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IMPACT ASSESSMENT

Accompanying the document

[…]

[…]

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1. INTRODUCTION: ECONOMIC, POLITICAL AND LEGAL CONTEXT

This Impact Assessment accompanies the legislative proposal for a Data Act announced in the 2020 European Strategy for Data[1], including the review of the Database Directive[2]. The instrument sets out a series of horizontal provisions tackling problems around data access and use that exist in a range of sectors.

The act covers the following types of situations and data:

- Business-to-business (B2B) data sharing, including use cases based on data from Internet-of-Things (IoT) objects[3] and co-generated data. This concerns mostly non-personal data.
- Business-to-consumer (B2C) data relations. This concerns data generated by consumers in the course of using an object or service. This data is mostly personal data.
- Business-to-government (B2G) data sharing for the common good. This concerns mostly non-personal data.

In addition, the act covers the requirements for cloud services and for data interoperability that are a pre-condition for efficient data sharing within and across sectors.

The Data Act complements the recent proposal for a regulation on data governance (Data Governance Act - DGA)[4]. Whereas the DGA aims at fostering trust by regulating data intermediaries – organisations bringing the supply and demand of data together - the Data Act aims at clarifying the material rights and obligations as to who can use and access what data for which purposes.

1.1. Economic and societal context

According to the International Data Corporation, the data economy was estimated to be worth over EUR 324.86 billion at the end of 2019[5], representing 2.6% of the Gross Domestic Product (GDP) of the EU-27. It has a substantial growth potential. However, as noted in President von der Leyen's 2020 State of the Union address, *A real data economy […] would be a powerful engine for innovation and new jobs…but the reality is that 80% of industrial data is still collected and never used.*

Data is the basis for new digital products and services, as well as for developing Artificial Intelligence applications. A growth in value generation from data will effect a larger sustainable growth and innovation dividend on the wider economy[6]. Research by the Organization for Economic Cooperation and Development (OECD) suggests that companies that invest in data-driven innovation and data analytics exhibit faster

[1] COM/2020/66 final.
[2] OJ L 77, 27.3.1996, p. 20–28.
[3] For example connected cars, smart home appliances, wearables, agricultural equipment, airplanes, robots, trains, medical equipment in professional use, elevators, etc.
[4] COM/2020/767 final.
[5] European Commission (2020). *Final Study Report of the Updated European Data Market Study,* SMART 2016/0063.
[6] European Commission (2020). *The Updated European data market study,* SMART 2016/0063.

productivity growth than those that do not by approximately 5% to 10%[7]. Another OECD report estimates that access and reuse already generate social and economic benefits of 1% to 2.5% of GDP[8]. Data is a critical resource for start-ups and SMEs, in particular, as a business can be set up with very low initial capital[9], and 85% of new jobs created in the data economy over the last years have been created by SMEs[10].

In response to the COVID-19 crisis, the Communication on the recovery plan[11] stresses that Europe *'must build a real data economy as a motor for innovation and job creation'* and calls for the Data Act to establish the conditions for better access and control of industrial data at large.

Data is also critical to achieve the Green Deal objectives, and to boost the understanding of governments, businesses and individuals of environmental impacts of products and materials across entire supply chains[12]. The 'Forging a climate-resilient Europe' Communication[13] noted the 'increasing demand for translating the existing wealth of climate data and information into customised tools and user-friendly products', the need for 'more and better data to close knowledge gaps, support innovation to develop solutions, and disseminate and customise for local interventions', including disaster loss data. Better access to data could mitigate the human and financial losses caused by weather extremes in Europe, including 307 547 deaths between 1970 and 2019, and average losses of on average EUR 12 billion p.a.[14].

Studies estimate that a better use of data could save EUR 120 billion per year in the EU health sector alone[15]. In the transport, buildings and industry sectors real-time analytics of data generated by physical energy networks leads to average savings of 10-20%[16].

1.2. Political context

The enormous socio-economic potential of data has been recognised and addressed through a range of legislative and policy measures in the EU in the past years. In the 2018 Communication "Towards a common European data space" the Commission issued a series of principles, with guidance on B2B and B2G data sharing[17]. The Commission committed to monitor progress and, if necessary, consider legislative intervention to tackle the persistent problems.

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[7] OECD (2015). *Data-driven innovation: big data for growth and well-being*, OECD Publishing, Paris.
[8] OECD (2019). *Enhancing Access to and Sharing of Data: Reconciling Risks and Benefits for Data Re-use across Societies*, OECD Publishing, Paris.
[9] European Commission (2020). *Final Study Report of the Updated European Data Market Study,* SMART 2016/0063.
[10] European Commission, *Entrepreneurship and Small and medium-sized enterprises (SMEs)*.
[11] COM(2020) 456 final.
[12] COM(2020) 493 final.
[13] COM(2021) 82 final.
[14] SWD(2020) 330 final/2.; European Environment Agency, *Economic losses from climate-related extremes in Europe - Indicator Assessment*; World Meteorological Society (2021). *Water-related hazards dominate disasters in the past years*, Press Release.
[15] McKinsey (2020). *Shaping the digital transformation in Europe.*
[16] IEA (2019), *Energy efficiency and digitalisation*, IEA, Paris; Askenazi, B. (2019). *IA et Big Data révolutionnent l'efficacité énergétique*, Les Echos.
[17] COM(2018) 232 final; SWD(2018) 125 final.

Echoing the European Strategy for Data of February 2020, the European Council in October 2020 stressed 'the need to make high-quality data more readily available and to promote and enable better sharing and pooling of data, as well as interoperability'[18]. In March 2021, it recalled 'the importance of better exploiting the potential of data and digital technologies for the benefit of the society and economy'[19].

The European Parliament in its resolution on the Data Strategy urged the Commission to present a Data Act to encourage and enable a greater and fair B2B, B2G, government-to-business (G2B) and government-to-government (G2G) flow of data in all sectors[20].

1.3. Legal context

Horizontal rules

A number of horizontal rules in relation with data are in place at the European level. There are, however, currently no binding horizontal rules that address common problems of access to and use of data across the economic sectors or for the common good, even though these problems persist. The Data Act complements, and in some cases builds on, the instruments below.

The General Data Protection Regulation (GDPR)[21] aims at providing a high level of data protection, while facilitating the circulation of data within the EU. The Data Act fully respects the high level of personal data laid down in Article 8 of the Charter of fundamental rights of the European Union and implemented by the GDPR.

The Free Flow of Non-Personal Data Regulation ensures that non-personal data can be stored, processed and transferred anywhere in the EU. This regulation also addresses the problem of 'vendor lock-in' at the level of providers of data processing services, by introducing self-regulatory codes of conduct to facilitate switching data between cloud services. In response, industry participants developed the 'SWIPO' codes of conduct[22].

International data processing and storage, as well as data transfers are governed by the GDPR, trade commitments under the WTO, GATS and bilateral trade agreements.

Competition law is horizontally applicable in the context of merger control in the data market, data pooling by companies or an abuse of a firm's dominant position. The Horizontal Block Exemption Regulation[23] allows the sharing of know-how and other results of joint research and development between businesses if their R&D agreement meets the conditions of the Regulation, in compliance with competition rules.

The Database Directive provides for the sui generis protection of databases that have been created through a substantial investment, even if the database itself is not an original intellectual creation protected by copyright. Even though there has been substantial case-law interpreting the provisions of this Directive, there are still legal uncertainties about

[18] European Council *Conclusions* (2 October 2020).
[19] March 2021 videoconference of the European Council members, see *here*.
[20] European Parliament resolution of 25 March 2021 on a European strategy for data (2020/2217(INI)).
[21] OJ L 119, 4.5.2016, p. 1-88.
[22] OJ L 303, 28.11.2018, p. 59–68; SWIPO (2021), see *website*.
[23] OJ L 335, 18.12.2010, p. 36–42.

whether databases containing data generated by the use of products and services (such as co-generated data) would be entitled to such protection. This issue is addressed by the current review.

The Platform to Business Regulation imposes transparency obligations and requires platforms to describe for business users the data generated through the provision of the service. The proposal for a Digital Markets Act contains obligations in terms of the portability of data generated through gatekeeper platforms[24].

The Open Data Directive[25] sets out minimum rules governing the re-use of data held in the public sector.

Sectoral rules

At the sectoral level, there are some EU instruments containing rules on data sharing. The Electricity Directive and Regulation provide for eligible parties to access data on consumption, require certain actors in the sector to share network data and give customers access to metering and other data required for switching between providers. The Payment Services Directive (PSD2) enables third party providers to access an individual's account holder data at his or her request. For vehicles, the Type Approval Regulation requires Original Equipment Manufacturers (OEMs) to make repair and maintenance information available to dealers and repair services, and CO2 regulations permit OEMs to share data on CO2 emissions. The ITS Directive and its Delegated Regulations establish specifications in particular for data sharing in the field of road transport and multimodal travel information services. The Responsible Mining Regulation requires EU importers to disclose information on their supply chain with suppliers. The Vessel Traffic Monitoring and Information System Directive provides for maritime data collection and sharing. The European Statistical System (ESS) Regulation provides the central legal framework for the development, production and dissemination of European statistics[26].

The Data Act will respect the existing legislation. It will set rules for data access and use across the sectors for elements that all these sectors have in common. For sector specific features, it can be complemented by sectoral rules.

2. PROBLEM DEFINITION

2.1. What are the problems?

The overall problem tackled by this initiative is the inefficient and insufficient availability of data for use within the economy or for societal purposes, which prevents the non-rival nature of data being fully exploited. This non-rival nature implies that many parties can use the same dataset for a variety of purposes without functional loss to the original data collector. In that sense, data is very different from traditional 'goods' that lose value when more parties use it.

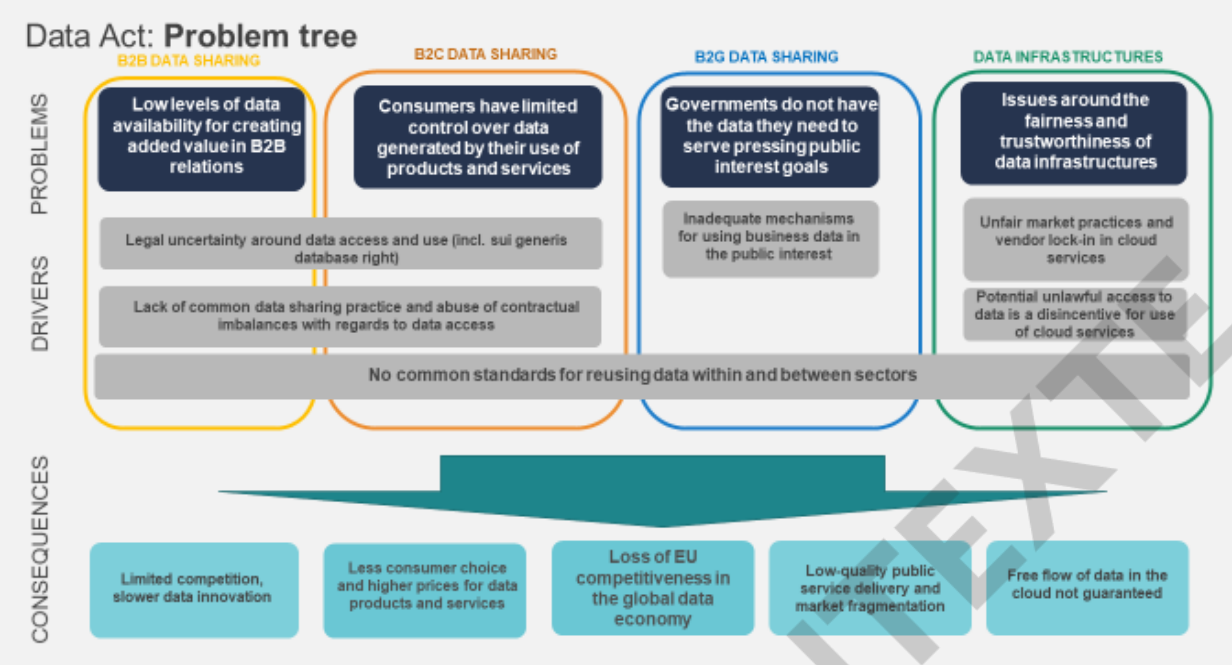
[24] OJ L 186, 11.7.2019, p. 57–79; COM/2020/842 final.
[25] OJ L 172, 26.6.2019, p. 56–83.
[26] OJ L 158, 14.6.2019, p. 125–199; OJ L 337, 23.12.2015, p. 35–127; OJ L 151, 14.6.2018, p. 1–218; OJ L 207, 6.8.2010, p. 1–13; OJ L 130, 19.5.2017, p. 1–20; OJ L 208, 5.8.2002, p. 10–27; OJ L 87, 31.3.2009, p. 164.

