ERT

Expert Paper

B2B Data Sharing

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Foreword

Enterprise data is increasingly seen as both a strategic resource and essential utility for economic progress worldwide. New digital business models are shifting from closed, linear value chains to open, integrated ecosystems in which the ability to easily exchange data in a secure way is key.

The industrial data ecosystems being formed today will be tomorrow's innovation platforms. Success or failure in the data economy is likely to determine which of the world's powers will lead economically in the coming decades. Facing fierce competition and with time running out to act, Europe must seize its chance and put in place the building blocks that will enable it to thrive in the coming open economy for business data. Key planks of the EU's legislative and policy agenda, from the Industrial Strategy and Digital Decade targets to the Data Strategy, should work in harmony to achieve this and unleash the potential of European business. The reward, if Europe succeeds, will be immense: global leadership in the next wave of digital transformation and a major boost to European growth, innovation and entrepreneurship.

When it comes to the data economy and business-to-business (B2B) data sharing, everything is still to play for. While Europe might have lost ground in the race for consumer platforms, thanks to its strong industrial base it is well positioned to become the world leader in B2B data-driven business models.

To explore this area further, in December 2019 the European Round Table for Industry (ERT) launched the 'B2B Data Sharing' Taskforce to deepen its cross-industry understanding of data sharing and the use and re-use of that data in a B2B context. The Taskforce's mission is to:

a) explore the business potential and business model of industrial data sharing

b) identify bottlenecks to its development in Europe and

c) provide recommendations to overcome these.

The Taskforce members are senior executives of companies led by Members of ERT that drive B2B business strategies or data practices in their organisations.

Our report finds that, while B2B data sharing is growing in Europe, a number of challenges still need to be overcome to fulfil its potential and to become a global leader. To address these challenges, our report suggests a number of ways forward, with a focus on data protection and privacy, a secure and resilient cloud & edge infrastructure, common data standards and investment in data analytics capabilities.

We believe that industry's efforts should be focused on putting access to data, data usage and creating value out of data at the heart of what European businesses do. Rather than being a mere afterthought, data sharing – where relevant – should be incorporated at an early stage in product design, technical standards and corporate strategy. Above all, this means putting in place the governance frameworks and technical capabilities needed for organisations to truly embrace data sharing as a core part of their activities.

And while, when it comes to B2B data sharing, industry should play the leading role, there is a clear part for policymakers to play in creating the policy framework and incentives that will secure Europe's success. Our report provides a detailed set of policy recommendations for doing so.

We are on the cusp of a revolution in industrial data sharing. It will unlock huge benefits, in terms of growth, productivity and societal welfare, and contribute to Europe's economic recovery from COVID-19. With its world-leading industrial companies, high levels of innovation and pioneering approach to digital regulation, Europe has all the assets needed to succeed in B2B data sharing. However, it must act now to avoid falling behind.

Executive summary

Key findings

- **BUSINESSES BENEFIT FROM B2B DATA SHARING, USAGE AND VALUE CREATION IN MANY WAYS.** According to companies led by Members of ERT, the most significant benefits from data sharing are developing and enriching services, training artificial intelligence (AI), improving customer experience, boosting operational efficiency, and differentiating products and services.

- **B2B DATA SHARING AND USAGE IS GROWING, BUT ITS POTENTIAL REMAINS UNTAPPED.** B2B data sharing and (re-)use will be a tremendous driver of innovation, business creation, productivity and economic growth, and is set to grow significantly in future. But while some pioneering companies are already experimenting with industrial data sharing, B2B data sharing has yet to achieve true scale in Europe.

- **EUROPE'S OPPORTUNITY TO LEAD IN B2B DATA SHARING AND USAGE.** Supremacy in the B2B data economy remains there for the taking. With its strong industrial base and technological capabilities, Europe is well positioned to secure leadership in B2B data usage and strengthen its economic recovery by developing practical business use cases based on data sharing.

- **A NUMBER OF CHALLENGES STAND IN THE WAY OF EUROPE'S SUCCESS.** These include legal, data privacy and interoperability issues, as well as the absence of common standards for B2B data sharing and a lack of scale in Europe's cloud infrastructure.

- **B2B DATA SHARING RELIES ON TRUST.** Businesses are wary of the risks posed by data sharing. For businesses to fully embrace B2B data sharing, they need to trust it. This trust can be provided through greater legal certainty, a safe environment for learning and a real understanding of the commercial opportunities it offers.

- **THE FOUR PILLARS OF B2B DATA SHARING AND USAGE.** Successful B2B data sharing models are built on four essential pillars, these being (1) a reference architecture based on infrastructure standards and widely adopted technologies, (2) common data standards and governance rules, (3) B2B marketplaces for data, and (4) data analytics, AI and other technologies able to generate value from data. Guaranteeing the existence of all four pillars is key to the emergence of a safe and innovative ecosystem, where trust prevails.

Policy recommendations

European policymakers and industry should join forces to eliminate bottlenecks and fully exploit the potential of B2B data sharing.

The EU should facilitate voluntary sharing of B2B data while avoiding premature regulatory action. Europe must strike the right balance between protecting privacy and stimulating research and development and innovation by making more data available for access and re-use. Underpinning this must be the preservation of contractual freedom as a guiding principle.

ERT believes that the European Commission's Data Strategy, as adopted in February 2020, provides a solid foundation for fostering B2B data sharing and realising the overall vision of European leadership in the Digital Economy. A swift execution of this strategy should now be the priority. To this end, ERT recommends the following actions listed in the table opposite.

Create a European Single Market for Data	Remove barriers to the free flow of data and maximise data availability. Enable better access to public sector data. Consider a general obligation to grant access to public sector data, with due consideration for existing intellectual property rights, investments and business agreements. Ensure a much more consistent, harmonised and innovation-friendly application of data protection rules across the EU.
Establish common European Data Spaces	Develop the systems, tools, standards, frameworks and platforms needed to operate data spaces. Involve industry in establishing the operating and governance model of the data spaces to ensure these reflect the practical needs of businesses. Ensure data spaces attract both large and small companies and both providers and users, so that their benefits are widespread. Ensure that each data space has a set of specific business cases with clear value creation. Build upon existing industry initiatives and know-how.
Encourage industry-driven standardisation	Ensure that standards for B2B data sharing are industry-driven and enshrined in international standardisation organisations. Encourage European companies, in particular SMEs, to actively play a role in industry-driven standardisation. Enable data spaces to play a role in defining requirements for common standards.
Address horizontal barriers for B2B data sharing	Improve data quality and agree common and harmonised cybersecurity rules to enable a consistent and compliant level of protection. Respect the fundamental principle that data sharing by companies is conducted on a voluntary and contractual basis (only impose mandatory data access on companies if there is a proven market failure or clear misuse of a dominant market position). Use the review of the EU antitrust guidelines on horizontal cooperation between companies to provide greater legal certainty on B2B data sharing.
Establish a trustworthy and cost-efficient European Cloud and Edge infrastructure	Ensure better alignment to realise synergies between national cloud initiatives and related activities at the European level while at the same time leveraging the capacity and expertise of the private sector. Avoid duplication of activities and ensure that the European Alliance for Industrial Data, Cloud & Edge and the forthcoming EU Cloud Rulebook leverage as much as possible the deliverables of the GAIA-X initiative. Ensure that the public sector provides initial demand for a European Cloud Federation. Ensure the adherence to the EU Cloud Rulebook in the public procurement of cloud services as a way to stimulate adoption and adherence to the rulebook across the EU cloud marketplace.

