Data-sharing in Europe: the implementation challenge

Conference report

Conference organized by Dauphine Governance & Regulation Chair and Gaia-X Institute

Paris Dauphine-PSL University, September 12th, 2024

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Speakers

Mario Campolargo | Former Portuguese Secretary of state for Digitalisation and Administrative Modernization

Marie-Claude Charles | Investment Director, Groupe Caisse des Dépôts

Thierry Desforges | VP R&D, Fédération Nationale des Syndicats d'Exploitants Agricoles (FNSEA)

Lucas Eustache | PhD student, Governance and Regulation Chair, Paris Dauphine-PSL University

Thorsten Fuelling | Vice President Consulting & Business Development, SupplyOn

Oliver Ganser | CEO Catena-X Association and Industry Consortium

Pierre Gronlier | Chief Innovation Officer, Gaia-X

Antoine Kubiak | Government Affairs Manager, Microsoft

Laurent Lafaye | Co-CEO, Dawex

Pierrick Le Masne | SVP Strategy in charge of the group's digital and technological issues, Groupe Accor

Laura Létourneau | Expert advisor for ecological and digital transformations, French Government

Sven Löffler | Head of Data Spaces and Data Products, T-Systems

Boris Otto | Professor for Industrial Information Management, TU Dortmund University and Executive Director, Fraunhofer ISST

Sébastien Picardat | CEO, Agdatahub

Laure de la Raudière | President, Arcep

Catherine Simonnin | Design Architecture & Innovation Governance, Orange Business

Frederic Sutter | Head of Skywise, Airbus

Yvo Volman | Director of the Data directorate in the Directorate General for Communication Networks, Content and Technology, European Commission

Anne Yvrande-Billon | Director for Economy, Markets and Digital, Arcep

Moderators

Éric Brousseau | Professor of Economics and Management, Scientific Director of the Governance and Regulation Chair, Paris Dauphine-PSL University

Jakob Rehof | Professor of Computer Science TU Dortmund University, director of Research Strategy, Fraunhofer Institute for Software and Systems Engineering and Director of Lamarr Institute for Machine Learning and Artificial Intelligence, Dortmund

Hubert Tardieu | Independent Director, Gaia-X

Joëlle Toledano | Professor Emeritus, associated with the Governance and Regulation Chair

Summary

The enactment of the Digital Act and the Digital Governance Acts were major achievements of the outcoming European Commission and Parliament. The new Commission, the regulatory authorities and industry now face the challenge of the development of data ecosystems. A wide range of initiatives have been launched over the past years, service providers have been developing solutions, users have been involved in experimentations and standardization efforts, developers in industry and academia have been working on the technology, public authorities have been facilitating cooperation among stakeholders, etc. It is now time to take stock of these efforts and to start drawing the lessons to be learnt from these efforts carried out in different contexts.

The conference gathered experts from industry, from national regulatory authorities, from the Commission and from academia with the aim of proposing analyses that should inform public policies and business strategies.

While the notion of "market for data" is often put forward, we are rather witnessing the development of "data-sharing ecosystems" supporting coordination processes among the stakeholders involved in a given value chain or industry. Data-sharing is thus primarily about benefiting from less costly-more rapid coordination processes. Data-sharing can also allow to enhance coordination thanks to new coordination features. In some cases, data-sharing triggers the provision of new services thanks to innovations in coordination.

The economics and technology of data-sharing starts to be documented. Three set of issues are informed by the current development. First, the benefits and costs for stakeholders sharing data allow to analyze the dynamic of emergence and the relevant scope of dataspaces, and of course to identify the key use cases to be developed. Second, the role played by data-intermediaries allows to understand their added-value in the emergence and development of dataspaces. Third developments in the technologies of compliance inform on how the governance of dataspaces can be established.

The conference was therefore organized along four panels. First, the economics of data-sharing explored with a specific focus on use cases, including analysis of the dynamic of emergence and performance. Second, the key role of data-sharing orchestrators was highlighted, and their business models was analyzed. Third the stakes of automated compliance and underlying governance arrangements was discussed. Lastly, policy lessons was drawn from what has been already achieved, and emerging policy challenges was highlighted.

Introduction

Éric Brousseau | Professor of Economics and Management, Scientific Director of the Governance and Regulation Chair, Paris Dauphine-PSL University

Jakob Rehof | Professor of Computer Science TU Dortmund University, Director of Research Strategy Fraunhofer Institute for Software and Systems Engineering, Director of Lamarr Institute for Machine Learning and Artificial Intelligence, Dortmund

This conference will explore the economic and technological challenges of implementing new European data-sharing regulations.

The first two sessions will focus on the creation of data-sharing ecosystems and the role and possible business models of ecosystem orchestrators.

The afternoon sessions will consider the challenges of compliance, regulation and policy, particularly the need for responsive policy development in the context of AI.

Keynote

Laure de la Raudière | President, Arcep

L'usage de la donnée irrigue l'ensemble de l'économie, à tel point que le concept d'économie de la donnée semble dépassé, laissant la place à celui d'une économie par la donnée. Par ailleurs, avec de nombreux textes parmi lesquels la loi pour une République numérique, le Data Act, le Data Governance Act ou la directive Public Sector Information, un cadre est posé. Il n'y a donc « plus qu'à » ! Pour autant, les choses ne sont pas si simples.

Pour citer Bruno Latour, sociologue fondateur du Médialab de Sciences Po, « décidément on ne devrait jamais parler de données, mais d'obtenu ». Cela met l'accent sur l'enjeu majeur des modalités d'accès et des conditions de partage de ces données – enjeu auquel la stratégie européenne de la donnée apporte des éléments de réponse.

C'est en partie dans les modalités d'accès que tout se joue. Quelles données doivent être par principe libérées et mises en open data ? Quelles données relèvent des données personnelles ? Quels garde-fous faut-il mettre en place pour inciter les entreprises à partager leurs données tout en apportant la confiance nécessaire ? Comment éviter que le partage des données ne bénéficie qu'à un nombre très limité d'acteurs du numérique ? De nombreux économistes ont, par leurs travaux, justifié l'importance de l'intervention publique et contribué à définir le cadre de l'économie par la donnée.

Désormais, nous entrons dans le temps de l'action, et de la mise à l'épreuve du réel. Dans ce contexte, acteurs publics et régulateurs ont la responsabilité de rendre les choses possibles.

En pratique, à l'Arcep, cela passe notamment par les mises en place du cadre européen en matière de partage et d'accès de la donnée pour les entreprises, c'est-à-dire essentiellement l'application du Data Governance Act et du Data Act, qui nous concernent depuis l'adoption de la loi pour sécuriser et réguler l'espace numérique (SREN). Nous faisons avec enthousiasme et détermination, en concertation avec les autres régulateurs français et européens, ainsi qu'avec les différents acteurs réunis dans le Comité européen de l'innovation en matière de données (EDIB) créé par le Data Governance Act.

Dès la promulgation de la loi SREN, l'Arcep a ouvert, une plateforme pour permettre aux prestataires de services d'intermédiation de données de se notifier en France, pour toute l'Europe, et de demander leur labellisation. Le maître mot, dans notre approche, est celui de l'esprit du Data Governance Act : instaurer la confiance pour faciliter le partage des données. Nous cherchons d'abord à renforcer la confiance de tous dans notre approche. Notre posture est celle de l'accompagnement. Nous cherchons à établir un dialogue nourri et constructif avec les prestataires de services d'intermédiation de données. Notre approche est avant tout pragmatique: la régulation ne doit jamais être hors sol, et nous devons garantir la robustesse dans la labellisation. Nous ne prenons donc aucun critère à la légère.

Alors que le Data Governance Act est applicable depuis septembre 2023, l'Europe compte une dizaine de services d'intermédiation de données qui se sont déclarés auprès d'un régulateur, dont une grosse moitié en France. C'est un frémissement, et peut-être une dynamique qui s'amorce. En tout cas, c'est prometteur pour l'écosystème français.

Concernant le Data Act, l'Arcep lancera une grande consultation publique dans laquelle elle présentera d'une part ce qu'elle a perçu des dynamiques du marché du cloud, d'autre part ses ambitions pour participer à l'ouverture de ce marché. Son souhait est que les données des entreprises ne soient plus enfermées dans des serveurs de deux ou trois grands acteurs, en apportant une plus grande liberté de choix aux entreprises. Nous ne devons pas nous résoudre à ce que celles qui souhaitent innover en France et en Europe n'aient pas vraiment le choix quand il s'agit d'accéder à des serveurs ou à la puissance de calcul, par exemple pour entraîner des nouveaux modèles d'intelligence artificielle. C'est une question économique, mais pas seulement.

Nous comptons sur le monde académique et le tissu économique pour nous éclairer et nous aider dans notre travail de régulateur, en répondant à cette consultation sous forme d'appel à contribution. Entreprises utilisatrices, grands acteurs, challengers du cloud, entreprises de services numériques, cabinets d'avocats… : nous vous invitons à y répondre et sommes à votre écoute. L'objectif est de contribuer à créer le marché unique de la donnée en Europe.

Parmi les enjeux que nous appréhendons, à la fois avec humilité et sérénité, il en est un d'articulation des cadres de régulation. Nous articulons déjà nos travaux avec les autres régulateurs français, y compris de manière informelle. Cette articulation sera renforcée dans l'enceinte multilatérale que sera le réseau des régulateurs voulu par la loi SREN. Nous les articulons aussi avec les autres régulateurs en Europe, dans l'EDIB. L'Arcep et la Cnil y sont très actives, dans l'objectif de créer l'indispensable harmonisation européenne.

Avec notre culture de régulateur ex ante, nous travaillons en amont avec toutes les parties prenantes, afin de bénéficier de l'éclairage du monde académique, des acteurs économiques, des prestataires de services d'intermédiation de données, des entreprises utilisatrices, de nos camarades européens et de la société civile pour affiner nos pratiques.