Various issues lead to an overall underutilisation of data. These issues are of a legal (lack of clarity regarding rights on data, uncertainties about the application of IP rules to databases containing machine-generated data, contractual practice), economic (disparity in negotiating power, market foreclosure), technical (lack of interoperability between sectoral data ecosystems and data processing infrastructures) or transversal nature (limited access to fair and trustworthy cloud services). The problems affect a range of economic sectors, as evidenced by a survey of 14 EU industrial ecosystems performed by the Commission[27].

According to a report on the value generated through the sharing of non-personal industrial data[28], only between 43% and 58% of the potential of data sharing along a value chain is realised and only between 20% and 40% of the potential of sharing between sectors. This is further confirmed by other studies, which indicate that, apart from a handful (8%) of companies, the vast majority of businesses are not capturing value from data but only eking out small gains across a few, isolated experimental use cases[29].

The majority of stakeholders in both past and more recent public online consultations confirm the existence of inefficiencies in data access and use and their negative consequences for innovation. For example, in the consultation on the Data Strategy, 75% of responding businesses confirmed they had difficulties in accessing the data they need from other companies[30]. This indicates that the principles for B2B and B2G data sharing issued by the Commission in 2018 have not been effective. Stakeholders and especially SMEs considered the principles helpful but unlikely to improve their ability to access data in practice[31]. The survey conducted by the Commission among the European industrial ecosystems, as well as the report by an expert group on B2G data sharing, confirmed these doubts and detected the persistence of serious obstacles to data availability and use[32].

[27] European Commission (2021). *Industrial ecosystems survey - Main findings*, Report (forthcoming).
[28] Deloitte (2018). *Realising the economic potential of machine-generated, non-personal data in the EU*, Report for Vodafone Group.
[29] Bisson P. *et al.* (2018). *Breaking away: The secrets to scaling analytics*, McKinsey.
[30] European Commission (2020). *Outcome of the online consultation on the European strategy for data.*
[31] European Commission (2019). *SME panel consultation B2B data sharing - Final Report*.
[32] European Commission (2021, *forthcoming*). *Industrial ecosystems survey - Main findings*, Report; European Commission High Level Expert Group on B2G *website*.



Problem 1 – Low levels of data availability for creating added value in B2B relations

Industry stakeholders, large and small, acknowledge the benefits of data sharing and data availability[33]. Companies that share data report gains in business opportunities and internal efficiency. Incentives to share data range from monetising the data value, obtaining greater speed and visibility across supply chains, faster and more innovative product development and deriving analytical results from shared data, to the availability of services such as predictive maintenance. One study found that increasing the level of data sharing among companies could create as much as EUR 1.3 trillion of value a year in the manufacturing sector by improving productivity by 2027[34].

However, the results of the public consultation on the Data Strategy showed that less than half of the respondents share data with, or reuse data from, other companies either vertically, horizontally or between sectors, and especially across the EU's internal borders. 80% of the companies encounter obstacles to using data from other companies, due to issues such as denied data access, prohibitive prices or unfair contractual terms. A similar message came out of the ecosystem analysis carried out by the Commission services[35].

[Placeholder: Results from the public consultation on general state of play of B2B data sharing (how many companies share data, how often, which sectors, which data, with whom, for what) and difficulties experienced (no access to data, access to data on unfair terms).]

Large companies are better prepared to develop data-based services and products. In particular, equipment manufacturers and service providers may have control over data *de*

[33] REF to OPC, responses to IIA consultation and Support Study TO BE INSERTED
[34] Deloitte (2018). *Realising the economic potential of machine-generated, non-personal data in the EU*, Report for Vodafone Group.
[35] European Commission (2020). *Outcome of the online consultation on the European strategy for data.*

facto or, where sui generis right under the Database Directive or other IP rights are claimed, *de jure*. In some cases, legal uncertainty as to whether data is covered under IP rights may also arise. This is notably the case of the Database Directive where the sui generis right can be used to indirectly protect access to data and can be exercised against taking and re-using of data stemming from the protected databases[36]. SMEs and start-ups meanwhile tend to lag behind larger companies in terms of data-centric innovation, as they possess limited legal expertise and negotiating power to get access to relevant data[37]. This imbalance can lead to data sharing under very restrictive terms.

As stated in the Data Strategy for Europe, data sharing will mostly be a choice of the company generating and holding the data. There are, however, situations where data access is a precondition for a competitive market. This is for example the case where the data is generated through the use an object or service, and the user company may have an interest in the data to be accessed by a third party beyond the manufacturer.

> *Maintenance (especially predictive) and repair services for any smart product linked with the IoT, for instance a lift or the braking system of a tractor, require data access. If the manufacturer of the system is unwilling to allow such access, independent service providers may be forced out of the market or would have to accept any terms offered that allow them to continue their activities.*

One study highlights that companies face strict contractual limitations when wanting to use or re-use data needed to provide services like installing machinery, repair, electrics and photovoltaic appliances [38]. In the agrifood, construction, manufacturing and aviation sectors, owners of smart machinery report being unable to access valuable data generated through their use of those devices, and that the data is captured by platform intermediaries or the equipment manufacturers[39]. This mirrors the problem related to the lack of consumers' control of data described in Problem 2 below.

Problem 2 – Consumers have limited control over data generated by their use of products and services

Use of online services and objects increasingly generates data, including performance logs from machines and consumer devices and measurements from industrial sensors. Currently, **consumers usually do not have control over the data.** Therefore they **cannot exploit the data** generated through their use **and capture the value of the data**.

As a data subject, an individual has control rights regarding personal data generated by their use of a product or service, including the right of access to those data and to object to data processing. They also have the right to port data (Article 20 GDPR) in a structured,

[36] SWD (2018) 146 final.
[37] Bookelmann, M. and Sneep, R. (2020). *Innovation, productivity, growth*, Desk Study Interreg; Everis (2018). *Study on data sharing between companies in Europe*, Study prepared for DG CNECT.
[38] European Commission (2018). *Study on emerging issues of data ownership, interoperability, (re-)usability and access to data, and liability*, SMART 2016/0030, prepared by Deloitte.
[39] Van der Burg, S., Wiseman, L. and Krkeljas, J. (2020). *Trust in farm data sharing: reflections on the EU code of conduct for agricultural data sharing*, Ethics Inf Technol. To be updated with references for the other sectors.

commonly used and machine-readable format to another controller. The exercise of the right to data portability is, however, limited both legally and from a technical point of view.

In addition, the consumer's ability to access and use the data they generate is determined generally by the underlying contract which are typically not negotiated and where the individual tends to be the weaker party.

If consumers had stronger possibilities to access data from objects and control the data they generate this would benefit them in different ways. They could, for example, take advantage of alternative aftermarket and value-added services, like predictive maintenance, which depend on access to such data[40], or of making informed consumer decisions, such as buying higher quality and more sustainable products and services[41]. They would also be able to repair products at competitive prices thereby extending their lifespan of and making them more sustainable. In turn, this would lead to a broader use of the data for economic or other purposes and would grow the overall benefits of data for the economy.

In specific areas (electricity, banking, cars), sectoral legislation has addressed the problem, and ensured that selected third parties can have access to the relevant data if the consumer so requires. However, the issue of rights of consumers to control the data they generate is transversal, and the underlying questions (who can do what with the data? who benefits from the generated value?) are the same in all the different sectors.

Problem 3 – Governments do not have the data they need to serve pressing public interest goals

Data is essential for driving better delivery of policy and public services. It is for example crucial for making transport, energy and other sectors fit for reducing net greenhouse gas emissions so the EU can achieve climate-neutrality by 2050[42], and for risk assessment and building resilience to increasingly frequent extreme weather events. The Covid-19 crisis has underlined the importance of data use for crisis management and for informed decision-making by governments at national, regional and local levels[43].

One example is the Exscalate4COV initiative that tested available molecules in order to identify new treatments for COVID-19. It took three months for researchers to obtain the relevant data from the pharmaceutical companies since there were no established processes in place to share such data.

The problems related to B2G data sharing go beyond crisis situations. The two main mechanisms through which public authorities currently acquire data from the private sector, i.e. reporting obligations and public procurement procedures, have proved inadequate to allow public authorities to respond to emergencies or changing economic

[40] MEASURE (2021). *The Measure privacy report*.
[41] SWD(2019) 92 final.
[42] European Commission (2021, *forthcoming*). *Support Study to this Impact Assessment*, SMART 2019/0024, prepared by Deloitte.
[43] De Nigris, S. *et al.* (2020). *Artificial Intelligence and digital transformation: early lessons from the COVID-19 crisis*; several EU and international case studies available in a Data & Policy special collection dedicated to *Telco Big Data Analytics for COVID-19*, see *here*; Science Academies of the Group of Seven (G7) (2021). *Statement on Data for international health emergencies: governance, operations and skills*.

and environmental circumstances[44] as well as to acquire specific datasets needed for other types of public purposes, e.g. improving mobility or compiling official statistics. Therefore, in 2018 the Commission issued guidance on B2G data sharing[45] and committed to take action if the problems related to B2G persisted. Since then, the problems have persisted. Procedures remain complex, costly and time consuming and, furthermore, cross-border cooperation[46] is not facilitated. These issues were also highlighted by a High Level Expert Group, which concluded that B2G data sharing in Europe is hampered by an increasingly fragmented landscape (in terms of operational models and rules) between and within both Member States and sectors while the processes for B2G data sharing are not transparent, scalable or easily replicable[47].

Problem 4 – Issues around the fairness and trustworthiness of data infrastructures

No value can be extracted from data without a data processing infrastructure, whether it is a simple Personal Computer, an on-premise server rack, or a cloud computing service provided over the internet. That is why computing infrastructure is a fundamental component of the proposed policy intervention to stimulate the European data economy. Most cases of data innovation, for example based on data sharing and re-use, depend for a large part on cloud services, e.g. for the interface of a data innovation ecosystem or for identification/authentication tools and data management tools. More in general, cloud services unlock access to emerging technologies, such as Artificial Intelligence or data analytics[48].

At the same time, these benefits of cloud computing come at the price of an increased dependency of European businesses on cloud services. In 2020, among enterprises that used cloud computing services, 59% were 'highly dependent', while 38% were classified in dependent to an 'upper-medium' extent[49]. This dependency makes it all the more important to ensure a security of supply of trustworthy, competitive, fair and resource efficient cloud and edge computing infrastructure and services, now and in the future.

In spite of the non-legislative actions the Commission has undertaken in the last few years, for example funding instruments such as the Connecting Europe Facility, problems persist relating to the trustworthy and fair nature of cloud services provided in Europe. In particular, vendor lock-in practices and unlawful access to data by non-EU/EEA authorities dismay the uptake of innovative cloud services. In turn, this leads to (i) less innovative deployment of data sharing and data analytics tools, (ii) underutilisation of data and (iii) an underperformance in terms of potential added value from increased use of data. In addition, the problem of unlawful access to data and overdependence on a small set of

[44] Craglia, M. *et al.* (2021). *Digitranscope: the governance of digitally-transformed society*, JRC Science for Policy report.
[45] SWD(2018) 125 final.
[46] World Economic Forum (2021). *Resetting Data Governance: Authorized Public Purpose Access and Society Criteria for Implementation of APPA Principles*.
[47] European Commission (2020). *Towards a European strategy on business-to-government data sharing for the public interest*, Final Report of the High Level Expert Group on Business to Government Data Sharing.
[48] EUROSTAT (2020), *Cloud computing.*
[49] EUROSTAT (2020), *Cloud computing.*

non-EU/EEA headquartered providers presents risks to the essential security interests and public order of the EU.