B2B data sharing: the big picture

What is B2B data sharing and why does it matter?

B2B data sharing can broadly be defined as *making data available to,* or *accessing data from,* other companies for business purposes. Data sharing can serve any company purpose, such as operational efficiency or sustainable development. Depending on the particular business need, data sharing can take place in several forms, from unilateral sharing to a collective approach in the form of data marketplaces and data platforms. In terms of monetisation, data can be shared for a fee, for free or through provision of service.

In the data-driven economy, companies completely rethink their data value chain, moving from data silos and a transactional approach to a **new concept of 'ecosystem'**. This ecosystem refers to the sum of interactions between those involved in a specific business domain, including suppliers, partners, customers, businesses in other sectors and other actors, including public institutions and academia. Industry data ecosystems work by:

a) connecting core value chains to the cloud and edge,

b) standardising the sharing and exchange of data derived from those value chains and

c) enabling the development of new services and applications on top of that data.

Businesses today typically operate on the basis of limited information across their vertical markets, especially outside of their core activities and business intelligence is often expensive and burdensome to acquire. Data sharing and data analytics, including AI, promise to bring them closer to obtaining oversight over all areas of relevance for their operations.

Predictive analytics – Royal Philips

Philips eCareManager is a software platform that enables patient population management, provides actionable insights for clinical decision support and supports care coordination. IntelliSpace Discovery is an open platform that offers radiologists comprehensive data analytics capabilities for clinical and translational research in radiology. It provides radiologists with applications and tools for aggregating and normalising data, which can be visualised and annotated to train and validate deep learning algorithms. Find out more in the Annex of this paper.

The ability to access, share and enrich business data provides the basis for new services and business processes that span borders, industries and companies, resulting in a diverse community of participants, including suppliers, technology providers, independent software vendors, logistics providers, manufacturers and start-ups. Each participant contributes new data sources or services, thereby adding additional value to the broader ecosystem. Industry data ecosystems can either be multi-company-led or single company-led. In the latter case, a large industrial player has sufficient scale to launch a data network through its own ecosystem of partners, customers and suppliers.

B2B data sharing and usage is a growing, if still nascent, field of opportunity. B2B data sharing and (re-)use will be a tremendous driver of innovation, productivity and economic growth, and is set to expand significantly in the near future. While still early days, numerous examples already exist of the significant long term business value created by data sharing. As the case studies in this report demonstrate, companies led by Members of ERT are leading the way when it comes to these early applications.

Discover-NOW – AstraZeneca

The UK national institute for health data science (HDRUK) launched in November 2019 Discover-NOW, a health data research hub which gathers NHS organisations, academics and pharma, tech and medtech industry. The hub aims to collect real world heath data to allow researchers to conduct studies to improve clinical practices and in particular develop personalised care for patients with chronic diseases, such as type-2 diabetes or heart failure.

How industry benefits from data sharing

The business community uses and shares data primarily in order to realise value creation. The value created by data can be grouped into three distinct categories of use cases:

1. **Top-line use cases** typically help companies improve customer-facing activities. They enhance activities in the areas of pricing, churn prevention, cross- and upselling and promotion optimisation to drive growth.

2. **Bottom-line use cases** focus on using data-driven services to optimise business processes. Examples include predictive maintenance, supply chain optimisation and fraud prevention.

3. **Data networks/new business models** move beyond individual processes. They expand a company's portfolio of offerings and open up new avenues for generating revenue. Examples include the sale of datasets, data-driven insights across verticals and new services and applications.

Possible business models for monetising data sharing

A number of different revenue models exist, depending on the individual offering, but can, broadly speaking, be broken down into the following models:

1. Direct charge for API / consumption based
2. Flat fee / subscription based
3. Value / outcome based charge
4. Monetisation model through strategic partners (API integration)
5. API access as premium / upsell opportunity

The opportunity for Europe

Europe has fallen behind in the B2C data race, with consumer data increasingly concentrated in the hands of a small number of companies. PWC predicts that around 70% of the economic value generated by AI will accrue to just two countries: the USA and China.[1] But in the B2B data world, the race has barely started, let alone been won. Europe must seize this opportunity to lead the world in B2B data sharing by rapidly developing practical business use cases based on data sharing, drawing on its existing industrial strengths.

These initial use cases will, in turn, result in 'data gravity' as they facilitate new applications and services and unlock new sources of data. Over time, this 'gravity' will emerge as a real competitive differentiator for a digital Europe. According to a recent study by Deloitte, by 2027 the value of non-personal data in the manufacturing sector alone could be as much as €1.5 trillion.[2]

1 https://www.pwc.com/gx/en/issues/data-and-analytics/publications/artificial-intelligence-study.html

2 https://www.vodafone.com/content/dam/vodcom/files/public-policy/Realising_the_potential_of_IoT_data_report_for_Vodafone.pdf

Data Intelligence Hub – Deutsche Telekom/VDMA

Deutsche Telekom has developed a data marketplace called Data Intelligence Hub providing intermediation services. It is used for B2B data exchange in several industrial sectors, including the so-called 'Umati' approach of the VDMA (The Mechanical Engineering Industry Association). Umati allows for the collection, hosting and sharing of data generated by machines across manufacturers, with 110 machines in ten countries interacting with 30 different data users, such as machine manufacturers. The latter are able to analyse data on how their machines are used and use this in improving their products. Find out more in the Annex of this paper.

Catena-X

With the objective of creating uniform data and information flows throughout the automotive value chain, BMW AG, Deutsche Telekom AG, Robert Bosch GmbH, SAP SE, Siemens AG and ZF Friedrichshafen AG have joined forces to build an the Catena-X Automotive Network. Together with other companies, they want to participate in the development of an open, scalable network for cross-company and secure information and data exchange in the automotive industry. Find out more in the Annex of this paper.

In addition, the huge quantity of public data held by the EU and its Member States could unlock substantial benefits in terms of growth and innovation if mechanisms are introduced to enable its safe and secure sharing with industry. While not the focus of this report, the potential benefits of voluntary government-to-business (G2B) and business-to-government (B2G) data sharing could be significant for Europe, as recognised by the EU's data strategy.

The opportunity provided by B2B – as well as G2B and B2G – data sharing, usage and value creation is even more significant in the context of Europe's economic recovery from the COVID-19 crisis. The recovery is a chance for Europe to not only rebuild its industrial base, but to upgrade it for the era of Industry 4.0 – with data sharing at the heart of this transformation. By leading the next wave of digital transformation, Europe can capture the benefits of the next wave of technological development and ensure it is not left behind in the global race to recovery.

Putting industrial data sharing and usage at the heart of its recovery plans will also help Europe achieve many of its other policy goals, from supporting SMEs to promoting European industrial leaders and transitioning to a low-carbon economy. Building a single market for industrial data will boost the growth of European SMEs, start-ups and scale-ups that currently lack access to the data they need to innovate, compete and expand in the global market. Similarly, a unified and secure industrial data ecosystem will help leading European industrial firms to both add more value to their existing business activities and enter new areas of activity.

