

IoT and Far Edge

Future Directions for Industry



Rolf Riemenschneider
Head of Sector IoT
European Commission - DG CONNECT

Cloud is High on the Commission Agenda

- Cloud is essential to deploy technologies such as **AI, IoT, blockchain or data analytics**
- [EU Data Strategy](#), [EU Industrial Strategy](#) and [EU Recovery Plan](#) stress importance of strengthening Europe's strategic autonomy for data processing, notably cloud and edge
- Development of national initiatives, such as [Gaia-X](#)

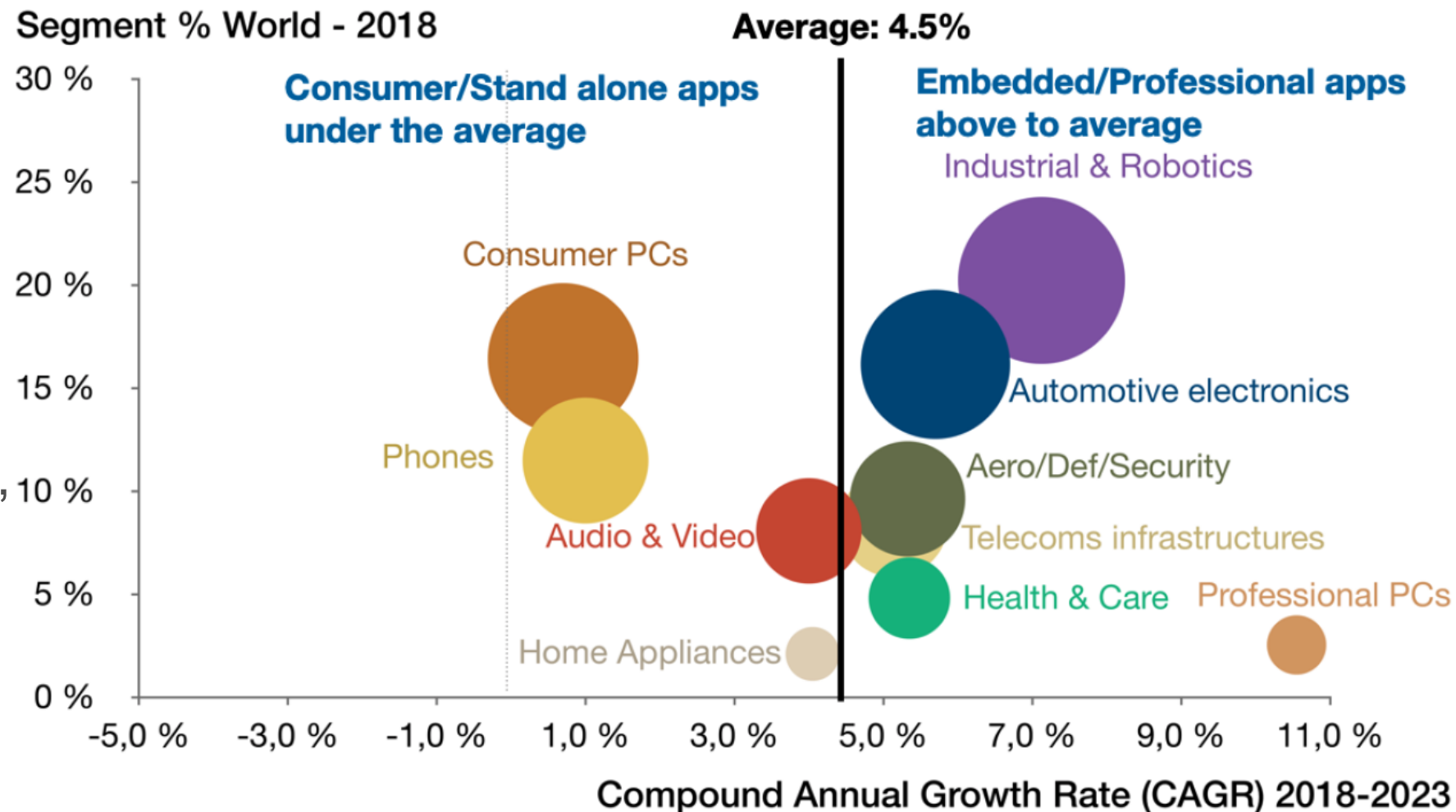


European cloud federation as a single European initiative to build a secure, energy-efficient and trustworthy cloud offering in Europe that meets the data processing needs of tomorrow