2.2. What are the problem drivers?

Driver 1 – Legal uncertainty for consumers and businesses around data access and use

A recent study found that companies considered unclear legislation on who can do what with data and the resulting uncertainty as one of the key blocking factors for a more efficient use of data[50]. This is confirmed by business surveys[51].

The problem is particularly acute in situations where the data is co-generated by the user of an object/service or the producer/provider of the object/service. Does the acquisition of an object or a service by a company or a consumer come with the benefit of sharing in the value of the data (beyond the rights given to data subjects by the GDPR)? Can the value be only captured by the manufacturer or the provider of the service? Or should the possibility to capture the value go to both the user of the object or service and the manufacturer or provider of the service?

Smaller companies blame this uncertainty as the reason for allowing larger players to exclude access to data through technical means, dictate data formats or impose unfair standard contract terms[52]. The absence of clear standards for smart contracts and clear rules for their use further hampers data use and data pooling[53].

Another factor that drives uncertainty around data access and use lies in the sui generis database right, an intellectual property right that under the Database Directive grants an exclusive right to the maker of databases over their use. It does not provide an exclusive right on data as such[54]. However, the fast evolution of data-based technologies has made difficult to distinguish between the control of databases and data. This is foremost the case with IoT technologies that produce vast amounts of data ("machine-generated data") necessary to carry out their functions (e.g. optimising temperature in a house, directing a car fleet or increasing crop production in agriculture). Therefore, the risk exists that the sui generis right is used for purposes that were not intended by the EU legislators, namely to indirectly provide legal protection to data for data holders against the interest of data co-producers - business and consumers. The second evaluation of the Database Directive has already documented the possibility that the sui generis right might apply to machine-generated data[55].

[50] SITRA (2021). *The future of the European companies in the data economy*, Report.
[51] European Commission (2018). *Study on data sharing between companies in Europe*, prepared by Everis; BDI (2021). *Datenwirtschaft in Deutschland, Wo stehen die Unternehmen in der Datennutzungund was sind ihre größten Hemmnisse?* Report
[52] Mohr, N., and Roggendorf, M., (2020). *Data Sharing in Industrial Ecosystems*, McKinsey and Fraunhofer.
[53] European Commission, Blockchain Strategy *webpage*; European Blockchain Observatory and Forum (2019). *Legal and regulatory framework of blockchain and smart contracts*; European Commission (2021, *forthcoming*). *Smart contracts and the digital single market through the lens of a 'law + technology' approach*, study prepared by Schrepel, T.
[54] Recital 45 of the Database Directive.
[55] SWD(2018) 146 final.

These risks are well understood by a significant proportion of stakeholders. The results of the survey conducted for the review of the Database Directive in the context of the preparation of this impact assessment shows that respondents think it is necessary to clarify the scope of the sui generis right. A strong majority (73%) thinks that excluding machine-generated data will have positive effect on legal certainty[56].

[Placeholder for the input on the database right from the public consultation]

Annex 7 to this Impact Assessment is specifically dedicated to the review of the Database Directive.

The legal problems are compounded by practical issues around the portability of the data. Manufacturers or service providers generally do not offer interoperable formats and interfaces for standardised data exchange[57]. Use of products and services generates large volumes of data, but there are no applicable rules requiring the facilitation of the transfer of data to a third party service provider. Companies typically mix up requests for access to data and for data portability, rarely provide the data in machine-readable formats, and refuse requests on technical grounds or transfer incomplete files with delays[58]. Yet, ensuring a frictionless data exchange was found to be critical to boost the European machine-to-machine economy[59]. Consequently, consumers cannot in practice port co-generated data to another service provider whose offer of repair or analytics services depends on access to the data.

Driver 2 – Lack of common data sharing practice and abuse of contractual imbalances with regards to data access

Voluntary data sharing between businesses is typically implemented on the basis of contracts, concluded only for the purpose of data sharing or in the context of a purchase/lease of a data generating product or supply of a service.

Where the contractual parties have aligned interests and share data, they create value from data and maximise benefits across the value chain. However, there is little established market practice for data sharing both within the same sector and even more across sectors, in particular across borders in the internal market. Only a few sectors developed market practices for B2B data sharing, such as the development of codes of conduct in agriculture[60] and tourism[61] or the legal guide on industrial data for the technology/ manufacturing sector[62], while data sharing practices in other sectors stay underdeveloped. Market practice for cross-sectoral data sharing, especially where this would involve cross-

[56] REF TO ADD
[57] Article 29 Data Protection Working Party (2016). *Guidelines on the right to data portability*; De Streel, A., Krämer, J. and Senellart, P. (2020). *Making data portability more effective for the digital economy*, CERRE Tech, Media and Telecom Study; Riechert, A. (2020). *Data portability*, Policy Paper.
[58] See this *presentation* from the ISA² Workshop; Drechsler, L. (2018). *Practical challenges to the right to data portability in the collaborative economy*, Proceedings of the 14th International Conference on Internet, Law & Politics, Universitat Oberta de Catalunya.
[59] COM(2020) 66 final.
[60] EU Code of conduct on agricultural data sharing by contractual agreement, see *here*.
[61] Add REF for tourism
[62] Orgalim (2021). *Legal guide on industrial data*.

border transactions, is even rarer due to, among others, a lack of expertise/know-how and standardised legal practices[63].

Especially smaller businesses or start-ups would lack the necessary expertise, or the resources to acquire the expertise, and as a consequence may shy away from often complex data sharing contracts.

If companies and sectors do not engage in data sharing, they miss the opportunity to accumulate relevant expertise and experience, which becomes a vicious cycle. This lack of know-how has an additional negative impact, as in particular cross sectoral data sharing is a way of leveraging some of the main benefits of the data economy. This hampers, for example, energy management and decarbonisation initiatives which require substantial data collection from diverse sectors (e.g. mobility, industry, agriculture and energy). Lack of data sharing along value chains is for instance a major barrier to technology-enabled circular economy business models[64].

In some cases, data sharing practices are directly driven by mandatory data access rules in sectoral legislation. However, these exist only in a handful of sectors (e.g. banking, automotive, chemicals, electricity[65]), and conditions for access vary considerably. This leaves market participants without clear and consistent guidance for data sharing conditions in other sectors and across sectors.

Where the parties' interests are not aligned, data holders may, due to their superior negotiating power, either deny access to data altogether or offer data sharing only at commercially disproportionate conditions[66] imposing unilaterally unbalanced terms for data access. In such cases, the requesting party cannot create value from the data at all or only under disproportionate conditions.

According to a recent study, unfair terms relate mainly to the exclusion or disproportionate limitation of warranties and liability of the data holder, to the unilateral modification of contract terms by the data holder and to conditions surrounding the termination of a data sharing contract[67]. Such terms reduce the economic value of the data for the weaker counterparty or deter data requestors to enter into a contract at all.

In addition, the superior negotiating power of the data holder can deprive the user of a data generating product or service of its fair share of the economic value of the data.

Imbalances in negotiating power between data holders and data requesters – in particular SMEs and start-ups– prevail in several sectors, for instance construction, manufacturing and agriculture, and in aftermarkets (e.g. repair and maintenance) generally[68].

[63] European Commission (2021, forthcoming). *Study on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights*, study prepared by ICF.
[64] Berg, H. *et al.* (2021). *Unlocking the potential of Industry 4.0 to reduce the environmental impact of production*, Eionet Report.
[65] OJ L 337, 23.12.2015, p. 35–127; OJ L 151, 14.6.2018, p. 1–21; OJ L 396, 30.12.2006, p.18; OJ L 158, 14.6.2019, p. 125–199.
[66] Deloitte (2017). *New technologies case study: data sharing in infrastructure*. *A final report for the National Infrastructure Commission*.
[67] European Commission (2021, *forthcoming*). *Study on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights*, study prepared by ICF, [72-75].
[68] European Commission (2018). *Study on emerging issues of data ownership, interoperability, (re-)usability and access to data, and liability*, study prepared by Deloitte; European Commission (2021, forthcoming).

[Placeholder: Data from public consultation supporting the statements above (unfair terms as difficulty, imposed on SMEs by large companies, sectors concerned)]

In cases, where data sharing practices are directly driven by sectoral legislation and this sectoral legislation leaves the detailed conditions for data access to contractual negotiation, the result may be similar, leading despite an access right as a matter of principle to imbalanced access conditions.

Driver 3 – Inadequate mechanisms for using business data in the public interest

As highlighted in the report of the High Level Expert Group on B2G[69], the lack of access to relevant data held by companies hampers the ability of public authorities to deliver evidence-based and efficient public policies and services. Moreover, if the data necessary is held by only one company, pricing conditions may be unaffordable for tax-payer funded public sector bodies. Furthermore, the lack of clear rules and mechanisms in place to streamline B2G data sharing negatively impact on the private sector, which is confronted with a plethora of not consistent rules in the EU. Some Member States, for example France and Finland, have adopted horizontal, or sector-specific legislation providing for public sector access to data held by businesses[70]. EU-level **sectoral initiatives** such as the European Freight Transport Information Regulation[71], establish data sharing mechanisms within specific domains, complemented by the Once Only Technical System under the Single Digital Gateway Regulation. Several Delegated Regulations from the ITS Directive organise the access to transport and mobility data as well.

This context of national, local and sectoral initiatives creates a risk of fragmentation across multiple dimensions, including the type of data that can be collected, the manner it should be collected in, and the purpose for which this can be done[72]. This is problematic for two reasons: many of the societal challenges which could be addressed by B2G data sharing require cross-border and cross-sectoral datasets (e.g. climate change, transport or containment of epidemics)[73] and it creates a burden for companies confronted with many requests from different public sector bodies for the same dataset.

Businesses highlight the uncertainty and fragmentation across the EU about the notion of 'public interest'[74]. Public authorities lack clarity on what data is available and what it entails to create value from it[75]. As a result, private companies and the general public might

Study on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights, study prepared by ICF, [p. 10]. This was also reported by numerous businesses in the feedback on the Inception Impact Assessment on the Data Act.

[69] European Commission (2020). *Towards a European strategy on business-to-government data sharing for the public interest*, Final Report of the High Level Expert Group on Business to Government Data Sharing.

[70] See the French *LOI n° 2016-1321 du 7 octobre 2016 pour une République numérique* and the *Forest legislation in Finland*.

[71] OJ L 249, 31.7.2020, p. 33–48.

[72] European Commission (2021, *forthcoming*). *Support Study to this Impact Assessment*, SMART 2019/0024, prepared by Deloitte.

[73] European Commission (2020). *Towards a European strategy on business-to-government data sharing for the public interest*, Final Report of the HLEG on Business to Government Data Sharing.

[74] Stakeholders feedback to the Inception Impact Assessment, see Annex 2.

[75] Young A. and Verhulst S., (2020). *Data Collaboratives*, in Harris P., *et al*. (eds.), "The Palgrave Encyclopaedia of Interest Groups, Lobbying and Public Affairs", Palgrave Macmillan.

be less willing to share data that could otherwise be used to tackle societal challenges[76]. Similarly, there are no industry-specific guidelines and protocols guiding collaboration, businesses do not know what to expect in terms of scope of request, licensing or charging possibilities. The lack of sustainability and governance rules negatively affect the effectiveness and efficiency of B2G data sharing over time[77].

A recent call to build the data infrastructure and ecosystem to tackle societal and environmental threats, endorsed by more than 400 signatories'[78], demonstrates that the current ecosystem for B2G data sharing lacks clarity and adaptability.

Driver 4.1 – Unfair market practices and vendor lock-in in cloud services

Current practices of cloud providers impede the fair and open cloud market that would be necessary for the efficient functioning of the data market. In particular, commercial, contractual and licensing practices[79] are causing an unnecessary market consolidation around a few large actors through vertical integration of services, vendor lock-in practices and entry barriers for new market entrants.

First of all, 'vendor lock-in', or the situation in which users are prevented to switch from one data processing service provider to another by porting their digital assets in between environments, is a transversal problem that affects all types of data processing services and that was confirmed by the stakeholders to the Inception Impact Assessment on the Data Act[80] and the public consultation on building the European Data Economy, in which more than half of business respondents indicated to already have experienced problems while switching from one cloud service to another[81]. It directly makes the cloud market less fluid and competitive and prevents cloud services from becoming the reliable commodity that EU businesses should be able to depend on without further thoughts.