Railigent - Siemens Mobility

Siemens Mobility's Railigent platform supports owners and operators of trains, infrastructure and signalling to generate added value by increasing availability of their trains, improving maintenance and operations and reducing costs. Railigent not only uses Siemens' own applications and data analytics but also integrates an ecosystem of partners to offer customers even greater added value. Railigent is a cloud-based platform that can record, interpret, process and analyse large amounts of data from the railway environment. Many applications not only generate relevant insights but also provide tailored recommendations to the customer. Railigent uses advanced and sometimes proprietary methods of machine learning and artificial intelligence, with data and algorithms also made available to partners to support them in creating applications. Find out more in the Annex of this paper.

B2B data sharing will also play a role in bringing to fruition the European Green Deal's goal of making the EU carbon neutral by 2050. Greater data collection and data sharing can enable individual companies to better monitor and reduce the environmental impact of their activities, and to share best practice with industry peers.

This could help accelerate the shift to climate neutrality in each sector and provide policymakers with the accurate data needed to design effective and targeted environmental regulation.

However, as it stands, Europe is not seizing the potential of industrial data sharing. As Commission President Ursula von der Leyen herself put it in her latest State of the Union Address, *"The reality is that 80% of industrial data is still collected and never used. This is pure waste"*. If the EU is serious about achieving its goal of attaining 'technological sovereignty', it cannot afford to allow other economies to secure the same dominance in the B2B data economy they have already secured in B2C. Time is running out – Europe must act swiftly to overcome the challenges that are currently holding back Europe's data economy.

Ocean Carriers – TradeLens

TradeLens is a supply chain and logistics network with data coverage of over half of global container shipping volume. It aims to improve visibility of vital shipment data, deploying data with speed and security and facilitating greater collaboration between shippers and their logistics partners.

Challenges

While B2B data sharing provides the opportunity for new business models, significant challenges must first be addressed. Potential data ecosystem participants face numerous barriers, including concerns regarding the protection of confidential and sensitive data, challenges around sharing data securely and insufficient common standards and definitions.

When it comes to the GDPR, data protection authorities in EU Member States interpret various provisions of the legislation quite differently, undermining the EU Single Market, hampering innovation and creating difficulties for companies operating in more than one Member State. IT providers and users are faced with GDPR-related legal uncertainties, hindering the development of B2B data sharing and other data-driven value creation in Europe.

Regulatory and legal uncertainty more generally is a major barrier, undermining the trust that is essential for B2B data sharing. Businesses, if they are to participate in B2B data ecosystems, need to be confident that their confidential commercial data is protected and have greater certainty when it comes to intellectual property, privacy, competition, data localisation and liability rules.

Generating 'sharing ready', high-quality and interoperable data also remains a challenge. This is key to ensuring the automatic exchange of data within and between sectors and across borders. Poor data quality and lack of data interoperability currently limits the capacity of businesses to use technology and algorithms to process and extract value from datasets, ultimately hindering innovation.

One key reason for poor data quality and a lack of data interoperability is the underdevelopment of common standards and compatible formats. Currently businesses struggle to interpret and easily integrate data from external sources, making B2B data sharing a costly and complicated process. The lack of harmonisation in the description of datasets (metadata) is a particularly significant challenge. While it is industry that should lead on the development of shared standards, currently there is not enough collaboration happening in this area.

Finally, a lack of scale in Europe's cloud infrastructure is a substantial obstacle. European companies still hesitate to adopt cloud computing due to unalloyed concerns and/or a lack of digital skills, which in turn undermines the development of B2B data sharing. Above all, they are concerned about their ability to control who can access 'their' sensitive data in the cloud – concerns that are magnified by Europe's dependency on non-European cloud infrastructure providers. While several Member States have developed cloud-computing initiatives to address these concerns, these policies are not coordinated at the EU level, creating a severe risk of market fragmentation for cloud services in Europe.

The role of industry in enabling B2B data sharing and usage

Industry leading the way

Industry is driven above all by commercial interests and opportunities. In other words, B2B data sharing will only reach its full potential if businesses perceive more value in sharing data than in keeping it for themselves. Fortunately, despite the risks and uncertainties discussed above, industry is leading the way in developing the economic potential of B2B data sharing.

Companies are working hard to grasp the business opportunities presented by data sharing, while navigating the challenges and risks. Many are learning by doing, as case studies from companies led by Members of ERT demonstrate. From Nokia's smart city data platform "Sensing as a service" to Deutsche Telekom's data marketplace and AstraZeneca's data research hub Discover-NOW, Europe's leading companies are already demonstrating the immense potential of B2B data sharing. The major players in the field of aeronautics and space are working to build a stronger data ecosystem throughout their value chain by partnering with SMEs and supporting them to enhance their processes, systems and digital skills.

Sensing as a service – Nokia

Nokia has developed a platform, Sensing as a Service, which helps telecoms operators monetise real-time environmental data, collected and processed from connected IoT sensors by selling it to cities and other authorities. These data can subsequently be used to make cities smarter.

Optimising chemical production through data sharing – BASF

BASF is using data sharing to achieve efficiency gains with its supplier for air separation units. As part of several chemical production processes, BASF uses concentrated gases that are produced using standardised air separation units. These units are produced by a specialised vendor that provides additional data-driven services to support the operation of its units. BASF and other users stream live data from their units into an independent data-sharing platform, which the machine supplier uses to generate and train optimisation models. These are subsequently used to provide individual, live-control command streams that optimise the operation of the air separation units on the client-side. This optimisation lowers the energy consumption of the production process and delivers both cost savings and environmental benefits. Find out more in the Annex of the paper.

Cross-industry and cross-sector collaboration to strengthen and deepen Europe's data sharing ecosystem is already taking place as well. Companies are working together on a range of initiatives, including efforts to develop common standards and data sharing services. As Member companies, businesses are also helping policymakers understand the B2B data economy and informing them of industry best-practice.

SAP Information Collaboration Hub for Life Sciences - a public cloud network supporting collaboration between pharmaceutical supply chain trading partners

The information hub for life sciences is designed to reduce drug counterfeiting and follows directives issued by governments worldwide requiring the serialisation of drugs and commensurate compliant reporting. It uses a digital network built on SAP's Cloud Platform and enables trading partners to exchange large amounts of serialisation and associated traceability data for verification via blockchain.

Operating room 4.1 - a platform for novel health services

SAP has developed a platform that links data sources and medical devices from different manufacturers to make that data accessible to software developers and medical users. Such a platform can help to translate software-based medical innovation into the clinical routine quickly, efficiently, and cost-effectively, thus optimising the therapy of patients with smartly assisted procedures and paving the way for software-defined healthcare.

The four pillars of successful data ecosystems

Early industry experience with B2B data sharing has identified four essential pillars that underpin a successful data ecosystem.