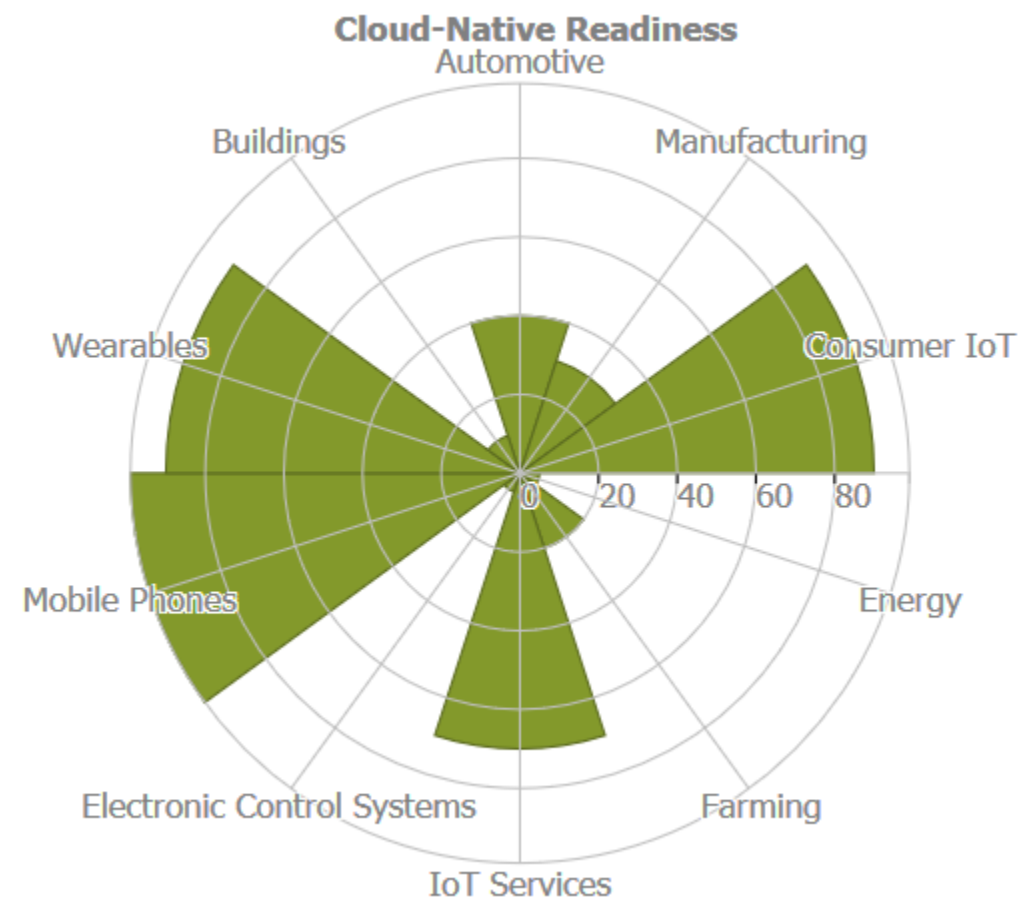
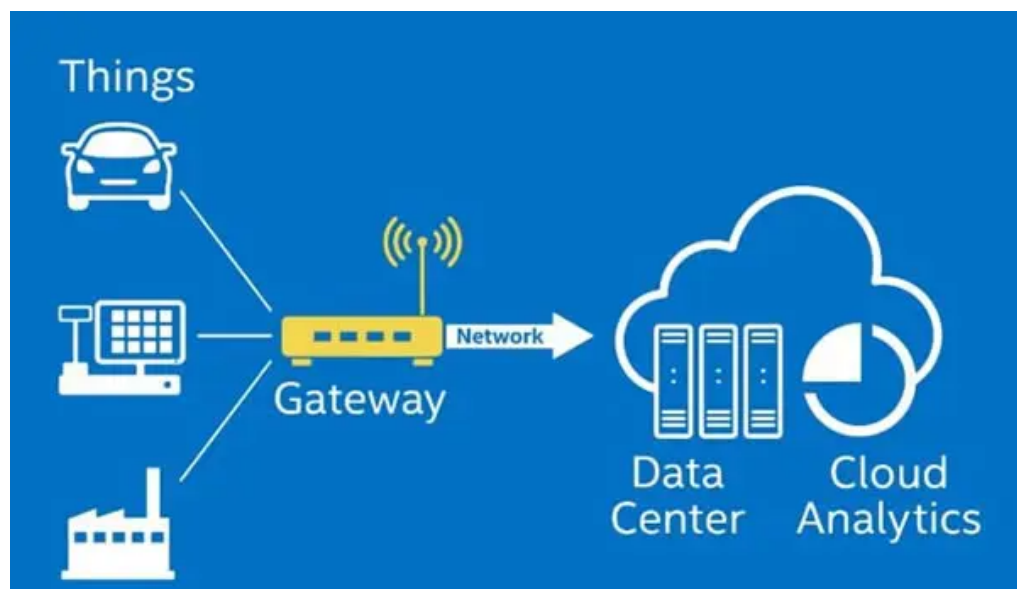
TREND