The Free Flow of Non-personal Data Regulation provided a self-regulatory approach to address the problem of vendor lock-in, inciting a process for industrial stakeholders to develop codes of conduct for easier cloud switching[82]. Industry proposed initial codes of conduct in May 2020, but an analysis shows that it is unlikely that the codes of conduct will effectively improve switchability of cloud services on the market.

The absence of common standards is the most important *technical* cause of vendor lock-in of data processing services. Different data formats or data architectures lead to different outcomes on the basis of the same data, and this prevents porting of data and assets to a new cloud environment, or maintaining a specific application after switching. While technical interoperability is possible through specific tools for cloud services dealing with

[76] European Commission (2020). *Towards a European strategy on business-to-government data sharing for the public interest*, Final Report of the HLEG on Business to Government Data Sharing.
[77] GSMA (2018). *Scaling Big Data for social good: the need for sustainable business models*.
[78] ODI, The GovLab, Cuebiq (2021). *The use of mobility data for responding to the COVID-19 pandemic.*
[79] European Commission (2018). *Switching of cloud services providers*, study prepared by International Data Corporation (IDC) and Arthur's Legal.
[80] See annex 2 and contributions on the European Commission *Have your say webpage*.
[81] European Commission (2017). *Synopsis report consultation on the 'building a European data economy' initiative*.
[82] OJ L 303, 28.11.2018, p. 59–68.

data storage, it is harder at the level of software-as-a-service, where standardisation efforts could offer a solution.

In addition to the problem of 'vendor lock-in', other contractual issues also negatively affect users of data processing services. Studies show that there is a generally unbalanced contractual relationship between cloud service providers and cloud users, resulting from the sheer size of hyperscale cloud service providers, and having detrimental effects for cloud users[83].

Driver 4.2 – Potential unlawful access to data is a disincentive for use of cloud services

Cloud services provided in Europe are vulnerable to unlawful access to data by non-EU/EEA authorities. This diminishes trust in cloud services and therefore puts a strain on the maximum potential of the data economy in Europe. In fact, stakeholders report reluctance to use cloud services due to concerns that some jurisdictions have laws on access to data that conflict with EU law including the Charter of Fundamental Rights[84].

This issue revolves around specific laws with extraterritorial effect that several third countries, in which major cloud service providers have their headquarters, have in place[85]. Through these laws, the third country can oblige cloud service providers to grant its authorities access to data of the cloud provider's EU customer organisations, even if this data is processed in the EU[86]. As cloud services are increasingly used by EU public authorities to operate public infrastructures, this has direct implications for the EU's essential security interests. At least as essential, however, is the breach of data protection that this entails for European citizens, through the unconsented (and often unknown[87]) access to their data.

This problem is particularly relevant, because at the moment 85% of the cloud services provided in Europe are offered by non-EU/EEA headquartered providers, and this proportion is increasing[88].

Driver 5 – No common standards for reusing data within and between sectors

Studies indicate that depending on the sector, between 24% and 36% of the benefits of data sharing will come from sharing **between** the sectors and from diverse sources[89]. Data can only be used and reused, and generate value in different contexts, sectors and across internal EU borders, where the actors involved understand and trust the interfaces mediating data access. This 'interoperability', in the form of common and compatible

[83] European Commission (2021, *forthcoming*). *Study on the economic detriment from unfair and unbalanced cloud computing contracts*, preview *here*.
[84] European Commission (2021, *forthcoming*). *Support Study to this impact assessment*, prepared by Deloitte.
[85] Commission policies and ongoing initiatives aim to address this through, for example, the e-evidence proposals and ongoing initiatives for international negotiations, including for an EU-US agreement on e-evidence.
[86] Such laws even cover EU-headquartered providers, but only for the part of their services that is provided outside EU borders, and the services provided to non-EU citizens.
[87] In many cases, the referenced third country laws prohibit cloud providers to notify their customers of the data access that is being performed.
[88] Synergy research group (2021), and here, figures pertain to IaaS/PaaS and private cloud services.
[89] Deloitte (2018). *Realising the economic potential of machine-generated, non-personal data in the EU*, Report for Vodafone Group.

standards for description of data and data formats etc., is, amongst other things, essential to the functioning of common European data spaces[90]. The 2019 workshops on common European data spaces[91] highlighted a series of issues regarding standardisation within the different sectors.

The OECD notes that 'one of the most frequently cited barriers to data sharing and reuse is the lack of common standards, or the proliferation of incompatible standards.' For instance, inconsistent data formats prevent the creation of longitudinal data sets, as changes in measurement and collection practices make it hard to compare and aggregate data[92]. For instance, in industrial and agricultural settings, data and service providers have selected architectures, ways to describe the data and data formats for their platforms, which make it difficult to exchange data. This problem is even stronger at the cross-sectoral level.

This is confirmed by the public consultation on the European Data Strategy of 2020, where 91.5% of the respondents agreed that standardisation is necessary to improve interoperability and ultimately data reuse across sectors. Some 91.1% of respondents agreed that future standardisation activities need to better address the use of data across sectors of the economy or domains of society[93].

2.3. How will the problem evolve?

In **B2B data sharing** contexts, it is expected that **market imbalances, the disparity in negotiating power between companies engaging in data transactions and lack of clarity over data rights, including the uncertainty as to IP rights,** will persist or deepen. The increasing complexity of data value chains makes businesses increasingly reluctant to share data, **with negative effects for innovation and added value creation**. For instance, due to insufficient data sharing, only 10 to 20% of potential data value generated in the financial sector is currently accessible[94]. Data-driven network effects and associated entry barriers in fast evolving digital markets will continue to drive innovative start-ups out of aftermarkets, negatively affecting new business models, in particular those based on data, e.g. AI analytics and advanced data-driven services such as predictive maintenance[95]. A UN study predicts that with the inherent dynamics of the data economy, companies currently leading the 'data race' will make it difficult for smaller firms to compete[96], potentially depriving customers of lower prices. A German stakeholder estimated that prices charged to consumers could be 30-40% lower if there was access to data-driven downstream markets (such as for smart home appliances) that are digitally controlled by manufacturers [97]. Furthermore, the absence of standards for data sharing will limit

[90] European Commission (2019). *Reports of the workshops on common European data spaces*.
[91] European Commission (2019). *Reports of the workshops on common European data spaces*.
[92] OECD (2019). *Enhancing Access to and Sharing of Data: Reconciling Risks and Benefits for Data Re-use across Societies*.
[93] European Commission (2020). *Outcome of the online consultation on the European strategy for data.*
[108] McKinsey Global Institute (2021). *Financial data unbound: The value of open data for individuals and institutions*.
[95] JRC (2018). *Access to digital car data and competition in aftersales services*, Digital Economy Working Paper 06.
[96] UN (2019). *Data economy: radical transformation or dystopia?* UN Frontier technology quarterly.
[97] ZDH Position on the IIA Data Act, *Have your say (europa.eu)*.

communication and sharing between different data spaces, with potential for duplication of effort in obtaining data across sectors.

In **B2C contexts,** ongoing practical limitations (such as the insufficient level of interoperability) on the exercise of rights to port all data generated by use of products and services will hamper **consumer choice for digital products and services**[98]. Consumers will continue to be locked into certain service providers due to the high switching costs, which will limit demand for competing products and services, with knock-on effects on innovation[99].

In **B2G contexts**, **public sector bodies are likely to continue to lack access to necessary data** for responding in a harmonised way to challenges at local or national level, and in tackling cross-border emergencies and policy challenges. The problem will become less and less sustainable as extreme weather events increase with the intensification of the impact of climate change. A lack of a harmonised approach to B2G data access and reuse will increasingly make companies in the internal market subject to different rules and administrative practices, generating inefficiencies and affecting competition in the EU internal market due to varying approaches regarding the justification for the data transfer requests or the application of different compensation rules.

In the context of **access to fair and trustworthy data processing services**, without policy intervention it is likely that both fairness and trustworthiness of cloud services would significantly decrease. Firstly, the current non-binding cloud switching framework is based on SWIPO codes of conduct, which do not address technical hurdles to interoperability[100] but adopt an approach based on pre-contractual transparency. As vendor lock-in can only be tackled by addressing at once the contractual, technical and economic problems, vendor lock-in practices in the cloud will persist. Secondly, studies show that the dependence of the EU businesses on cloud services is growing, and that the market share of non-EU/EEA hyperscale providers is growing in Europe, despite private industrial initiatives such as 'Gaia-X'[101]. Therefore, without additional public intervention in this regard, distrust in cloud services will likely grow, caused by the risks associated with third country access to data in the cloud.

3. WHY SHOULD THE EU ACT?

3.1. Legal basis

This initiative is part of the European Strategy for Data and intends to complete the single market for data[102]. As such, it needs to take into account the scale of the internal market, since data-driven products and services are often developed using data from different Member States, and later commercialised across the EU.

[98] A concern shared by the European Consumers Association in the 2020 consultation on the data strategy.
[99] Borghi, M. (2019). *Data portability and regulation of digital markets*, CIPPM.
[100] In contradiction with the Regulation on a Framework for the Free flow of non-personal data, Article 6.
[101] Infotechlead (2021). *Amazon, Microsoft and Google grab cloud share in Europe*; and *here*.
[102] Area in which data from the public sector, businesses and citizens can be accessed and while respecting rights in relation to such data and investments made into their collection.

Accordingly, Article 114 TFEU is the relevant legal basis for this initiative.

3.2. Subsidiarity: Necessity of EU action

In the EU, the key sectors of the economy span across borders, with the suppliers, producers and clients established in different Member States. Data flows form an intrinsic part of digital activity and mirror these existing supply chains and collaborations. Any initiative aiming to organize such data flows must address the whole EU single market.

Datasets in individual Member States often do not have the richness and diversity to allow big data pattern detection or machine learning. In addition, data-based products and services developed in one Member State may need to be customised to the preferences of customers in another, and this may require local data or even international data. Data needs to flow easily through existing and cross-sector value chains, facilitating a cross-border service or replicating an existing data-based service from one Member State to another.

In a Single Market, potential obligations on manufacturers of smart objects connected to the IoT, for both personal and industrial use, can only be set at EU level. Similarly, cloud providers usually place general service offerings on the market at EU level, without making a distinction between different Member States. The identified problems related to data processing services are therefore in need of a transversal EU solution. Also, fairness of business-to-business contracts would also be hard to achieve by different national rules which could lead to choices, imposed by the party with the stronger bargaining power, of an applicable law with the lowest level of protection. The cross-border nature of industrial data value chains, of cloud computing service offers as well as of the production and sale of smart objects makes it very difficult to address problems of fairness of contractual rules on data sharing, access and use at Member State level.

Moreover, the clarification of the role of the *sui generis* database right and its relationship with machine generated data cannot be achieved by Member States alone. This right is part of the *acquis* and has autonomous concept in EU law. It, therefore, requires the review of the Database Directive on the EU level.

Member States are already considering or adopting – at different speeds - legislation on different aspects of the data economy[103]. The Commission therefore indicated in 2018 that it would consider legislation to address obstacles to data use in the single market in case of their persistence[104]. EU intervention, unlike national intervention, can ensure a coherent framework in the internal market[105] for national as well as sectoral approaches to tackling data barriers and bottlenecks, and ensure comparable access and use conditions for common European data spaces.

[103] European Commission (2020). *Study supporting the impact assessment on the Regulation on data governance,* SMART 2019/0024, prepared by Deloitte. See: B2G data access legislation mentioned in chapter 2.
[104] COM(2018) 232 final.
[105] Max Planck Institute for Innovation and Competition, *Arguments against "data ownership"*.

3.3. Subsidiarity: Added value of EU action

Considering the importance of economies of scale for the development of data technologies and services, coordinated action at EU level can bring greater value to the European economy and society as compared to action by individual Member States. In the area of business-to-government data sharing, many data providers that have relevant data are multinational companies. Such data providers should not be confronted with a fragmented legal regime. However, the initiative should leave room for national measures in particular in terms of the structures to be put in place.

