



Data sharing in Europe: DGA and DA from legal consensus achievement to implementation by stakeholders

Conference report

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

Paris Dauphine-PSL University, September 19th, 2023



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Data sharing in Europe: DGA and DA from legal consensus achievement to implementation by stakeholders

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

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In the context of European strategy for data announced by the EU in 2020, the Data Act (DA) has been adopted in June 2023, and the Data Governance Act (DGA) will enter into force in September. There is widespread interest among stakeholders involved in data-sharing ecosystems in understanding the impact of and strategies for implementing this new regulatory framework.

Indeed, the DGA is initiating a regime of opt-in provisions for data intermediaries, and the DA obligations are subject to significant margins of legal interpretation, while no European Data regulator is created to oversee the implementation. The industry, in cooperation with public authorities, is therefore developing, experimenting, and scaling up governance solutions such as automated compliance tools, trust and labelling frameworks, clearing houses, aimed at facilitating the development of efficient, fair and secured data sharing spaces or data markets. The way value is created and distributed through data sharing, and the way costs are shared, are also essential dimensions of the arrangements governing digital ecosystems, with significant impacts on value creation by the models, as well as their sustainability, and the competitiveness of the involved stakeholders.

Welcoming words

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

This conference will consider the challenges of data sharing and data markets, particularly the kick-off services and business cases that will be required to attract industry participants and reach critical mass. Governance arrangements and technical solutions must guarantee security and trust while learning (by-doing) can be relied upon to trigger innovation.

Jakob Rehof | Professor of Computer Science TU Dortmund University and Director of Research Strategy Fraunhofer Institute for Software and Systems Engineering

The Gaia-X Institute, an independent think-tank under the auspices of Gaia-X, is devoted to strategic research on data exchange and the data economy. It has a broad scope that encompasses technology, economy, law and regulation, as well as civic and human rights in the context of the digital economy

Introductory keynotes

Fransizka Brantner | Parliamentary State Secretary, Federal Ministry for Economic Affairs and Climate Action, Germany

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We need to create more value out of data in Europe. It is key for innovation, competitiveness and our digital sovereignty. It will help us to manage the immense transformative processes that we are facing today. We have just successfully completed negotiations on the Data Act (DA). The Data Governance Act (DGA) was agreed in 2022. With these acts, we now have a solid regulatory framework for a robust European data economy where data can be shared and used effectively. These legal acts aim to ensure responsible data use, provision and access and to leverage its potential for innovation. This, in turn, will contribute significantly to our data and digital sovereignty.

The DGA, as an initial legislative proposal on EU Data Strategy, contributes to the European data economy by promoting trust in data intermediaries. It also enhances mechanisms for data sharing and utilisation across the entire EU. The DA complements the DGA. Thanks to our joint efforts, the DA will also increase data availability and responsible use of data. It finally grants users access to the data they generate when using smart products and services and it could be the new basis for new innovative services and products. It provides ample opportunities for industry, SMEs and end users. While promoting data sharing, the DA also effectively protects trade secrets and thereby strengthens the European single market for data.

On the practical side, there is Gaia-X, a project initiated by Germany and France in 2019. Our goal was to create an innovative European data ecosystem that enables the development of competitive and scalable data and AI applications. Gaia-X is an important element in the implementation of the new regulatory framework. Today's conference is an excellent opportunity to discuss how Gaia-X and regulatory efforts go hand in hand and how Gaia-X can actually help to implement regulation. Gaia-X has already achieved a lot. It has guided large communities to take its spirit and ideas beyond its organisational boundaries. Technical results are visible and are starting to be deployed on the ground. We are, of course, looking forward to broader market uptake during the coming years as even more users apply what Gaia-X has developed.

For many European countries and Germany especially, small and medium enterprises are important to the economy. There is tremendous potential in data-sharing that has not been exploited yet. That is why we, *via* the German Gaia-X hub, have made special efforts to make Gaia-X known and show how it applies to them. It is also important to mention the eleven Gaia-X use cases that Germany supports *via* public funding. They develop data spaces in the financial, automotive, maritime, public and other sectors, or work on cross-sectoral solutions to connect clouds and data spaces. These are actual test beds to test what, on the one hand, regulation provides for and, on the other hand, the solutions that Gaia-X has already developed, for example, the architectural and policy framework or governance solutions.

Some of these projects have already published quite important results that follow regulatory requirements and apply Gaia-X solutions. One of them is EuroDaT. The aim of EuroDaT is to establish a mutual data trustee, in line with the EU DGA, and to implement Gaia-X-compatible use cases from the financial sector. The data trustee is intended to enable companies, academic institutions and public authorities to exchange data in a secure, legally compliant, largely automatic manner. Another funded project that may help to implement the concept of data intermediaries is Health-X dataLOFT, which will empower citizens to provide, use and control their own health data. The aim is to develop transparent, cloud-based applications in highly relevant areas of healthcare, all in accordance with the Gaia-X framework.

In conclusion, we are glad that, with the new regulatory framework and the tools of Gaia-X, Europe can benefit from efforts that go hand in hand. We are optimistic that this paves the ground for better and more data-sharing in Europe. Above all, what is important is our sovereignty. Thank you.

Jean-Noël Barrot | Minister Delegate for Digital Affairs, Ministry of Economy, Finance, Industrial and Digital Sovereignty, France

Europe has reached a major turning point in the implementation of its ambitious data strategy through the DGA and the soon-to-be-adopted DA, both regulations which are fully supported by France under the impetus of Prime Minister Borne. These regulations represent a unique opportunity for the EU in general and for France in particular to enter the race for innovation as they pave the way for a harmonised framework for B2B, B2C and B2G data sharing, as well as better availability of public sector data.

Trust, availability, competitiveness and fairness are the key words of this new innovation-driven framework which will amplify the value generated by data. I can already mention a few examples of how deeply these regulations will impact stakeholders' activities. The DGA will enable data holders and data users to unlock the innovation potential of industrial data, with the support of labelled and neutral intermediation services who can help them to build data marketplaces. On the side of research, academia will take advantage of a dedicated process to access a large range of specific public sector data, which will significantly improve the impact of our scientific research. Finally, and most importantly, the DA will put a final stop to unfair contractual terms in B2B data-sharing partnerships, especially in relation to major BigTech companies. This will simplify customers' everyday lives by removing barriers when choosing a new cloud service provider. In line with these regulations, the French government has initiated a bill to secure and regulate the digital space; it is currently under parliamentary review.

With respect to the monitoring of intermediation services, the French government has opted for ARCEP, an authority which has a recognised background of pro-investment and economic regulation. The challenge now is to ensure the effective implementation of these new rules. This will not be possible without strong collaboration between data spaces and ARCEP in France, but also a vibrant European eco-system, spearheaded by Gaia-X, that thrives and gathers users and solution providers around this central idea of data sharing. Naturally, the technology and service providers who are currently most interested are well-known European cloud-service providers as well as some small and large companies specialising in data. But they would have accomplished nothing without the investments and commitment of world-class users. I am happy to see that the automobile industry, which was most present at the beginning, has been joined by energy producers, transport and mobility businesses, and of course by the aerospace industry, with Catherine Jestain from Airbus being the new chairwoman of the Gaia-X board.

All this energy has been able to produce common deliverables from Gaia-X policy rules to the Gaia-X federation services on which the European project SIMPL will be able to build. But also many concrete projects, such as Agdatahub in the field of agri-food data, EONA-X which is dedicated to transport and mobility data, Prometheus-X in the field of education, and Omega-X which is strongly supported by the energy industry. More recently, we have launched together with Germany and the European industry a new initiative called Manufacturing-X, which aims to develop cross-sectoral industrial data sharing. I hope to see the emergence of more transformative projects, especially for the aeronautics and energy industries.

In France, the community has been gathered and stimulated by the Hub France, which has been supported by Cigref. I would like to thank its chairman, Jean-Claude LaRoche, and Henri d'Agrain for their hard work. I am happy to announce that we have recently founded the Data Space Lab that is being launched by ENT and I would like to thank Anne-Sophie Taillandier, a well-known anchor of the Gaia-X community. This lab will be both a sandbox and a test bed to enable new projects to experiment with data spaces and data sharing in a secure and controlled way.