L'enjeu principal est sans doute là : après deux décennies de régulation sectorielle, il nous faut agir sur des objets immatériels et trans-sectoriels. Cela nous oblige à le faire de concert entre régulateurs européens. Ainsi que l'affirme notre manifeste, les réseaux doivent rester des biens communs et des infrastructures de liberté, quel que soit leur régime de propriété. Je vous propose d'œuvrer ensemble à ce que les données deviennent elles aussi, en Europe, un bien commun et une infrastructure immatérielle de liberté.

Éric Brousseau

During the academic year 2023-2024, the Gaia-X Institute and the 'Governance & Regulation' Chair, together with stakeholders from the European data-sharing ecosystems (DSEs) — and then from the industry, governmental agencies and regulatory bodies — launched a survey aimed at informing in-depth case studies on DSE. Interviews were managed mainly in the industry, but also within governmental agencies and regulatory bodies, to explore the technical, strategic and regulatory challenges that underpin the development and dynamics of DSEs. The results will be presented today to inform our discussions today.

Data sharing is about managing a process of innovation rather than about developing data markets. Stakeholders in DSEs seek to create value through the development of services that automate coordination in the aim of cutting costs and reducing delays, or allow to develop new value-added services. Their development correspond de facto to an innovation process, requesting to manage different phases: prototype design and testing, integration of users' feedbacks in the design, upscaling of the production process, framing the adoption by users and the learning-by-using effects, identifying new use cases thanks to analytics and data, and developing new features. We therefore need to understand each ecosystem, in the context of its value chain as well as the strategies of key stakeholders. We must also consider the central technical, strategic and trust-building role of orchestrators in building those ecosystems.

Round table 1: The economics of sharing data

Chair: Éric Brousseau

Opening

Lucas Eustache | PhD student, Governance and Regulation Chair

DSEs are the most promising avenue for studying value creation through data flow. Although data sharing is a complex, innovative process that can offer a wide range of benefits across the value chain, effective collaboration is required to create use cases and develop or optimise services. Data sharing also has strategic implications: greater integration increases the amount of data that can be shared, at the same time that the sharing of larger quantities of data increases the strategic value of the data-sharing process.

DSEs are not data market places that match supply and demand. Instead, they seek to unite diverse stakeholders in bilateral or multilateral relationships. They incentivise providers to join the ecosystem and persuade users to share their data by offering guarantees about confidentiality, security and compliance. DSEs add value by providing the technical infrastructure that enables data to be shared. Every element is inter-dependent and tied together by use cases, which are specific applications or solutions that leverage data, technology or processes to address a particular problem or need within one or several value chains. The benefits of use cases can be very wide and may include traditional optimisation, the navigation of uncertainty, the development of new products, and value chain reorganisation. Setting up a DSE is costly as every area of process must be reviewed and integrated. It requires a strategic approach that takes account of the data-sharing maturity of all participants and incentivises them all to join in and share data.

DSEs offer four levels of benefit. The first is the digitalisation of data exchange: modifying data collection processes to digitalise information has an initial cost, although it results in reduced exchange costs. The second benefit relates to the introduction of algorithms and automation: training employees to use software and rethinking processes has a cost, but it can deliver efficiency gains and improve information conformity. This, in turn, enables the third benefit, namely the opportunity to reorganise the value chain, free up resources and deepen management, albeit at a risk that the DSE becomes increasingly essential to production processes and the internal organisation. The final level is innovation in products and processes, whether inside or outside the ecosystem. Again, this deeper integration of the DSE within value chains increases its strategic importance but also introduces risk.

Every interview and case study in our research project emphasised the central importance of trust at all levels of integration. In practice, trust means risk mitigation. Two types of risk must be mitigated: technological risk, namely the risk that an orchestrator will access and use data in spite of contractual clauses designed to prevent this; and the risk of dependence, in that the orchestrator could leverage the lock-in effect of your reliance on DSE-specific assets to extract increasing amounts of value from you. These risks vary depending on the nature and sensitivity of the data shared through the DSE. A participant will only join a DSE if the benefits they can extract outweigh these risks. Technical solutions, like trust-by-design, or solutions based on the business models of the orchestrator or DSE itself, can offset these risks.

Éric Brousseau

Our research highlights the importance of the structure of the value chain, including the presence or absence of large, dominant players, the balance between participants, and the interplay between complementary value chains. While we can draw general conclusions about the dynamics of DSEs, our conference today also aims at exploring the challenges characterizing different industries and value chains.

Creating Supply Chain and operations resilience through data: AIRBUS

Frederic Sutter | Head of Skywise, Airbus

Skywise is an official Airbus brand that aims to create a collaborative community based on data sharing. Airbus is an integrator: about 80% of the value of an aircraft comes from a very large and complex supply chain that involves over 15'000 suppliers. Around 1.5-2 million parts enter the production flow in Airbus factories every day; all of them must be monitored to ensure impeccable safety, quality and security. In 2023, Airbus delivered 735 aircraft and had more than 8,500 aircraft on its order book. Although our commercial position is positive, the fact remains that we are heavily reliant on our supply chain and face significant challenges accessing data that are locked in internal silos and databases.

Skywise was launched in 2015 to create value across our business, in our supply chain, and in our end customers' operations. Data and digitalisation are a key enabler to ensure quality and on-time delivery. A driving principle was our need for our internal teams to be able to trust the quality of the data that we use to make decisions and create value. At first, we did not have an internal data governance network or data officers and relied on subcontractors for quality assurance. We started with data visualisation and simple dashboards, introduced more complex analytics, and now also use our data to create AI scenarios that support internal processes, planning, HR, and customer support for maintenance operations.

Creating a robust data foundation has offered a number of benefits, from reducing operational risk and monitoring on-time delivery from suppliers, to avoiding unnecessary costs and maintaining quality across the production lines. It was particularly useful during Covid, when easy access to shared data enabled us to maintain our focus on quality and safety, monitor stock management, change production rates, and switch product parts. Corporate affairs colleagues came to recognise the value of the Skywise tool during this period. By collecting and providing real-time access to massive amounts of internal and external data, Skywise enabled us to react and make appropriate decisions when we had to deal with border closures, health restrictions, grounded aircraft, significant shifts in travel demand and recovery and, eventually, to ramp up production again. It showed that our challenge is not just about identifying challenges, but also about sharing data in a trusted forum.

Our supply chain must comply with sustainability regulations and drive our efforts to decarbonise the aviation industry. For example, we use parts that may contain soon-to-be-banned substances: suppliers must comply with applicable regulations, but we are responsible for checking and reporting that this is being done properly. Skywise helps us reduce the risks by informing tier n suppliers when they are supplying items that are banned in tier n+1. Having a system that can capture supply chain data and connect to internal systems is particularly important given that our sector has extended lead times, a long production phase, and produces aircraft that remain in operation for several decades.

Skywise has more than 45,000 users, of which around 40,000 are within Airbus. Airline companies leverage this shared ecosystem to improve troubleshooting, maintenance and flight operations across 11,000 aircraft from both Airbus and Boeing. With more than 52% of Airbus fleet in service, Skywise reached a critical mass giving Skywise participants competitive edge in their operations. Systems are in place to separate information about aircraft from these two suppliers.

Although Airbus is currently very successful downstream, we want now to enable any suppliers from different industries to share information more easily. This cannot be achieved with Skywise and its centralised approach. We are therefore working with Gaia-X AISBL to develop open standards, sovereignty rules and harmonised infrastructure with a view to establishing a decentralised ecosystem that can be used across different industries and countries. The Gaia-X compliance document and trust framework are central to our efforts to share regulated data.

EONA-X

Pierrick Le Masne | SVP Strategic Planning & Board Member Eona-X, Groupe Accor

EONA-X brings together a relatively eclectic group of organisations in the mobility, transport and tourism sectors that work in different ways to serve similar audiences. Use cases allow us to identify opportunities for effective collaboration as these organisations have different requirements and differing levels of access to customer data. EONA-X aims to build trust and meaning to bring business partners together.

The successful use case that was developed for the Olympic Games was designed to optimise the flow of delegations. It identified where delegations were, where they were going, and what they needed at their destination. This offered minor efficiency benefits to our partners, who included Aéroports de Paris, hotels and transport providers, but it was hugely beneficial for the delegations, who felt genuinely welcomed and cared for, and for the Interior Ministry, which was able to monitor people's whereabouts easily. The efficient exchange of data enabled us to work more effectively. The majority of our use cases relate to forecasting and the use of timely data to organise short-term work flows more efficiently.

EONA-X currently focuses on one-to-one and one-to-many data transfers. In the future, work on third-party trust will enable us to exchange consumer data while respecting GDPR. Thereafter, there will be incremental costs associated with instant data exchange. In our sector, instant data access is central to the provision of good customer service. We have two potential business models: a pay-as-you-go model for large volumes of data that would be similar to existing business models for digital platforms; and a subscription model. We expect that the subscription model will be more popular as it can be costed within the wider supply chain and because many use cases are based on forecasting rather than access to specific data. Use cases must be useful, relevant across the industry, and a source of appreciable value to at least one participant. Questions about technology and the business model pose less of a challenge.

Having half-a-dozen successful use cases that are scalable and improve efficiency would be good but not sufficient: we will only succeed if our value proposition can be easily understood at board level. Companies are increasingly specialised, but EONA-X has more in common with a conglomerate approach that seeks to cross-fertilise ideas and develop value across sectors. Our aim is not to make money through data but to improve the way we operate. Our challenge is to convince board members that this has value.

Agdatahub: the agriculture / agronomy value chain

Thierry Desforges | VP R&D, Fédération nationale des syndicats d'exploitants agricoles (FNSEA)

Our collaborative approach at Agdatahub brings together 400,000 farmers, 30 million hectares of land and 50 suppliers. Our strategy and use cases are driven by geopolitics, economics and sociology.

We have a geopolitical angle because we face real-world demands and applications. For example, the US agricultural equipment manufacturer John Deere gains a significant competitive advantage by collecting data from its tractors in France, Germany, China and elsewhere, and combining that information with weather prediction models and AI tools. This helps them to build their strategy and perform very well at a global level. We need to use French and European data in the same way: to predict and respond to unexpected events and changing markets, and to gain stability in work, climate, food demand, planning, investment, public policy and more over the long term.

