



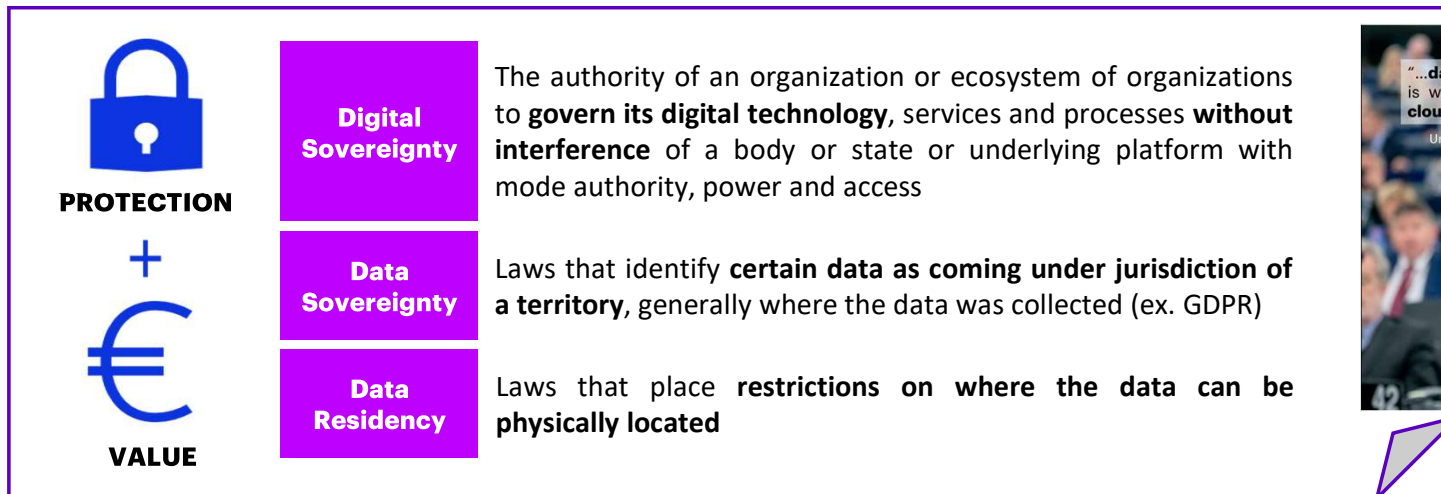
Cloud adoption patterns for European public sector agencies and the Sovereign Cloud option

10th June 2021
ITAPA Conference

THE REASON WHY TO UPTAKE OF THE CLOUD

DATA VALORIZATION AND PROTECTION

It's all about data. Modernization of constituency life, work and interaction requires digital services, and this means **extracting value from data**. At the same time data need to be **protected from misuses and privacy breaches**. EU wants to give to all member state citizen the highest level of trust and enable the **valorization of their data**.



The European Commission is convinced that businesses and the public sector in the EU can be empowered through the use of data to make better decisions. To address this vision the Commission has issued in **February 2020** a comprehensive **Strategy for Data**.

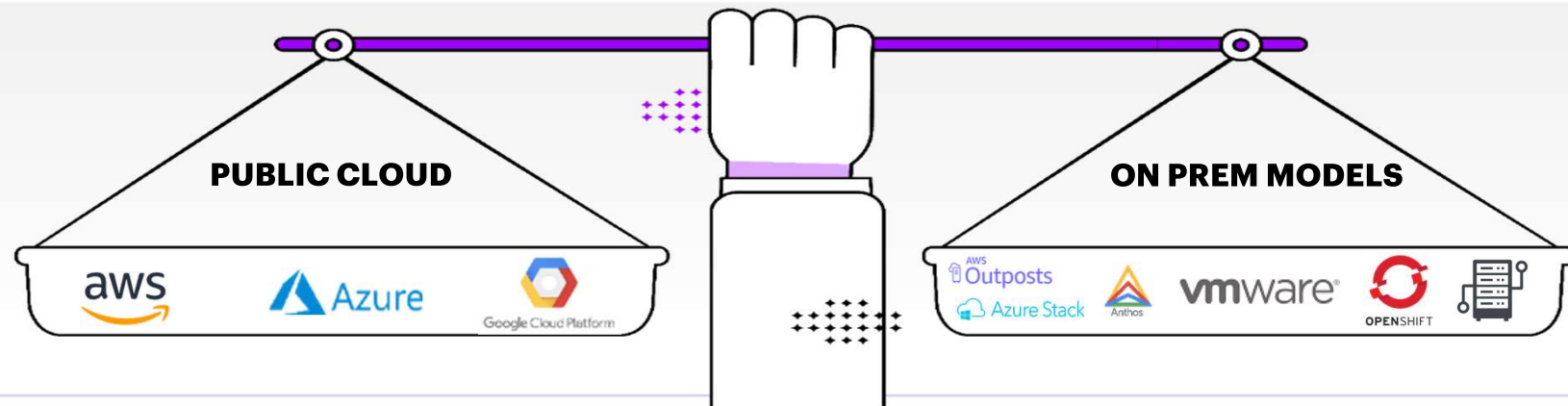
80% of EU Industrial Data is not monetized now