Finally, these new regulations, no matter how well-grounded and welcome they are, may represent legal and technical challenges for you. These will be discussed today. But I know I can trust such a strong ecosystem to solve them quickly and easily. France will make sure – and we are counting on the activism of Gaia-X – that the European legal corpus for digital technology is a springboard for growth and the strategic autonomy of our single market. To this end, and to conclude, let me stress that Franco-German cooperation is, and will remain, essential to an impactful implementation of our digital single market, leading to growth and progress for our citizens. We count on you to maintain the great dynamic we have managed to establish so far.

Implementing data sharing in Europe: The cases of DGA and DA

Jakob Rehof | Professor of Computer Science TU Dortmund University and Director of Research Strategy Fraunhofer Institute for Software and Systems Engineering

Hubert Tardieu | Independent Director, Gaia-X

Joëlle Toledano | Professor Emeritus, associated with the Governance and Regulation Chair, member of the French National Digital Council (CNUM)

Bert Verdonck | Chief Executive Officer, Luxembourg National Data Service

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Hubert Tardieu

The DGA will enter into force next week. The DA was adopted in June. The question is no longer which regulation to choose, but how to implement what has been agreed. We will discuss the implications of the decision to regulate first and fine-tune later, the central role of data intermediaries in the European data strategy, and a survey of eight lighthouse projects that offers feedback on the new regulations.

Bert Verdonck

We have developed a structured questionnaire to explore stakeholders' perspectives of the new regulations. Many initiatives are working on their business cases and use cases as they seek to understand how to gain traction, size and how to scale their activities, and use platform effects effectively. They are also working on organisation and governance and developing new technological tools to exchange data, automate transactions and ensure compliance. These pioneering initiatives are trying to establish effective relationships, with controlled, balanced governance and good technology choices in order to create interoperable frameworks and support future cross-sectoral exchanges.

Hubert Tardieu

Automated compliance is central to establishing trust within a data space. The European Commission is keen to explore compliance-as-code as a means of implementing regulations and reassuring users. The DA actively promotes smart contracts.

Jakob Rehof

Smart contracts and the underlying ledger technology are probably the single most important instrument for raising levels of compliance automation at present, especially in data spaces and ecosystems. Decentralised ledgers might enable the elimination of intermediaries in business transactions in the future. For the present purposes, however, we focus on smart contracts as enablers of the automation of basic compliance-relevant tasks and the creation of electronic archives of transactions. Importantly, they offer a place for identifiable and delimited components to act as targets for the testing and certification of key qualities. Smart contracts offer a basic hook for automatic compliance by design and could also be a good target for standardisation. They are particularly promising for data spaces and data ecosystems because the associated resources and technology can be shared, which enables economies of scale, cost-sharing and other advantages.

Europe is pioneering the regulation of software-intensive systems. Regulation of vertically-integrated systems has been underway for several years. The novelty with the DGA and the DA in this regard is that the regulator is trying to do the same for general business-related software, including areas that have previously been unregulated. It is interesting to see that article 30 of the DA promotes smart contracts for data sharing and imposes clear requirements in terms of security, functional correctness and so on. This is a great opportunity for Europe to take a leadership role.

Hubert Tardieu

New regulations for non-personal data will have specific requirements for regulated markets like health, finance and aeronautics. The member states are likely to interpret the DGA and DA in different ways at the point of implementation. What is your view on this?

Joëlle Toledano

The objectives of digital regulation in Europe have been carefully chosen: innovation, competitiveness, data sharing, fair practice, privacy and security. However, the organisation and implementation of this regulation has not been afforded the same rigour. Outside competition law, the Commission has little experience in directly enforcing its regulatory powers: it usually lays down the rules, then monitors actions and governments without exercising its responsibilities directly. This cannot be the case with digital technology, as regulation of the most powerful players will rely on strong action at European level.

Centralised action is unlikely to be sufficient to encourage the development of markets and innovation. Data is a central issue. Access to and use of data is the subject of around half a dozen regulations and as many different objectives. And just until now they are supposed to be enforced by almost as many national regulators.... And without European coordination. SMEs are likely to struggle unless there are structures to help them implement these requirements. A global vision of a dynamic European policy that respects privacy is required. The next European Commission should reconsider the organisation of digital regulation governance and data regulation in particular: one size does not fit all.

Hubert Tardieu

Value creation and distribution and cost sharing are also essential considerations that have significant impacts on value creation, sustainability and competitiveness. In the personal data market, the network effect shows that take-off can only occur if each side of the market reaches a critical size. What is your opinion? Is the dynamic of data-sharing likely to operate for non-personal data?

Bert Verdonck

There is not a single dynamic in scaling, but scale does matter and 'big' is an important word in 'big data'. Many initiatives have not reached the scale required to create impact, especially in the non-personal data area. Achieving the necessary scale, volume of transactions and number of participants is not easy and requires optimal knowledge of all aspects of the market, as well as effective investment, tools, governance and use cases. In this context, fragmentation is fatal, harmonisation is key and interoperability is essential.

Jakob Rehof

Data-sharing business cases are a major driver, but there is also a huge push from AI-based applications and huge interest in the transformative power of AI-based technology. It is not clear where it will lead, but a data-led transformation is underway and an enormous new economic driver is coming into existence. Because AI technology feeds on data, we must ramp up our ability to build, use and share data in order to keep up in the tech arms race.

Joëlle Toledano

Businesses cases are important but use cases must come first: without them, it is not possible to have a clear idea of the likely costs or impacts of sharing data. We must have more use cases. For one thing, it will help SMEs to establish their costs.

Questions and answers

Moderated by Hubert Tardieu, Independent Director, Gaia-X

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Boris Otto

It is important to clarify who will pay for the adoption and scale-up phases. Use cases are important but they will not deliver the data-sharing infrastructure that we require.

From the floor

Until you see the data, it is not possible to imagine what can be done with them. But if you can see data, someone has already made a significant investment. Making data available requires a strategy, and a strategy requires investment. It is important that you choose the right data in which to invest.

Hubert Tardieu

Use cases need to show how data-sharing will make a difference. For example, satellite data from Copernicus was not useful for fighting forest fires unless it was linked to real-time data from the ground. Providing the Copernicus data for free simply enabled start-ups to make money from European taxpayers.

From the floor

Data exchange implies a transaction, which requires a contract. Without shared civil law in Europe, what is the role of the contract in data exchange?

Jakob Rehof

It is said that smart contracts are neither smart nor contracts. Although they are not legal contracts, they can be used to implement certain parts of contracts and may help to align our understanding of the role of contracts relative to the new regulations. Smart contracts are “smart” in so far as they execute transactions automatically.

Éric Brousseau

There is legal convergence in Europe in particular for trade and economic related issues. Furthermore, parties establish a jurisdiction of reference when they sign a contract. This legal diversity within the EU is not a significant issue. Business cases, user cases, underlying technology and the incentive to join those initiatives are more important.

Amal Taleb

Trans-national contracts have existed for a very long time and European law provides directives for the resolution of issues. The bargaining power of the parties engaging in the contract is important. Shared data spaces might create opportunities for smaller entities to cooperate, engage or negotiate with larger ones. The DA states that B2B data sharing is covered by common law, contract law and negotiations. For B2C, the consumer is protected by a strong legal framework. I do not think it is too complicated.

From the floor

The DA uses the term ‘data sharing’, which is disconcerting. The sharing of public data is already well underway, but confidential data will not be shared. How do the DA and DGA address the sharing of the results of providing information? How can companies and individuals contribute their information for the common good?

Boris Otto

We must clarify how we allow for different kinds of third-party data use. Data does not always move to a third party, it can reside where it is and be processed by algorithms. Clarifying which kinds of technology can be used to address these different re-use scenarios would provide clarity for data-sharing initiatives.

Keynote - Implementation of the European Data Strategy: where do we stand?

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

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The Data Strategy

This is a crucial moment for the implementation of the data strategy: the instruments are in place and we now have to ensure they work as intended. Data and innovation are vital for tackling the major challenges that face us in health, the environment and so on. To enable Europe to benefit from the data that its companies and citizens generate, we must maintain control of them and ensure they are properly used.

The data strategy was adopted in February 2020 and is designed to build a genuine single market for data in Europe. The vision behind it has four key elements: data must be able to flow between countries, across borders and between sectors; ample data should be available for innovation; data should be used in full compliance with European values and rules, including privacy rules; and the rules on the access and use of data within the internal market must be very clear. The creation of infrastructure and shared data spaces is a central aspect of the strategy and is just as important as the underlying legislation

The legislative framework

While the DGA and DA are the focus of this conference, the Digital Markets Act and Digital Services Act are also relevant for data sharing. The Open Government Data Act makes troves of government data available for innovative use on the basis that it was paid for by the taxpayer. Data sets defined as 'high value' are freely available in machine-readable format.