Our economics topic includes farm technology and management: farms must constantly improve their techniques and knowledge of systems in order to remain competitive. Acquiring and sharing increasing amounts of genetic data makes it possible to work more quickly and create more value, within the limits of regulations. For example, following the EU's decision to ban neonicotinoids, European sugar beet farmers are being out-competed by farmers from countries that still use these products. We are leveraging data to identify new varieties of sugar beet that offer better disease resistance. Sharing data and uses cases should help farmers to make better decisions, implement better processes and create more efficient models. We must recognise, however, that the average farmer is not a CTO or senior VP of data. Someone on each farm takes responsibility for data but this is not their area of expertise. It can be difficult for them to recognise the data they generate, optimise it, and use it to take good decisions.

In terms of sociology, it should be noted that around 40% of farmers in France and other countries will retire in the next ten years. We must prepare for this by connecting stakeholders, promoting recruitment, providing training courses and developing use cases. We also need to connect farmers and consumers. Trust is key, to reassure farmers that their data will be used to integrate value creation into the farm, not to extract it, and to reassure consumers about the quality of farmed products. In recent years, agricultural management has been driven by yield optimisation. Now, due to the climate and geopolitical instability, we must return to a lower-tech, more localised production system and reduce technology-related costs. We must collaborate to increase efficiency, return value to farms and cut operating costs.

CATENA-X

Oliver Ganser | CEO Catena-X Association and Industry Consortium

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Car manufacturing involves a global value chain. Every day, billions of car parts are produced in a process that starts with mining companies and moves up seven or eight tiered levels to reach the factory. Connecting these tiers is a challenge that can be tackled within the data space. It requires a vertical integration of the supply chain that maps the parts used and tracks their production method and location, supply chain performance, and overall CO_2 footprint.

This vertical integration presents three challenges. First, the current lack of a product that supports multi-tier collaboration. Instead of tackling the impossible task of creating one monolithic app that serves every requirement across the chain, we need to integrate existing tools so partner organisations can choose the solution that meets their needs. With Catena-X, we are trying to create a multi-tier ecosystem that enables us to speak the same language. Second, our ecosystem must offer global scalability. Our supply chains go around the world a couple of times, so our solution must be able to exchange data within Europe but also with China, Africa and North and South America. Third, we need digital twins that can be used and re-used as we develop and refine each new use case. Re-using artefacts, logins and digital twins cuts costs and speeds up execution.

Catena-X is creating a system that we can build, operate and govern. These three pillars will support the integration of partners into our open-source community. It is important that our governance can scale globally and that the DSE is a shared asset that is not owned by any one market, organisation or entity. Shared ownership is key to gaining the levels of trust that are necessary for effective data sharing. To further support trust, we use open-source Eclipse software for development, the IDSA (International Data Spaces Association) connector for governance, and Gaia-X for trusted identities. The use of a clearing house and self-description elements for trusted identities will become increasingly important as AI develops. Digital identities must scale globally so we can promote global adoption across boundaries.

Our next challenge is to enable Catena-X to scale up. Barriers to entry are being kept low, with certified, easily accessible applications providing a wallet and simple data exchange for €29.99 a month. To promote uptake, we rely on people activating their personal and business networks, on small teams with mutual business interests agreeing to transfer certain processes or components to Catena-X, and on partnerships with significant companies that share their experiences of Catena-X on LinkedIn. We are working to promote the use of digital twins inside Catena-X, particularly the potential to re-use elements of use cases with lower costs and quicker time to value, as this highlights the cross-benefits of use cases and the entire ecosystem. Catena-X is now alive and is being scaled globally.

Discussion

Pierrick Le Masne

When building a DSE, it is vital that the referential for data exchange is defined in advance. The cost of data sharing is also important: this is less about marginal IT costs and more about the creation of a new intermediation approach. Online hotel reservations are less appealing if they add 20% to the room price.

Éric Brousseau

There are costs and risks when rebuilding and reorganising business models along the value chain. Also a central question is how the value that is created should be shared between participants in the ecosystem. Lastly, participants must trust those who are gathering and analysing data: orchestrators should be prevented to engage into opportunistic behaviours.

Frederic Sutter

It is estimated that the aerospace and automobile industries share around 20-25% of their supply chain. Many of these are small & medium enterprises who do not all have IT systems and would only access Data Space Ecosystems (DSE) if it had very low barriers to entry. DSE should use an independent, interoperable trust framework that scales globally and is supported by national authorities. Gaia-X and IDSA propose relevant frameworks and protocols.

Oliver Ganser

It is important to re-use artefacts, particularly when some suppliers serve multiple industries. Companies are willing to transform their businesses and invest in ecosystems like Catena-X or tools like generative AI if they believe that this will futureproof their operations. DSEs have an operational cost but they can also reduce costs significantly, facilitate regulation, and provide benefits across a global platform ecosystem. These are smart, scalable solutions that apply to multiple industries and create room for innovation, but we need to tell the story in a way that makes sense. To people twenty years ago, today's internet would be inconceivable. We must find ways to make it possible for people to understand the concept of DSEs.

Hubert Tardieu, Independent Director, Gaia-X

The EU is proposing a lot of new technology and research. Do you all think that data sharing is the main innovation challenge in your industry?

Oliver Ganser

Yes.

Pierrick Le Masne

Yes and no. We have to decide whether we are seeking a collective benefit or a new intermediation service. If an organisation like Google ends up intermediating data sharing, it will be extremely costly for us all. As Oliver explained, it is a question of imagination and mindset. Over-specialisation in our activities has made us weak so we need to find new ways to work across sectors. Data sharing is a good option.

Frederic Sutter

We need to develop reliable processes that go beyond existing P2P or P2Many exchanges. Effective data exchange and data sharing based on shared interests and benefits should help us to achieve step changes in the economic competitiveness of our industries.

Ulrich Ahle, CEO, Gaia-X

Data-driven business models require efforts and offer benefits. It is important that we explain and demonstrate the benefits of data spaces compared to digital platforms. Data spaces offer security, a common trust framework and agreed standards that make it possible to connect participants almost automatically. It would be interesting to try to substantiate your theory by applying it to real-world cases, maybe using an advanced data space like Catena-X, and an emerging space, like finance.

Mario Campolargo, Former Portuguese Secretary of State for Digitalisation and Administrative Modernisation

Over-specialisation and vertical integration might be a weakness on a data enabled strategy. Ecosystems based on one sector or an established integration model are likely to benefit from sharing data sets with apparently unrelated domains (health may have a lot to do with environment, socio-economic development or age pyramid). The generic notion of digital twins combining relevant data becomes very important in the taking of informed decisions. It is therefore important to ask whether we are ready to open up data spaces to multiple sectors and new stakeholders. Would this be driven by business interests or societal interests?

Éric Brousseau

We will discuss this question during the coffee break as we have run out of time for this panel.

Jakob Rehof

The website for today's event contains a number of documents that are relevant to our discussion.

Round table 2: The business models of orchestrators

Chair: Joëlle Toledano | Professor Emeritus, associated with the Governance and Regulation Chair

Opening

Lucas Eustache

Even in collaborative, horizontal ecosystems, someone has to take the lead. Orchestrators are responsible for the coordination of DSEs. Technical orchestrators provide the shared infrastructure, language and standards necessary for data sharing. Strategic orchestrators maximise the value of use cases and encourage participants to join and share their data. Specialist orchestrators are not a monolith: multiple players can perform different roles within a single DSE, and they can be centralised, decentralised, public, private or hybrid. Orchestration can be defined on a two-dimensional scale that aligns stakeholder interests and the orchestrator's central role within the value chain and relative to other stakeholders.

Orchestration is a process. The orchestrator's business model is about creating value and sharing it in viable ways. This is reflected in the three stages of the data-sharing life cycle: emergence, achievement of critical mass, and expansion. The orchestrator must ensure that the business model adapts to each of the three phases and moves from one stage to next. During the emergence phase, the aim is to create value. Once the DSE has achieved critical mass, it is possible to start extracting value. At the point of expansion, the process starts again through innovation, the addition of new participants, and the extraction of more value from participants in the value chain.

Emergence occurs when the first use case becomes operational. The orchestrator must take the lead on governance, establish a vision that brings participants together, and source funding to cover initial fixed costs for standards, infrastructure and so on. Although these costs can be funded by the orchestrator or major participants, this creates a risk that a non-neutral orchestrator will work for their own benefit. Collective funding supports horizontal, democratic decision-making about governance but creates issues around coordination, particularly if participants are not fully aligned on wants and needs. Public subsidies can mitigate risk and help to ensure neutrality but sourcing such funding can be difficult. Often, DSEs rely on a mix of funding sources. As well as having a long-term view, DSEs must have a short-term vision that incentivises participants to join and enables the creation of direct value during the emergence phase.

Once the DSE reaches critical mass, namely an operational threshold in terms of use cases, data sharing or participant numbers, it becomes possible to extract value to finance the ecosystem. This can be done directly or indirectly. Direct methods can be used alone or in combination: a subscription; an entry fee, which may be perceived as an investment and increase loyalty; or pay per use, which may be useful in DSEs with heterogenous use cases. Indirect value-capture mechanisms are more relevant to central orchestration. One approach offers free access but allows the orchestrator to benefit from the data exchange and services developed by the participants. Another works on the basis that a rising tide lifts all ships: the DSE creates value and efficiencies across the system, enabling all participants to benefit.

The expansion process, which is broader and more uncertain, has two aspects. During an enrichment phase, participants are encouraged to develop deeper integration within the DSE through innovation and long-term investment, albeit with the risk that the increased sharing of increasingly sensitive information will create a lock-in effective and opportunistic risk. During an enlargement phase, the logic is similar to the emergence phase: the addition of more participants and more use cases creates more value, although again, additional finance might be required to benefit fully. Because expansion may take the DSE in new directions, it is important that the orchestrator is a neutral intermediary in order to support trust and ensure that decisions are taken in the interests of the ecosystem as a whole. There are currently no clear answers about how the expansion phase ends, but it is likely that DSEs will come up against natural boundaries or other ecosystems. It is interesting to consider the potential for competition between DSEs.