- **Growth led by IoT**
- **Sovereignty** in key sectors like industry, automotive, aerospace, health, telecom, ..
- **Edge computing** to spur innovation in electronic systems

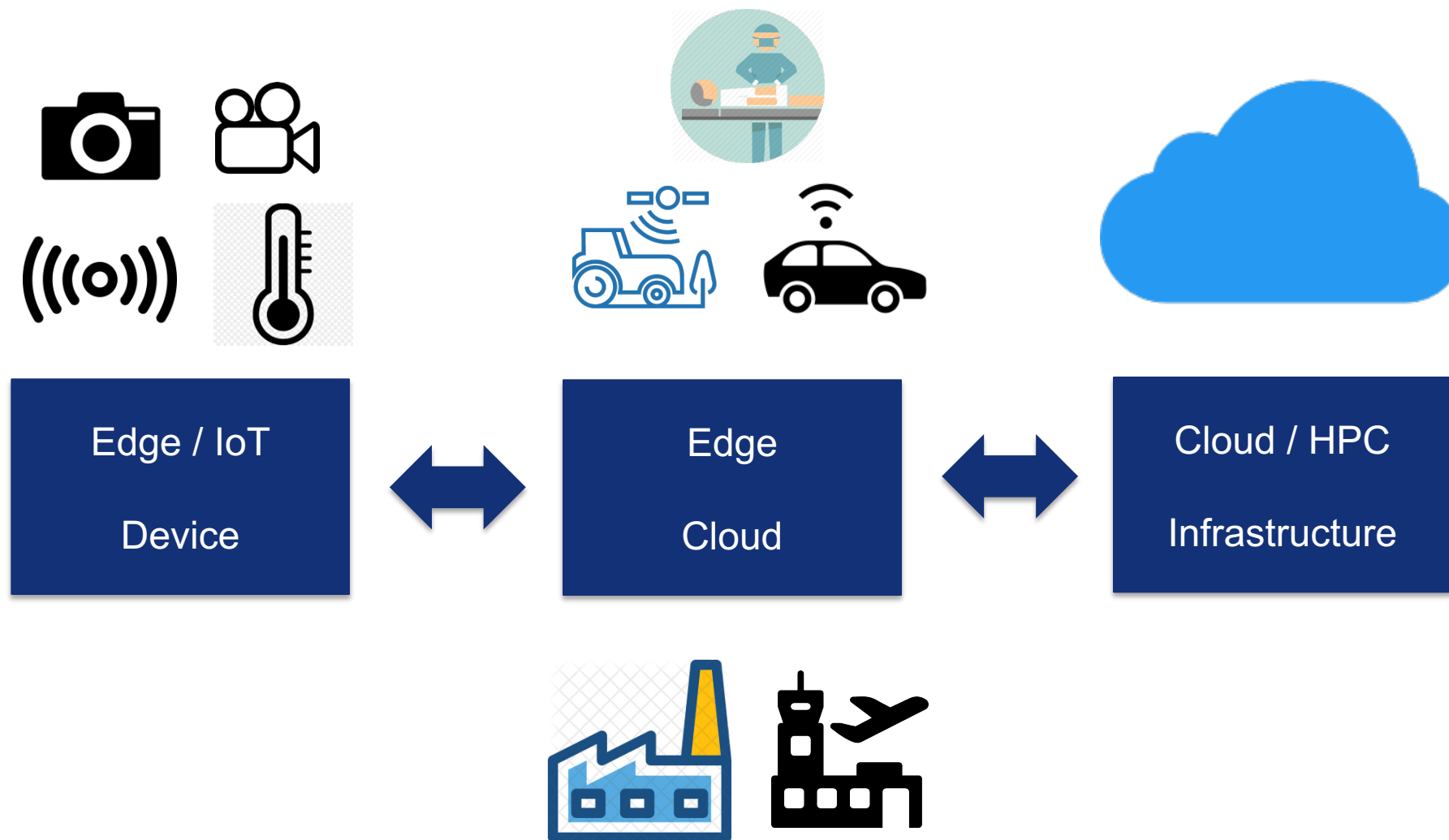