The Data Governance Act and Data Act

The DGA and DA are the cornerstones of the vision for European data. The DGA aims, fundamentally, to increase trust in voluntary data sharing by regulating the organisations that bring data supply and demand together, and creating neutral data intermediaries to move away from the business model of platforms collecting data to exploit. It is important that service providers are neutral intermediaries so that the parties who generate data retain control over it. This is an important principle.

A new class of European Recognised Data Altruism Organisations will be established to promote data altruism and enable people to donate their health or other data for the common good. Public sector data that cannot be open data will be made available for innovation while registry data will be made available for research in ways that maintain its confidentiality. Member states are being asked to develop the technologies, infrastructure and supervisory structures required to achieve these goals. The European Commission is investing in research programmes, running workshops for data intermediaries, and working on a data altruism rulebook and registers. It welcomes enquiries from entities who are interested in registering as intermediaries or altruistic organisations. The European Data Innovation Board (EDIB) will launch shortly. It will ensure that member states' competent authorities are informed of activities in other states and will work on interoperability between data spaces and shared standards. It is crucial for the coordinated implementation of the DGA and DA. Nominations for board membership are currently being received.

The DA was agreed in June 2023 and is due to be published in early 2024, and will be applicable 20 months later. It focuses on fairness: who is allowed to capture the value in data and access and use it? Measures proposed under the DA provide consumers and companies with greater control over the use of data generated by connected products and try to balance the interests of consumers with the interests of the companies that have invested in these technologies to generate data. It provides clear rules on how to request and access data and makes it easier for the public sector to access private sector data in exceptional circumstances. It recognises the importance of protecting intellectual property rights and data of critical commercial importance and introduces a fairness test for contract terms in data-sharing agreements. It facilitates switching between cloud providers in Europe.

The DA sets out rules and mechanisms to enable interoperability through technologically neutral data-sharing tools and facilitates the use of machine-to-machine exchanges for automated compliance and the execution of contracts. This will help to ensure that agreements are robust and based on appropriate control mechanisms. Member states must designate bodies to enforce the DA. Questions of enforcement and governance will be considered in the next Commission period and at national level to make sure that authorities share the same vision and are able to work together effectively. The Commission is preparing guidance and model contracts and is organising in-depth workshops and expert groups on data-sharing and cloud-computing contracts to support the successful implementation of the DA.

Data spaces and funding

Legislative action should be accompanied by non-legislative actions. Funding is being allocated to the development of data spaces and Horizon Europe is supporting the development of vital technologies to preserve privacy. Data spaces are a combination of data infrastructure and governance arrangements that determine who can access and use what data. They are supported by agreements that facilitate interoperability. Ten common European data spaces have been announced in the data strategy and the digital programme is supporting 14 European data spaces in key economic sectors and areas of public interest.

From the floor

What is the relationship between the data innovation board and the data space support centre?

Yvo Volman

The Digital Europe programme is funding the data space support centre. The centre will guarantee coordination between data spaces, work on cross data-space interoperability, and provide the data innovation board with insights on interoperability needs and possibilities. It has a very important function.

The DGA, DA, Data Innovation Act and support centre are designed to enhance efficiency and flexibility and promote the creation of new business models based on rich industrial data. We want European data to work for Europe. Member states and initiatives like Gaia-X have a crucial role to play in the development of infrastructure and funding. The Commission will report on the state of progress before the end of the year. Skills shortages are a significant issue but our current focus is on the legislation, tools and data spaces we have available. Our aim is to make Europe a key player in the data economy. We welcome questions from interested parties.

Open discussion, questions and answers

**Moderated by Jakob Rehof | Professor of Computer Science TU Dortmund University
and director of Research Strategy Fraunhofer Institute for Software and Systems
Engineering**

From the floor

There is a major worldwide trend in data localisation, but the DA only applies to Europe. How does that fit with the overall data strategy you are implementing?

Yvo Volman

As data localisation within Europe is now forbidden, I assume you are referring to the availability of our data outside the EU. The DA is clear on this point: we will be open and assertive, not naïve. The DA is a declaration of how we want to handle our data and is not directed against any third party. It does not contain any data localisation requirements. Article 27 is designed to protect us from third-country spying.

From the floor

The DA is extensive and may be difficult for companies to implement. What guidance will be issued? Will a list of members of the European Data Innovation Board (EDIB) be published?

Yvo Volman

A list of members of the EDIB will be published; nominations from member states are still being received. Guidance is a delicate matter. The instrument is now European law, and the court of justice is responsible for interpreting it. We are willing to discuss its implications for specific use cases, but we cannot provide authoritative interpretation. The guidance document will attempt to explain without over-simplifying.

Éric Brousseau

Do you have a mid- to long-term vision for the EDIB? Might competing visions from the various national authorities lead to conflict? Data spaces will use different organising principles in different industries.

Yvo Volman

The EDIB is responsible for ensuring that member states understand how the DGA is being implemented elsewhere; it is not a conflict-resolution body. It is also intended to ensure interoperability between data spaces by building bridges and identifying norms.

Sebastien Picardat

Agriculture is a heavily asymmetric market. Do you think that the regulations are sufficient for regulating this type of market and monitoring abusive practices by global companies?

Yvo Volman

The relationship between horizontal legislation and sector-specific particularities is important. The data intermediary market should be monitored by national authorities. However, member states have chosen to allocate this responsibility to very different types of national authority, from competition authorities to data protection offices, which may make it difficult to achieve a common vision.

The Commission discussed the asymmetry of agricultural markets when creating the DA. It believes that the DA is flexible enough to accommodate these differences and has included governance mechanisms to support coordination with sector-specific bodies. If the DA is not fit for purpose in this or other markets, there is the potential for more granular, sector-specific legislation to kick in.

Hubert Tardieu

What are your expectations on unlawful data transfer and EUCS?

Yvo Volman

We seek to be open without being naïve. Unlawful data transfer should not happen. We are trying to prevent that with article 27 of the DA and similar provisions in the DGA.

Keynote by representative of research organization

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

Data Spaces for Data Sharing

European Strategy on Data

The European data strategy provides a great opportunity to leverage the value of data and its innovation potential in order to drive progress. The strategy makes it clear that data only has a value if it is used, and that data use should be maximised for our benefit. A key pillar of the strategy is that when data is used and shared, a fair balance must be found that respects the fundamental interests of the data provider and the legitimate interests of the broader community. Data is also more powerful when combined: when individual parties pool their data, we maximise the benefit. Sharing improves outcomes for everyone.

Regulation and Innovation for Data

Our understanding of a fair, balanced economy must be matched by appropriate legal provisions and supported by innovation. The European data strategy is a consistent, actionable, shared approach to creating the technology, data spaces and ecosystems we require. It goes beyond the recent heavy focus on engineering and technology by considering the need to balance competing interests in data and the value that derives from sharing data. By sharing resources, we can share burdens and improve outcomes, whether in terms of tackling major challenges like the circular economy or harmonising mobility apps to ease day-to-day travel. Data sharing is good for the individual and the ecosystem.

Trust as a Key Success Factor

Trust is a key factor in successful data sharing. Trust-building technologies and architectures tend to be very complex, with high associated costs. However, taking trust seriously is vital: participants in open ecosystems must be able to trust other participants and trust that the data they receive stems from a reliable source. Data providers must be able to trust that their data will not be mis-used.

Although data differs from tangible goods, many concepts from the physical world apply to the world of data. For example, the terms and conditions for trading goods are also relevant to the data economy.

Data Innovation and Regulatory Compliance

Technology must support data sharing and innovation but also adhere to the law. Solutions should be automated to the greatest extent possible. To achieve this, the texts of the legal provisions must be made machine-readable and conflicts, gaps and limitations must be identified. Data-sharing architectures that reflect those findings should be developed. It is important to note that the extra technology required to achieve these goals will need to be funded by business cases.

Proposal for a Delivery Model to Make Data Spaces Real

At present, the concept of data spaces is not accessible to most users or relevant to customer processes. We must change this, structuring what we do to ensure everyone sticks to their core activities and plays to their strengths. Organisations like Gaia-X bring together multiple players and the broader community and have much to offer in terms of the trust framework. We should also consider developing open-source software, perhaps via the Eclipse Foundation, as no one player in the European market is able and willing to invest the necessary resources independently. Cooperation would promote trust while formal standardisation would encourage widespread adoption. As the saying goes, if you want to go fast, go alone; if you want to go far, go together.

