

'Powered by Gaia-X' Value-Creation Scenarios



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Executive Summary

Gaia-X can unlock value across 5 distinct scenarios: Data-driven Innovation, Digitisation of a Value Chain, Federated Cloud Ensembles, Digital Sovereignty, and Digital Ecosystem SW Enablement. We discuss how the *Gaia-X Trust Framework* is applied in real-world examples, driving business growth across these scenarios. We classify each of these examples according to business goal they seek to achieve, what they get from using Gaia-X, and what Gaia-X deliverables they employ.

By unlocking the latent value across digital ecosystems, projects and organisation using Gaia-X can reach different type of economic outcomes:

Scenario	Gaia-X-enabled Economic Outcomes
Data-driven Innovation	New products and services, Higher ROI for digital assets
Digitisation of a Value Chain	Optimisation and efficiency, Reduction of administrative costs, Lower legal liability risks
Federated Cloud Ensembles	Flexibility, Vendor lock-in mitigation
Digital Sovereignty	Automated compliance, Business resilience, Access to regulated markets
Digital Ecosystem SW Enablement	Cheaper implementation, Faster time-to-revenue, Scalability

Value-creation Scenarios

Data-driven Innovation

Projects aiming at data-driven innovation employ Data Analytics and Machine Learning technologies to fuel new product development, services and business processes efficiencies. By cleverly combining multi-context sovereignly shared data, they can **more efficiently extract novel insights enabling growth and creating competitive advantages**. But for this to occur, innovators, data providers and consumers first require a mechanism to locate and exchange data assets and models. Gaia-X facilitates this by enabling the creation of **transparent data catalogues and marketplaces**. With artifacts like the Gaia-X Meta-Registry and the service ontology, different ecosystems can easily identify and verify each other, ensuring that their respective users, providers and associated data products, applications and/or algorithms are exchangeable in a trusted environment.

This is the context where AI also thrives, and for which the innovative European ‘**data space**’ **concept was conceived**. Each operational data space must provide a specific and concrete interoperable framework, based on commonly agreed governance principles, practices and enabling services, facilitating trusted data transactions between participants, typically in a peer-to-peer fashion. As such, different elements are required including a governing rulebook, a connector (SW components to facilitate the look-up and retrieval of data and services catalogues, to handle the negotiation flow between participants, the orchestration of the actual data transfer process, including the enforcement of data usage policies and monitoring and auditing of the exchanges) integrating with existing identity systems, and data transfer/processing technologies, or a list of common federated ecosystem services.

Within this decentralised context, **cross-coherency of these elements is thus critical**, as the system’s overall functioning and usefulness is predicated on a seamless operation, and this in turn on a network of trusted relationships among participants and service providers. To this end, Gaia-X provides a mechanism for parties to successfully **verify that every party and service, and their circumstances and claims, are truthful and behaving conformant** to a certain code. This sustains the organisational trust and interoperability structural for such federated ecosystem, in turn enabling the sovereign data-sharing leading to data innovations.

Concrete Example

A prime example of this category is [AgrospAI](#), an open ecosystem for Agriculture. The desired business outcome for this project is a trusted marketplace where AI-driven agricultural use cases can be rapidly deployed. To this end, AgrospAI utilises the Gaia-X Trust Framework to automate the onboarding of participants. Instead of manual checks, every legal entity involved —whether a farm, a data provider, or a tech start-up— obtains Gaia-X Verifiable Credentials, such as the Legal Participant Credential. A [Gaia-X Digital Clearing House](#) automatically validates these, ensuring that only trusted actors are admitted into the ecosystem. The result is a “Trusted Marketplace” where services display a machine-readable proof of compliance, providing immediate transparency to users and significantly reducing the time for verification of partners across different agricultural channels, thus expanding the footprint of sovereign data-sharing. This automation allows the ecosystem to focus on innovation and value creation rather than administrative hurdles.

What do they seek to achieve?	Data-driven innovation
What do they want to build using Gaia-X?	Domain compliance
Applicable Gaia-X deliverables:	Domain extensions

Digitisation of a Value Chain

This category entails the **digital integration of multiple actors within a given or various industrial value chains**, to improve operational efficiency by way of collaboration and information-sharing. This is another instance of the 'data space' paradigm. A prototypical example is one of suppliers, logistics providers, and customers in supply chains. Orchestrators of these ecosystems, when pressed for scalability, require a rule-checking system allowing them to (semi-)automatically vet and organise participants along a basic governance model. A technical implementation will be necessary too, but the Gaia-X value proposition lies in the more organisational side of it.