Sectoral views on Cloud-Native Transformation

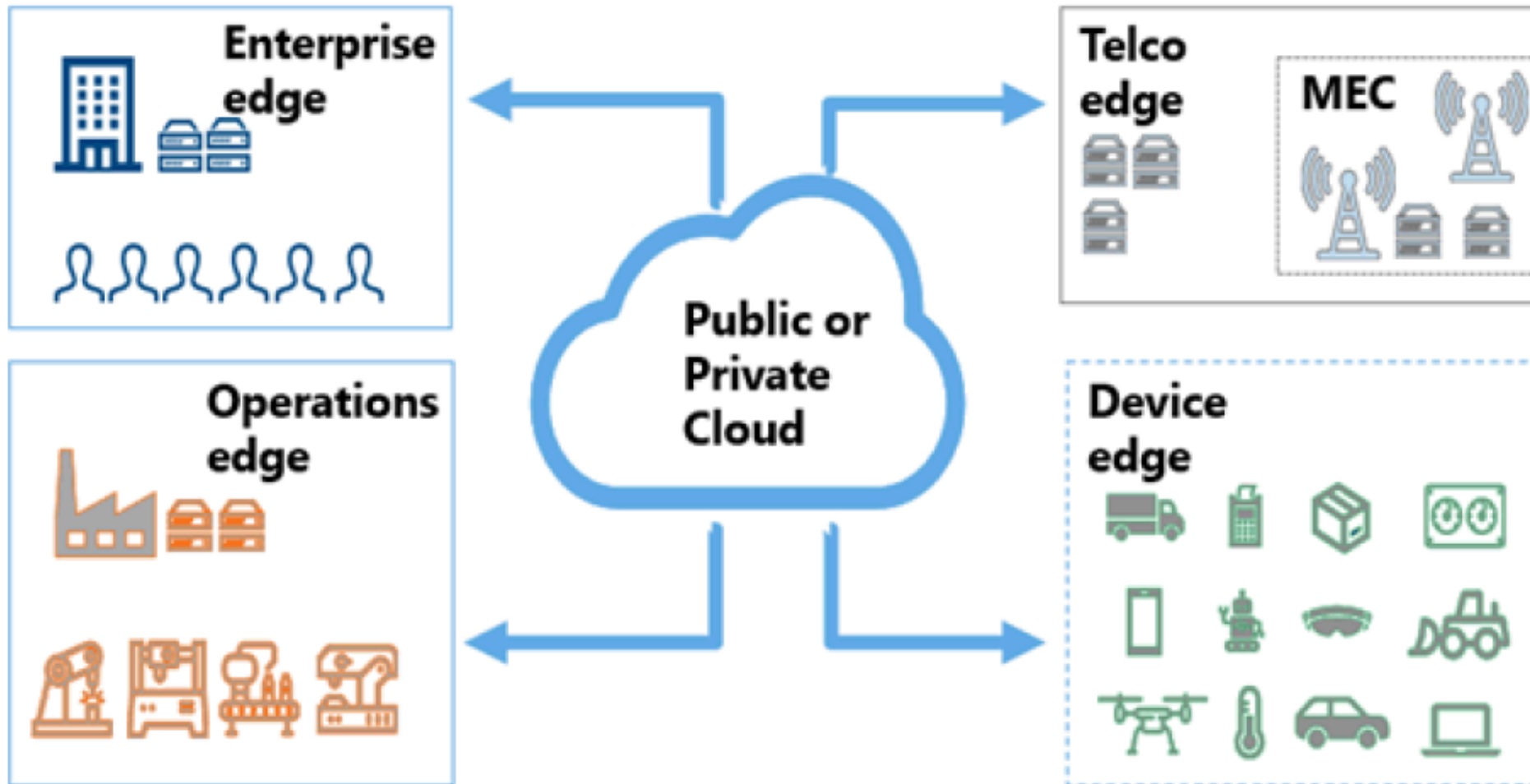
- 70% of IOT revenues are cloud-centric
- Consumer markets dominated by the cloud
- Low adoption rate of cloud in key industrial sectors



