Will GAIA-X Impact I&O Strategies in Europe During 2021?

Published 11 March 2021 - ID G00735607 - 7 min read

By Analysts Tiny Haynes

Initiatives: Cloud and Edge Infrastructure; CIO Leadership of Innovation, Disruptive Trends and Emerging Practices

The GAIA-X project, a federated data infrastructure, offers a response to data sovereignty concerns in the European public cloud market and a potential alternative to global hyperscalers. This research helps I&O leaders determine if GAIA-X is a suitable alternative for managing protected data.

Overview

Key Findings

- Legal frameworks in the U.S. and China might allow government access to the hyperscaler's service under specific circumstances, raising concerns among infrastructure and operations (I&O) leaders in regulated industries and governments about exposure of customers’ data.

- Digital strategies in business and government place emphasis on data workloads' interoperability with ML, AI and IoT systems, forcing I&O leaders to deliver a platform that is interoperable with customers and partner systems and exposing their organizations to costly data egress fees from hyperscale cloud providers.

- The global pandemic has accelerated digital strategy, forcing I&O leaders to proceed at a speed never anticipated and sometimes unachievable with current systems and processes.

Recommendations

I&O leaders tasked with expediting the transformation to cloud within Europe should:

- Ensure compliance with data sovereignty and residency requirements by collaborating with legal and compliance specialists to identify data types to move to GAIA-X, because they present risks when handled by hyperscale cloud providers.

- Identify new revenue streams and customer experience improvements by dedicating resources to engage with GAIA-X Foundation working groups.

- Build a strategy around adoption of GAIA-X-certified services when they are relevant to business objectives.
Introduction

The global pandemic has expedited cloud computing adoption plans for most medium and large enterprises, moving beyond desktop SaaS for office productivity tools to back-office and revenue-generating functions. However, enterprises in the European Union (EU) face data sovereignty concerns when using U.S. and Chinese hyperscalers.

This prompted Germany’s Federal Ministry for Economic Affairs and Energy (BMWi) to sponsor the GAIA-X initiative. The initiative aims to build open standards that allow the interoperability of data between infrastructure and data ecosystems that are secure and sovereign to the EU. In addition to data sovereignty requirements, the GAIA-X initiative addresses concerns about vendor lock-in that many enterprises face with U.S. and Chinese vendors. As such, GAIA-X has the potential to redefine the cloud services landscape in the EU. Figure 1 shows how far behind Europe is in the global digital platform economy.

How can I&O leaders determine whether GAIA-X is a suitable alternative to their incumbent cloud providers? This research explains the cloud delivery ambitions of GAIA-X to help I&O leaders make effective decisions with an increasingly stressed IT budget.
Figure 1: The European Contribution to the Platform Economy

**The European Contribution to the Platform Economy**

Platform Economy — Market Capitalization Value Distribution of Companies

- U.S. (20) 74%
- Europe (8) 4%
- Asia (16) 21%
- Africa (1) 1%

Adyen, Delivery Hero, Mail.ru, SAP, Scout24, Spotify, Yandex, Zalando

(n): Number of platform companies listed at stock market on 17 November 2019
Source: Gartner
735607_C

**Analysis**

Ensure Compliance With Data Sovereignty and Residency Requirements

Data sovereignty and residency requirements could prevent organizations in the EU from using U.S. or Chinese hyperscale providers for certain types of protected customer data. I&O leaders should consider whether this data is a suitable candidate for moving to the GAIA-X framework.

**The GAIA-X Framework**

GAIA-X is an initiative to build open standards to allow the interoperability of data between infrastructure and data ecosystems that are secure and sovereign to the EU. The following principles underpin the GAIA-X initiative: ¹

- Implementation of secure federated identity and trust mechanisms (security and privacy by design).
Sovereign data services that ensure the identity of source and receiver of data, as well as access to the data and usage rights.

Easy access to the available providers, nodes and services. Data will be provided through federated catalogs.

Integration of existing standards to ensure interoperability and portability across infrastructure, applications and data.

Establishment of a compliance framework and certification and accreditation services.

Contribution of a modular compilation of open-source software and standards to support providers in delivering a secure, federated and interoperable infrastructure.

GAIA-X’s architectural framework is shown in Figure 2.