4. OBJECTIVES: WHAT IS TO BE ACHIEVED?

4.1. General objective

The Data Act's general aim is to make more data in the EU usable to support sustainable growth and innovation across all sectors in the data economy and evidence-based and efficient public policies and services.

It will seek to achieve this aim by opening opportunities and removing barriers for access to data, to both private and public sector bodies, while preserving incentives to invest in data generation.

4.2. Specific objectives

The specific objectives of the intervention are formulated in response to the main problem areas identified in Chapter 2, as shown in the graph below.

1. ***Increase legal certainty of consumers and businesses on access to data while continuing to incentivise data generation***

Common market practices for business-to-business data sharing and access within and across sectors should be promoted. In particular, increasing legal certainty for companies and consumers who generate data by using and interacting with digital services and objects (as 'data co-producers'), including with regard to machine generated data in databases, will encourage greater participation in the data economy by all actors, regardless of their size.

It should make it easier in practice to move data between service providers. At the same time, entities that have invested in data generation should in principle be fairly rewarded for these investments and opening up greater access to data should not diminish incentives to continue investing in high quality data generation.

2. ***Prevent abuse of contractual imbalances that hinder fair data sharing between businesses***

The Data Act will aim to protect market participants against unfair contractual terms affecting access to and use of data that are imposed by a party enjoying a significantly stronger bargaining position.

3. ***Facilitate use of commercially-held data for specific public interest purposes***

Public sector bodies should be able to access and use data necessary for specific public interest purposes, which is not available through reporting obligations or voluntary

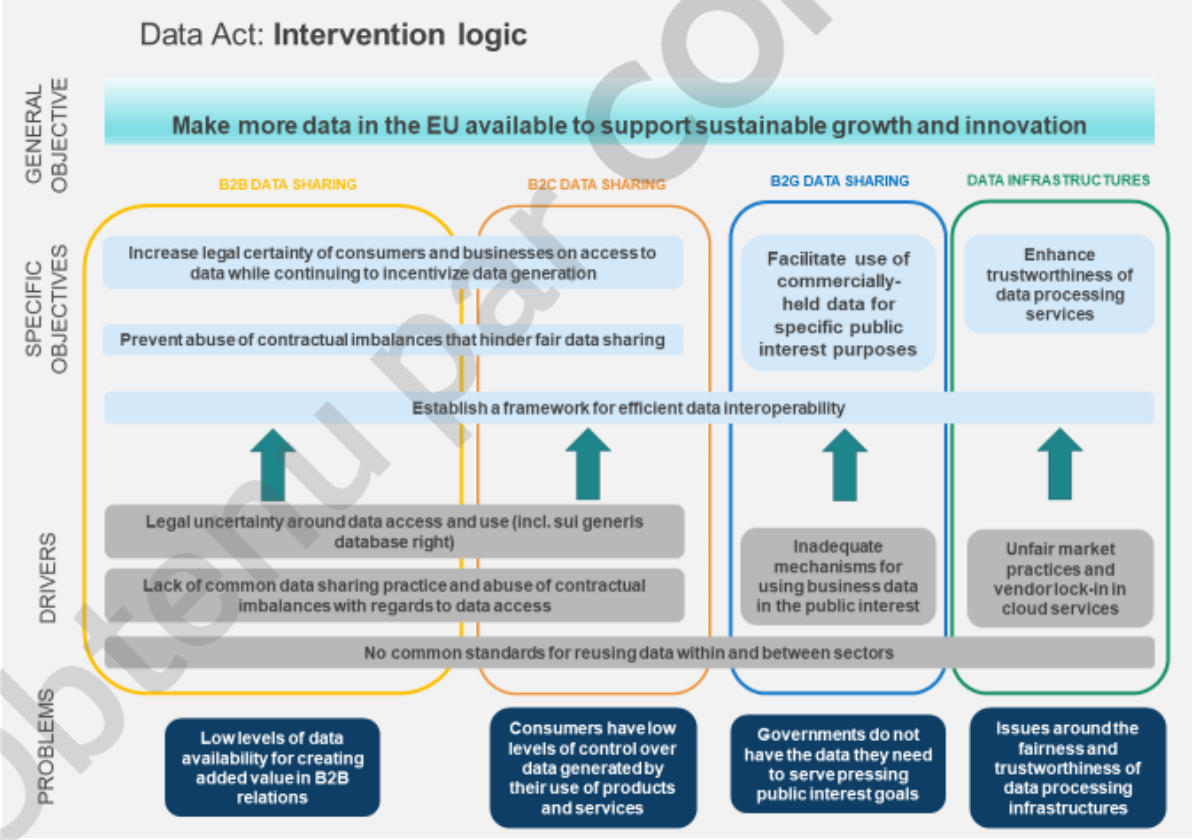
arrangements, while the burden on businesses is minimised. Data sharing should enable public and private to develop data systems ready to respond quickly and securely in the event of a public emergency.

4. Facilitate switching between trustworthy data processing services

Cloud users in the EU should be able to more easily switch between different providers of data processing services, for free or against reasonable costs. They should feel able to trust these services and choose the one best responding to their needs, regardless of the home jurisdiction of the providers, and without having to be concerned about the integrity of their data. Lock-in effects should be prevented.

5. Establish a framework for efficient data interoperability

Minimum common principles and standards should allow actors – including businesses consumers and researchers - across sectors to access and port data to and create value efficiently through European data spaces. This should reduce transaction costs, enable actors to find the high quality data they need so that data can be reused across sectors, while remaining flexible so each data space to reflect the needs of the sector and the set-up of the stakeholder ecosystem[106].



[106] SWD(2020) 295 final.

5. WHAT ARE THE AVAILABLE POLICY OPTIONS?

In line with the general and specific objectives of this initiative, the policy options are designed to enhance data use, currently hindered by various barriers described in Chapter 2 and for which the common factor is that the vast socio-economic potential of data remains underexploited along the value chain both for data holders and data users.

In line with the European strategy for data, the overall approach follows the principle that most data sharing should be voluntary with qualified obligations only where strictly necessary to relieve clear, major imbalances and data bottlenecks, while preserving incentives to invest in value generation from data.

Each option combines different levers designed to address the problem drivers identified in chapter 2 and to deliver the specific objectives of chapter 4, but with different emphases. The options have been designed based on realistic propositions for change that have emerged in the debate around data access and use over the last few years.

Policy option 1 (PO1) involves a minimal level of intervention through non-binding measures to facilitate more efficient and balanced data sharing. Policy option 2 (PO 2) proposes a limited set of legislative measures to facilitate the use of data, while strengthening legal certainty on how data can be used and by whom. Policy option 3 (PO 3) proposes further going obligations in terms of use of data by third party businesses, consumers and public sector bodies, and also foresees stronger provisions in terms of obligations on data service providers and in terms of interoperability requirements.

The levers in the different policy options are aimed at complementing each other, and should therefore not be considered in isolation: In other words, the balance between improving data access and use on the one hand and providing incentives to invest in data and data technologies is the result of their combination.

Each option leaves unaffected existing applicable rules in the areas of data protection, intellectual property (with the exception of changes introduced by the review of the Database Directive), competition, justice and home affairs and related (international) cooperation, trade-related obligations, and the legal protection of trade secrets.

Each of the policy options would leave room for further going interventions in **specific sectors**. For the two legislative options (policy options 2 and 3), the principle would be that future sectoral legislation can complement the horizontal legislation, but would have to respect the common rules set out in the Data Act.

5.1. What is the baseline from which options are assessed?

In a baseline scenario, the Commission would not propose any specific measures to address the problem drivers of inefficiencies, imbalances and ineffectiveness described above. The ongoing implementation of the Data Strategy[107] could facilitate voluntary data sharing,

[107] See chapter 1.

including by providing a framework for trusted data intermediaries under the DGA and promoting the development of data spaces.

The baseline figures are those of the autonomous growth of the data economy that can be expected without further policy intervention. Considering that the current initiative will affect a wide range of economic sectors, the total GDP for the EU27 of around 11.5 trillion EUR in 2020 has been chosen as the most suitable baseline against which the impacts of different policy options can be measured.

The baseline is expected to show an autonomous growth to around 13.8 trillion EUR (+20%) in 2028. This projection is based on the GDP forecast used in the European Data Market Monitoring Tool[108] up till 2025 and beyond this date, based on GDP growth rate forecasts of the OECD (1.5%-1.6% p.a.).

5.2. Description of the policy options

Policy Option 1 – Non-binding measures encouraging wider and more efficient data sharing, use and processing among stakeholders

This option would consist of the Commission issuing guidance documents and supporting best practice and self-regulation among the relevant stakeholders.

To **tackle the issues of legal uncertainty and contractual issues around data sharing,** the Commission would set up a forum of experts and stakeholders whose role would be the creation of an industry-driven self-regulatory **framework for co-generated data** such as a code of conduct per sector or across sectors – ensuring consistency among sectors. This framework could include best practices for manufacturers or service providers in the application of the *sui generis* right under the Database Directive and it could encourage allowing users of products and services to access data they generate, subject to appropriate compensation. The Commission could also recommend a set of voluntary balanced model contract terms for all data sharing, including for co-generated data, in order to promote know-how, in particular for SMEs and to facilitate B2B data sharing within and across sectors[109]. At the same time, non-binding recommendations on the use of specific standards for smart contracts would be elaborated.

To **facilitate use of commercially-held data for specific public interest purposes**, the Commission would support Member States in implementing recommendations of the expert group, including a recommendation to the Member States on the setting up of governance structures to promote and oversee access and reuse in the public interest of data held by businesses. This would include criteria for determining specific purposes for tasks performed in the public interest, and for devising compensation models for data sharing.

To **enhance fairness, competitiveness and trustworthiness of the EU market for data processing services**, the Commission would encourage industry to present significant improvements to the existing Codes of Conduct on switching and porting in the cloud,

[108] See the European Data Market Monitoring tool *here*.
[109] The development of the model contract clauses will be done by an expert group accompanied by a process involving stakeholders to ensure a mutual exchange on the needs of the practice.

answering better to the interests of cloud users. This would be supplemented by the adoption of voluntary standard contractual clauses to define and promote 'switchability'[110]. The codes of conduct should be enlarged in scope to also incorporate measures on costs and technical interoperability. Any action on interoperability would remain non-binding. To raise trust in data processing services, voluntarily standard contractual clauses could be deployed to create a market standard on the specific legal, technical and operational safeguards that providers could implement to mitigate risks of experiencing conflict of law associated with the use of non-EU headquartered data processing providers.

Policy Option 2 – Rules on controlled data sharing with predictability on how data will be used

To increase consumers' and businesses' legal certainty on access to data:

- In order to allow data co-producers and other interested parties to enjoy usage rights without interference and to address the current legal uncertainty, machine-generated data would be explicitly excluded from the scope of application of the sui generis database right through a targeted review of the Database Directive.
- Businesses and consumers using a product or service would be granted the right to access all the data they generate – not only personal data in the case of data subjects.
- Businesses and consumers using a product or service would be granted the possibility to allow access to the data by service providers, such as providers of aftermarket services, based on fair, reasonable, proportionate, transparent and non-discriminatory conditions (general access modalities). These conditions should ensure that these businesses and consumers obtain a fair share of the value of the data. For consistent data access conditions across sectors, such general provisions would also be the basis for any data access rights for third parties that are established in future sectoral legislation. There would be a limited set of potential third party beneficiaries such as aftermarket service providers within the sector (e.g. repair services and spare part suppliers).
- A dispute resolution mechanism would apply to data access rights that are established in future legislation to ensure consistent data access conditions across sectors.
- Manufacturers and service providers would retain the right to access and use the data generated by the relevant products and services, subject to data protection and other applicable rules. Technical means, such as smart contracts, and APIs, for tracking, managing and especially enforcing data sharing agreements would be encouraged through the introduction of essential technical requirements for their interoperability across sectors.

To prevent abuse of contractual imbalances:

[110] Building for example on the SWIPO process, to provide guidance and governance between Cloud Service Providers and Cloud Service Customers to ensure safe and effective switching from provider and the portability of non-personal data in the light of article 6 on the "Free Flow of Non-Personal Data" regulation.