The four pillars are:

1. A reference architecture, based on agreed infrastructure and cybersecurity standards, industry best practice and widely adopted technologies
2. Data standards and common governance rules to simplify data understanding and reusability
3. B2B marketplaces enabling the consumption of data assets at scale
4. Data analytics, AI and other technologies able to generate value from data

Guaranteeing the existence of all four pillars is key to the emergence of a safe and innovative ecosystem, where trust prevails.

The industry offer – data sharing and usage as a core business principle

ERT Member companies are committed to realising Europe's potential as a global leader in industrial data sharing. As this report demonstrates, European companies are already beginning to unlock the economic and social potential of B2B data sharing. But it is time for industry, with the support of policymakers, to raise its level of ambition and take data sharing to a new level. To achieve this, ERT Members believe that companies should seek to adopt data usage and sharing as a core business principle, whereby rather than being an afterthought, data sharing – where relevant – is incorporated at an early stage in product design, technical standards and corporate strategy as a source of value creation.

To achieve this, companies should work both within and across industries to define the right format, protocols and standards and architecture needed to make data sharing simple and cost effective to implement. To build and maintain trust, however, it is also crucial to uphold the fundamental principle that data sharing by companies should be conducted on a voluntary and contractual basis. Mandatory data access should only be imposed on companies if there is a proven market failure or clear misuse of a dominant market position.

Industry motivations

Discussions among senior data experts from industrial companies clearly indicate that the value generated by sharing data, for both data suppliers and those consuming the data, is significant across all industries. The top 10 reasons to engage in B2B data sharing according to companies led by Members of ERT are:

1. Developing / Enriching services
2. Training AI
3. Improving customer experience
4. Revenue growth
5. Operational efficiency
6. Product / service differentiation
7. Market knowledge
8. Processing speed
9. Shortened supply chains
10. Expansion into new markets

ERT Members are also committed to working closely alongside policymakers to inform them of best practice in B2B data sharing and ensure policies to enable greater data sharing are evidence-based and proportionate. The next section contains recommendations on what such policies could look like.

ERT Policy Recommendations to foster B2B data sharing in Europe

European policymakers and industry should join forces to fully exploit the potential of B2B data sharing as a driver of innovation, job creation and European competitiveness in the digital age.

As a starting principle, the EU should seek to facilitate voluntary sharing of B2B data, while avoiding premature regulatory action. Europe must strike the right balance between protecting privacy and stimulating research and development and innovation by making more data available for access and re-use. Underpinning this must be the preservation of contractual freedom as a guiding principle.

All developments – for infrastructure, marketplaces or data spaces – should be 'use case oriented' and satisfy the needs of industry and society. Use cases should be ecosystem-based and cross-sectorial. Impact, speed, and value creation are key.

ERT believes that the European Commission's Data Strategy, as adopted in February 2020, provides a solid foundation for fostering B2B data sharing and realising the overall vision of European leadership in the Digital Economy. A swift execution of this strategy should now be the priority. To this end, ERT would like to provide further guidance to the European Commission by recommending the following actions.

Create a European Single Market for Data

The success of data-driven business models, including B2B data sharing, largely depends on the ability of providers to scale and reach a critical mass of customers rapidly and use of a large amount of industrial data to develop new digital services. The EU needs to establish a single market for data so that European providers can scale their businesses and effectively compete in global markets. The creation of a single market for data will allow data to circulate freely within the EU and across vital sectors of the economy, thereby promoting data-driven innovation and stimulating economic growth.

- The European Commission should urge Member States to review and eliminate all disproportionate data-localisation requirements to allow the free flow of data within the EU, in line with the EU Free Flow of Data Regulation.

- The Commission should further enable better access to public sector data under the EU Open Data Directive. The Directive ensures a minimum harmonisation of national rules on the re-use of public sector information and aims at facilitating this re-use. However, Member States still take a different approach to provide access to public sector data sets and maintain certain exceptions. The Commission must ensure effective implementation of the Open Data Directive to improve the availability of public data in machine readable formats.

- We welcome the European Commission's efforts to open up more, specifically sensitive, public sector data in Europe under the Data Governance Act. Based on the proposal, we understand that Member States should further specify conditions to grant access to such datasets. However, a fragmented approach in granting access to these datasets should be avoided, as it could hinder the creation of a single market for data.

- We welcome the introduction of the so-called "equivalency test" for reviewing intellectual property rights and trade secret frameworks in third countries, as proposed in Article 5 (9) of the Data Governance Act. We agree that such a test is necessary to protect sensitive non-personal public sector data. Furthermore, any restrictions on the international transfer of highly sensitive non-personal public sector data should be in line with the EU's international

trade commitments. A definition and concrete examples of such highly sensitive data would be welcomed.

- The European Commission should consider the need for a general obligation to grant access to public sector data, especially for high-value datasets, through a revision of the Open Data Directive and/or the proposed Data Governance Act, while taking into account intellectual property rights and existing contractual agreements between the public sector and its business partners.

The digital transformation of the European economy depends on the creation of an open and secure environment for data sharing, subject to full compliance with European Union rules on data protection and privacy. B2B data sharing should be in line with the EU General Data Protection Regulation (GDPR) whenever personal data is involved in mixed-data sets. ERT fully supports the ongoing review of the GDPR to address shortcomings related to interpretation of the Regulation.

- The GDPR review should ensure a more consistent, harmonised and innovation-friendly application of data protection rules throughout the EU. This will unleash the potential of innovative digital technology while maintaining a high level of data protection and privacy.

- In line with this goal, the pending ePrivacy reform should be closely aligned with the GDPR's risk-based, harmonised and horizontal approach to data protection, to avoid creating unnecessary barriers to B2B data sharing.

Establish European Data Spaces

ERT welcomes the creation of European Data Spaces, as outlined in the EU Data Strategy. These data spaces have the potential to underpin B2B data sharing in Europe, bringing together all relevant stakeholders in a particular industry or domain to leverage the wealth of data that exists in Europe, test new data business models and scale them across Europe. While data-driven innovation is critical in all sectors of the economy, each domain has its own specificities and not all sectors are moving at the same speed.

Therefore, ERT welcomes the Commission's plans to set up separate data spaces for specific industries and domains. GAIA-X together with existing European partnerships (e.g. AI, Data, Robotics) can provide blueprints.

- Priorities for data spaces should include the development of IT systems, data-sharing tools and platforms, domain-specific governance frameworks, measures improving the availability, quality and interoperability of data and the development of technical tools/ standards for data pooling and sharing.

- Industry should be involved in establishing the operating and governance model of the data spaces, to ensure that they reflect the practical needs of businesses.

- Data spaces should attract both large and smaller companies and both providers and users of data, in order to overcome the current data divide.

- For each data space, there should be a set of specific business cases, which offer clear value propositions to participating companies. This will be essential in incentivising companies to share data and consequently in making data spaces operational.

- Finally, we suggest that the European Commission builds upon existing industry initiatives (such as data marketplaces) and technical know-how and promotes and further develops these under the framework of the data spaces.

Encourage Industry-driven standardisation

Common data standards are essential for B2B data sharing. Data interoperability and quality, as well as structure, authenticity and integrity, are key when it comes to value generation - especially in the context of AI. The adoption of standards and shared compatible formats is a prerequisite for data-driven innovation at scale.