Source: Bundesministerium für Wirtschaft und Energie

GAIA-X details use cases envisaged by the GAIA-X Foundation. These are broken down into the following specific verticals:

- Manufacturing (Described as Industrie 4.0/SME)
GAIA-X as PaaS

Several features make the GAIA-X framework a potential bedrock for a credible PaaS service:

- Open interoperability between certified providers, allowing workloads to be moved without the need for rewriting of APIs
- Low cloud egress costs, resulting in no economic barrier to moving workloads between providers
- Low perceived threat of data being accessed by non-EU governments through legislative means (this does not prevent hacking and other illegal activity)
- Collaborative ecosystem of vertical industry groups that build Pan-European services across a common data plane

From its inception, the GAIA-X Foundation had numerous working groups of cross-industry collaborations, building potential frameworks and use cases of such data exchanges. Gartner believes that for these to be successful, productized services must be available in 2021.

GAIA-X has attracted 22 founding organizations, headquartered in Germany and France, reflecting the diverse vertical industry interest in this initiative (see Note 1). Working groups established across industries — including manufacturing, supply chain, healthcare information systems and passenger data for (international) transportation — encourage collaboration on various data-sharing initiatives.

To date, representation on a public-sector level has been seen from the German, French and Italian governments, as well as the European Commission.

Preventing Compliance Violations

The question of data residency is discussed at great length in The State of Privacy and Personal Data Protection, 2020-2022, as are the wider aspects of cloud security for I&O leaders in I&O Leaders Must Take an Active Role in Cloud Security and Compliance for Digital Business Success. I&O leaders who do not understand data residency requirements risk outcomes ranging from wasted resources in staff time and technical investments to fines for violating General Data Protection Regulation (GDPR) regulations.
In addition, because provisioning services through hyperscale cloud providers is so easy, safeguards that security departments traditionally have enforced can be bypassed. Any user with a credit card can provision a free developer environment that can bypass existing controls, potentially exposing protected data and increasing the risk of noncompliance.

EU citizens’ personal data is protected within the GDPR. To avoid compliance violations, consider moving data such as personal information, data that requires a physical audit of infrastructure and government data marked up as sensitive or secret to GAIA-X.

I&O leaders should consult both in-house and external security professionals about the legal interpretation of such data, the list of nations outside the EU with adequacy rulings and contractual language required by data protection agencies. Perform regular Data Protection Impact Assessments (DPIAs) of all controls to safeguard EU citizens’ personal data in public cloud services. Review regulatory body rules covering your industry to ensure that your public cloud providers maintain compliance.

**Identify New Revenue Streams and Customer Experience Improvements**

Use cases listed on the GAIA-X Foundation website are driving working groups within particular industries to see how joint collaboration can introduce new products and improve customer experience and supply chain efficiencies. The ability to share data within an industry and within applicable regulatory frameworks can reduce service delivery times, detect fraud and ensure a higher level of service.

For example, the mobility working group, consisting of Air France-KLM, Amadeus SAS, Schiphol and the Paris airports, is working on sharing passenger details among airlines, travel reservation systems and airports to eliminate the requirement to carry passports and enable travelers to navigate through airports more quickly. This data could be combined with COVID-19 vaccination data to ensure that travelers who have been immunized are not subject to quarantines or testing.

I&O leaders should set aside resources to identify, join and contribute to working groups that can grow their ecosystem of related enterprises and harness the potential of digital transformation.

**GAIA-X: Mission-Critical Success Factors**

What will make GAIA-X relevant for the European I&O leader?

1. Clear purpose and objectives from the initiative

2. Formal GAIA-X certification ready by the end of the first half of 2021

3. Vertical-specific solutions available and fully productized with clear service definitions, contracts and pricing available by end of 2021

4. Proactive advertising campaign that explains the GAIA-X proposition clearly
5. Managed and professional services providers channel that is able to clearly articulate the benefits of GAIA-X

Evidence
Evidence comes from GAIA-X Foundation announcements, Gartner client inquiries with both GAIA-X participants and potential customers, and presentations to Gartner research communities.

1 GAIA-X: A Federated Data Infrastructure for Europe, GAIA-X.

Note 1: GAIA-X Founding Organizations

- 3DS Outscale
- Amadeus SAS
- Atos
- Beckhoff Automation
- BMW
- Bosch
- Cloud Infrastructure Services
- DE-CIX
- Deutsche Telekom
- Docaposte
- EDF
- Fraunhofer
- German Edge Cloud
- Institut Mines-Telecom
- International Data Spaces
- Orange
- OVH
- PlusServer
- Safran
Recommended by the Author

Market Trends: Europe Aims to Achieve Digital Sovereignty With GAIA-X