- In addition to the model contract terms described under PO1, a contractual fairness test for B2B data sharing contracts limited to not individually negotiated contract terms[111] would prohibit unilaterally imposed unfair contractual terms. Model contracts terms and fairness tests are two different but complementary instruments[112]. The contractual fairness test would address all data sharing agreements, including where co-generated data is being shared.
- Product manufacturers and service providers would have transparency obligations to specify in their agreements with customers what data is likely to be generated by the product and the services and how it can be accessed by users of products and services. SMEs would be exempt from these obligations.

To facilitate B2G data sharing:

- The Data Act would provide for a limited range of purposes at EU level for which public sector bodies may request companies to provide necessary data not otherwise available through reporting obligations, public procurement or voluntary arrangements. These purposes could include only the most pressing social needs, where other means of accessing data are not available, including responding to public emergencies, environmental protection, safeguarding public health and the compilation of official statistics. Any additional purposes could be added by Member States only on the basis of objective and verifiable criteria and a public needs analysis.
- Safeguards would address purpose limitation, proportionality, respect of fundamental rights and freedoms and the rights and the interests of the company providing the data. Data should be anonymous in principle, and if personal data is needed, it should be processed in compliance with the GDPR or other relevant EU or national legislation.
- Companies providing the data would be compensated under a preferential treatment regime i.e. for public sector bodies at prices lower than those charged to private entities and reflective of marginal costs. Data necessary for emergencies should be provided free of charge where requested.
- Member States would be required to ensure mechanisms for facilitating and registering data sharing and for resolving disputes, with a requirement that both private and public entities are represented in the bodies designated for these tasks. SMEs companies would be excluded from the new obligations.

To enhance trust in data processing services:

- Providers of cloud and other data processing services would be legally required to ensure 'switchability' by guaranteeing a minimum level of functionality of cloud services across different providers. This would address contractual, technical and commercial aspects to enable customers to port their digital assets to another provider or back in house when they want to terminate their contract with a service provider.

[111] A contract term would not be individually negotiated, if it has been supplied by one party and the other party has not been able to influence its content.
[112] European Commission (2021, *forthcoming*). *Study on model contract terms, fairness test in B2B data sharing and cloud contracts and data access rights*, ICF, p. 69.

- There would be a framework for data processing services interoperability standardisation[113]. In addition, this option would empower the Commission to adopt implementing acts related to the technical standard-setting process, or to mandate the use of certain switching standards.
- To raise trust in data processing services, in line with Article 30 of the DGA, providers would be required to take technical, legal and organisational measures to prevent access or transfer based on requests from third country jurisdictions in relation to EU customer data where such transfer or access would be in conflict with EU or national law, unless strict procedural conditions are met.

In order **to improve the interoperability of data**,

- the Commission would be empowered to endorse data interoperability requirements elaborated by standardization bodies or industry for selected common European data spaces in delegated acts. The requirements would **not** be mandatory for stakeholders in the data spaces.

Policy Option 3 – Framework for opening up access to data to more innovative businesses and to public sector bodies in case of a clear public interest

PO3 proposes legislative measures to maximise the opportunities for parties to request data and determine how they wish to use it once made available, with stronger obligations on data holders and data processing service provider to facilitate portability in practice.

To increase consumers and businesses' legal certainty on access to data:

Under PO3, in addition to the measures in PO2, the following measures are envisaged:

- Organisations with a legitimate interest in data in a supply chain or related to products would be entitled to request access to data. Such a legitimate interest would include being the co-generator of the data, requiring the data to innovate or to enter a particular market and provide aftermarket services, or requiring the data to allow informed and efficient choices. Data in scope could include data concerning durability or reliability of the product or its components, reparability and upgradability, presence of substances of concern in the product and their tracing, on the recycled content, and its lifecycle and environmental impact.
- Manufacturers and service providers would be by default required to apply technical means to enhance the possibility for access to the data by service providers, such as providers of aftermarket services.

To prevent abuse of contractual imbalances:

- In addition to the voluntary model contract terms (as under PO1) the proposal would contain a fairness test (as under PO2), which would apply to all contractual terms on data access and use, i.e. also where the terms are individually negotiated.

[113] As suggested by stakeholders in the user industry, oversight would be ensured by existing bodies within the scope of their competences. See BdB (2021). *Position paper on Digital Sovereignty*.

To facilitate use of commercially-held data for specific public interest purposes:

- A wider range of public interest purposes would be specified compared to PO2, including areas such as urban planning, housing and education.
- Businesses providing the data should be compensated on the basis of marginal cost.
- Medium and large companies would be required to designate a function responsible for handling requests from public sector bodies (data stewards)[114].
- As under PO2, Member States would need to set up national structures for facilitating B2G data sharing.

To facilitate switching between trustworthy data processing services enhance:

- Users of data processing services would be granted a statutory right to 'provider switching', ensuring a minimum level of functionality of data processing services across providers. A legal provision would specify parameters of switchability, in terms of maximum costs and maximum timeframes (according to data processing service type), which would have to be fulfilled by providers in order to comply with the right, and mandate binding interoperability standards (such as APIs) to be deployed.
- As under PO2, legal, technical and organisational measures to prevent unlawful access to data by non-EU/EEA authorities would apply.

To establish a framework for efficient data interoperability:

- The Commission would be empowered to endorse data interoperability requirements elaborated by standardization bodies or industry for selected common European data spaces in delegated acts. The requirements **would be mandatory** for stakeholders in the data spaces.

Summary of policy options 2 and 3

[114] See Data Collaboratives *website*; and European Commission (2020). *Towards a European strategy on business-to-government data sharing for the public interest*, Final Report of the High Level Expert Group on Business to Government Data Sharing.

Objectives	Policy Option 2	Policy Option 3
1. Increase consumers' and businesses' legal certainty on access to data	a) Exclude databases containing machine-generated data from the protection of *sui generis* right in Database Directive. b) Transparency requirement on OEM/ service providers regarding data likely to be generated and how it can be accessed. c) Consumer/ business may access data from use of products/ services and allow access to third parties (on the basis of fair, reasonable, non-discriminatory, transparent and proportionate terms). d) Dispute settlement mechanism for access mechanisms. e) OEMs and service providers' ability to access and use data is confirmed; technical means e.g. smart contracts to be encouraged to ensure data sharing agreements respected.	a) as PO2 b) as PO2 c) as PO2, plus user access to relevant supply chain data which can be made available to a wider range of third parties including on value chain. d) as PO2 e) as PO2 f) Broad access and use right for organisations with a legitimate interest in data in a supply chain or related to products. g) OEM and service providers to be required to facilitate access to data by third parties through technical means.
2) Prevent abuse of contractual imbalances	(In addition to the model contract terms described under PO1) Fairness test to prohibit unfair conditions for data access/use regarding *non-negotiated contract terms only*.	(In addition to the model contract terms described under PO1) Fairness test to prohibit unfair conditions for data access/use for *all contract terms*.
3) Facilitate use of commercially-held data for specific public interest purposes.	a) EU-level limited range of public interest purposes for public sector bodies to request data from companies. MS can add on basis of a needs analysis. b) Safeguards on purpose limitation, proportionality, respect of rights of individuals and businesses. Shared data to be anonymous in principle. c) Data provided free in emergencies; for all other public interest purpose businesses compensated at preferential rates. d) MS set up national coordination structures (with public and private sectors represented). e) SMEs excluded from the new obligations.	a) EU-level wider range of public interest purposes for requesting data. b) as PO2 c) Businesses compensated on the basis of marginal cost. d) as PO2 e) As PO2 f) Businesses required to designate data stewards to handle requests.
4) Facilitate switching between trustworthy data processing services	a) Obligation on data processing service providers to facilitate switching. b) New standardisation framework for interoperability. c) Obligation on data processing service providers to take *measures* to address conflicts where third countries' request data access.	a) Users of data processing services have a right to 'provider switching' with strong requirements in relation with service functionality. b) Detailed mandatory interoperability requirements. c) as PO2

5) Interoperability	Commission power to endorse data interoperability requirements elaborated by standardization bodies or industry for selected data spaces. Compliance with the requirements would not be mandatory.	As PO2 but compliance with the requirements would be mandatory.

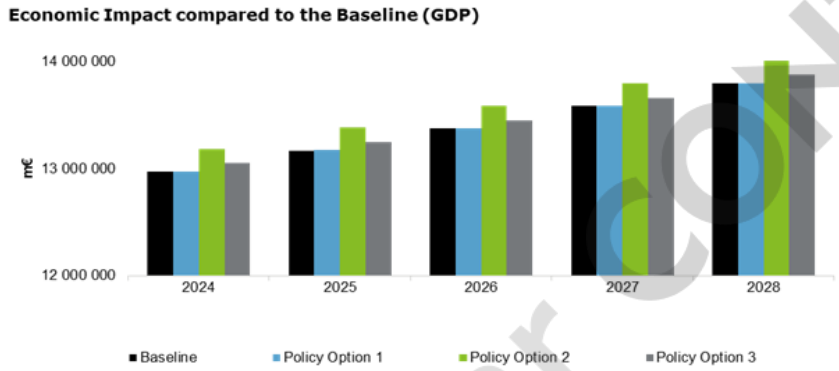
5.3. Options discarded at an early stage

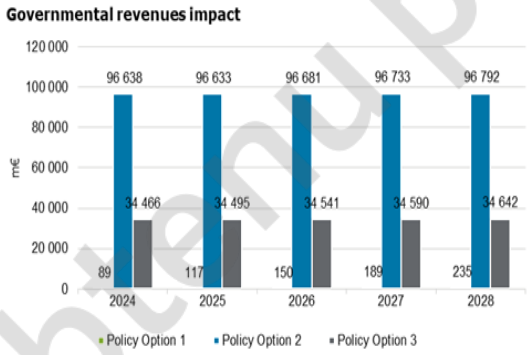
No options were discarded at the outset.

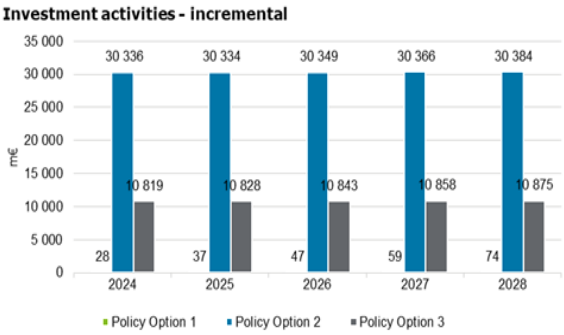
6. WHAT ARE THE IMPACTS OF THE POLICY OPTIONS?

6.1. Economic impact

The estimated macroeconomic impact of implementing the policy options compared to the baseline is summarised in the table below. *[it includes B2B and B2C data sharing measures - graph to be updated with estimates for B2B cloud switching and B2G data sharing]*







By 2028, PO2 could create an additional 2 234 752 jobs as compared to the baseline scenario[115]. This is considerably higher than the expected job-creation under PO3, which would lead to the creation of 799 830 additional jobs.

Baseline

[115] European Commission (2021, *forthcoming*). *Support study to this impact assessment*, prepared by Deloitte.

According to the Baseline Scenario (section 5.1 above), which envisages certain existing and planned data sharing instruments, but not the Data Act, EU-27 GDP would increase from EUR 11.5 trillion to 13.8 trillion EUR by 2028.

Policy option 1: Non-binding measures to encourage data sharing

The impact of this policy option across the three main data-sharing scenarios depends on the uptake of the Commission's Recommendations or guidelines by Member States. There is little evidence that existing non-binding measures related to data sharing and cloud switching, such as the codes of conduct developed by the agriculture industry and by the SWIPO group, have led to a better-balanced distribution of data value and increased socioeconomic potential of data[116]. The economic impact of this option is therefore assessed in the studies supporting this Impact Assessment to be negligible compared to the baseline scenario[117]. The exception are the provision of model contract terms in B2B context and the voluntary approach for switching data processing services, which, if duly followed by stakeholders, could lead to more than negligible benefits.

Increase legal certainty of consumers and businesses on access to data while continuing to incentivise data generation

For consumers, a voluntary scheme for access to data from the use of products/ services in order to switch to alternative services might have positive results in certain sectors but the lack of market incentive indicates low impact.

Best practices on co-generated data by the stakeholder and expert forum may be followed where companies consider it to represent a competitive advantage.