By using the *Gaia-X Compliance Extension Toolkit*, a universal yet concrete framework, champions within these chains define organisational blueprints and requirements that allows to better cross-orchestrate participants. Then, using the freely available [Gaia-X Compliance Engine](#), their projects can **streamline complex multi-party interactions in practice, thus realised powerful efficiency gains**. Moreover, because the paradigm is flexible, it also future proofs against future interactions across different and heterogeneous value chains.

Concrete Example

[COOPERANTS](#) is a collaborative alliance in the Aeronautics and Space sector involving industry primes, SMEs, and research institutes. The business challenge in this sector is the high cost and complexity of integrating heterogeneous IT systems across the value chain, often involving very sensitive or intellectual property or even national security information.

COOPERANTS employs the Gaia-X Trust Framework to replace a protracted bilateral trust establishment with a standardised model, i.e. it uses Gaia-X as the baseline architecture for interoperability. With this, a supplier in the Aerospace chain can automatically prove they meet specific data protection or interoperability standards without human intervention. This **dramatically lowers the entry barrier for smaller SMEs, or innovative start-ups**, who might otherwise struggle with the long processes and heavy but necessary compliance requirements within the industry. The outcome is "faster, lower-risk collaboration," where onboarding happens in seconds rather than days, directly reducing integration costs.

What do they seek to achieve?	Digitalisation of a value chain
What do they build using Gaia-X?	Technical & functional interoperability
Applicable Gaia-X deliverables:	Identity model and Geographic extensions (for tech interoperability), Domain extensions (for functional interoperability)

Federated Cloud Ensembles

As evidenced by the example above, many initiatives express the desire to connect different infrastructure and platform providers, to enable a more flexible composition of IT resources. Indeed, generalising this approach grants a **unified, resilient digital stack that can adapt to changing regulations and fluctuating business demands**. Acting as service providers or integrators, organisations within this category seek to federate resources across multiple cloud, edge, or telecom providers.

These can make use of the semantic harmonisation prescribed by Gaia-X (articulated via a common identity model and an ontology for service characteristics) to handle the information (at least a critical part) coming from the distributed resources making up the federation. Moreover, the live [network of GXDCHs](#) facilitate a real-time display of services compliant to specific Codes of Conduct or rules (whether these be regulatory, organisational, economic, technical, or use case-driven). This **facilitates integrators and users the composition of modular and purpose-specific IT ensembles**, allowing projects to use whatever services they require at a given time, thus also mitigating vendor lock-in.

Concrete Example

[Dynamo](#), a marketplace for the contractual federation of European cloud offerings, is one example illustrating the business value of said IT federation capabilities. Dynamo’s goal is to create an operational interoperable ecosystem where different Cloud Service Providers (CSPs) can offer services from providers across different geographies, thus generating critical market mass for European CSPs, as well as increasing options for cloud consumers. Dynamo leverages the Gaia-X Trust Framework as an “in-flow trust engine.” It uses the Gaia-X technical specifications and GXDCHs to verify the legal identity and service provenance of each provider, through Verifiable Credentials.

Furthermore, Dynamo seeks to create their own ‘Compliance Extension’, checking for baseline [Gaia-X Compliance Policies](#) but also validating claims covering European digital legislation such as the Data Act or the AI Act. The Gaia-X semantic interoperability and operational model allow **a provider within the Dynamo marketplace to instantly prove their service meets complex regulatory requirements, for users in other geographies to easily consume**. The business outcome is a highly efficient marketplace where customers can procure federated cloud resources with the assurance that all underlying legal and technical compliance checks have already been satisfied.

What do they seek to achieve?	Federating cloud resources
What do they build using Gaia-X?	A trusted marketplace
Applicable Gaia-X deliverables:	Identity model, Gaia-X Compliance

Digital Sovereignty

From the example above we can already detect a theme gaining a lot of notoriety, that of Digital Sovereignty. Recent geopolitical events have brought light to the need of **organisations to gain transparency over their digital supply chains, as well as maintain control and autonomy over their data, technology and infrastructure**. This topic is critical for ensuring operational resilience and privacy, and thus an extremely hot topic for 2026. Organisations playing within this context prioritise digital compliance, and technology interoperability and reversibility.