Keynote from industry

Amal Taleb | Director of EU Government Affairs, European Cloud provider SAP

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Although the European Commission has established remarkable legislative consensus in a short period of time, it is too early to talk about a legal consensus, as there are significant uncertainties about how the DA and DGA will evolve over time. They contain areas of uncertainty that will make it difficult for regulators and private companies to accurately assess the extent and precise nature of their obligations.

The DGA

The DGA is a concise piece of legislation, especially regarding data-sharing provisions. However, it is missing an important actor: the entity that is actually sharing the data. It provides important, necessary rules for other actors and intermediaries to ensure they are neutral and to clarify how they will and will not use the data. However, the short and fairly one-sided nature of the text raises questions about how it will be implemented, for example when an intermediary is asked by one party to delete data on the basis that it is illegal (as prescribed by the Digital Services Act), or how the integrity of data will be protected when actors join or leave data spaces.

There is a specific provision weighing on the intermediary on the need to prevent anti-competitive practices within the Data Space, but the DGA only pins down the intermediary on this notion, not the other parties to this data space: a perfectly honest, rigorous, compliant intermediary could find themselves at fault if the parties that are sharing the data are not honestly complying with competition law. Making sure the intermediaries are neutral makes sense in some respects, but it must be remembered that competition issues are found across all economic sectors. The implementation of the DGA is left to national authorities, which raises the risk of fragmentation. After all, the will of distinction is also known as the narcissism of the smallest possible difference and a national authority might feel the need to distinctively apply the rules.

The Data Act

Unlike the DGA, the Data Act is a broad, busy, complex text that combines the very different approach of each legislators. Even so, some issues have been left open. Although there are some progress like, the idea that data sharing can be prevented where there is a risk of 'being highly likely to suffer economic damage' was not in the original drafts, or the introduction of good faith providers to the cloud provision area is useful as it provides common ground for discussion. Even so, many things are not defined or are subject to articulation with other legislation. Actors will have to engage in a strenuous legal analysis to determine if they meet the criterion for being a data holder and understand the right scope of the data they can share or not share, especially in complex ecosystems that includes different IoT devices. Other problematic issues include the need to determine what happens if a direct competitor receives the same data and understanding what qualifies as a trade secret or intellectual property rights.

The DA and DGA are supposed to be mirror images on the question of business-to-government data sharing. However, the DGA clearly frames who should be asked and what can be done; these things are not as clearly defined in the DA.

There are significant grey areas on switching and interoperability which will pose a challenge for cloud providers, the authorities who regulate them and the judges who adjudicate on contracts. We are craving a real internal market and we risk creating fragmentation and loopholes through this capacity for local interpretation and gold-plating, especially as the public authorities and judicial systems in different member states do not have access to the same structures and resources. This will lead to increased fragmentation in the way we procure cloud in Europe in the coming years.

Finally, inter-operability must not add complexity when entities are trying to share their data. The article that is designed to support interoperability of smart contracts is attached to data sharing. When it comes to Switching interoperability, a question remains. Although it is usually performed by a European standard organisation; now we will have a question of hierarchy between standard bodies and industrial initiatives different bodies that work at a different pace and are differently able to handle complexity. It leaves open question of the way common specifications are going to work. Nevertheless, the framework is helpful, and the initiative was much needed. But we must now wait and see if it will help European companies, small and big, to grow in the ways that they wish.

Open discussion, questions and answers

**Moderated by Jakob Rehof | Professor of Computer Science TU Dortmund University
and director of Research Strategy Fraunhofer Institute for Software and Systems
Engineering**

Martine Gouriet

Users currently share the cost of interoperability. Not being able to switch from one cloud to another costs us millions every year. Isn't some regulation better than no regulation at all?

Amal Taleb

The cost of switching and egress fees varies by company and by solution. In some companies, the business model could be constructed on the level of egress fees that they charge; others do it differently. Regulation is needed but the rules should be homogenous across Europe, without national variations. We must also accept that one size does not fit all: an SME that uses a cloud solution to pay salaries is not the same as a big UK bank that decides to duplicate all its operations and data sets within Europe because of Brexit. Yet, we have this common regulation that set strict timelines independently of the complexity of the topic or needs of the user. The new text provides more flexibility for good-faith cooperation, but it would be a shame if the regulations were implemented in a way that limits flexibility and personalisation.

From the floor

Private players must determine the value and costs of their own data. Most hubs in Europe force public holders to share their data for free, even though it has a value and the cost of providing it for free to a competitor is huge. Who will bear these costs at the end of the day?

Boris Otto

Making data available is not the same as providing it for free. There is also an opportunity cost in not sharing data that could be used for other things as well as costs in terms of risk. Our challenge is to find the right balance between protecting the legitimate interests of the data providers who incur those costs and maximising the potential value of that data in various scenarios. The costs and benefits that occur depend on the individual use case and the quality of the data. Every data provider must make an informed decision about whether they are better off sharing data, assessing that against the benefits they will reap. If data sharing is the right answer, embrace that scenario.

In the past, most discussions were around technology and questions of economic viability and the business case were neglected. This needs to change.

Hubert Tardieu

We cannot separate discussions about the cost of information from those about the neutrality of data intermediaries. In the B2C market, data intermediaries are remunerated by re-using the data they have collected. Bringing data intermediaries into the non-personal data market gives rise to deficiencies that will have to be corrected. We must leave enough room for data intermediaries to be paid for their efforts.

From the floor

Do the DGA and DA provide sufficient legal protection to trade secrets and intellectual property rights?

Amal Taleb

The DA addresses these issues slightly differently in different chapters, but the foundation is good-faith cooperation and a push towards consensus. In the data-sharing section of the DA, the data holder has the sole burden of proving that sharing will be highly detrimental from an economic perspective. This should be straightforward if there is a request to send data to a third party in an ancillary market or a direct competitor, but the cost of identifying risks will be more difficult if it involves a newcomer in the market. We must be aware of possible window-dressing by foreign entities that will use these new vessels to circumvent protections. Some actors might move deliberately slowly to manage risk.

From the floor

You proposed a delivery model to make data spaces real. This raises many questions for me, including the involvement of the data-space support centre, which is a 3-year funded project.

Boris Otto

My aim was to adopt the perspective of user entities, many of which are confused and unsure where to turn for assistance. I believe that it would be beneficial if we could organise and present our assets in a way that solves real-world problems for users. The proposal I presented is intended to help these different institutions to identify and focus on their core activities, so we can avoid trying to do everything and as a result delivering nothing. I welcome your input to improve my proposal.

From the floor

Is there a specific definition of what it means for a data intermediary to be neutral?

Hubert Tardieu

An example of being 'not neutral' would be Amazon exploiting data that is collected when the merchant completes an exchange with their customer. The European Commission has made the data intermediary a cornerstone of how non-personal data will be shared. This is great, but it creates a danger in the B2C ecosystem, and we must now understand what it means to be neutral. The DGA indicates that a neutral data intermediary is like a post office that accepts and delivers an envelope but never opens it. Finding ways to optimise the role of data intermediaries will require us to improve our understanding of the economics of data sharing. This is a work in progress. The Gaia-X institute intends to continue this work with Paris-Dauphine University because we believe that the regulations have moved beyond our understanding of the economics and real-world operation of data sharing.

Amal Taleb

National authorities will designate and verify whether an intermediary is neutral, which will give rise to different definitions in different countries. That will bring complications.

Bert Verdonck

The jury is out. The DGA contains a baseline description, but different entities will interpret that in different ways. At present, there is no single definition that applies across Europe.

Questionnaire on Industry Stakeholder Perspective

Bert Verdonck | Chief Executive Officer, Luxembourg National Data Service

Lucas Eustache | PhD Student, Governance and Regulation Chair

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Study overview

Bert Verdonck

It is important that the implementation of these regulations is grounded in reality and reflects the real-life experiences, struggles and opportunities of data ecosystem stakeholders. Our questionnaire explores business, legal, technical and organisational aspects to shed light on the expectations, questions and strategies of stakeholders in light of the DA and DGA. A diverse sample of 10 key actors were interviewed over 15 hours. The regulations are well received from a legal perspective although some elements require clarification. Use cases and business cases are central to understanding the scope and dynamics of the initiative. The technical aspects and potential of data intermediaries were also explored.

