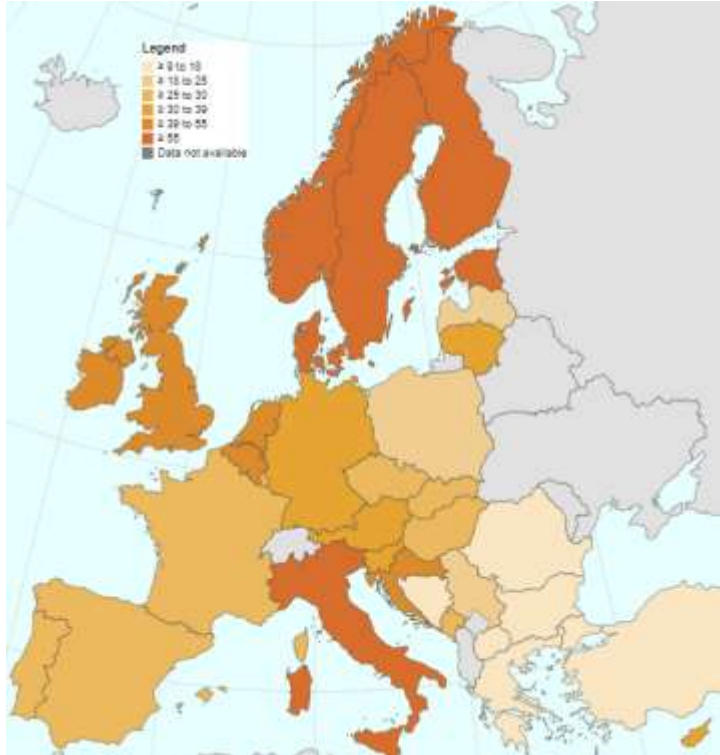


Governance/contractual issues

EU Cloud Rulebook (2022)

Risk of unlawful access to data

Data Act/Cyber Certification (2022)



Cloud, Common European Data Spaces and AI



High Value
Datasets
From
public
sector

- Driven by stakeholders
- Rich pool of data of varying degree of openness
- Sectoral data governance (contracts, licenses, access rights, usage rights)
- Technical tools for data pooling and sharing

Marketplace for Cloud to Edge based Services Cloud services meeting high requirements for data protection, security, portability, interoperability, energy efficiency



Federation of Cloud & HPC Infrastructure & Services

Cloud stack management and multi-cloud / hybrid cloud, cloud governance

**Edge
Infrastructure
& Services**

SaaS (Software as a Service)

Software, ERP, CRM, data analytics

PaaS (Platforms as a Service)

Smart Interoperability Middleware

IaaS (Infrastructure as a Service)

Servers, computing, OS, storage, network

**High-
Performance
Computing**

AI on demand platform

**AI Testing and
Experimentation Facilities**

European Alliance of Industrial Data and Edge

Key Tasks



bringing **relevant actors** together to **prepare and update horizontal and technology specific investment roadmaps on cloud and edge**

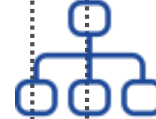


providing **recommendations** to ensure the **coherent integration of investments** with those foreseen for the deployment of common European data spaces in relevant areas



advising the Commission on **requirements and standards for cloud services**, including for public procurement.