- Data should be easily interpreted and easily integrated with relevant data sources and unambiguously understood by all ecosystem

members. Greater harmonisation in the description of datasets (metadata) should be the priority.

- Standards for B2B data sharing should be industry-driven and established in international standardisation organisations such as the ISO and IEC, or in global industry consortia such as the OPC Foundation. Specific vertical industry association initiatives, such as UMATI/ VDMA (see case study for more details), are also crucial. Companies led by Members of ERT are committed to actively contributing to these standardisation efforts.

- The European Commission should support industry-driven standardisation and encourage European companies, in particular SMEs, to actively participate in these efforts.

- We welcome the establishment of a European Data Innovation Board as envisioned under the Data Governance Act, including its advisory role in identifying cross-sector data standardisation needs.

- European data spaces should also play a role in defining the requirements for common standards, and working towards their development and adoption.

Address horizontal barriers to B2B Data Sharing

While each industry has specific requirements, there is a need for EU-wide rules and standards to address barriers to B2B data sharing that are common to all industries and to facilitate B2B data sharing across sectors.

- Lack of trust is a major barrier to B2B data sharing that must be addressed. To this end, data intermediaries can play an important role in creating a safe and trusted framework, within which companies can share their data. ERT however questions whether a compulsory notification framework, as proposed under the Data Governance Act will actually achieve better up-take of data sharing within the EU: the proposed notification procedure and conditions laid out for data intermediaries do come with a significant administrative and monetary effort. In contrast, the enabling and incentivising effects of the framework, specifically for smaller players in the market regarding scale, are not imminent from the proposal. A voluntary scheme and certification mechanism, including a public register or information point, would be a better alternative and a more feasible approach for making these services more transparent and attractable for B2B and B2C data exchange.

- The European Commission should focus on improving data quality and defining common, harmonised cybersecurity rules that provide a high level of data protection, without hindering access and usage. High quality data will facilitate the secure and rapid exchange of data, building trust and creating value for ecosystem participants.

- The upcoming EU Data Act should respect the fundamental principle that data sharing by companies is conducted on a voluntary and contractual basis. The EU should avoid any premature regulatory action. It is key that any forced sharing of data must be ultima ratio to address clear misuse of a dominant market position or proven market failures which softer measures have failed to resolve.

- The review of the EU antitrust guidelines on horizontal cooperation between companies should be used to provide greater legal certainty on B2B data sharing, both within and across industries. Given the novelty of the questions that arise in this emerging market, we encourage the European Commission to update the horizontal guidelines and/or introduce new horizontal block exemptions for data sharing agreements.

Establish a trustworthy, secure and cost-efficient European cloud and edge infrastructure

The success of B2B data sharing will depend on a trustworthy, secure and cost-efficient cloud infrastructure. ERT calls for clear policy direction, led by the European Commission, to bring together the currently fragmented and overlapping set of national initiatives in this space. ERT welcomes the European

Commission's plans to create a European Cloud Federation and EU Cloud Rulebook to harmonise existing capacity and regulation on cloud computing. ERT fully supports the launch of the European Alliance for Industrial Data, Cloud & Edge and the creation of a related Important Project of Common European Interest (IPCEI) to mobilise both public and private funds for the development of a European Cloud Federation.

- The European Alliance for Industrial Data, Cloud & Edge should leverage as much as possible the deliverables of GAIA-X and other related initiatives like the AI/Data/Robotics Partnership. It should realise synergies between national cloud initiatives and related activities at the European level, leveraging the computing capabilities within Member States, including High Performance Computing (HPC). Duplication of activities must be avoided.

- ERT welcomes the EU's overall ambition to mobilise up to €10 billion public and private funds for the creation of a European Cloud Federation and European Data Spaces. To create value out of data we need sufficient political and budgetary support (e.g. from Horizon Europe, Digital Europe Programme and Connecting Europe Facility) for the AI, Data and Robotics initiatives as necessary add-on to the European Alliance for Industrial Data, Cloud & Edge and data spaces.

- ERT welcomes the aim to develop an EU Cloud Rulebook to address cloud user concerns and to establish a single market for cloud computing in Europe. It should build on the policies, rules and standards that are developed within the GAIA-X initiative.

- The Cloud Rulebook should include inter alia: horizontal and sectoral certification schemes to ensure compliance with security standards, interoperability specifications and, additional requirements that can be applied as necessary (such as rules and transparency obligations for cloud service providers that prevent unauthorised data access based on foreign jurisdiction legislation that would violate EU law).

- The public sector should provide initial demand for the European Cloud Federation, since industry alone cannot provide the scale needed to get the project off the ground. Adherence to the EU Cloud Rulebook should be the basis of public procurement of cloud services.

- ERT supports the creation of EU Cloud Marketplaces, both for the public sector and industrial ecosystems. Bringing the private sector in the lead, marketplaces should foster the adoption of cloud services that comply with the requirements of the EU Cloud Rulebook.

Conclusion

B2B data usage and sharing is set to expand rapidly over the coming years, boosting growth and productivity and providing the foundation for countless new business use cases and applications.

With this report, ERT hopes to have made a valuable contribution to the debate as the EU prepares to move forward with a variety of initiatives that will shape the future of data sharing in Europe. These include the Data Act, the ePrivacy Regulation and the European Cloud Federation supported by the European Alliance for Industrial Data, Cloud & Edge.

While ERT supports the intention behind these proposals, the devil will be in the detail and policymakers must ensure that their efforts help, rather than hinder, European industry's ability to reap the benefits from B2B data sharing.

With its strong industrial base, Europe has the foundation it needs to lead the world in B2B sharing. Whether it succeeds in doing so will depend on the ability of industry and policymakers to work together in creating the shared technological and legal framework which is the prerequisite of a vibrant data economy.

Annex – Extended case studies

BASF & Siemens

As described on page 7, the business community uses and shares data primarily in order to realise value creation. The value created by data can be grouped into three distinct categories of use cases:

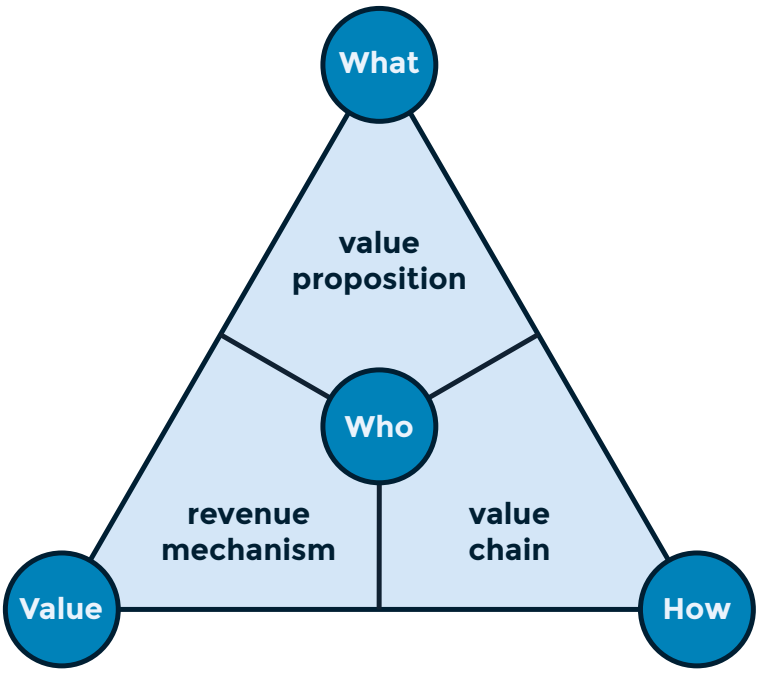
1. **Top-line use cases** typically help companies improve customer-facing activities. They enhance activities in the areas of pricing, churn prevention, cross- and upselling and promotion optimisation to drive growth.