Prevent abuse of contractual imbalances that hinder fair data sharing between businesses

The use of model contract terms would increase B2B data sharing to some extent as they would discourage the use of unfair clauses and foster balanced market practices within and across sectors. They would also reduce legal costs/ disputes/litigation and benefit SMEs in particular as they may lack experience[118]. Model contract terms could be, in particular, beneficial for SMEs lacking experience. Stakeholders across sectors are supportive with some variations[119].

Facilitate the use of commercially-held data for specific public interest purposes

This policy option may allow for requests and the value of the data obtained to be monitored. However, without binding procedures for B2G data access, stakeholders envisage few benefits[120]. Public bodies may lack incentives to implement Commission

[116] SWD(2018) 125 final; OJ L 134, 31.5.2018, p. 12-18.
[117] European Commission (2021, *forthcoming*). *Support study to this impact assessment*, Annex 8, prepared by Deloitte.
[118] European Commission (2021, *forthcoming*). *Study on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights*, prepared by ICF [p. 55, p. 114/115].
[119] Feedback from Data Act IIA: a number of stakeholders show support with some variations of model contract terms e.g. Eurocommerce, ETNO, Austrian Federal Chamber, etc.
[120] European Commission (2021, *forthcoming*). *Support study to this impact assessment*, prepared by Deloitte.

recommendations that are administratively burden in the short term with uncertain benefits in the long term.

Facilitate switching between trustworthy data processing services

With regard to improving fairness of data processing services in the EU, economic impacts would depend on the extent to which industry stakeholders would improve the SWIPO codes of conduct and adhere to them. Positive economic impacts, in terms of a more fluid cloud market, may only be expected if industry actors manage to extend the scope of the codes of conduct so that they would also address the economic and technical (interoperability) problems behind cloud switching.

PO1 for data processing services could potential deliver an additional 0.03 percentage points of EU GDP. However, as the SWIPO codes of conduct fail to address the technical and economic aspects of the vendor lock-in problem, such success cannot be guaranteed121.

Regarding trustworthiness, this option may increase transparency but will not eliminate the potential of conflicts. It also will not fully ensure that customers are aware of the risks to their data, because the respective non-EU/EEA laws that can mandate access to EU data, often prohibit service providers to notify customers whose data is concerned by an access to data request.

Policy option 2: Rules on controlled data sharing with predictability on how data will be used

PO2 will yield benefits from wider access to data while preserving incentives for investment in data value generation.

The overall economic benefit can be estimated **either** (1) on the basis of gains predicted by stakeholders, **or** (2) based on an extrapolation of the predicted efficiency gains for a representative market. These two approaches produce a range of likely benefits of PO2 of an increase to EU GDP by 2028 of between (1) EUR 271 billion p.a. and (2) EUR 106.8 billion p.a.

An **additional EUR 271 billion** would represent an increase of 1.96% of EU GDP. In terms of **governmental revenues** (i.e. the sum of market output, of taxes, net social contributions, sales, other current revenues and capital transfer revenues), the expected increase from 2024 to 2028 is **EUR 96.8 billion.** The predicted increased in **investment activities** from 2024 to 2028 is **EUR 10.9 billion**.

Increase legal certainty of consumers and businesses on access to data while continuing to incentivise data generation

The **clarity on rights to access and use data generated through the use of products and services**, including the exclusion of machine-generated data from the scope of the sui

[121] Idem.

generis database right under the Database Directive[122], is expected to lead to **efficiency and productivity gains.** The gains would result from increased legal certainty, reduction of information and transaction costs in identifying the data holder such as the creator of the database, and reducing likelihood of spurious litigation concerning third-party data use. In addition, the benefits of the rules, even though not establishing mandatory data access, result from setting up a predictable and coherent framework for future sectoral data access rights ensuring legal certainty and efficiency in data transactions. Such cross-sectoral rules would also make data-sharing practices more easily to apply and more widespread. [PM: more specific figures on the latter aspect expected from the DG JUST study] These gains are estimated at **EUR 196.7 billion p.a. by 2028.**

In addition, businesses and consumers generating data through the use of products and services could see a **reduction in switching costs for aftermarket services and new opportunities to use services** relying on access to this data – estimated at EUR 68.1 billion p.a. in savings.

Sectors with less data sharing such as agrifoods could also see as much as a 500% increase in data sharing. The value of **open business opportunities and competition** are estimated at **EUR 6.2 billion p.a**.

Additional direct and indirect benefits are also expected, though could not be quantified. They include reduced legal costs, including other indirect benefits like waste reduction, business growth, reduced entry barriers for SMEs and more resilient supply chains due to enhanced usage of data for the prediction of supply and demand.

This policy option would allow consumers access to data and allow them to permit a limited set of third party beneficiaries to access the data for the purposes of aftermarket services.

For products, **the impact on the consumer IoT market** (estimated revenue EUR 145.5 billion) can be estimated with the help of an analysis of the smart home appliances sector. This sector is categorised by low levels of standardisation and data portability, but a high number of market participants. The extended but predictable data access facilitated by this policy option could therefore unlock the high potential of sectors such as that of smart home appliances, enabling the development of data portability based on standards, allowing new players to join the market and contribute to increase customer's choice. The impact of this policy option on the smart home appliances sector – whose EU market is estimated at EUR 19.9 billion, is estimated to generate 19% in **efficiency gains**. These would include increase in consumer choices and mitigation of "lock-in" to particular devices and services; ability to repair devices and reduce unnecessary waste; incentives to develop new or improved services and products for customers; and increase in efficiency of devices in both energy consumption and functionalities offered.

For **connected services**, a controlled and predictable opening of access to data can be compared to the assessed impact of PSD2, where it was forecast that allowing access to

[122] See also the REFIT table on the Database Directive review. Notably the main benefits are bringing legal certainty, ensuring the sui generis right does not interfere with data access and data sharing, reduction of information and transaction costs and the reduction of the risk of opportunistic litigations.

information on funds would **enable market entry of third parties** with legal status offering added value services. The Commission forecast EUR 0.9 - 3.5 billion in savings to merchants[123] as a result of PSD2. Early evaluations indicate an increase in the number of start ups and the appearance of a pan-European sector as a result of PSD2. A similar broad impact on competitiveness in aftermarket services connected to data-generating services can be expected as a result of this policy option.

Costs to service providers and manufacturers, and also to data reusers, would concern in particular setting up and maintaining APIs for data to be accessed. This is estimated, for smart home appliances, at EUR 943.9 million in one-off costs, and EUR 169.7 million p.a. in recurrent costs. Extrapolated to the whole IoT market, this would imply costs to overall IoT market of EUR 6.9 billion in one-off costs and EUR 1.2 billion in recurring costs[124]. Given that under PO2 the creation of APIs is not mandatory, the costs for service providers and manufacturers is likely to be only a fraction of these amounts in practice.

Prevent abuse of contractual imbalances that hinder fair data sharing between businesses

Model contract terms (see impact under PO1) complemented by a **contractual fairness test** for unilaterally imposed unfair contract terms and **general access rules for sectoral data access rights** are expected to positively impact data-driven innovation, consumer surplus and productivity gains, lowering barriers for SMEs and encouraging competition in the data economy. As part of PO2, these tools promote data sharing at fair conditions and address to a large extent the untapped potential of data sharing. These overall gains would outweigh possible legal and operational costs[125].

The expected benefits of a fairness test are due to a reduction of unfair contractual clauses and abuse of negotiating power, resulting in fewer potential conflicts[126]. This would be beneficial particularly for SMEs as it would lower the barriers to participate in data sharing and bring forward more innovation. Data holders could incur certain costs for revising contracts to comply with a fairness test, which would be outbalanced by reducing abuse of negotiating power and increasing contractual fairness to the benefits of data (re-)users, SMEs and consumers[127]. A fairness test is supported by stakeholders, mainly SMEs, (with some variations) from various sectors e.g. construction, crafts, technology[128].

[Placeholder: benefits figures from the study]

[123] SWD(2013) 288 final. See also Polasik M. *et al.* (2020). *The impact of Payment Services Directive 2 on the PayTech sector development in Europe*, Journal of Economic Behavior & Organization, Vol. 178, pp. 385-401, which shows a rapid but temporary expansion in PayTech start-ups leading up to the entry into force of PSD2.
[124] Based on smart home appliances representing 13.7% of EU IoT revenue. See European Commission (2021, forthcoming). *Support Study to this Impact Assessment*, prepared by Deloitte.
[125] See European Commission (2021, forthcoming), *Study on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights*, study prepared by ICF [p. 117-120].
[126] Ibid [p. 118].
[127] Ibid [Table 8.8, p. 120-121].
[128] Position papers following the consultation on the Data Act IIA with variations of support for a fairness test: ZDH (German crafts association), Federation of Finnish Enterprises, Federation Francaise batiment, ECIS (European Committee for interoperable systems), ACT, IBM

Facilitate the use of commercially-held data for specific public interest purposes

The measures in this option should clarify for businesses and the public sector the purposes, legal basis and procedures for requests for data needed in the public interest, and deliver direct and indirect benefits to the economy.

In the first place, the emergency situation of the COVID-19 pandemic and the full lockdown measures from March 2020 caused disruption to economic activity amounting to 0.2% of EU GDP per week. The economic cost of climate related emergencies were already averaging more than EUR 12 billion p.a., even prior to the severe flooding and fires that hit various parts of Europe in summer 2021[129]. Access to necessary data, such as mobility data to inform the adoption and adjustment of pandemic lockdown measures from locality to locality, would have reduced this economic cost[130].

However, improving B2G data sharing is also highly relevant in non-emergency situations. One of the public interest purposes to be specified under PO2 would be public statistics. According to a recent analysis, the economic value of official statistics is estimated to grow to 61.3 billion between 2018 and 2030. Should B2G sharing increase the amount of official statistics by even 20%, EUR 12.3 billion (20% of EUR 61.3 billion) would be added to GDP by 2030, around EUR 1 billion p.a. In addition, there would be induced benefits and non-monetary benefits, which are estimated to be higher than direct benefits by a factor between 20-50 times[131]. Corresponding economic benefits of making privately-held data available for specific public interest purposes may be expected. Businesses within scope of the policy option should benefit from predictability of in what circumstances and how the data would be lawfully requested and made available. This is estimated to **reduce the time needed to obtain data from six months to one week**[132], resulting in annual costs savings in **reduced administrative burden** for the private sector of roughly **EUR 155 million** across the EU p.a.[133].

As with existing procedures, businesses would need to continue to deploy resources to consider and respond to requests, including through technical interfaces[134]. This policy option only envisages requests for a small number of top level public policy priorities which are not addressed in other existing instruments (e.g. for security/ law enforcement purposes). The **maximum additional recurrent costs to businesses resulting from the estimated 20% additional data sharing is estimated at EUR 78 million p.a**.

[129] COM(2021) 82 final.
[130] ESTAT (2021, *forthcoming*). *Methodological support to impact assessment of using privately held data by official statistics*.
[131] ESTAT (2021, *forthcoming*). *Methodological support to impact assessment of using privately held data by official statistics*.
[132] European Commission (2021, *forthcoming*). *Support study to this impact assessment*, prepared by Deloitte. Estimate based on example of collaboration between England's roads authority and company on mobility insights to improve modelling and infrastructure planning.
[133] European Commission (2021, *forthcoming*). *Support study to this impact assessment*, prepared by Deloitte.
[134] Support study estimates the one-off cost to be 552.5 million, but it is assumed that this investment has already been made to deal with existing requests.

Public sector bodies may be expected to incur some recurring costs for auditing and verification procedures which are estimated at EUR 192.2 million p.a. Public sector bodies would be required to compensate businesses for the cost of providing the data, estimated above at EUR 78 million p.a. plus, where one-off costs are involved, EUR 552.5 million.

Facilitate switching between trustworthy data processing services

Firstly, PO2 would create assurances for European users that their data would not be accessed by non-EU/EEA authorities, because it would require operational guarantees from service providers with headquarters in non-EU/EEA countries. This solution would lead to significantly increased trust, as it would make the solutions to the problem visible to the users themselves (in terms of, for example, encryption solutions or anonymization/pseudonymisation tools).