Regulation: between expectations and uncertainties

Lucas Eustache

The new regulations will increase compliance costs and change features of our interviewees' business models. The impact of the DA on data spaces is generally indirect: the data spaces will not support the cost of compliance but will affect the relationship between the data space and the stakeholder, particularly during onboarding. Data sharing is a multi-sided market in which each stakeholder can occupy both sides of the market in their roles as data providers and requesters. As such, they can have different viewpoints on the same provision. There was broad agreement about the positive impact of abolishing service provider lock-ins, especially for SMEs and asymmetric markets. Some stakeholders were concerned about obligations to share data and the impact on their trade secrets. There is also uncertainty about the future AI act, which could limit potential new use cases.

Bert Verdonck

The DA generates strong reactions, both in its own right and in relation to other legal obligations. Its impact must not be viewed in isolation: it has broad implications that create complexity and concerns.

Use cases: a prerequisite for data sharing

Lucas Eustache

Use cases are at the heart of the initiative. Use cases can refer to several things, such as the creation of value-added services, cost reductions and efficiency improvements, as well as potential learning effects that will reinforce the initial use case and create a positive feedback loop. The maturity of the data space correlates with the multiplicity and value of its use cases.

There are various conditions for the materialisation of a use case. In a data-driven business opportunity at industrial level, a stakeholder may get involved in data sharing because they need to do something with their data. Collaboration at data-space level can also occur because stakeholders wish to share data due to existing relationships or membership of the same group or lobby. A third, less important condition is effective onboarding in the data space, whereby the data space coordinator uses their knowledge to develop and shape a use case and the learning effects feed back through the framework. These conditions are overlaid by technical, organisational, legal and business considerations. Use cases are a cornerstone of the initiative, but business perspectives are not the only relevant aspect.

Bert Verdonck

An initiative should scale within the initial use case and across use cases. Learning effects can improve the performance and attractiveness of use cases and a multiplicity of good use cases rapidly increases the richness and viability of an initiative. This is seen from the big platform companies, who constantly extend the number of offerings in their service portfolio to satisfy evolving user needs and to captivate their audience.

Lucas Eustache

The business model for a data space combines a classical network-and-platform business model. The construction of networks is subsidised by the European Commission or public funds. Data spaces have two revenue streams: value-added services and subscription fees. The willingness of stakeholders to pay subscription fees is influenced by the number and viability of use cases.

Technical choices tailored to use cases

In a sense, the aim of tech should be twofold: first, to lower barriers to entry by making the tech simple enough that even small companies without IT expertise can enter; second, to enable scalability and application efficiency gains. Data initiatives are still quite recent so the interplay between the tech and other dimensions of data spaces are still at proof-of-concept stage.

Bert Verdonck

Some of these initiatives started with a big data lake that people thought they might be able to exploit. In other cases, people developed the use case and made their technological choices accordingly. The more mature initiatives have developed by building up a sound business base and a good understanding of the operation, construction, governance and organisation of their network and creating an onboarding process, monitoring and compliance to suit that structure.

Data intermediaries, towards a new governance of data spaces?**Lucas Eustache**

Data intermediaries are open groups that create a direct commercial relationship between stakeholders. The meaning of 'open group' is not clearly defined but it should not exclude potential participants. The value of intermediation services is related to the difference between the data you own and the data you need: the more data you need, the more valuable the intermediary. The regulations define how data and services will be controlled to avoid the risk of anti-competitive practices: there will be interoperability between services with no lock-in effect. The DGA regulates data intermediary services and can limit their business models. It is not clear who will meet the initial fixed costs of building these networks.

Bert Verdonck

Data intermediaries must decide whether to take a risk investing in the creation of this activity, knowing that the business case relies on achieving scale but that other intermediaries will share the same ambition in an open market. The stakeholders interviewed had different opinions about the potential of this model.

Lucas Eustache

The regulation and new governance model will affect the business model of a data initiative and the incentives for other stakeholders to join. Interviewees' perspectives on the need for an intermediary were influenced by the structure of their market and their industry. Specific industry features will determine the business model for the data space. There is no one-size-fits-all solution.

Bert Verdonck

It would be interesting to analyse the role and scope of the data intermediaries in different business model patterns. Intermediaries have a more or less important role to play in each different pattern

Main Takeaways

Use cases are vital for providing the specifics that lawyers require and exploring the impact of different choices. The overall scaling of use cases should show the economic potential, viability and sustainability of data-sharing initiatives, especially once initial subsidies dry up. The value of a data intermediary is contested: some stakeholders are strongly in favour while others do not feel it adds value. These views are influenced by the industry and the market structure. Projects are still maturing, and some parties are struggling to find the necessary components to underpin their initiatives; again, this is influenced by the target industry. The technology chosen must be appropriate for the use case, the stakeholders and the type of exchange. The questionnaire had a fairly small sample; other contributions are welcome.

Open discussion, questions and answers

Moderated by Hubert Tardieu | Independent Director, Gaia-X

From the floor

Which legal entity would best support data spaces and data intermediaries?

Bert Verdonck

We have not gone into this level of detail as final organisational structures are still to be decided. Initiatives often divide the tasks into a governance/trust entity and an operating entity for deployment and infrastructure, then run them as separate entities to mitigate risk. The European Commission is working on a new instrument that might offer opportunities for consortia to create cross-border legal entities (EDIC = European Digital Infrastructure Consortium).

From the floor

During a similar conversation in November 2021, the answer was 'a cooperative entity'. European cooperative companies are extremely interesting legal entities; I invite all participants to explore them.

From the floor

Have you studied specific legal use cases? Do you view them as business use cases in your survey?

Bert Verdonck

Not specifically, although some of the domains consider use cases driven by legal considerations, such as contracts, legal and insurance. I am not aware of a specific legal-centric data space, although the creation of a European procurement data space could be an opportunity to set one up.

From the floor

Some industries do not see the need for an intermediary. Is that because they engage in bilateral agreements? Or are there ecosystems where they are not really required?

Lucas Eustache

Industries that are reluctant to use DGA intermediary services tend to be organised around a key player that already has a network based on its specific interests. They are not motivated to engage in a new process that would be open to their competitors.

Bert Verdonck

On the other hand, there are also positive drivers towards intermediaries. For example, smaller players in asymmetric markets might be motivated to set one up to break the hold of larger players. There is a lot of variation based on the starting context and the motivation of participants to change that situation.

Lucas Eustache

The stakeholders within a market do not always have the same opinions or priorities.

Éric Brousseau

Your survey highlighted the standardisation of data formats and processes to manage, store and label data so it can be used by different parties.

Lucas Eustache

Standardisation does not emerge as a clear issue. Again, stakeholders have different perspectives depending on their position in the market.

Bert Verdonck

In most situations, agreeing on a governance structure and a leading authority is more of an issue than technology. If participants are motivated to make it work, they will agree to a central standard.

Éric Brousseau

Would it make a difference if data and format standardisation were managed by a not-for-profit?

Bert Verdonck

Yes, that could be one way to smoothen that out.

From the floor

Will a report be published on the survey? Gaia-X is trying to work at European level to avoid the development of competing national initiatives. It would be interesting to know the perspective of the survey participants about their plans for scaling from regional to national to cross-border.

Bert Verdonck

At this stage, all the initiatives started with home markets but plan to expand to Europe or beyond. There is a risk of competing initiatives. Even if a data space grows in a territory, it needs to be able to collaborate and exchange with others. It is still too early to clearly identify specific use cases of interoperable data spaces. International cooperation is a key motivator for choosing these structures.

Lucas Eustache

Participants are all concerned about the risk of failure. Some are interested in competition between data initiatives but think that, by letting another party make the first move, they could benefit from their infrastructure and network without having to contribute financially.

Hubert Tardieu

The governmental advisory board is trying to ensure that member states are aware of different initiatives in other states to avoid this kind of issue arising.

Martine Gouriet

What is the level of maturity of these projects. Are they research projects or operational?

Lucas Eustache

They are all recent. Some data spaces are fairly advanced; others are still at proof-of-concept stage.

Bert Verdonck

They all plan to move to operational phase, reach critical scale and create real impact.

Lucas Eustache

It will take some time to create a proper network.

From the floor

Will you publish the results of the study?

Bert Verdonck

Yes. We intend to make a combined report of the survey plus the main outcomes from today.