2. **Bottom-line use cases** focus on using data-driven services to optimise business processes. Examples include predictive maintenance, supply chain optimisation and fraud prevention.

3. **Data networks/new business models** move beyond individual processes. They expand a company's portfolio of offerings and open up new avenues for generating revenue. Examples include the sale of datasets, data-driven insights across verticals and new services and applications.

To visualise use cases for each category, we use St. Gallen University's Business Model Navigator™ to answer the following questions for each stakeholder in the value network:

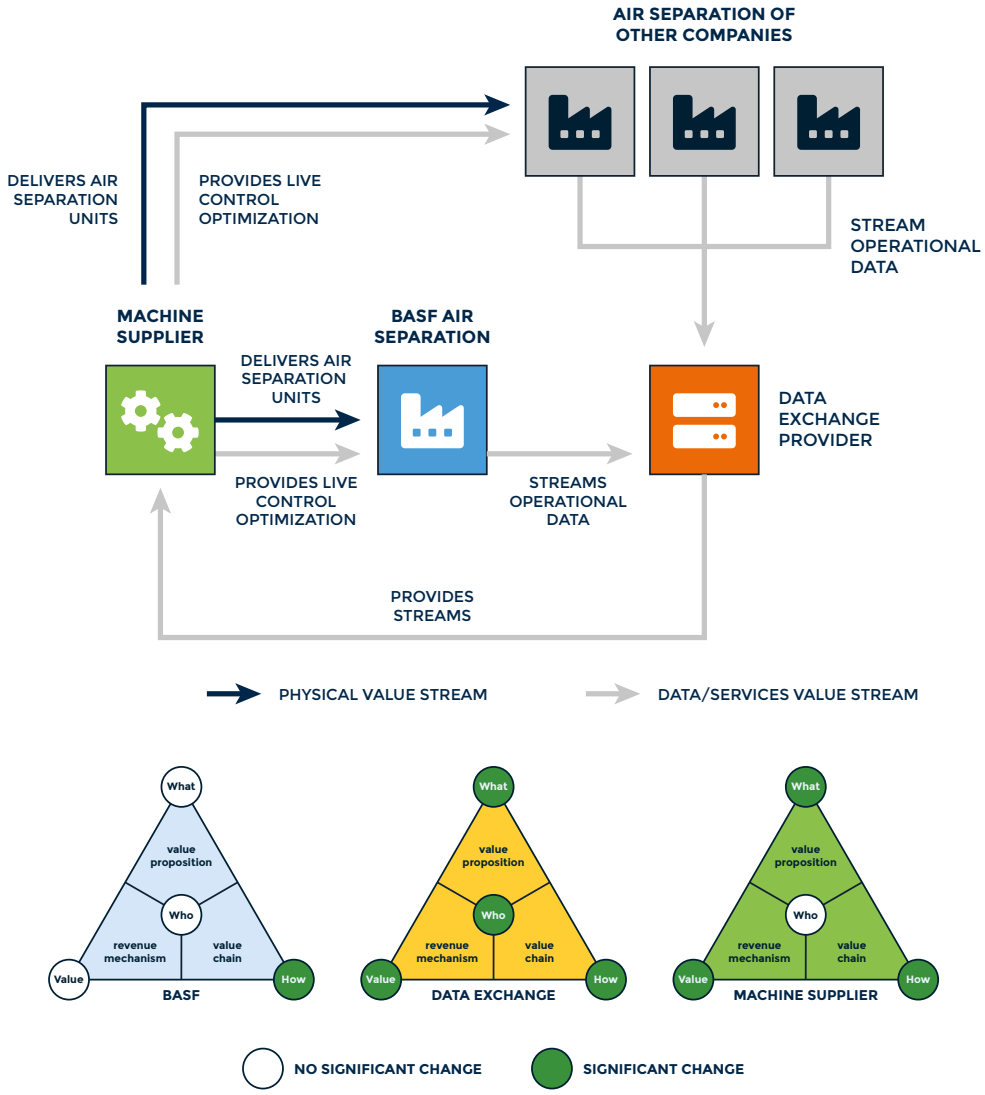
- **Who:** Who are the stakeholder's target customers?
- **What:** What is the stakeholder offering to the customer?
- **How:** How does the stakeholder produce the deliverable?
- **Value:** How does the stakeholder create revenue?



Optimising chemical production through data sharing – BASF

BASF is using data sharing to achieve efficiency gains with its supplier for air separation units. As part of several chemical production processes, BASF uses concentrated gases that are produced using standardised air separation units. These units are produced by a specialised vendor that provides additional data-driven services to support the operation of its units. BASF and other users stream live data from their units into an independent data-sharing platform, which the machine supplier uses to generate and train optimisation models. These are subsequently used to provide individual, live-control command streams that optimise the operation of the air separation units on the client-side. This optimisation lowers the energy consumption of the production process and delivers both cost savings and environmental benefits.