Because of the highly globalised footprint of commercial operations and technology sourcing, this is not only a technical matter but rather requires of **harmonised legal and operational frameworks** ensuring that digital assets are not subject to strenuous external control or unauthorized accesses. The primary Gaia-X artifact of use here are the [Gaia-X Labels](#), which provide a standardised way to visualise and verify the operational behaviour of a service.

Concrete Example

A concrete application of this scenario is the recent Level 3 (top-level) certification of various services across 5 European cloud providers: Cloud Temple, OPIQUAD, OVHCloud, Seeweb and Thésée, featured in the [CISPE Catalogue](#) (also containing other services with lower requirements labels).

For buyers, the issuance of Gaia-X Label Level 3 ensures said services receive a verifiable guarantee of transparency, applicability of European contractual law, customer data processing in Europe with no external transfers, as well as GDPR compliance and with basic European sustainability standards (together, **composing what can be called “European sovereignty” in a practical sense**). Thus, for example, these providers have all enabled measures for seamless data portability across their data storage and prevent extraterritorial accesses. Instead of relying on generous marketing claims, the buyer can cryptographically verify the certification of such claims. This fosters “real trust in the cloud”, **allowing sensitive industries to migrate to the cloud without compromising their autonomy, or breaching regulatory obligations**.

What do they seek to achieve?	A catalogue of digitally-sovereign offerings
What do they build using Gaia-X?	Automated compliance
Applicable Gaia-X deliverables:	Gaia-X Labels

Digital Ecosystem SW Enablement

The enablement of digital ecosystems, among other activities, will include provisioning ready-to-deploy solutions or “*Everything as a Service*” (XaaS) digital offerings. This **accelerates the creation and scaling of these sought-after innovative ecosystems by removing the technical burden of building and deploying tools from scratch**. Orchestrators or SW companies working on this space focus on developing components (often OSS, but not necessarily) and/or onboarding services. The data spaces of the first section above are a common example among these ecosystems (with the federation services mentioned representing enablers), but they are not the only ones.

Digital ecosystem enablers may choose to employ the [Gaia-X Ontology](#) to maximise harmony with other enablers, within the same or different ecosystem. It is a **way to future-proof and to ensure the products or services provided can be reused elsewhere, facilitating economies of scale**. Similarly, the Gaia-X Technical Compatibility Kit (a first version available [here](#)) ensures compatibility with the Gaia-X Trust Framework’s core engine, thereby maximising flexibility and business outcomes, as per the other four scenarios described.

Concrete Example

[Pontus-X](#) exemplifies this category by providing **an open-source framework for the Industrial AI & Data Economy, bundling the Gaia-X Trust Framework as part of a larger IT platform** that data ecosystems can deploy and use with ease. For organisations or business networks wanting to launch a new sovereign data environment, where control is not relinquished to a single central player, building the necessary identity and trust stack is a significant challenge. Pontus-X solves this by offering readily-available federative capabilities.

Any ecosystem built atop of Pontus-X inherits Gaia-X harmonised trust mechanisms out of the box, as well as Compute-to-Data capabilities (derived from the [Ocean Protocol](#)). The former includes legal participant validation, self-descriptions and validation by a [Gaia-X Digital Clearing House](#), ensuring ecosystem services are described in a transparent and verifiable way. These descriptions cover privacy policies, SLAs, parties responsible for hosting and sub-components, as well as business-continuity aspects. Furthermore, because Pontus-X utilises Gaia-X de facto semantics, participants gain the capability to operate across multiple ecosystems by design, thus fostering an open and collaborative digital environment. The business outcome is a “lower entry barrier for trusted ecosystem creation”, **allowing user organisations (including orchestrators) to focus entirely on the data and services around their core businesses**, rather than on coding.

What do they seek to achieve?	The enablement of a federated data & AI ecosystem
What do they build using Gaia-X?	An onboarding service to their decentralised, highly-scalable, sovereign platform
Applicable Gaia-X deliverables:	Identity model



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