Structure



EUROPEAN ALLIANCE
FOR INDUSTRIAL DATA,
EDGE AND CLOUD

**Edge-cloud
continuum**

**Defence &
Aeronautics**

**Member
States
Cooperation**

Industry technology and investment WGs

39
industrial
members,
continuous
open process

Member
States

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

April 2022



Open source



Secure



Energy efficient

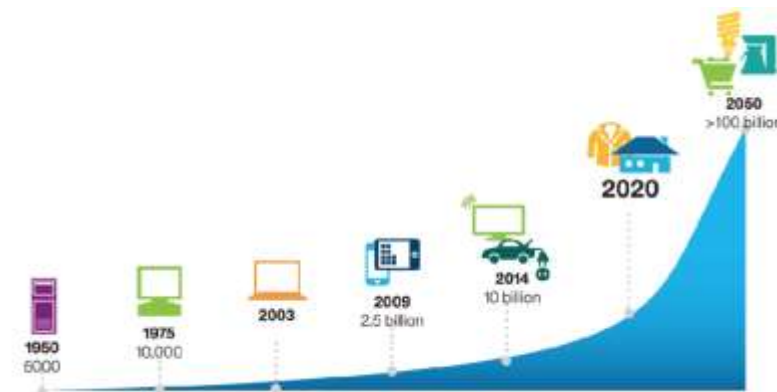
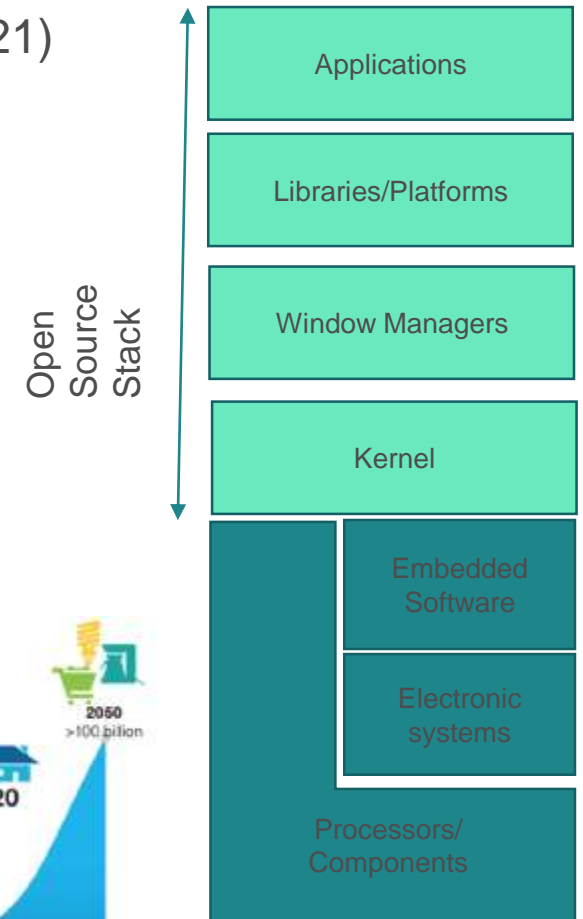


European
Commission

Study on the Economic Impact of Open Source in the EU economy (September 2021)

- Confirmation of big impact: EU companies invested over €1bn in OSS
- Cost Benefit ratio above 1:4
- Impact between €65 and €95bn
- Positive correlation with GDP and confirmation of causality
- Open Source → Public good
- EU policies required.
- Case studies confirm TCO reduction, avoid vendor lock-in and increase digital autonomy.

→ Digital Autonomy



Inflection points in Computing history

Open Source in the European Commission





Think Open

Communication (2020)

https://ec.europa.eu/info/sites/default/files/en_ec_open_source_strategy_2020-2023.pdf

A working culture based on the principles of open source

Decision (2021)

[https://ec.europa.eu/transparency/documents-register/detail?ref=C\(2021\)8759&lang=en](https://ec.europa.eu/transparency/documents-register/detail?ref=C(2021)8759&lang=en)