- **Data Processing today: 80% Cloud - 20% Edge**
- **Strong growth of DATA forecasted**
- **Risk of Commoditization**
- **Growing need for COMPUTATION close to the data:**
 - Real-time / safety
 - Data security / privacy
 - Energy consumption / carbon footprint / environmental footprint
 - Optimisation of resources: storage – network – computing centres
- **Data Processing in 5 years: 20% Cloud – 80% Edge**



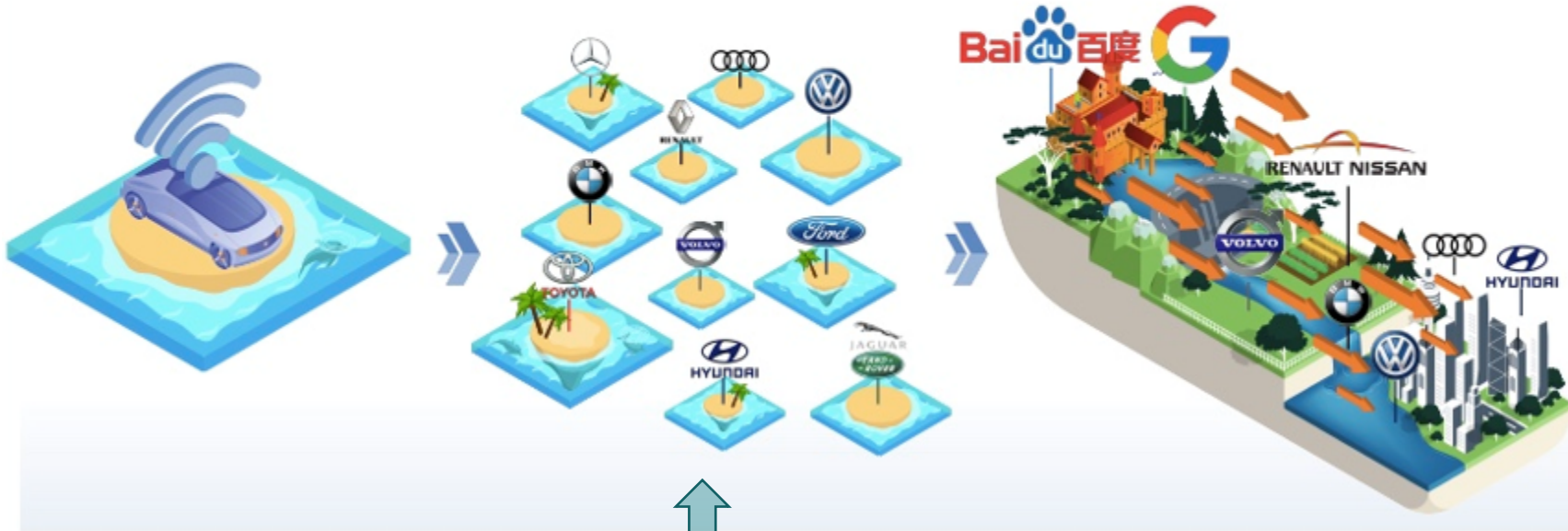
Industrial Need: Taxonomy for the Edge



Source: IDC, 2020

Edge Computing: Europe's one-time opportunity

Source: Berylls Strategy Advisors



Use European

Power @theEDGE

- Respond to Commoditization of key European Industry
(scale of Data Analytics and Prediction)

→ **Join Forces at European Scale**