The role of an investor: Groupe Caisse des Dépôts

Marie-Claude Charles | Investment Director, Groupe Caisse des Dépôts

Caisse des Dépôts offers expertise, financing and investment to projects that are strategic for France. It is interested in data sharing in its role as an institutional investor, a private investor and a trusted third-party. For the last decade, Caisse des Dépôts has been investing in data companies, initially in physical infrastructure but increasingly in immaterial infrastructure that requires huge amounts of investment and involvement to support successful deployment. During this time, its investment portfolio has included technical operators and tools, data hubs, airports, tourism, and in-house data services for local authorities and companies. It is currently supporting the deployment of new data hubs for strategic sectors. This involves the development of specialised platforms that reflect the maturity of data, actors and stakeholders in each sector and using the experience from one model to improve the next.

Building data-sharing infrastructure will take millions of euros of investment over a number of years. To be successful, we must be innovative and not simply aim to replicate. Some projects are similar to greenfield financing, tackling new use cases that have widespread interest; others, like Agdatahub, are brownfield projects that seek to respond to recognised issues. We are at the start of the process and a number of pain points need to be cracked by different actors in order to develop successful platforms. The use case is the heart of the reactor. Brownfield use cases can be identified and activated once the data is found. Greenfield projects require much more investment by financers, data users and providers.

Competition is another pain point: many companies already have P2P networks and do not see the value of sharing their data outside these networks. Indeed, they may even see it as a threat. Regulators have made efforts to improve confidence around neutrality and sovereignty but more remains to be done. The costs of data sharing, in terms of finance and risk, will also have to be supported by all stakeholders.

Use cases are central to the success of any data exchange platform. Agdatahub, for example, must show all potential users that sharing data and cracking existing P2P systems will offer benefits to users, whether they are small farmers or big industrials, regardless of the differences in their needs and challenges. Data hubs must enrol the market, overcome fears about the risks of data sharing, promote the neutrality and sovereignty of these platforms, explain the importance of data exchange, demonstrate the benefits of sharing, and highlight the potential to create value. Caisse des Dépôts is working to enrol data exchange platforms and stakeholders, mobilise stakeholders around challenges of data exchange, and communicate around these pain points in order to reach a position of critical mass.

SupplyOn

Thorsten Fuelling | Vice President Consulting & Business Development, SupplyOn

The world has changed dramatically in the 25 years since SupplyOn was founded by industrial partners in the automotive industry. Their ambition was to improve supply-chain resilience by creating an industry portal, developing standard processes for purchasers and suppliers, and establishing common processes that enabled more and more partners to work within the same ecosystem, whatever their origins. From the outset, the project was driven by one purpose: to improve the supply chain. SupplyOn now has more than 200 customers in the network and more than 140,000 suppliers around the world, of which around 40% are in Europe, 30% in Americas, and 30% in Asia incl. China. The portal has been opened to other parties for years. It has also been integrated with other solutions, such as Catena-X.

SupplyOn's use cases and the value they underpin are interesting and important. The starting point for a DSE should be potential value rather than the use case. The automotive industry focused on Tier 1 companies rather than OEMs when it launched SupplyOn. The aerospace industry leveraged 80% of our solution when it developed a high-end collaborative data-sharing space that supports the level of standardisation necessary for adoption across the industry. As a result, 80-90% of the European supply chain for the aerospace industry will go through our platform. SupplyOn is also working to improve standardisation to encourage all suppliers and purchasers to use this ecosystem and, ultimately, make it more robust. Processes and quality requirements are similar across rail, automotive and aerospace, which explains why the SupplyOn data-sharing infrastructure has such broad appeal.

Although SupplyOn uses its own solutions, it has also been part of Gaia-X, Catena-X and Aerospace-X from the outset because we are convinced that community value is best developed through sharing. We use a subscription model when we can set standards, have the governance and can get the community on board. Companies own the data that they process through our platform; with their permission, we can share this data with others. As an orchestrator, we are not new but we are innovative. From our origins in automotive, we now work across multiple industries and with a range of major companies, using the same process and tools but developing new industry-appropriate solutions as required. We expect that complexity will increase further in the future, particularly with the increase in governance regulations for ESG, invoicing and so on in Europe and further afield. By leveraging our existing network and integrating it with other networks, we can ensure that we are making progress without reinventing the wheel.

Dawex

Laurent Lafaye | Co-CEO, Dawex

Dawex is a tech company leader in data exchange solutions. Our clients create data ecosystems and data spaces that support various business cases and a combination of business models for the orchestrator and also for the participants. Dawex technology implements the Gaia-X Trust Framework and existing open source connectors like Eclipse data space components connectors and a set of features helping orchestrators and data ecosystem participants to onboard, expose uses cases and be compliant with the data circulation regulations in Europe as well as the ones in Japan, Korea Brazil, the USA, etc.

Over the course of ten years inbuilding secure and compliant data ecosystems in 20+ industry sectors, with multiple parameters of their respective business models, here are some of the lessons learnt.

First of all, in any business, there are two ways of selling a product or a service: the first one is to sell a direct gain and the second is to sell a saving.

Selling a gain is a promise on the future, and is estimated by many variables, one of which being time, which sets a break-even point. For example, a retailer with many points of sales in France or Europe, with the largest market share, decides to sell its data to its ecosystem of suppliers or to related players in the market. This will trigger new revenue to match the value of its data that are already produced for its own use. Such as, anonymized customer journeys or data on the wear and tear of the products its stores sell and receive in the maintenance or product warranty phase.

This business is called Data Marketplace, either one-sided or two-sided. A data marketplace can start with a single data provider, who is also the orchestrator of many data acquirers. The one-sided business model of this data ecosystem starts with the data product monetization of only one provider, being also the data orchestrator. Usually, based on our experience, the break-even point is a matter of months, between less than 12 months, up to 24. In some cases, the data marketplace becomes a 2-sided model, when the single provider becomes a data intermediation service provider and offers other data providers in its market access to a broad data ecosystem. The business model becomes multi-faceted: from a model centred around revenue per transaction to a multi-faceted model involving subscriptions to the data intermediation service. However, selling a gain is not a priority for a C-level, as it's often a question of market position that triggers this data ecosystem mode.

For participants who place less value on selling a gain, selling a saving can bring comprehensive promises.

A saving can be calculated based on several variables such as accelerating the product maintenance, or the adoption of a new regulation. But selling a saving requires collaboration between participants of this ecosystem. Players within this ecosystem may be less mature, reluctant to contribute, or focused primarily on their own activities. In this situation, an orchestrator can add value by onboarding participants and developing use cases that benefit all players within the ecosystem. And participants are willing to pay for such service. There are many possible business models for this kind of data ecosystem, and the time to create one can be slightly longer

As a conclusion, let's not forget that data ecosystems are primarily B2B, rather than B2C or C2C. Data ecosystems are physical assets, like road, energy or telco networks. Orchestrators, or Data Intermediation Service Providers operating such digital networks, are now regulated in Europe with the Data Governance Act. If these data ecosystems are considered as vital for the economy, they need to get similar support as the one received by these networks built in the last 2 centuries. With the new European Union Data Strategy, let's hope that the European Commission will take the lead on this topic, as France and Germany are already actively engaged in the creation of secure and compliant data ecosystems.

Agdatahub

Sébastien Picardat | CEO, Agdatahub

Agdatahub was created 5 years ago by EU farming representatives to control data uses on agriculture and agronomy and support data-sharing initiatives. Today, among other achievements, it has received investment from the Banque des Territoires, has been recognised as a lighthouse project by Gaia-X, and is set to form part of a consortium deploying European data spaces. We have learned from our failures and gained a deeper understanding of the market for data, the reasons why people share data, and the central importance of use cases and value creation to engage participants in data-sharing spaces.

Farmers spend significant amounts of time managing data, for example to sell carbon credits, improve turnover, report on pesticides or improve efficiency. Technology should seek to simplify these tasks and improve farm revenues. Farmers' organisations, with support from Banque des Territoires, identified the need to develop a data intermediary five years ago. The newly established concept of a data-intermediation service provider offered a promising way to bring together very small entities, like hill farms, with dominant entities, like the two companies that control milking robots. To balance such an unbalanced relationship, a neutral organisation is essential. This is why data intermediation is so important.

Harmonisation was also necessary to respect GDPR regulation. Under EU regulations, it is not possible for the same company to collect, store, share and process data: a neutral organisation must be responsible for sharing data, and this organisation cannot store or process data. Data storage and processing are already efficiency so, to add value in the data chain, data sharing was the key element.

Some industries are able to rely on a single large company, like Airbus, to build, finance and share an ecosystem in order to improve relationships with suppliers. Unfortunately, in our sector, no major company is in a position to do this; instead, we will require assistance from the European Commission or member states. We have opened a black box around data intermediation and the form that it can take in practice, but we have yet to find a solution. Our benchmarking has produced splendid reports about data sharing in education, health, agriculture, mobility, building and so on, but we have yet to find funding solutions in our sector. It may be that private funding is the only solution, but it should be remembered that public infrastructure investment allows us to drink clean water from a kitchen tap or benefit from international roaming charges when we travel. While it is unlikely that Europe will develop a European data space, it should consider supporting the development of a network with roaming rights managed by the Gaia-X clearing house. Member states, the European Commission and farmers' representatives need to come to an agreement both to support food sovereignty and to ensure technological sovereignty.

Discussion

From the floor

We have discussed neutrality but not governance. Data intermediaries are responsible for running the data service and business model, but also for implementing the participants' preferred governance framework. Farmers might have relatively few opinions about data governance, but for a company like Airbus, the orchestrator plays an important role as a guarantor of their preferred governance structure.

Joëlle Toledano

The word 'orchestrator' has been used to emphasise that a data intermediary as defined by the DGA (Data Governance Act) could be a solution, but that it is not necessarily the whole solution.

Sébastien Picardat

I agree. The governance of neutrality is not a theoretical question for us. Farmers wanted to retain a degree of control over the capital and the structure. Some participants, including start-ups, did not want to use Agdatahub because their competitors owned capital. Their concerns about the management of data transactions were unfounded, but resolving them required six months of negotiations and an agreement from the French government to take a majority stake in Agdatahub. We implement DGA to ensure the transparency of transactions. All operational processes are regulated and audited.