Data Economy value expected in EU27 by 2025 **829 B€**

PUBLIC ADMINISTRATION OPTIONS

THE NEED TO UNLEASH THE POWER OF DATA

Cloud comes in different flavours, and they are evolving. At the extremes it's an **innovation vs control** balance to find



Best of Breed solutions	Built-in innovation	Continuous resilient computing
State of the Art A.I.	Pay as you go	Global Ecosystem

Actual challenge
TRADEOFF

Full control of operations	Direct accountability compliance	No need of data treatment agreements
Local resources and ecosystem	Ringfencing of data	Capex approach

Future benefit
INTEROPERABILITY



Industrial Dataset



Government Dataset



Not structured data



Administrations



Enterprises



Research



Developers

WHAT DOES SOVEREIGN CLOUD MEAN?

CONTROL AND CHOICES CLIENTS RETAIN AFTER MIGRATING TO THE CLOUD

'Sovereign Cloud'

is a solution that provides clients with control over the location, access to and processing of their data in a cloud environment, in response to **compliance concerns** in specific countries or sectors

Needs that Enterprises and Government agencies would like to address via a Sovereign Cloud

- Minimize Lock in risk
- Have a fallback plan at 50+% apps in the cloud
- Avoid forced modification of cloud services
- Retain the status of critical infrastructure even on the cloud
- Manage sensitive data
- Rely on portability of workloads across clouds
- Be protected contractually

Typical characteristics we associate to sovereignty

- **Data residence/storage**: All data resides locally
- **Cloud/datacenter ownership**: All data is governed and managed locally
- **Data processing**: All data processing including API calls happens within the same country as the data is stored
- **Data handling and accessibility**: Handling and access of data is strictly controlled as per local and industry legislation and regulations
- **Compliance by design**: help clients effectively manage their data compliance risks with local or sector specific standards/laws on residency

+ easy

+ distinctive

A casus belli - the long quest for a functional and fair US/EU data sharing treaty



SOVEREIGNTY ATTEMPS

TWO RECURRING STATEMENTS AND A WAKE-UP CALL

1 Recurring statement [by generic EU member state]

"I need to **protect my data** as they are a strategic economic and political asset"

2 Recurring statement [by generic EU member state]

"I can **invest big money** to create a **country wide IT infrastructure** to address the need of critical national companies and government agencies, specifically **for trusted interoperability**"

These two statements, combined with independent strategies and plans in each EU country, resulted in a series of doomed-to-fail initiatives for the quest of *Community Clouds* – mostly Government driven.



Andromède

Cloudwatt Numergy



SPC Cloud



Bundescloud

Failed upon poor service catalogs, continue obsolescence, price pressure, no way to force captive adoption, always perceived as the "B choice" and thus "*it's better not to move*".



WAKE UP CALL

There is **no such a budget** that can pay **for a closed system IT platform** which addresses the **expectations of users** now definitely set on the **Hyperscalers-grade services** and close the technology gap.