- **Edge Computing: Europe's one-time opportunity :**

→ Federated Cloud – Far EDGE – 5G/AIoT – HW Sensor Devices

→ **Coherent approach across European Partnerships**

- **Partnering to grow the opportunity,**

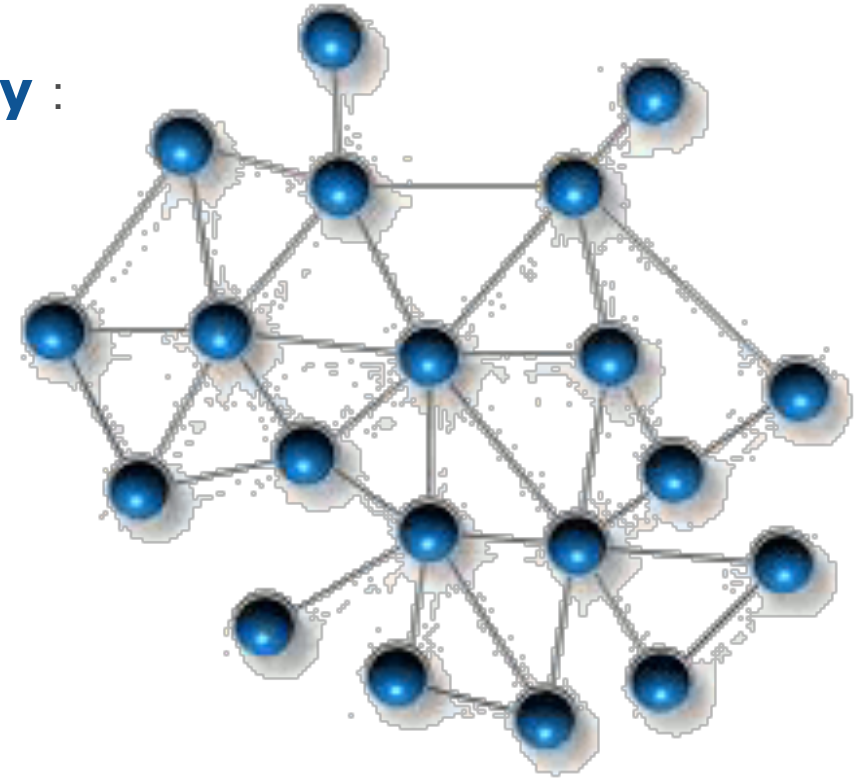
→ Fierce competition from Internet giants

→ Multivendor partnerships, relevant alliances **?? NEW ??**

- **Foster Open innovation & Skills** (SMEs, start-ups)

- **Open Edge computing architecture**

→ avoiding fragmentation (e.g. data flow, verticals) and lock-in



Standardisation

ETSI
JTC1-IEC
TM Forum
OneM2M

Open Source

CNCF
LF EDGE
OSF – Edge Computing Group
Eclipse Edge NATIVE
ONAP

...

Industrial Alliances

5GACIA
AECC.org
5GAA
AIOTI.org
Ecconsortium.eu

...