Marie-Claude Charles

A few ago, Caisse des Dépôts invested in a data-sharing platform for the agro-alimentary sector that was supported by a major industrial group. The platform struggled to attract participants because of a perceived lack of neutrality and concerns that the industrial could not be trusted. Consumers were also reluctant to participate. In this case, a perceived lack of neutrality resulted in the failure of the project.

Lucas Eustache

Neutrality is also necessary. DSEs do not come out of nowhere: they develop based on value chains and stakeholders that know each other. These factors can give rise to competitive friction, particularly as data sharing is not a trivial undertaking. Neutral intermediaries are vital to minimise risks and friction. Transparency is also important, but it does not have a direct effect on data or competition.

Thorsten Fuelling

At first, it was not easy to persuade other participants to join SupplyOn. Neutrality is very important for us and we have worked hard to maintain it for 25 years. Without neutrality, you are lost.

Hubert Tardieu

SupplyOn was created by the German automotive industry. Why did BoostAeroSpace, which was founded by major players in the French aerospace industry, choose SupplyOn to be their orchestrator? Why is Catena-X not using SupplyOn as its orchestrator?

Thorsten Fuelling

In 2008, when BoostAeroSpace screened the market, we were the only candidate. SupplyOn's purpose is supply chain management, not pure data orchestration. To my understanding, Catena-X was looking more for a technical orchestrator to work on use cases that are not all related to our core business.

From the floor

Does Caisse des Dépôts invest primarily in physical infrastructure or in software, legal support and so on?

Marie-Claude Charles

We invest throughout the lifecycle. Our first investments were in telecom and fibre infrastructures but, as the national territory is now fully equipped, we are divesting from this type of investment and moving into data infrastructure, data exchange, and services and capabilities. We are investing along the value chain and following the life cycle of digitalisation and the data-driven economy.

Éric Brousseau

Agdatahub and SupplyOn provide two contrasting examples of orchestrators that help to explain why the Agdatahub and SupplyOn provide two contrasting examples of orchestrators that illustrate the extent to which the role of intermediaries might vary given the eco-system and the players' strategies. Agdatahub acts like an orchestrator for various value chains in a given industry (i.e. in this case the agri-agro industry). It aims to articulate the different chains and stakeholders to the benefit of the industry with its specificities. By contrast, SupplyOn considers itself to be a specialist of logistics, integrating players from multiple industries in diverse value chains. As a result, it proposes to replicate its model in several industries. The visions of the role of orchestrators and of what needs to be done thus differs. SupplyOn's functional approach to data sharing is closer to the concept of the provision of a (physical) network infrastructure, while Agdatahub focuses more on business processes. They face different technical requirements and regulatory issues.

Marie-Claude Charles

Logistics has obvious use cases but it required creativity to develop use cases for Agdatahub that would appeal to data users and data providers. Once use cases have emerged, the data can be collected.

Joëlle Toledano

Agdatahub is also a way to transfer power and added value to farmers. Existing use cases are in the hands of quasi-monopolies. The challenge is to find new business models that are acceptable to big companies but share value in different ways. Inventing a new business model is easier than changing an existing one.

Mario Campolargo

In some cases, the ecosystem corresponds to an existing integrated business model and stable value chain (e.g. automotive) and the exchange data adds value. Other domains like e.g. farming, with its mix of providers, beneficiaries and consumers, poses significant challenges as the value chains incorporate a diverse and changing set of actors. It is like with goods, where new business models emerged. There are examples of B2B companies that moved to B2C because consumers became better informed and the digital channels removed intermediaries.

Data is a very important starting point and a real enabler. We certainly need big supply chains and captains of industry to exploit the data to make currently well integrated value chains more effective. But in the long run we will need to foster the emergence of data spaces and data market places that will enable new business models (exploiting the power of B2B, B2C or C2C... let alone the possibility of a market place between AI agents acting on our behalf).

Thierry Desforges, FNSEA

Different orchestrators work at different scales. For example, agriculture goes from many participants to few. The real challenge is to go from many to many and return value to many. It requires strong regulation and significant state investment to protect the base and ensure neutrality. Sharing data from few to few and sharing the value with few is easy: the challenge is going from many to many.

Hubert Tardieu

When BoostAeroSpace was launched, it was wisely decided that fees should be split between the buyer and the supplier with a view to encouraging a network effect. Who invented this fee structure?

Thorsten Fuelling

This has always been the SupplyOn pricing model for 25 years. BoosAeroSpace is also convinced, that this suits the aerospace industry.

Hubert Tardieu

So SupplyOn invented the idea, and you simply proposed that model to BoostAeroSpace?

Thorsten Fuelling

Yes. There were some discussions, but at the end all parties agreed to continue with the existing model.

Hubert Tardieu

You had the courage to say that your economic model was likely to work and would cover your costs.

Thorsten Fuelling

Thank you.

Joëlle Toledano

They were confident that they would cover their costs due to their experience in the automotive industry.

Hubert Tardieu

We celebrate businesses like Amazon for developing a business model that provides some things for free and others at a cost. SupplyOn have invented a successful economic model.

Joëlle Toledano

This model exists in other industries. They did not invent it, but they have scaled it successfully.

Jakob Rehof

Our position paper contains schema for understanding benefits that might accrue to participants in DSEs. When you consider the feedback thus far, has the main driver been optimisation and cost saving?

Lucas Eustache

Yes. Up until now, cost saving has been the main driver because it is easy to explain and optimise. It is also much easier to save costs than to imagine a model that does not yet exist.

Jakob Rehof

Is it possible that we will encounter problems with risk willingness?

Lucas Eustache

Yes, this is linked to uncertainty.

Hubert Tardieu

You mentioned four levels, starting with cost savings and culminating in innovation and new products. It is possible that participants could jump directly to level four, where the chance of making money is highest?

Lucas Eustache

Someone could try, but they would have no chance of succeeding.

Sven Löffler, Head of Date Spaces and Data Products, T-Systems

Current cost optimisation cases are mainly driven by established platform economies. In my view, the real innovation comes when network effects kick in, because this provides access to new data sources from previously unknown ecosystems, which creates opportunities to monetise data and boost innovation.

Éric Brousseau

I share your view on DSEs and innovation processes. Although radical innovation is possible on paper and, a priori, more profitable, stakeholders have different interests and priorities. In practice, the first step is to develop simple applications and optimisation processes that deliver benefits for all stakeholders, and generate trust, shared data and analytics. This will create opportunities to enhance processes. This process of incremental change has been underway since the 1980s: business and production processes have been managed through digital systems that generate huge amounts of data that can be analysed to identify weaknesses, allow adaptions and improving of functions, and make it possible to develop algorithms of increasing complexity that are then used to reshape the way the industry operates. New entrants, with lots of cash, can eventually engage in radical reinvention, but for stakeholders in existing value chains, the only way forward is to change the value chain through step-by-step process of increasing data sharing by progressive development of new use cases based on the lessons drawn from (and the data generated by) the cumulative development of uses cases.

Sven Löffler

We should not underestimate the value and the benefits of DSEs for small and medium enterprises (SMEs). Huge players like Airbus and BMW already have the infrastructure. Data sharing across the whole chain could offer huge benefits to smaller parties that do not have this infrastructure yet.

Round table 3: The challenge of compliance / Compliance by design

Chair: Jakob Rehof

Opening

Jakob Rehof

Compliance connects regulation with implementation. The challenges of ensuring that implementation complies with regulation include the need to clarify what the regulatory framework implies for technical implementation, the legal effects of technical choices, and the economic costs of compliance. The latest Gaia-X compliance document is a great step forward in meeting these challenges.

Compliance by design, that is the idea that automated systems could be used to implement and monitor compliance, is an appealing concept. However, it is not feasible: legal systems cannot be fully automated as they require human judgement, and computer science cannot answer legal questions about the operations, vulnerabilities or future applications of arbitrary systems. Although properties cannot be fully automated, it may be possible to automate some aspects of systems.

Automated compliance by design can be understood to mean 'compliance by design plus design for automation'. While it cannot provide 100% coverage, it seeks to deal with the incompleteness of potential automation by using recognised, built-in tools to determine if the system incorporates certain compliance properties by design. It is also possible to design for automation by using coding standards, design principles and trusted components and frameworks that make it easier to automate certain checks on the system. DSE frameworks are one of the chief enablers of automated compliance by design. With the right framework, ecosystem and governance structures in place, it is possible to share many things.

The way in which research on these topics is organised deserves more attention. If the European Union is pioneering regulation on data sharing and AI, then it should also be pioneering new research and development programmes and leveraging high-quality European research in order to take on a leadership role and improve alignment between academic and industrial research. It could take inspiration from the US approach, which encourages close connections between industry, politics and computer science, as illustrated by a February 2024 White House report called *Back to the Building Blocks: A Path Toward Secure and Measurable Software* which includes references to memory-safe programming languages but also to formal methods and basic research. The use-inspired basic research model that Stokes formulated in the 1990s is relevant here. This category does not have a home in current research funding, but basic research thinking and use-case-oriented basic research programmes are necessary if we wish to make real progress and gain technological leadership.

Design Architecture and Innovation Governance: Gaia-X & Orange

Pierre Gronlier | Chief Innovation Officer, Gaia-X

Catherine Simonnin | Design Architecture & Innovation Governance, Orange Business

Pierre Gronlier

A trust anchor is an authority that can sign claims. Different participants, from humans and legal entities to power stations and satellites, negotiate to define the rules for their ecosystem, including policy rules, trust anchors and compliance. These are stored in a registry, as defined by EBSI (European Blockchain Services Infrastructure). The challenge is to achieve interoperability between trust anchors.

Automated compliance can support the building of interoperable data ecosystems and data spaces. There are at least four levels of interoperability: legal, organisational, semantic and technical. Within an ecosystem, the technology can be easily changed, like paint on the walls of a house. The governance model and trust framework, however, are architectural elements that are difficult to alter without major building works. Once participants have agreed on common rules, each organisation or persona can use a wallet or agent to exchange semantically interoperable credentials. There is increasing convergence on Gaia-X standards.