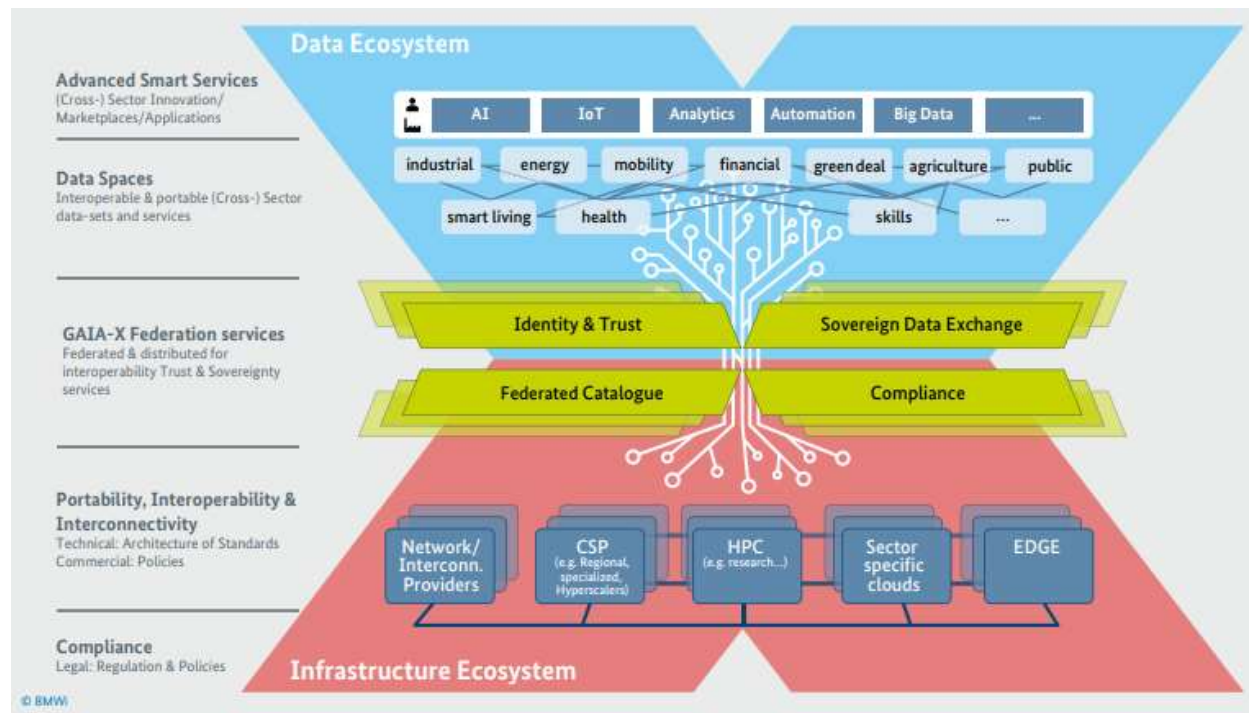
"Europe has lost the global battle in cloud computing but should nevertheless resume the fight"

E. Macron - September 2020

GAIA-X AS THE REFERENCE PROGRAM

AGGREGATING DEMAND AND OFFER IN THE CLOUD MARKET

The Gaia-X framework defines a **set of policy rules and architecture of standards to ensure portability, interoperability and interconnections** for infrastructure, applications and data.



- The GAIA-X ecosystem as a whole is structured into a **Data Ecosystem** and the **Infrastructure Ecosystem**
- Activity in the **Infrastructure Ecosystem** is focused on providing or consuming **infrastructure services**, which in GAIA-X are represented primarily by the **Asset** called **Node**
- In **Data Ecosystems**, the main Asset is **Data**
- Data and Infrastructure Ecosystems are **not separable**.
- The binding element between **Providers** and **Consumers** are **Services**, ultimately also tying Data and Nodes together
- The whole GAIA-X ecosystem is carried by a common and solid foundation consisting of **Policy Rules**, an Architecture of Standards of interconnection

CLOUD NATIONAL CHAMPIONS

EMERGING TO COPE WITH TECHNICAL AND JURIDICAL CHALLENGES

The EU position is accelerating the forming of **alliances, coalitions and partnerships** at continental and member state level

Alliance on Industrial Cloud and Edge



on 7 May 2021, **27 European CEOs** presented the roadmap that outlines the priority areas to foster a **highly secure, low carbon, resource-efficient and interoperable cloud and edge ecosystem**.

The recommendations, anchored in European user requirements, aim at enabling world-leading data-led innovation across industries. **Most of the Alliance members are also Gaia-X members**

Alliance on Industrial Cloud and Edge

- Only European Companies
- Mostly node or service providers
- Potential National Champions



Gaia-X members

- Also non EU corporations
- **Hyperscalers included**
- Users and data owners too



Juridical Challenge on Data Protection
Technical Challenge on Data Protection and Interoperability



European Providers



Hyperscalers

The EU Commission and the Member State are fostering the setup of **public private partnerships** to overcome the challenges without losing access to hyperscalers



Hyperscaler Embedding



DEFINING THE RIGHT ANSWER TO CLOUD TRUSTWORTHINESS

ACCENTURE NAVIGATOR



Risk Posture

- Regulatory analysis
- Industry Benchmark
- Risk analysis – data, IP, continuity of critical apps ...
- Affordability of risk mitigation measures or not having access to cloud innovative technologies
- Discussion with public administrations / agencies (e.g. French ANSSI⁽¹⁾)
- Definition of a doctrine and an operational framework



App and Data classification

- Data analysis : level of sensibility (confidentiality, integrity, availability) by time horizon
- Data gravity
- Data fragmentation between organization / applications
- App and data segmentation



Range of response

- Formulation of current Cloud strategy – Hybrid, Multi-Cloud
- Creation of scenarios
- Analysis of scenario responses by app domains
- Analysis of « cost » of non-public cloud : access to technology, costs, elasticity...
- Analysis of inter-dependencies: economics, Data Gravity...



Integration and orchestration

- Formulation of Cloud trustworthiness strategy
- Operating model for managing Cloud trustworthiness strategy