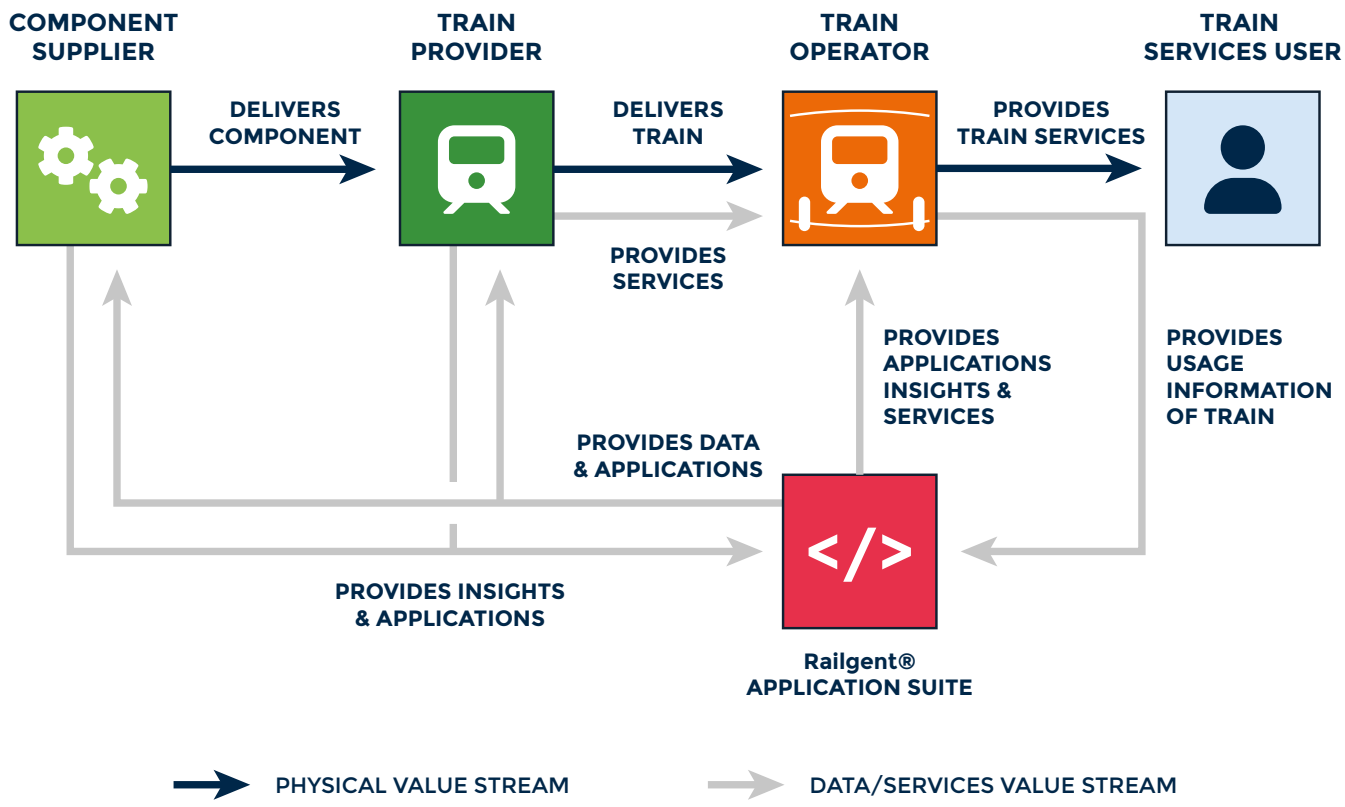
From the perspective of BASF, this is a "Bottom-line" use case, whereas from the perspective of the supplier it is a combination of a "Top-line" and "Data Networks/New business models" use case. The data exchange that facilitates the secure and independent collection and distribution of streaming data represents a new business model.



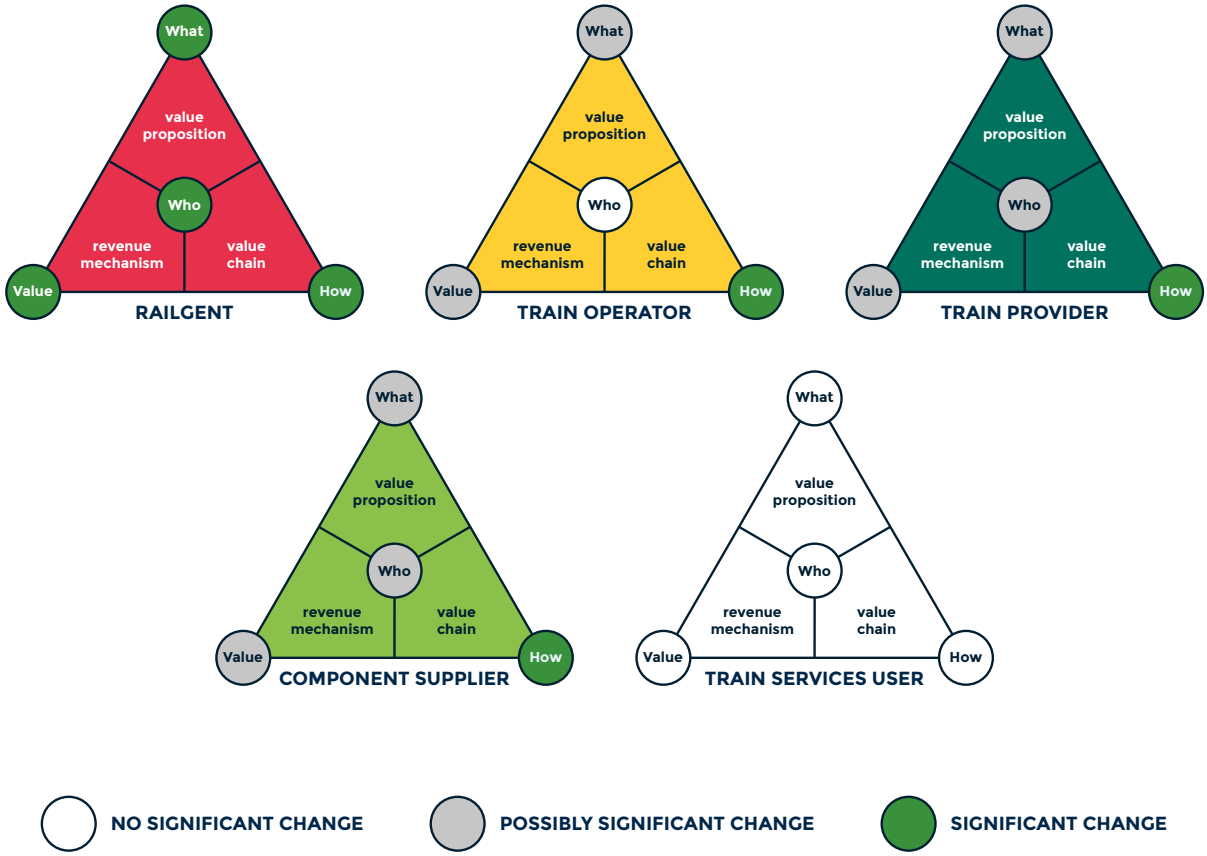
Railigent – Siemens Mobility

Siemens Mobility's Railigent platform supports owners and operators of trains, infrastructure and signalling to generate added value by increasing availability of their trains, improving maintenance and operations and reducing costs. Railigent not only uses Siemens' own applications and data analytics but also integrates an ecosystem of partners to offer customers even greater added value. Railigent is a cloud-based platform that can record, interpret, process and analyse large amounts of data from the railway environment. Many applications not only generate relevant insights but also provide tailored recommendations to the customer. Railigent uses advanced and sometimes proprietary methods of machine learning and artificial intelligence, with data and algorithms also made available to partners to support them in creating applications.

An example of an offering is the "availability guarantee" for train services at Renfe Spanish Rail Company. Besides the delivery of 26 high-speed trains, Siemens Mobility offered a performance contract with an availability guarantee, whereby passengers are reimbursed for delays of more than 15 minutes. This is possible thanks to analysis of sensor data from critical components, enabling predictive maintenance. The result is an on-time rate of 99.9%, with the additional benefit that, due to high reliability, 60% of passengers switched from aircraft to train travel.



From the perspective of Siemens Mobility, this is a "Data Networks/New business models" use case. From the perspective of the train operator, this is a "Bottom-line" use case. From the perspective of the train provider, it is – depending on the concrete business case – a combination of a "Top-line" and "Data Networks/New business models" use case.