To achieve interoperability for trust anchors and schemas, it is necessary to find the highest common denominator across different ecosystems. This involves the identification of agreements on rules for operationalisation, governance and onboarding, and consistent approaches to performing tasks. Automated compliance can identify common denominators quickly and relatively cheaply. Thereafter, the ecosystem can negotiate governance rules and participants can negotiate cross-ecosystem relationships.

Catherine Simonnin

The Gaia-X compliance document details rules, principles and criteria that have been developed to lay the groundwork for automated compliance. It describes the elements that are needed to achieve compliance at each level and explains how to make a self-declaration of compliance or obtain relevant certification. Lower levels allow for high levels of self-assessment; higher levels require external certification from a trust anchor. The Gaia-X team has built a digital clearing house that contains a registry and notary service and allows participants to check if a DSE meets their requirements for any given criterion.

Service providers who wish to obtain the Gaia-X label will need to self-declare their suitability by submitting the relevant paperwork to the Gaia-X clearing house of their choice. To obtain a higher level of certification, they can obtain the necessary certificates from a conformity assessment body. The compliance document lists all permissible standards, such as ISO standards, that can be used to fulfil each criterion. Digital certification will be developed in the future; at present, certificates are delivered in PDF format and can be verified by a notary service.

Pierre Gronlier

The technical stack can be used to automate rules and rule monitoring. The compliance document and the compliance engine are separate.

Catherine Simonnin

Adopting this system in full will require the development of interoperable wallets. Each wallet will be use-case oriented or provider oriented, the aim being to develop an enterprise wallet with an acceptable format that can be used to achieve interoperability and avoid the need to have individual wallets for each DSE or data system. Notary services will automatically translate PDF certificates into verifiable credentials.

Pierre Gronlier

Tools are being developed by the market to enable the notary service to transform PDF or JPEG files into a structured, machine-readable format. They will use optical recognition or visual language models to extract information used by ISO standards for conformity assessments, such as accreditation authority, issuance and expiry data, scope, validation, and audit information. Gaia-X is working to combine the world of conformity assessment with a technical stack that can automate it.

Telekom's perspective as one of the first Gaia-X Digital Clearing House nodes

Sven Löffler | Head of Data Spaces and Data Products, T-Systems

Digital clearing houses are important because global data space operators need to be able to trust their business partners, particularly when those partners are based in other countries. During the onboarding phase, they need to be able to determine whether the partner is trustworthy enough to be given a digital passport that will enable them to access the network; once data exchange is up and running, they need to know if the partner continues to be trustworthy. An effective clearing house operation establishes trust in the system and increases transparency by showing how partners are using and accessing information. It can further increase trust levels by reading and stamping verifications and creating certification.

Our target is the development of a decentralised wallet / digital passport that will allow holders to move between data spaces. We are working through innovation and iteration to identify and exploit interoperability between systems and deepen our understanding of the key issues underlying global standards and interoperability. The Gaia-X trust framework is generally well understood and well implemented, but it needs to be accessible to partners in the US, China, Korea and elsewhere, all of which are subject to different regulations. Achieving integration across borders will require standardisation but also the identification of common denominators that support effective data exchange.

Data sources must be trustworthy. For example, we need to be able to validate data within countries that have different internal regions with their own IDs while also cooperating across borders with third parties. Our service is actually in 192 countries available and over time we are adding a trusted data source and service. We are aiming to add trusted data sources until we have full, global coverage & reach and can identify participants as partners in any country.

Everything in the onboarding process and automated compliance can be completed automatically within seconds. We are very proud that Catena-X is using this system. Next, we will tackle interoperability in different countries and globally and work to enhance the presence of trusted data sources and trust anchors in specific regions. We believe that every region and country should have infrastructure and a clearing house node available as a network layer. Our ambition is that, ultimately, exchanging data should be as easy as making a telephone call is today.

Microsoft perspectives

Antoine Kubiak | Government Affairs Manager, Microsoft

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Microsoft is strongly in favour of trusted data sharing and believes that there are significant data-sharing opportunities in Europe. Challenges and opportunities include IP, cyber security and privacy, as well as automated compliance and compliance by design. As trust and control are critical customer demands, technology and governance must be designed to support trusted data sharing.

Different scenarios need to be accommodated when creating frameworks for trust and data sharing. It is essential to reduce some of the risk around the loss of control of data. In order to create trust, each participant must maintain autonomy and control of their data, decide which policies are used to share their data, and remain in control of deployment. The system must be adaptable enough to meet customers' needs and flexibility across different scenarios, sectors and situations. We support the use of trust anchors to guarantee authenticity of participants 'credentials and limit the number of intermediaries in the chain of trust We favour a decentralised approach, and we believe that there is a need for flexibility in terms of infrastructure. Standardisation also has a key role to play in data spaces and DSEs. Microsoft would like to be more involved in the automated verification of credentials and claims, as these are important accelerators of data spaces.

Eclipse Dataspaces Components (EDC) is a good example of compliance by design that facilitates data spaces. Microsoft participates actively in this open-source project. Governance is developed for policies and supports compliance while simultaneously granting full autonomy to participants in the project. We have developed suitable technologies and a decentralised verification system for credential management.

As recent EU discussions show, there is a need for companies to support data-sharing objectives by implementing legal and data governance measures that ensure trust and control. In Europe, Microsoft launched its EU Data Boundary initiative in January 2023. This is a key legal commitment that applies to all Microsoft services and platforms and will offer a number of benefits to customers by building on existing commitments in terms of data residency, recent investments, regulatory compliance and so on. While it does not significantly change functionalities or pricing for our customers, it should be understood as part of our broader data privacy commitments, safeguards and controls around data storage.

Microsoft Cloud for Sovereignty is aimed at public sector customers and governments. It integrates expertise from local partners and providers, governance and transparency processes, sovereign controls and data residency. In France, we have developed the BLEU project, with Orange and Cap Gemini, based on Azure Technology. It is a great example of automatic compliance.

Discussion

Jakob Rehof

What is the impact of the choice of provider of verifiable credentials?

Catherine Simonnin

The provider of the verifiable credential is not the same as the provider of the certificate. The verifiable credential contains information. What is important is what is inside, not who sends it.

Pierre Gronlier

The term 'verifiable credentials' simply means that the integrity of the information being shared can be verified and the issuer can be traced. Think of it as a transparent envelope with a stamp on it. The important point is to trust the issuer and ensure that the integrity of the information is not compromised.

Catherine Simonnin

The provider is the conformity assessment body of the trust anchor. It is important to choose a good one.

Sven Löffler

The service provider must be able to rapidly revoke a credential used to access an ecosystem when necessary. Reaction times, reliability and geographic reach are all important. Trust comes through declarations and clarifications, but it is also supported by conformity across different levels, notably in terms of the information provided by different stamps and the reliability and validity of the stamper.

Pierre Gronlier

Verified credentials ensure that the issuer is traceable and the information contained in the credential supports interoperability. The principles are similar to those used on the world wide web. It is possible that, one day, data from Agdatahub will feature in Catena-X.

Jakob Rehof

It would be useful to understand more about your needs for automation and how they relate to economic viability. Is Gaia-X easy to access? Is the cost of onboarding reasonable? Cost is a major driver of compliance automation: automation can make things less expensive and increase levels of trust. On which problems should the Gaia-X framework focus as it works to drive progress on compliance automation?

Pierre Gronlier

Compliance is a core value that will support adoption. The market for compliance regulation is valued at $17 billion per year and is expected to reach $24 billion by 2028. Regulation exists everywhere and this creates a huge opportunity for Gaia-X. Automated compliance could have applications in a huge range of ecosystems, based on ISO and CASCO standards. Industry already differentiates between verification, validation, audit and so on. We make the same distinctions but combine them with technology.

Catherine Simonnin

Our success depends on active participation and support from interested members. All are welcome.

From the floor

Compliance for cloud services is a starting point but we are now discussing much wider applications. Have verifiable credential mechanisms been implemented in any other sectors? Are there similar initiatives?

Pierre Gronlier

Yes. For example, Sven's presentation mentioned identity verification for financial institutions.

Sven Löffler

Yes. It is being used, but relatively few data spaces are in production and have a commercial model behind them. In my view, we have to focus us on standardisation and global adoption and availability.

Hubert Tardieu

Many people in the finance sector are employed purely to apply banking regulations on behalf of governments. The finance sector would be keen to have verifiable tools that would enable this regulatory work to be automated, freeing up staff to focus on their primary role of customer care.

From the floor

Regulations are increasingly important in the banking sector. Tools that make it possible to directly manage regulatory and compliance issues would definitely be welcomed by us and our customers.

Catherine Simonnin

There are currently a number of active criteria at the standards and compliance level. We need to simplify these criteria to encourage innovation. Start-ups often struggle to cope with large amounts of paperwork.

Sven Löffler

Every criterion has a business value as well as a price. We should not over-complicate matters and we should ensure that every criterion has a clear value proposition for participants.

Éric Brousseau

Earlier, we mentioned the need to lower barriers to entry for small players, like shopkeepers and farmers. Automation can lower costs, but if it is too technically complex then small players will struggle to comply. Would these participants need to invest in sophisticated trust-building technology?

Catherine Simonnin

We should adapt criteria to capture essential information without creating barriers for small players. Trust solutions can be offered through mobile technology. There is no need for a data centre in every house.

Jakob Rehof

The comparison with the US is interesting from a research and technology perspective but also from a regulatory perspective. For example, the number of AI-related regulations has increased by 56% in just the last year. The US system is actively regulating, it just does it in a different way.

Antoine Kubiak

The landscape has changed significantly in the last five years and a key challenge now is the alignment of these regulations. We must consider the future role of AI and automation in any discussion of data spaces. It is encouraging to see the Commission working to implement the new EU data rules.

Jakob Rehof

Regarding the potential to create value out of data, what are your thoughts on AI? It would be interesting to discuss this next year. It is relevant to questions about data regulation and the relationship between the data acts and AI act. It also raises economic questions about how a new regulatory environment could support new business models for data sharing.