Cluster 4: Digital, Industry, Space

- JU KDT
- JU SNS
- Work Programmes
 - Destination 3 World leading data and computing technologies
- ...

Digital Europe

- Artificial Intelligence
 - Data Spaces
 - Cloud to edge federation
 - Testing & Experimentation
- Cybersecurity

Horizon Europe
Cluster 3: Security

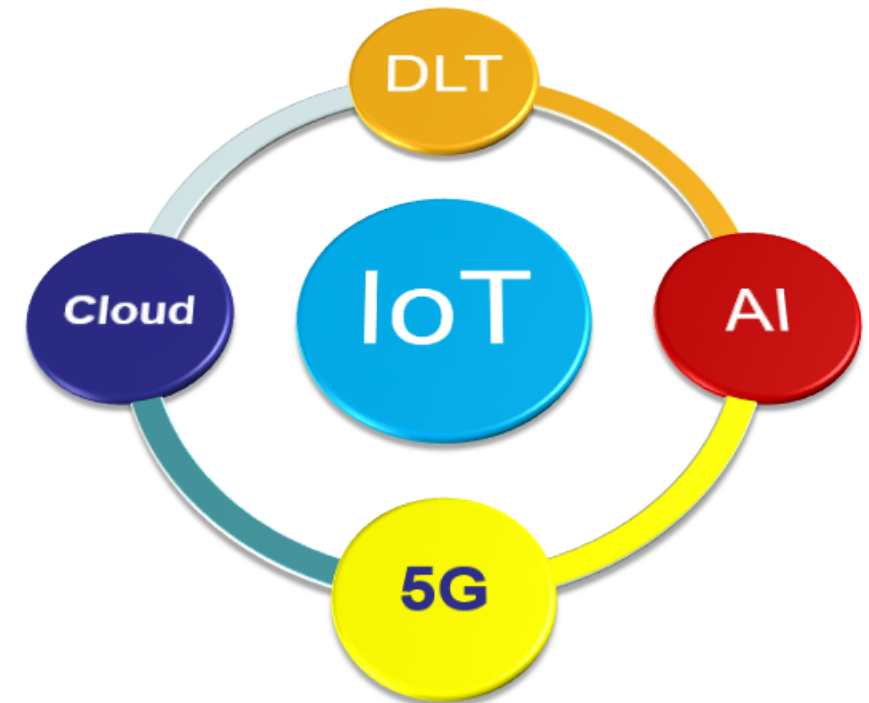
Horizon Europe
Cluster 5: Energy
and Mobility

Horizon Europe
Cluster 6:
Agriculture, ...

...

- **A Transversal Approach for HE**

- Leverage Europe's strength in **Key Digital Technologies**
- Alliance **AIOTI**
- Smart Network and Service **SNS JU**
- Federated Cloud + Edge **GAIA-X**
- *Alliance for Industrial Data and Cloud*



- **Momentum: Smart Edge Platform for Interoperability**

- Strong in **Creating Value Networks in Verticals**
- Horizontal Coordination **across verticals**
- **Platform & Standardisation:** formal or prenormative ?
- An ecosystem through **SMEs and start-ups**
- **Role of Open Source** like ECLIPSE, LINUX, et al.

THANK YOU

Useful links:

- **European Data Strategy:**

<https://ec.europa.eu/digital-single-market/en/policies/building-european-data-economy>

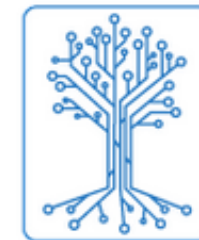
- **ARTEMIS White Paper: From IoT to SoS:**

<https://artemis-ia.eu/news/whitepaper-from-iot-to-sos.html>



- **GAIA-X Initiative:**

<https://www.data-infrastructure.eu/GAIAX/>



GAIA-X

- **The Alliance AIOTI: IoT + Edge Computing Convergence**

<https://aioti.eu/news/>



- **NGIOT CSA Workshop IoT-EDGE on 11/09/2020:**

→ www.NGiot.eu