Deutsche Telekom's Data Intelligence Hub[3]

Deutsche Telekom's Data Intelligence Hub (DIH) is a data transaction platform that has been on the market since 2018. The core idea of the DIH is to act as a neutral intermediary or broker on an open data marketplace, mediating between providers and buyers of data. As the operator of a neutral, certified and cloud-based infrastructure that meets the strict requirements of the International Data Spaces Association (IDSA) and maintains data sovereignty in data exchange, DIH also creates the technical basis for the simple and secure exchange of data between transaction partners. In this function, DIH is also able to cover further needs with regard to data, such as secure storage and further processing. These services can be modularly extended by existing AI functions, which can be used to combine data sets and analyse them, based on established algorithms and routines. In a cloudbased 'AI workshop' with proprietary or open source tools, platform users can develop their own AI approaches and enable more complex functions. As a further field of application, the DIH infrastructure is also used by city administrations and public bodies in the context of providing Open-Data. For this purpose, the architecture must be tailored to the specific legal requirements for the provision of public data, for example to ensure availability and free access.

A central challenge in data trading is the definition of the 'product'. Unlike physical goods, there is no rivalry in the use of data – in principle, data can be reproduced and used as desired, without restricting individual users. Accordingly, in data transaction, it must be pre-defined in detail for what, and in what period of time, data is used and whether it may be passed on. If this is not possible, this fundamentally limits the incentives to sell data. In practice, bilateral contractual solutions have so far been used in the B2B sector. The next step is to transfer licensing models – as known from the software world – to data and make them technically enforceable. Approaches for technical solutions in which buyers are released for use on the neutral DIH infrastructure already exist and are being further developed in parallel in reseautarch and practice. Thus, the basis for trading data in the B2B sector is increasingly being improved.

The DIH is provider-neutral in all sectors (except telecommunications) and operates across all industries. It enables users to combine a wide range of information across industries to create new insights and added value. For example, international weather data in the context of route information for the logistics or insurance industry can gain considerable additional relevance. On the other hand, its vendor neutrality also enables competitors within an industry to offer their data securely. With the increasing breadth of the data available on the platform, network, scale and connectivity effects can be exploited in combination with the existing analysis tools.

3 Source of use-case: https://www.ifo.de/en/publikationen/2020/monograph-authorship/industrial-digital-economy-b2b-platforms

Royal Philips' Data-driven Healthcare Solutions

Below are several examples of data-driven healthcare solutions with an AI function developed and enabled by B2B data sharing.

1. eCare Manager

eCareManager is a software platform that enables patient population management, provides actionable insights for clinical decision support and supports care coordination.

AI-enabled function or features

The Discharge Readiness Score uses predictive analytics to estimate the probability that patients in intensive care units (ICUs) are at risk of death or readmission within 48 hours if they were to be discharged from the ICU, assisting the healthcare professional in the ICU discharge process.

Sentry Score uses predictive analytics to identify patients in intensive care units (ICU) who may require an intervention within 60 minutes, helping the healthcare professional prepare accordingly.

Validation process

The Discharge Readiness Score was retrospectively developed and validated on separate ICU patient cohorts and further validated as a marker of severity of illness throughout the ICU stay on another cohort of ICU patients.

Sentry Score was retrospectively developed and validated on separate ICU patient cohorts and a prospective validation was performed for another cohort of ICU patients against blinded assessments of need for intervention, as adjudicated by ICU clinicians.

Ultimate decision responsibility

The Discharge Readiness Score presents healthcare professionals with the probability that a patient in the ICU will die or need to be readmitted to the ICU within 48 hours of a discharge from the ICU. They remain fully in control of the decision of whether to discharge a patient from the ICU.

Sentry Score presents healthcare professionals with the probability that a patient in the ICU will need an intervention within 60 minutes. They remain fully in control of any intervention.

2. IntelliSpace Discovery

IntelliSpace Discovery is an open platform that offers radiologists comprehensive data analytics capabilities for clinical and translational research in radiology. IntelliSpace Discovery is for research use only and cannot be used for patient diagnosis or treatment selection.

AI-enabled function or feature

The IntelliSpace Discovery platform provides radiologists with applications and tools for aggregating and normalising data, which can be visualised and annotated to train and validate deep learning algorithms.

Validation process

AI-enabled algorithms that are created using IntelliSpace Discovery are validated separately; the platform itself is used for research purposes only.

Ultimate decision responsibility

Healthcare professionals and researchers use IntelliSpace Discovery platform to create algorithms for research purposes, while remaining fully in control of validation and deployment of those algorithms.

Concluding recommendation

These examples demonstrate the huge progress to be made in healthcare through greater data sharing. Every citizen in the EU has the right to access essential, high quality and affordable healthcare services. For continued innovation, it is paramount that stakeholders in the healthcare domain - both public and private – step up their efforts to share data and make it available in health data spaces, evidently in a compliant and ethical manner.

Catena-X

With the objective of creating uniform data and information flows throughout the automotive value chain, BMW AG, Deutsche Telekom AG, Robert Bosch GmbH, SAP SE, Siemens AG and ZF Friedrichshafen AG have joined forces to build the Catena-X Automotive Network. Together with other companies, they want to participate in the development of an open, scalable network for cross-company and secure information and data exchange in the automotive industry. Through standardised information and data availability, the participating companies want to increase the competitiveness of the automotive industry, improve efficiency in industry-specific collaboration and accelerate company processes across the board. A particular focus is to be placed on small and medium-sized companies, and existing structures in the European vehicle industry are to be integrated into the network. The basis for trustworthy and secure collaboration will be the European cloud data infrastructure GAIA-X.

Currently, the following use cases are being worked on jointly:

1. **Parts traceability:** Materials and components can be tracked across organisations within the supply chain from n-tier suppliers to the OEM. For example, recalls in case of anomalies can be specified.

2. **Quality management:** Improved visibility for critical parts/components. Complaints and warranty claims are based on common original analysis. Tier N suppliers are included in feedback loops for part quality issues and n-tier suppliers are included in feedback loops for quality issues.

3. **Sustainability:** Consumers request more transparency on sustainability KPIs. Raw material suppliers, manufacturers, and logistics providers share their sustainability KPIs as well as certificates on parts, enabling tracking of sustainability-related data within the value chain.

4. **Demand & capacity management:** Individual OEMs share tactical and operational demand for parts/components with their respective suppliers in an industrial network in accordance with applicable antitrust rules. These suppliers and their individual OEMs thus jointly manage fluctuating demand and varying acceptance rates.

   The open network to be established will create an ideal foundation for the industry to better meet the challenges of the transformation already in full swing. Continuously connected parts and component suppliers, assembly plants and ultimately the driver of a vehicle will, for example, make it possible to create a digital twin of a vehicle that can form the basis for innovative business processes, digital offerings and new mobility services.

The European Round Table for Industry (ERT) is a forum that brings together around 60 Chief Executives and Chairs of major multinational companies of European parentage, covering a wide range of industrial and technological sectors. ERT strives for a strong, open and competitive Europe as a driver for inclusive growth and sustainable prosperity. Companies of ERT Members are situated throughout Europe, with combined revenues exceeding €2 trillion, providing around 5 million direct jobs worldwide – of which half are in Europe - and sustaining millions of indirect jobs. They invest more than €60 billion annually in R&D, largely in Europe.

This expert paper has been prepared by the B2B Data Sharing Taskforce of the European Round Table for Industry.

For more information, go to: https://ert.eu/focus-areas/digital-economy/

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