From the floor

Any mechanism to automate verified credentials must include a cascade of responsibility. In our data space for the European construction industry, we work with very small companies that do not know about the cloud, far less that their data is in it. The complexity is not B2B but B2B2C. The data is at level C.

Catherine Simonnin

The criteria cover subcontractors as well as suppliers. It is always possible to insist that your data is not stored outside Europe or controlled by a non-European entity.

From the floor

In our use case, it is not so simple. It requires a sophisticated approach.

Catherine Simonnin

A cloud can have 50 suppliers but none of them will have access to your data or infrastructure. They are not directly connected to us. The conformity assessment body is responsible for checking certificates.

Round table 4: Public Policies: Beyond regulation and subsidies? Regulation and Policy

Chair: Hubert Tardieu, Independent Director, Gaia-X

Hubert Tardieu

The European Union and member states have invested €1.7 billion in subsidies, research and development and a data framework to support data-sharing initiatives. Now that the foundations are in place, we must consider what remains to be done and what is at stake for the next five years.

Opening

Yvo Volman | Director of the Data directorate in the Directorate General for Communication Networks, Content and Technology, European Commission

Data is an essential resource for economic growth and competitiveness. It is an engine for job creation and innovation and the fuel for AI. The market for data is expected to increase to €840 billion by 2030, equal to 6% of European GDP.

The 2020 European strategy for data aims to combine legislation and deployment to strengthen our data economy. We must work on both aspects to make progress.

The Commission has delivered on the promises contained in the data strategy. The Data Governance Act (DGA) entered into application in September 2023. It is intended to increase trust in voluntary data sharing by implementing a trustworthy mechanism to link the supply and demand of data and by creating neutral data intermediaries. These intermediaries have no commercial interest in selling data and play an important role as trustworthy organisers of data sharing and pooling in common spaces. The DGA supports data altruism by enabling individuals and companies to securely share their data within data pools where analytics and machine learning can be performed. Finally, the DGA created a data innovation board to help stakeholders and member states share best practices, break down silos, create standards to support effective data spaces, and ensure data can be used in different contexts.

The Data Act (DA), which will come into application in September 2025, aims to ensure a fair allocation of value derived from data access and use. It has achieved a balance between making data available and protecting the interests of those who invest in the underlying data technologies. It gives users of connected products, such as factory robots and smart dishwashers, greater control over the data that these devices generate and send back to the manufacturer. It allows manufacturers to use these data to improve their products, and allows product owners to transmit the data to third parties, for example for after-sales services. This creates huge opportunities for growth. The DA also allows cloud users to switch seamlessly between providers, which has already led several major players in Europe to abolish switching charges.

Legislation has also been passed to regulate high-value data sets that were developed with public funds, such as meteorological data and business registers. These valuable data products are now available at no cost in machine-readable format and through APIs. Providing free, easy access to these data across Europe should boost business innovation, particularly among start-ups and SMEs, and will support the continued training of AI models.

Substantial investments are being made to create and support common European data spaces. These spaces are intended to facilitate trusted, secure data pooling and sharing in strategic economic sectors and domains of public interest. They are owned by stakeholders and reflect the needs and characteristics of the target sector. Some are in their early stages while others are well into deployment; it may take several years for these investments to bear fruit. The data space support centre is playing a critical role in ensuring that data spaces are interoperable, benefit from economies of scale and can be joined together.

We now have a framework that will allow us to go beyond legislation and funding and ensure that these measures work together in practice. I expect that the next Commission mandate will focus not on regulation, but on ensuring that these acts are properly implemented and create business opportunities. To promote this, we have organised 11 dedicated workshops on the DA over the last year and held more than 50 bilateral meetings with over 100 stakeholders. We have published several documents that explain the legal provisions in an accessible way, including in-depth Q&As on the DA that will be updated over time. The Commission is also supporting users, particularly SMEs, by preparing model contract clauses for data sharing. Member states are responsible for setting up the structures and processes that will underpin the success of the legal framework. We aim to strengthen the fundamentals of data economy in each country.

In order to make data transactions work smoothly, we need to drive progress on automation and compliance. Lawyers and IT specialists will need to work together to develop solutions that are robust and practical, as well as integrating indirectly related concepts like digital identifies for European citizens and companies. I believe that the basic technologies involved in automated compliance can be used to enable data for compliance and reduce the burden of reporting. To that end, we intend to fund the development and deployment of compliance technologies through the Horizon programme and Digital Europe.

Recent EU reports (Draghi and Letta reports) highlight a significant role for data. The recent announcement of the creation of a European Data Union, as part of the political guidelines of President von der Leyen, will keep data at the forefront of policy discussions. In the coming years, we must ensure that our data framework is operational, interoperable, and fully understood by all parties. We must make the connection between data sharing and the development of AI and other frontier technologies and ensure that European companies are able to access the benefits. Data must be shared seamlessly, at scale and with respect for high standards of privacy, security and European values and rules. The 2020 European Data Strategy states that we will adopt an open but assertive stance on data flows between the EU and third countries. We will keep our markets as open as possible while recognising geopolitical realities and protecting the data of our citizens and businesses. We are looking forward to an exciting period of development. Working together will enable us to achieve the best results.

Europe in the global data economy: sharing as a culture worth promoting

Boris Otto | Professor for Industrial Information Management, TU Dortmund University and Executive Director, Fraunhofer ISST

The European Data Strategy embraces the critical role that data plays in driving innovation. Europe is sitting on a treasure trove of high-quality data that is not publicly accessible and has the potential to increase the effectiveness of AI. It is important for us to overcome the current lack of trust in data sharing in order to increase the ability of European businesses to reap the benefits.

The data strategy aims to create a regulatory framework that will facilitate a fair data economy, encourage data-driven innovation, and promote shared data spaces to maximise the use of data and spur innovation. Data spaces can play a crucial role in bringing together diverse initiatives to establish interoperable data spaces. Other European Union initiatives and activities share the same goal, as do the majority of people in this community. Building this shared understanding and ambition is a significant achievement; initiatives like Gaia-X and the IDSA further strengthen the community and help us to scale faster. The Digital Europe programme is funding several projects as well as sector-specific initiatives that will help us to leverage these building blocks.

Rising geopolitical tensions make it increasingly important that we reduce our dependencies on single sources of certain goods and services. Interoperability and the free flow of data, with trust at its core, is vital if we are to avoid drowning in complexity and cost as we explore the data space domain at an international level and multiply our relationships. China now recognises data as the fifth pillar of state production and has established a national data bureau. The European Union is considering whether the 'fifth freedom', that entitles citizens to reside anywhere in the EU, should also hold true for data.

We have a genuine opportunity to export our standards across the world. Our high-quality data can be leveraged to train and fine-tune foundation models and make the AI value chain more effective and efficient. Bilateral and multilateral data sharing can help us to further develop trusted execution environments, as is already happening in the European health data space. While we have made significant progress on open source and standards, we need to learn more about platform economics. Data spaces are essential and distributed architectures that behave like platforms from an economic standpoint. We must embrace this knowledge to promote adoption and sustainable operations, ensure that compliance with regulations is as easy as possible, and develop technologies that support automated compliance and verified credentials to further promote the integration of data space architectures. These things will take time, but we have made good progress.

We have a good strategy in Europe but we must ensure that it is not undermined by a culture that does not understand data sharing. By shifting the cultural perspective around data, we can encourage a mindset shift that embeds data management and sharing across the board. To achieve this, six principles are vital: partner ecosystems must create overspill value for all participants; data sovereignty and trust must be centred on trust frameworks and based on European values; shared data management must be available to small and less mature companies, without the need for proprietary intermediaries or centralised storage; data sharing must be encouraged as a key solution for addressing global challenges; economic frameworks must use proven concepts from economic theory to ensure that value is created and shared in fair and transparent ways; and shared assets are critical to AI development and innovation.

Implementing Public Policies

Laura Létourneau | Expert advisor for ecological and digital transformations, French Government

It is essential that we understand how data-sharing infrastructure can help us to address the challenges of this century. The advocacy and data-sharing infrastructure report, developed with the Digital New Deal Foundation and Terranova thinktanks and a dozen other contributors, aims to consolidate experience on these topics and share it in an accessible way with non-specialist audiences. It seeks to connect existing private, public and academic initiatives in France, Europe and further afield to show how this infrastructure is essential for addressing societal, social and environmental challenges.

The report starts by defining public data-sharing infrastructure and linking the concept to public platform theory, digital commons, open data, data spaces and data intermediaries. It goes on to explore examples of real infrastructure in healthcare, agriculture, consumption, education, mobility and housing, describing the stakeholders, macro- and micro-economic use cases, and the role of the infrastructure within the broader digital framework.

The main purpose of the first part of the report is to ask whether digital technology is needed to address the challenges of the century and, if so, why we should focus on public interest data-sharing infrastructures. Opposition to data-sharing infrastructure is rarely explicit, but scattered discussions at the wrong level can undermine progress. Explicit opposition generally focuses on the execution of the project rather than the underlying need. This first part aims to highlight the huge direct and indirect benefits that these projects offer in terms of operational and budgetary efficiency for public authorities, environmental and economic efficiency for companies, and innovative and sovereign digital development. Then the report provides guidelines to help infrastructure leaders capitalise on existing lessons. These guidelines will be adapted and extended over time. For instance, they state that significant efforts at national level must be matched by efforts at European level to identify complementary use cases and foster the development of the European market. In addition, they help to solve recurring questions about the technical, economic and governance characteristics of infrastructure. They also present six criteria for building a winning strategy, including internal transformation of public organisations and the construction and regulation of external stakeholders.

The final element of the report is a series of macro recommendations at national, European and international levels. The current situation is chaotic: to overcome this, we must adopt a common cross-ministerial vision in France, Europe and internationally and implement it with unwavering determination. This will be challenging because data-sharing infrastructure is an objectively complex topic. Nevertheless, this infrastructure is essential for fixing dysfunctional systems and there is a strong drive to succeed.

Reflections on public policy

Mario Campolargo | Former Portuguese Secretary of State for Digitalisation and Administrative Modernisation

The presentation identified three important perspectives and messages to be retained.