Éric Brousseau

We encourage anyone who would be interesting in participating in the survey to let us know. We particularly welcome contributions from industry and potential data intermediaries.

Keynote Automated Compliance to help implementing regulation

Jakob Rehof | Professor of Computer Science TU Dortmund University and Director of Research Strategy Fraunhofer Institute for Software and Systems Engineering

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Compliance automation: the big picture

Computer scientists understand the world in layered models called 'stacks'. Typically, higher levels depend on lower levels. The way applications are written and created depends on the way the supporting systems and infrastructure have been established. Automation of compliance-related tasks could be tackled at the top 'RegTech' level, which is composed of bureaucratic and management systems that support governance, security policies and industry standards, or with a 'compliance as code' approach at the next level down, by manipulating software systems and IT management to script tasks to implement standards automatically. The lowest layer contains network protocols and services and cloud infrastructure. We will focus on the third, systems-oriented layer that contains operating system services and federation services for things like authentication, credentials and access rights.

A smart contract is a computerised transaction protocol that executes the terms of a contract. They do not have an AI component, but they are smart because they automatically execute code. They are not legal contracts, but they could automate the execution of parts of legal contracts.

From the perspective of a computer scientist, Art. 30 of the DA is remarkable: it has scope and weight and talks about specific, technologically advanced subjects. It provides an opportunity to create shared services that relate to and support smart contracts and could, in turn, be used to support automated compliance by design. Automated compliance by design aims to provide trusted code for transactions and automatic archiving to support regulatory requirements. It is an important concept because it emphasises that automation has inherent limitations, both because the human component cannot be eliminated and because there are limits to what can be automated. Systems must be designed for automation and to enable automatic methods.

Data spaces and data ecosystems are the chief enablers of automated compliance by design because they enable the sharing of legal interpretations and standards, governance structures, technology platforms and trust frameworks, trusted components and infrastructure, as well as costs and intellectual power. Smart contract facilities may find their place alongside things like trust anchors, logging facilities, identity and access management, and federation services.

The role of smart contracts

The internet is a computing infrastructure that has grown, without central control, to a point that has changed the world completely. It is possible that the regulated data sharing could be enabled by adding a regulated layer to the TCP/IP protocols that underpin the internet. This would allow the internet to operate as the hardware/systems layer while host-to-host transport layers would operate as the distributed ledger, allowing people to move data in a secure and tamper-free way. An application process-to-process communication layer could enable the smart contracts, providing an immutable and secure transaction record, enabling the well-defined automation of contract logic, and providing an identifiable and delimited target for automated compliance that might qualify as a 'possibly verified asset'.

It is difficult to certify the properties of a piece of code when those properties can be spread out throughout the code and the system. Smart contracts establish locations where compliance-related properties can be checked. Art. 30 of the DA covers vital topics like avoiding functional errors, withstanding manipulation by third parties, and ensuring safe termination and interruption of compromised processes, as well as archiving, continuity and auditability.

The DA also raises challenges. For example, the regulators sought to be technology agnostic, which may have led to lack of clarity in some areas. It is important to consider the design possibilities and tensions inherent to the design space for smart contracts and related technology. For example, decentralisation is a key element underpinning security and trust in classic blockchain technology. Centralisation could offer benefits but undermine other key components in the process.

A 2021 report for the European Commission by Thibault Schrepel discussed the concept of a ‘smart contract factor’. This is the idea of providing trusted code templates and solution patterns that could be certified and tested in a way that no single participant would be able to achieve independently. It offers significant potential for data spaces and data ecosystems and supports the idea that, by sharing, we can achieve more. The use of trusted code repositories or factories could also be considered and supported by shared data spaces. Terminability must also be built into smart contracts so they can be prevented from executing if unintended behaviour or programming errors are identified.

In order to drive progress in automated compliance by design, we should focus on: developing repositories of tested or verified smart contract templates and automated tests, monitors and partial proofs; exploiting and standardising smart contract infrastructure in federation services and using advanced techniques from other areas of computer science; and sharing smart contract test beds and infrastructure to avoid the high costs associated with real-life errors and security problems. It should be noted that BigTech is already working on these points in the US. Europe must be willing and able to assume leadership in these hugely important areas.

Summary

We must support automated compliance by design in data spaces and data ecosystems. The advantages of doing this would include lowering barriers to entry and costs, pooling intellectual effort, creating trusted certification, testing for interoperability requirements, and taking advantage of existing pieces of the puzzle such as trust anchors and automated trust extensions. They must be integrated with compliance levels like the Gaia-X Labels to provide flexible strategies. We must be prepared and willing to use advanced techniques, including emerging concepts like secure multi-party computation or verified computing. As well as being fun and rewarding, this will enable us to meet the regulatory requirements for functional correctness, security and logging that are found in Art. 30 of the DA.

Open discussion, questions and answers

Moderated by Hubert Tardieu | Independent Director, Gaia-X

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Hubert Tardieu

Automated compliance by design is one way to implement all the regulations discussed today.

From the floor

This superb presentation emphasised that the challenge is not business or technology, but the interplay between business, technology and regulatory compliance. We will have issues when lawyers in the member states interpret this complex content differently. What can the Commission do to provide a framework for implementation? How can we put it into practice?

Jakob Rehof

The short answer is to place it in the context of data-spaces and ecosystems and the notion of sharing. Implementing the whole legal-technological interface could be a huge problem within one organisation, but by pooling resources through structures like Gaia-X we can try to master that interface in a more general way. We cannot resolve all of the issues, but we can move ahead by working together.

Boris Otto

We need to decide what we are willing to invest and what costs we will carry to achieve the trust that European values are based on. This presentation shows a way to share and lower the costs of moving towards a higher trust level. I like the idea of sharing this burden because Gaia-X is a real strength.

Hubert Tardieu

Discussions about diversity across countries and sectors will help people to understand what is at stake and lead us to the beginning of an answer.

From the floor

Do you think Art. 30 of the DA is complete or are some requirements still missing?

Jakob Rehof

It is already pretty comprehensive. There may be issues with it but it is not too narrow.

Pitches on stakeholder perspectives – legal, governance, business, technology, ethical

Martine Gouriet | Director Digital Uses, EDF, and Director of Gaia-X

Oliver Ganser | CEO Catena-X Association and Industry Consortium

Véronique Lacour | Group Executive Vice President Transformation and Operational Efficiency, EDF

Pascal Belmin | Vice President, Head of EU Aviation and Regulatory Affairs, Airbus

Oscal Lazaro | CEO, Innovalia & Data Space, 4.0 Coordinator

David Krieff | Director of Information Systems, ADP Group

Sébastien Picardat | CEO, Agdatahub

Martine Gouriet

This session will explore what is happening in the participants' different fields and the importance of data exchange in their sectors.

Véronique Lacour, what are the key data challenges in your sector?

Véronique Lacour

As an energy company, EDF's main challenge is to build a net-zero energy future with innovative solutions and services. We will build that future by switching from fuel to electricity, enabling customers to be actors, and providing cost-effective, carbon-free electricity. Both decarbonisation and electrification will require more digital and more data to monitor and pilot energy demand at industrial and individual level. Smart charging for electric vehicles will help us to manage peak demand, take full advantage of pricing and support the transition to electric mobility. Intelligent control of charging based on real-time data about battery charge and power-generation levels could enable us turn the batteries of parked vehicles into an energy reservoir for storage. Sharing information through cross-sectoral data spaces will support the energy transition and explains why EDF is supportive of these initiatives.

Martine Gouriet

Sébastien Picardat, agriculture has a few large players and many small players. What is your experience?

Sébastien Picardat

Agdatahub is a private company owned by the farmers' organizations (55%) and public institutions (45%). It was formed to help around 400,000 French farmers access and keep control of their data and improve their revenues in a heavily asymmetric market that could be controlled by a handful of key players. Data is collected by connected agricultural devices and machines, to be sent across the world for analysis. The results are used to plan preventive maintenance but also to set international prices based on crop quantities and quality, which in turn affects the revenues of the French farmers. Farmers are not given access to this data, which limits their ability to understand and grow their own businesses. Agdatahub aims to exchange data transparently in a trustful environment. The DGA and DA are not perfect, but we fully support them because it is a first step forward.

Martine Gouriet

Oliver Ganser, what is Catena-X and what are the main challenges in the automotive industry?