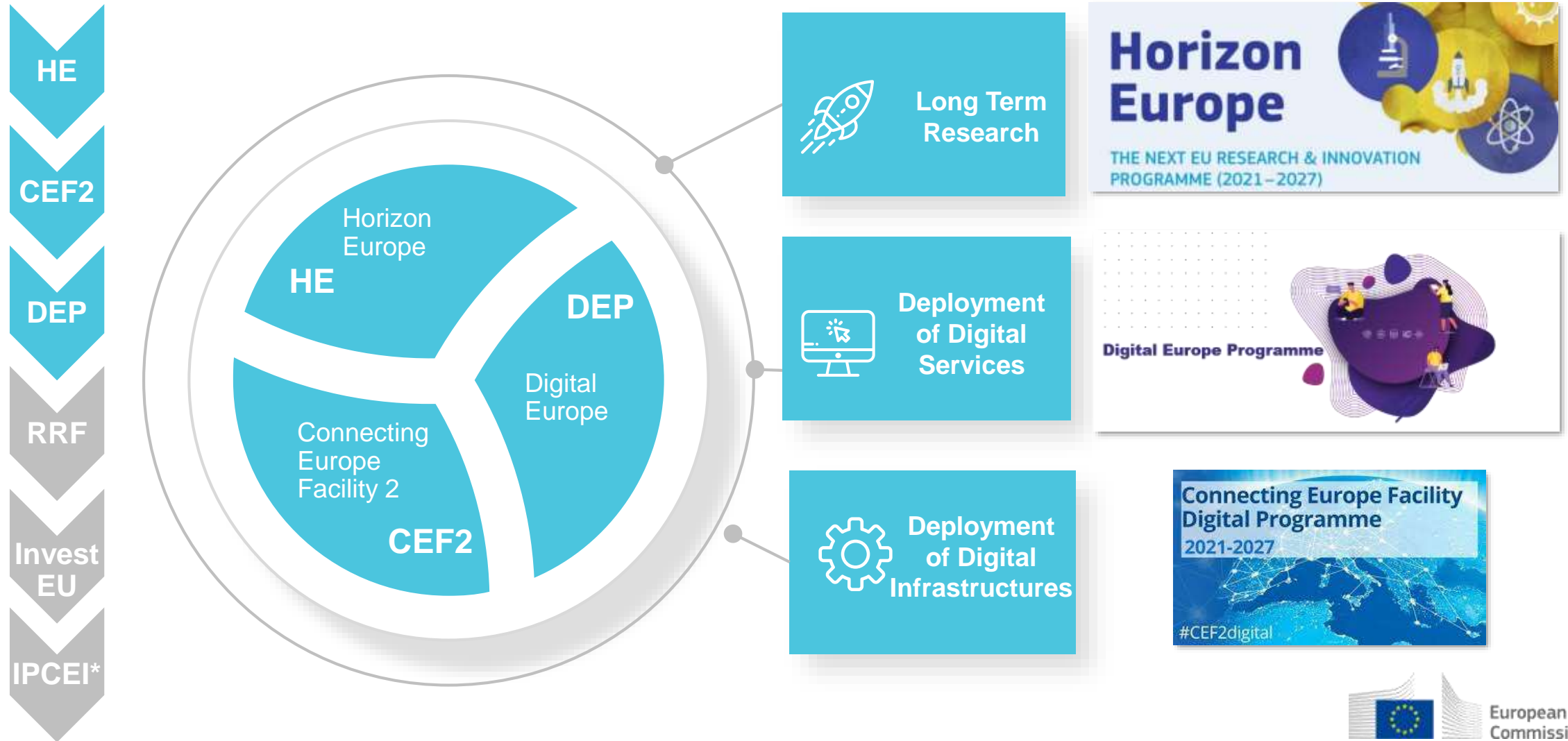
Commission services may make its software available for reuse, under an open source licence.