- Be clear about the vision, integrating it in a broader context and exploiting concrete differentiating assets you have or you can build

- Identify an overriding set of guiding principles that inform the modus operandi and stick to them, involving a multistakeholder and multidisciplinary approach

- Focus on implementation strategies that do not remain only on investment on technologies and mobilisation of elites, neglecting the broader acceptance and ownership by entrepreneurial leaders, public services, workforce and citizens, in the context of a proper governance.

Furthermore, it argues that the data strategy needs to be closely articulated with other strategies, namely AI and cybersecurity.

The deployment of a data economy is a multi-stakeholder effort that requires the articulation of local, national and European perspectives. A number of inter-disciplinary factors also give rise to the notion of the data infrastructure on which future society will be developed as a common good.

My vision is that Europe becomes a reference in value creation and innovation through the safe and responsible management and use of data, fostering ecosystems of trust and transparency, that benefit the society as a whole.

Europe has an ambition to be a leader in data-enabled value creation and innovation through new business models, emerging new actors, and automated, efficient and optimised data-sharing processes. Trust and transparency play a fundamental role in establishing collaboration between institutions, organisations and citizens: trust inspires participation, while transparency ensures that partners and participants understand how, why and for what purpose their data is used.

We must focus on extending the benefits that large companies already enjoy to a broader set of actors and public services, ensuring the economic development and wellbeing of the society at large.

Enabling the implementation of this vision there are a set of shared, guiding principles that are being embedded in Europe's new digital legislation. Europe must move fast to take leadership, compete globally and convince like-minded actors to understand the sustainability and benefits of its approach.

The Data Governance Act (DGA) aims to enhance data sharing across the EU by increasing trust, fostering the emergence of neutral data intermediation service providers, facilitating the use of public sector data, and encouraging data altruism. The Data Act (DA) aims to ensure a fair, competitive and innovative market by setting rules for access to end-user data, including high value publicly supported data and non-personal data. It encourages data sharing, preventing data monopolies and enabling SMEs and start-ups to innovate through data analytics. It promotes technical, semantic, organisational and legal interoperability. In addition, it proposes the use of smart contracts for the sharing and trading of data and the deployment of common European data spaces.

The AI Act aims to ensure that AI systems, algorithms and models in the EU are operated safely, ethically and with respect for fundamental rights. It includes measures to adopt a risk-based approach, compliance obligations and timelines, and has a strong focus on algorithms, training data, and data enrichment. The Digital Markets Act uses antitrust logic to ensure fair markets and targets the gatekeepers of large platforms. The Digital Services Act establishes accountability standards for illegal and harmful content and imposes due diligence obligations based on an organisation's size, role and impact on online ecosystems.

Having established its vision and principles, Europe must move to implementation. Beyond regulatory frameworks and the need for investment, there are three important challenges regarding implementation: value, capacity building, and governance.

It should not be assumed that society understands that value can be extracted from the management and sharing of data. From a policy perspective, we should emphasise the value of data as an asset to drive innovation, create new business models, promote informed decisions and ensure sustainable economic development. We must focus on creating an environment that shares or uses data across sectors to create value for the economy and broader society. It is important to facilitate sharing, accessing and reusing data experiments rewarding the efforts to automate data sharing and the emergence of neutral intermediaries. It is important to invest on open data policies while securing processing environments for sensitive data, and invest in technologies and research institutes that can demonstrate the value of data for policy decisions. Data spaces should be engines that speed the recognition and extraction of the value of data. The development of cross-cutting and transparent data governance models is paramount.

If broader investment in a knowledge-based economy is fundamental for increasing productivity and economic development, capacity-building investment in data experts, workforce and educated citizens is fundamental. Countries in Europe must attract the best data talent to promote research and create champions. They must ensure that citizens are able to understand, evaluate and use data in a safe, conscious manner that promotes active participation in society and democratic processes.

The ethical and efficient management of data and metadata depends upon trusted and transparent mechanisms based on clear policies, standards, regulations and guidelines. Governance is important for data ecosystems as either they optimise costs and increase efficiency on the basis of established relationships and supply chains or tend to generate new business models at the frontier of new data spaces. Governance cannot just be the remit of a sector or of a set of companies or organisations. Trusted entities will emerge and promote the benefits of data sharing. Governance must be agile, so it can adapt to challenges and foster effective cooperation between stakeholders in order to encourage the exchange of data and resources, drive innovation and create value. Governance should encourage data altruism and synergies. Finally, compliance systems and services should be used to reinforce trust and demystify the perceived complexity of ensuring compliance with the regulatory framework.

The deployment of secure, inclusive data infrastructure is essential for boosting data ecosystems and ensuring that they have a social and economic impact. Secure, large-scale storage, processing and analysis of data and visualisation must be performed in an agile and sustainable manner. Infrastructure must keep pace with technology. Data sits at the crossroads of multiple innovation and research areas. Initiatives and implementation strategies must integrate data strategies with AI strategies, cyber security, interoperability and public services.

A successful implementation strategy will require a clear vision, adherence to agreed principles, and complementary investments and priorities. Gaia-X plays an important role in making this strategy real. When simple, unorganised data is presented in a logical way it becomes information that can support decision making. Our challenge is to make sense of the data economy, knowing that it is a step towards building the information economy.

The point of view of a regulatory authority

Anne Yvrande-Billon | Director for Economy, Markets and Digital, ARCEP

ARCEP is a national regulatory authority that is in charge of implementing some of the provisions of the DGA and DA, notably the regulation of data intermediation service providers and cloud service providers. We aim to create a harmonised trust framework for data intermediation service providers to increase the availability and reuse of data within the European Union and facilitate the sharing of data between holders and users. ARCEP regulates the holders and providers of these services.

As soon as ARCEP was entrusted with this task by the French government, we opened a platform to enable data intermediation service providers to notify us of their activity and request certification. To obtain certification, intermediaries must comply with 15 checks that ensure that they are neutral and not subject to conflicts of interests. Six service providers have identified themselves through our platform thus far; one has requested certification at this point. This is lower than the number of intermediaries that we identified during the prefiguration and market research phase. We are taking a pragmatic, dialogue-based approach to ensure that our service is responsive and bureaucratic costs remain low.

We are keen to deliver a robust certification service and will pay close attention to the neutrality of intermediaries. We will check legal separation ex ante and verify the terms of access conditions. In cases where requirements will only be verifiable in terms of non-compliance, we will conduct ex post controls, receive complaints and impose sanctions. This approach is theoretical given the early stage of the process.

In implementing these regulations, we are aiming to strengthen confidence in our approach while also articulating the different regulatory frameworks. Cooperation between national regulators is a familiar topic in academic spheres and day-to-day practice. We coordinate with other regulators nationally and at European level, especially through the European data innovation committee. This group was created by the Commission to help it implement the various data acts through coordination with relevant authorities and regulators who agree on the interpretation of texts, advise on data policy, and assist with implementation and standardisation initiatives.

ARCEP is also working to implement regulations for cloud service providers that are intended to remove the technical and commercial barriers that make it difficult for cloud users to change suppliers. We are regulating supplier switching costs and promoting the portability of data and service interoperability. Our approach towards these new regulatory missions and this new type of regulated entity is, again, based on consultation and dialogue. Our intention is for ARCEP to develop a coherent approach across the different data-related markets that we regulate and to continue to open digital ecosystems in order to offer greater choice to companies and other users.

Hubert Tardieu

I would like to thank you all for your participation and contributions during these sessions.

Conclusion

Éric Brousseau

Our first panel explored the idea that the development of DSEs is a collective process of innovation, which enables participants to develop relevant use cases through active learning. It highlighted the virtuous cycle whereby use cases develop trust, which encourages users to develop further use cases, and the fact that this process drives the innovation, enlargement and enrichment of data spaces. The second panel considered orchestrators and the challenge of providing effective technical orchestration that leverages transversal functions and replicates solutions across industries and value chains, as well as strategic orchestration that optimises business opportunities based on the logic of value chains or industries.

A link was established between the development of DSEs and AI. Europe is lagging behind in the development of LLM, but the development of DSEs and data spaces creates an opportunity to fine-tune AI systems, develop useful services, and trigger innovation in value chains. This should be explored with regard to business development, regulation and public policy, potentially with a view to using DSEs that develop specific services or derive synthetic data that could be used to train AI systems.

Jakob Rehof

Although the idea of automated compliance is gaining traction, much remains to be done. Europe must develop a leadership position on compliance technologies by driving new research and development and investing heavily in basic research. Many of the areas where we could compete with the US and take a leadership position involve very hard problems that require long-range work. If we want to lead on regulation, we must also lead on the creation and invention of new compliance technologies. We must consider the economic perspective of AI and its potential to be a major driver of value creation for data, particularly as this driver is not currently central to many projects covered by Gaia-X or our research study. Integrating this perspective could provide a new orientation to some of these projects.

Joëlle Toledano

The main implementation challenge we face is not, at present, a regulatory challenge but the strategic, financial, economic and technical issues involved in creating DSEs. We have better understanding of what data sharing involves, what it is for, how it can be profitable, and how it might need to be financed in the near term. This is a work in progress. We are not alchemists and data sharing is not a new way to turn lead into gold. We must get our hands dirty and obtain financing with real money.

Hubert Tardieu

Our approach has matured considerably over the last year and we have developed a real understanding of each other's problems. Data sharing is an attractive innovations but, like any innovation process, it will take time, it is risky and it will not work every time. With effective collaboration, however, we can make it happen. Rather than spending €800 billion per year to drive Europe's industrial development, I wonder whether Mario Draghi should invest in developing a culture of data sharing. I believe that we are ready to push for this, although we will need to develop a compelling story to persuade the politicians.

We have taken the promises of last year and delivered on them; we are now ready to teach others what we have learned, particularly with regard to the economics of data sharing. I suggest that we develop and offer a specific section on this in the Gaia-X Academy within the next year. I believe that we have good opportunities before us and that it is time to promote our work in the business and political environment.

Éric Brousseau

We would be delighted to continue working with you to extract and share learning from users, developers, stakeholders, practitioners, regulators and policy makers. I would like to extend my warmest thanks everyone who participated in this meeting, especially those who organised and supported it.