Olivier Ganser

Catena-X is a European initiative from automotive industry partners and software providers that aims to develop data chains that fully cover all business processes so we can more effectively manage issues in our industry such as quality, carbon footprint and material flows. It started in mid-2021 with 28 partners and now has 166 partners across the world. The intention is for data chains to link raw-material suppliers to first-tier suppliers to OEMs and back to recyclers. After two years of work, we understood that many fragments of the solution already existed, but we required architecture, technologies, policies and legal frameworks to make them work together. Catena-X should launch in mid-October. As it is entirely open-source and has a holistic approach, other industries are interested in adapting it for their industries.

Martine Gouriet

Oscar Lazaro, what are the challenges from an international point of view?

Oscar Lazaro

Catena-X is making a remarkable effort in terms of end-to-end and horizontal integration. However, we need to expand this initiative globally addressing also vertical integration challenges; since many industries are dealing with challenges related to the energy and ecological transition. Catena-X provides evidence that data sharing and data spaces could help industry to meet these challenges. In manufacturing, it has become clear that very significant, coordinated investments will need to be made by private industry and public authorities if we are to fulfil our individual goals and projects at sectoral and national level. Coordination and alignment are key for maintaining an overview that allows industry to work across sectors and across countries. The data space 4.0 was created to promote common foundations for the effective exchange of trusted data in the creation, production, consumption and reclamation of goods. It is intended to address the needs of the whole ecosystem, at all tiers, including small, specialised companies.

Martine Gouriet

This is very ambitious. David Krieff, you have clear targets related to the 2024 Olympic Games in Paris.

David Krieff

EONA-X is a data space for mobility, transportation and tourism. When conversation turns to data spaces, people usually look for an exit, look bemused, or raise concerns about data privacy. Transport companies can already share data with other companies as long as it will be used in very limited, pre-agreed ways. Airports are highly motivated to manage demand, as reducing peak activity reduces the need to construct new capacity and manage the associated economic and environmental impact. Shared data spaces would make it possible to lower pressure on airport infrastructure by communicating in real time with partners and improve the user experience by providing travellers with relevant updates and information.

All the companies in EONA-X are IT-focused businesses that will be involved in the Olympic Games. This event sets a useful deadline for establishing the infrastructure and learning what does and does not work. We intend to provide a great experience at the Games for athletes, authorities and spectators.

Martine Gouriet

Pascal Belmin, what is at stake within Airbus and what are your main challenges relating to data?

Pascal Belmin

Data has four key applications in our industry. Production data enable us to analyse root causes and correlate events in new ways. Flight data from planes enable us to optimise and predict maintenance. Satellite data allow public authorities to monitor the weather and environmental issues. Air traffic management data can be used to optimise air trajectories; this alone could reduce CO2 emissions by 10%. As regards common data spaces, we work in an industry with two key players and have suppliers in 100 countries. Our solution must be worldwide and must include shared suppliers who deal with other industries. Replacing the vertical model by an end-to-end shared data space would be revolutionary in terms of supply chain management, flow optimisation and traceability. We are investigating whether this can be achieved in the short- to medium-term at a global scale.

Martine Gouriet

Véronique, what are the main pillars of data sharing?

Véronique Lacour

Digitalisation brings huge opportunities, but we need a secure, trusted, sovereign environment where we can easily store and save large amounts of public, sensitive and highly confidential data. We need data sovereignty to secure energy sovereignty. In a strategic sector like energy, data sovereignty is a prerequisite for data sharing. This is one reason why EDF is promoting the construction of shared spaces on trusted cloud infrastructure. Trust is based on three elements: a high level of cyber security, strong control of data, and immunity to non-European laws to prevent our data from being transferred to non-compliant countries. These three pillars are in the DA. We believe the DA will bring value to all sectors.

Martine Gouriet

Sébastien, you have a strong position regarding the DA and data intermediaries.

Sébastien Picardat

Some participants in Agdatahub fully support data intermediary status because they think it is a perfect tool for managing an asymmetric market with oligopolistic or monopolistic tendencies. For sixty years, EU farmers have innovated to manage market risks for raw materials and prices, but always with top-down regulation that makes it clear how the market works between supply and demand. As such, a data market with a neutral third-party intermediary to connect the data users and providers makes sense to them. In terms of the business case, Agdatahub is the coordinator of the consortium selected by the EU Commission to make proposals about agricultural data spaces. Connecting with existing national platforms in some Member States is one of the key challenges we face; finding a solution will require business cases and technology. We believe that data intermediaries could be adapted for SME interactions with global companies.

Martine Gouriet

David, do you share this view of data intermediaries and the DA?

David Krieff

Our first reaction on hearing about data intermediaries was bafflement: why would anyone want this status if the whole point of having data is to use them? The reaction stems from the fact that our industry mainly performs B2B exchanges and we do not have lots of counterparts with whom to exchange data. Even if it is not immediately useful to us, it is good that this new mechanism is on the table and available. In data spaces for the Olympic Games, we are building catalogues and normalisation, defining use cases and setting up a technical platform that will execute the contract and create a pipeline for data exchange. Companies are defining use cases for their needs only. We know from previous experience that there is a clear risk from having two-sided market mechanisms meeting in a platform.

Martine Gouriet

Oliver, can you elaborate on the challenges you face around automation?

Oliver Ganser

If we allow data spaces to work together, we can create value in a data space foundation. The aerospace and automotive industries are not so different and it may be possible to add value by building synergies. Europe does not have many opportunities to make a difference in digitalisation: hyper-scaling, AI and quantum computing are not European inventions. Europe can own the data space concept and use it to develop a digital economy. It is important that we articulate and support what we want to achieve through regulatory frameworks, how we want to strengthen our economy, and how we want to create value in the future. I strongly believe that this starts, not through regulation, but through automation. Automation seeks to scale, from a legal point of view, the technical elements as well as the flow of data and provides a framework that scales to cover billions of transactions a day. It is not just about technology and standards but also about ensuring that it scales to cover a lot of people and a lot of transactions.

Martine Gouriet

Pascal, what is your view on this text and on value creation?

Pascal Belmin

I agree completely with Olivier. The DA has many positives, but there is an issue with sequencing. The first step is usually to build voluntary data-sharing ecosystems which encourage innovation and bring people together. If that fails, regulation can be used to force a transfer that would not otherwise happen. That is the logical order for regulation. The DA immediately pushes a data-sharing obligation without a real impact assessment. In some sectors, there was a need to address clear market failures; in others, like ours, I believe it will make life more complicated and could distort existing incentives. It also does not go far enough to protect sensitive data like intellectual property and trade secrets or sector-specific safety data that could be dangerous in the wrong hands. It is notable that the EU is alone in regulating this. Some very complicated questions were left unresolved until the last minute; doubtless others remain. Nevertheless, it must be implemented, with all the challenges it brings to all aspects of our business. We must know what we are aiming for: it cannot be more regulation, unless it has a very specific objective.

Martine Gouriet

Oscar, what is your view?

Oscar Lazaro

I agree. There is a lot of uncertainty for OEMs and equipment providers. The reasons for establishing this regulation are good but its implementation will be complicated. We have been discussing horizontal implementation, but vertical integration with providers, including SMEs, within Europe and around the world will be central to optimising production. The DA will provide some legal and technical continuity as we navigate this difficult terrain. Manufacturing is a global activity. A stakeholder workshop we held concluded that success does not just depend on providing such continuity but on making things easy, fast, simple and cheap. If we cannot achieve this and integrate automation, we will not fully achieve our goals.

Martine Gouriet

We discussed data sovereignty. I would also like to hear other views on this point.

Oliver Ganser

Data sovereignty must be at its highest level for each individual participant: they must know what is happening with their data and what it is used for. We do not work with data intermediaries at present because we believe it is important to understand the impact of your data, who is working with your data and how, and that you control those decisions. We do a lot of education on data sovereignty, identity sovereignty and service sovereignty. We have developed certificates and credentials to understand if the other user is credible and if the software is sovereign and respects our standards. To create real value in a data space, these many links must work together. We have many single solutions but we need all the layers to create value. The DA is a solid foundation for making data sovereignty enforceable and trusted.

Sébastien Picardat

Data sovereignty and food sovereignty are inextricably linked, as the war in Ukraine has shown. It is of the greatest importance that we keep control of our data on French and European level

David Krieff

Sovereignty goes both ways. In the airport business, being able to reassure companies that they can keep ownership and control of their data is really advantageous and a strong foundation for partnership.