Open Source Programme Office

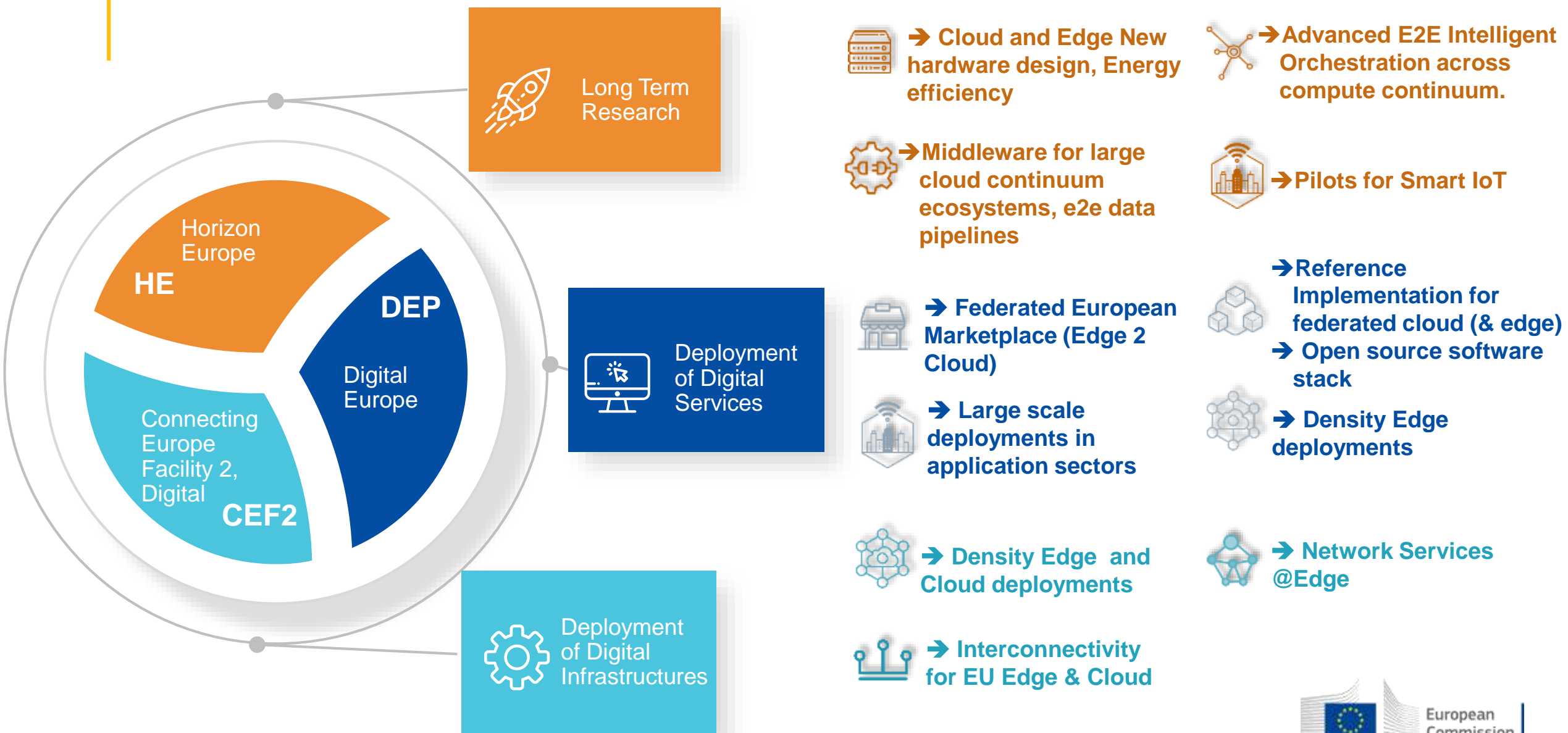
- Implement the action plan in the open source strategy
- Promote open source practices within Commission
- Provide support and guidance to open source projects
- Represent Commission in open source events and establish connections with other organisations



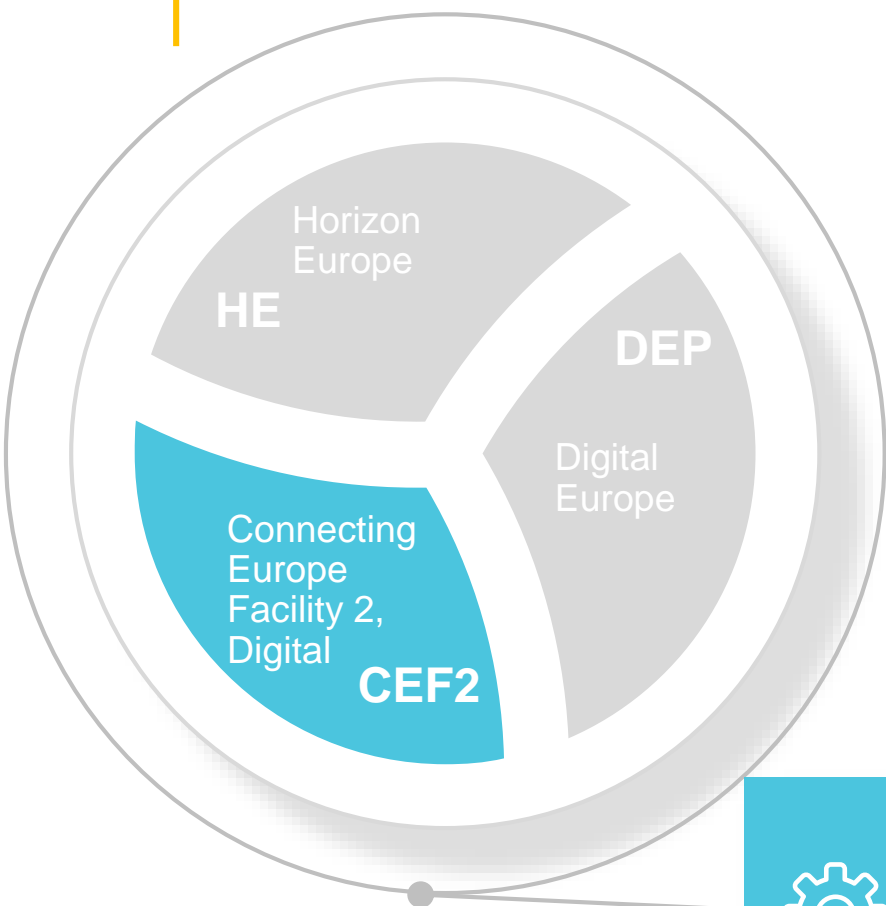
EU Funding Programmes in Digital



Key investment in Cloud-Edge in EU programmes



CEF2 – Edge-Cloud continuum, Roadmap



→ Density Edge
and Cloud
deployments



→ Network
Services
@Edge



→ Interconnectivity
for EU Edge & Cloud

2021-2023

5G corridors deployment, 5G deployment including when appropriate Edge

5G for smart communities, 5G networks deployed with a cloud-to-edge middleware stack (from DEP)

Backbone networks for pan-European cloud federations, development and deployment of cross-border and national cloud infrastructure interconnections at both the physical and functional levels

Integration of 5G with edge computing and federated cloud facilities

CEF homepage: [CEF Digital | Shaping Europe's digital future \(europa.eu\)](https://europea.eu/cef)

CEF workprogramme: [Multiannual work programme for 2021-2025 - Connecting Europe Facility - Digital](https://europea.eu/cef)

CEF Cloud Call: [Funding & tenders \(europa.eu\)](https://europea.eu/cef)

Digital Europe, Smart Middleware



Deployment
of Digital
Services

Smart middleware for a European cloud federation and for the European data spaces



Full Stack, across Edge
and Cloud



Baseline for EU
common data spaces



Data management and
advanced data services



Multi-cloud
orchestration



Built-in
identification,
data security



Business
intelligence



Environmental
tracking



Tested in use case
of public interest

European Cloud Security Certification Scheme

- ENISA is currently drafting a draft European Cloud Security Certification Scheme
- Adoption by means of EC Implementing Act (expected 2022)
- Legal basis: EU Cybersecurity Act (2017)
- Preparatory work conducted by the CSPCERT Industry WG
- 3 levels of security assurance
 - Basic
 - Substantial
 - High



Thank you



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