Pascal Belmin

If you want digital sovereignty, you probably need the chips. The Chips Act is clever from that perspective. That resiliency and non-dependence logic must be extended to other technologies, like super-computing. We have to think how to build that equipment chain in the EU because it is a key component of sovereignty. We also need cloud infrastructure and solutions. There is an investment issue here that needs to be decided at national and EU level. This will be difficult to achieve. In terms of regulation, I think the quantum leap to sovereignty will be through consolidated investment, aligned national and EU strategies and private sector activity on shared data spaces without additional legal complexities.

Martine Gouriet

We have a number of events to look forward to: the launch of Catena-X in October, a Gaia-X seminar in November with the demo of Agdatahub, the European elections in June, and the Paris Olympics in July.

The main takeaways of this session are that there is a lot of value in data sharing and that we must be international, open and assertive but not naïve.

Open discussion

Moderated by Hubert Tardieu | Independent Director, Gaia-X

Hubert Tardieu

This session will explore how key stakeholders are approaching the regulations and ask how stakeholders can be helped to understand the economics of data-sharing.

From the floor

Personal data sharing has not been discussed, even though everything is moving towards personalisation. Are you working on personal data use cases and if not, why not?

David Krieff

There is a lot of value to be extracted by increasing cooperation between companies. B2B is an under-developed area: there is tremendous value to create and a whole complex to be built. GDPR is clear but different companies need to be able to agree to share customer data, which raises two main issues. First, companies are usually reluctant to share data which is central to their business – the sociology of shared data spaces is important. Second, we need to bridge a gap that is not the same for everyone. We are aiming to offer services to people without sharing their data but by articulating our services in a different, more accessible way. We need to ensure that each company does not learn about the other companies' customers in the process.

Sébastien Picardat

In the farming industry we are mostly dealing with legal entities, not personal data.

From the floor

GDPR influenced other parts of the world to reflect on data privacy. Do you see any signs that other parts of the world are influenced by the EU's decisions on the DA and DGA and might wish to align?

Oscar Lazaro

It is probably too early to provide a definite answer. However, when we have offered opportunities for collaboration on manufacturing shared spaces, our counterparts have immediately shown an interest. I think that is a good indication that the EU is providing leadership in this area. We do not seek to impose our rules, but we are happy to create an environment where cooperation can take place.

Pascal Belmin

The incoming EU Commission will have to decide what we want to create and invest in. If we identify a project that we want to build on a multi-country basis, like Airbus, we need to produce one object, whether it's infrastructure or cloud, so the member states, the EU and private industry can come together around that goal. Fragmentation is fatal.

Bert Verdonck

The greatest sense of urgency is now with the AI Act. Many countries seem to have been taken by surprise by the speed of generative AI and are scrambling to get effective regulation in place. This might make people realise that they also need to get control over the collection and use of their data.

From the floor

What value will individual farmers get from Agdatahub?

Sébastien Picardat

Agdatahub is heavily focused on creating value for farmers and agrifood actors. All of the use cases we are building are 'B2B2Farmers'. The goal at the end of all business cases is to distribute value along the chain by increasing the farmers' revenue, either by increasing their turnover or reducing their costs.

From the floor

Member states have a key role in connecting European legislation with specific data space projects. What role do you envisage for member states in these projects? How can we improve that connection?

Martine Gouriet

There is a key role for national stakeholders because there is a need for coordination as projects are set up. In operational terms, the DA will be implemented and interpreted at national level.

David Krieff

States have an organisational role in many systems. There will be great potential to use data spaces and make them part of the social ecosystem.

Sébastien Picardat

There will be a debate next month on the place for Member States in some entities, like EDIC (European Digital Infrastructure Consortium), which develops, mutualises and operates public infrastructures for public organisations and companies, specifically agri-food companies.

Hubert Tardieu

Could you explain more about EDIC?

Sébastien Picardat

The European Digital Infrastructure Consortium is part of the Digital Europe programme to mutualise infrastructure for some sectorial use cases by developing a trans-national project between Member States and private entities. In the agri-food sector, EDIC could be an option for developing and implementing EU infrastructures for public use cases and business use cases.

Pascal Belmin

We need to build collaboration and coordination between the EU, member states and the private sector to create a dynamic that will deliver concrete projects.

Hubert Tardieu

This is why Gaia-X's ability to intervene and compensate is so important. An EDIC will be created in the next six months but the effort will be enormous.

From the floor

In recent years, support organisations and work groups have developed shared language around data space initiatives, interoperability and governance, but there is still a lot of policy work required. What is your take on this? Do you feel that it is an issue?

Hubert Tardieu

It is too early for the sectors to have an opinion. Some are well organised, but others are still new and trying to get information about existing data spaces. For the time being, it is primarily trial and error.

Amal Taleb

These data spaces are not all at the same stage. Another issue is the importance of the tradition of contract and contractual agreement. Companies that were willing to share in a common platform provided by an intermediary go willingly with known entities. Governance rules and interoperability provide a framework for shared data spaces, but there is a long history of commercial practices that usually take the form of a contract. One of the best ways to obtain interoperability might be to embed and reintroduce what is already proven to work in contracts.

From the floor

What are you doing to measure and communicate on trust and trustworthiness in digital ecosystems?

Sébastien Picardat

In our data space, all subscribers have their own digital and legal identities based on a public registry: by design, we know that all the participants are themselves. By the end of this year, the full data offer will be digitally signed and certified. As a digital data intermediary, there will be a registry for transactions.

Bert Verdonck

There are not many quantified trust measures. Gaia-X is thinking of indicators that could be used to aggregate trust across ecosystems where some participants are known and trusted and others might be less trusted. There is clearly a need for transparency across the chain in terms of the participants and the quality and reliability of the data that is being shared. It would be useful to have aggregated trust scores.

From the floor

There was a question about ‘what do we want?’ There are lots of practical areas where Europe could be leading: how do we get these things moving ahead as well as exciting moonshot ideas like fusion and quantum computing? It has been mentioned that data moves at the speed of trust. I wonder if it actually moves at the speed of control?

Hubert Tardieu

EONA-X is targeting what you said: I want to go somewhere, get me there.

Conclusion and wrap-up

Jakob Rehof | Professor of Computer Science TU Dortmund University and Director of Research Strategy Fraunhofer Institute for Software and Systems Engineering

We have a huge opportunity to secure European values in a fundamental area of life. For too long, we have been willing to leave leadership to the US and other countries. This is understandable: creating these technologies has not been critical to value creation for European companies. However, these topics are moving closer and closer to the path of necessity: if you are not able to play in a leading way in this space then the rest is increasingly unimportant.

European leadership in this sphere should be seen as something that we want. AI will be a huge driver and other countries will need to follow up. There is an opportunity to take on a leadership role, but there must also be a willingness to pursue it aggressively and follow through on the technological aspects.

Hubert Tardieu | Independent Director, Gaia-X

We need to stop talking about what we do not want and talk about what we do want. Use cases are essential for overall scaling and understand the value of data intermediaries. We must revisit the economics of data sharing in all its many aspects. This is extremely important and directly linked to questions of scale. The mechanisms are already known in B2C but must be invented for B2B.

For Europe to take leadership, it must develop regulations that are compatible with designs that can be used by automated compliance. It was interesting to hear speakers say that data intermediaries are not necessary if you want to retain data sovereignty, and that food sovereignty and energy sovereignty depend on data sovereignty. The outgoing Commission has created a lot of regulation and the new one must now implement. We must nurture and support them as they do this. Finally, there will be a gigantic talent shortage in these domains. We must develop a curriculum to educate the next generation of engineers, lawyers, economists and make sure they understand what is at stake.

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

The economics of data sharing is an interesting combination of short- and long-term effects that needs to be better explored. Sharing data allows firms to efficiently exploit existing capabilities and benefit immediately from direct economies and efficiency gains. It also allows them to learn and enhance processes, resulting into a positive feedback loop. In the initial phase of the cycle, however, data-sharing might be considered by some stakeholders as costly and risky, impeding its development. Thus, users and data producers must be incentivised to share their data and share the costs and benefits fairly.

The European legislation takes an interesting approach as it allows for bottom-up experimentation without imposing a model on any industry. It offers a natural way for business communities and industries to organise themselves to suit their own requirements. Different models will emerge and compete or merge: this is not how we usually consider policy in these domains. To succeed, all stakeholders, including regulators, will have to develop new capabilities. Given the different logic of the different industries, we will doubtless develop different solutions for different types of value chain. The academic community could help to by contributing to this collective learning process.



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