PO2's legal measures to address vendor lock-in and unlawful access to data are expected to increase trust in cloud services resulting in economic benefits.

Migration of users between cloud platforms can be costly and time-consuming for service providers, and efforts vary considerably from vendor to vendor[135].The enforceable legal obligation of switching, accompanied by an approach of standardisation (for platform and software cloud services) on interoperability, should make switching easier and increase growth and take up rate of cloud services in the EU. It is expected to steer the efforts made by market players in the same direction, and force more cooperation and streamlining of portability solutions on technical and contractual levels. It would generate an estimated 10.9% higher cloud demand in 2025, or additional EUR 7.1 billion, compared to the baseline. Beyond the data processing services sector, PO2 could add 0.05 percentage points to EU GDP.

PO2 would result in increased compliance costs for cloud service providers, in particular implementation of standards. These costs are expected however to be outweighed by additional demand.[136]

PO2 is likely to bring assurance to customers that their data would not be accessed by non-EU/EEA authorities, and increase user trust and the visibility of solutions like encryption or anonymization/pseudonymisation tools.

Establish a framework for efficient data interoperability

Data interoperability requirements foreseen under this policy option are likely to make businesses benefit from an increased adoption of standards leading to a reduction in costs for acquiring, integrating and processing data.

[Placeholder: impact figures to be added, including DG GROW figures]

Overview of PO2 - Benefits and costs (millions EUR p.a.)

[NB: table to be updated when further results from studies are available]

[135] reference to be provided by E2

[136] European Commission (2018). *Switching of cloud services providers*, study prepared by International Data Corporation (IDC) and Arthur's Legal.

Measure/ Impact (millions EUR p.a)		**Benefit**	**Cost**
1) Legal certainty	legal certainty	196700	p.m.
	Reduce switching costs	68100	
	New business opportunities	6200	
	Reduced legal costs		
	Indirect benefits		
	IoT economy efficiency and competitiveness	*105900*	*p.m.*
	Connected services efficiency and competitiveness	*900*	
	Total (1)	271000	p.m.
	Total (2)	106800	p.m.
	Total (1) % of GDP	1,96%	p.m.
2) Contractual fairness		0	
	Total	**0**	**0**
3) Facilitate B2G	Rules on sharing for specific purposes (stats only)	1000	78
	Administrative burden	155	
	Audit and verification		192
	Total	**1155**	**270**
4) Facilitate cloud switching	Obligation to allow switching	7100	
	standardization		
	Total	**7100**	**0**
5) interoperability framework			
	Total	0	0
TOTAL		***279255***	***p.m.***

Policy option 3: Framework for opening up access to data to more innovative businesses and to public sector bodies in case of clear public interest

This policy option would allow broader range of businesses, customers and public sector bodies to access data. Overall, it could **add EUR 71 billion p.a. to EU GDP by 2028**, which would represent an increase of 0.5% to EUR 13.87 trillion EUR. Regarding **governmental revenues**, the expected increase from 2024 to 2028 is **that of EUR 34.6 billion.** The increase in **investment activities** from 2024 to 2028 is expected to be **EUR 30.4 billion**. However, this option would entail a relatively high administrative and compliance burden on data producers/holders, for example in relation to the stronger obligations on data holders to facilitate portability in practice as well as for data holders and reusers to designate data stewards for managing B2G relations.

Increase legal certainty of consumers and businesses on access to data while continuing to incentivise data generation

Obliging manufacturers and service providers to take technical steps to ensure access and portability of all data generated by the use of the product/ service would open opportunities for development of new services and products by businesses, as well as allowing access to other entities including research organisations deemed under the Data Act to have a legitimate interest in the data. This would allow potential new players to join the market and reveal key information about supply chains, stimulating competition and contributing to the establishment of new and complementary markets.

This **clarity on rights to access and use data generated through the use of products and services**, would increase to a more limited extent legal certainty and encourage more data sharing for businesses, leading to some **efficiency and productivity gain**s. Interviewed stakeholders estimated a gain of 10%, which extrapolated to the whole data economy would amount to **EUR 131.2 billion p.a.** The lower impact of these measures with a higher intensity compared to the measures in PO2 are explained by the potentially stifling effect the measures may have on investments in data. Companies that are forced to share data in a wide range of situations are unlikely to make major investments in data production and handling.

There would be a reduction of switching costs for aftermarket services generating 20% cost savings, amounting to EUR 90.8 billion p.a.

Stakeholders also estimate a minor 1% increase in business and growth opportunities, amounting to EUR 6.2 billion p.a.

As with PO2, additional direct and indirect benefits are also expected, though could not be quantified. They include reduced legal costs, including other indirect benefits like waste reduction, business growth, reduced entry barriers for SMEs, and more resilient supply chains due to enhanced usage of data for the prediction of supply and demand.

For the consumer IoT market, the market for fitness trackers may assist in forecasting the impact of this policy option. Compared to smart home appliances, there are relatively few participants in the fitness tracker market, the level of digitalisation and data portability are however higher. The sensitivity of the data collected by trackers could attract a wider range of third parties offering a wider variety of services, compared with smart home appliances. The size of the EU fitness tracker market is estimated at EUR 8.7 billion, but under this policy option estimated only to generate 2% in **efficiency gains**, due to the lack of predictability concerning how the data will be re-used. Extrapolated to overall IoT revenues and based on projections of the size of the IoT market in the EU in 2030, this would produce gains of **EUR 11.1 billion p.a.** [137].

[137] Size of Europe's fitness tracker market estimated at EUR 7 389 M on the basis that Europe's share of the global fitness tracker market, valued at EUR 20 065 M is 37%, representing 0.06% of EU GDP. See MarketWatch (2021). *Fitness Tracker Market Size 2021 Advanced Technologies and Growth Opportunities, SWOT Analysis in Industry 2027 with Top Growth Companies*. IoT revenues in Europe estimated at EUR 145.5 bn, so fitness trackers are 5% of the overall IoT revenues. See Statista (2021). *Internet of Things (IoT) market revenue forecast in Europe in 2019 and 2022*. IoT revenues are projected to grow by 383% by 2030. See SWD(2021) 144 final. For the EU IoT revenues to EUR 557.3 bn, a 2% efficiency gain in fitness trackers extrapolated to EU IoT market would be EUR 11.1 bn.

Customers' ability under PO3 to access wider data on the product would provide enhanced and increased reparability and optimisation opportunities in the context of predictive maintenance services carried out by independent repairers. This should translate into a longer usage time for smart machines or devices and considerable cost saving. Evidence indicates, for example, that with access to the right data consumers would save around €100 p.a. by keeping and repairing a smartphones instead of replacing them.

Costs to service providers and manufacturers, and also to data reusers, would include setting up and maintaining APIs for data to be accessed. This is estimated, for fitness trackers, at EUR 167 million in one-off costs, and EUR 15 million p.a. in recurrent costs. Extrapolated to the whole IoT market, this would imply costs to overall IoT market of 3.3 billion in one-off costs and EUR 0.3 billion in recurring costs.

The obligation to provide additional information on supply chain would to some extent be covered by existing reporting requirements on energy efficiency. In the textile industry, collection of information on durability and reliability has been estimated by an industry association at about EUR 10,000 to EUR 20,000 per company to set-up the collection process, especially in the absence of standards for estimating durability. Industry associations consulted estimated on average a 3% increase in costs compared to the baseline[138].

A data minimisation principle where smart questioning of data could be sufficient to share value fairly without needing to move the raw datasets themselves.

Greater use of standardised smart contracts could also boost confidence allowing parties to trace and control how data is used.

Although small and micro companies would be exempt from obligations to make data available, in primary markets smaller companies may be deterred from investment in developing data generating products and services.

The promotion of standardisation for smart contracts could provide assurance to data holders that data will only be accessed by persons in accordance with the agreement.

Prevent abuse of contractual imbalances that hinder fair data sharing between businesses

The combination of model contract terms, general rules on data access modalities and a fairness test for all terms in data sharing contracts (irrespective if individually negotiated or not) would result in benefits from unfair contractual clauses for data sharing being universally eliminated, leading to more data sharing at fair conditions. In this case the data recipients would be protected irrespective of what they had to agree in a negotiation in order to obtain access to data.[139] The greater positive impact for data (re-)users and SMEs

[138] Eurpean Commission (2021, *forthcoming*). *Support study for Impact Assessment on Sustainable Product Initiative*.

[139] See European Commission (2021, *forthcoming*), *Study on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights*, prepared by ICF.

would however lead to potential legal/ operational costs for data holders' and restrict the freedom of contract.

[Placeholder: figures from the study]

The impact of model contract clauses and the general rules on data access modalities are outlined in the impact of PO1 and PO2.

Facilitate the use of commercially-held data for specific public interest purposes

This option would provide flexibility to Member States, who would be able to define, within certain common EU-level parameters, a range of specific tasks in the public interest where public bodies can request data from businesses at marginal cost. Less predictability and harmonisation for EU businesses and citizens would be the price of this flexibility.

As with PO2, access to necessary data in public emergencies could reduce economic impacts substantially.

In non-emergency situations, this policy option should also result in more data sharing, but it is not possible to predict given the flexibility to be allowed to Member States.

The obligation to create a data steward function could save time and reduce wasted requests for data that is not available. The benefits are likely to be concentrated for businesses currently burdened by duplicate requests sent by a single public body to multiple businesses, or businesses that receive requests for the same or similar data from more than one public body. In such circumstances, the cost of the data steward function could be less than current administrative burden. Requiring business and public sector bodies to designate a data steward – estimated to cost on average at EUR 210 000 p.a. - is estimated to cost EUR 821.8 million p.a. at EU level.

Some uncertainty would remain, however. Businesses within scope may consider it necessary to invest in new organisational and technical systems to handle potential requests for data, estimated at EUR 552.5 million[140]. Recurring costs are estimated, as for PO2, at **EUR 78 million p.a**.

Facilitate switching between trustworthy data processing services

PO3 is expected to produce higher benefits to PO2, as it consists of legal measures to ensure cloud switching and addressing unlawful third country access to data, such as trust, increased cloud adoption and consequently more innovation, cost-efficiency especially for SMEs, and increased data sharing and use.

P03 would in addition mandate interoperability standards for the services, which would make it easier for users of the data processing services to switch from one service to another, while maintaining full functionality.

At the same time, mandatory interoperability standards for these services come with a cost which is difficult to assess. At the same time, such mandatory standards risk stifling

[140] Support study estimates the one-off cost to be 552.5 million, but it is assumed that this investment has already been made to deal with existing requests.

innovation by data processing service providers and in turn by user industries). Innovation could be affected by lengthier product development cycles, as compliance would have to be built into new service offerings.[141] Also, legally mandated interoperability standards may be inappropriate for the enormous diversity in different service types on the market (e.g. infrastructure, platform and software services) and countless different functionalities (ranging from simple data storage to highly tailored software applications). A given user of cloud services, such as an email client is likely to use data architecture and semantics quite different from those used for delivering another service type, like a Customer Relations Management system. Industry standardisation is more likely to identify appropriate interoperability standards that can evolve in the light of ongoing technological developments.

Establish a framework for efficient data interoperability

The mandatory nature of the standards under PO3 is likely to yield much stronger results than the non-obligatory standards under PO2. At the same time their adoption are likely to lead to considerably higher costs for industry.

[Figures to be added, where available, including DG GROW figures]

Overview PO3 - Benefits and costs (millions EUR p.a.)

[NB: table to be updated when further results from studies are available]

Objective	**Measure**	**Benefit**	**Cost**
1) Legal certainty	Legal certainty	131200	p.m.
	Reduce switching costs	90800	p.m.
	New business opportunities	6200	p.m.
	Reduced legal costs	p.m.	p.m.
	Indirect benefits		
	IoT economy efficiency and competitiveness	*11100*	p.m.
	Connected services efficiency and competitiveness	*900*	
	Total (1)	228200	p.m.
	Total (2)	12000	p.m.
	Total (1) % of GDP	1,65%	
2) Contractual fairness		0	
	Total	**0**	**0**
3) Facilitate B2G	Rules on sharing for specific purposes	1000	78
	Administrative burden	155	p.m.
	Audit and verification	p.m.	192
	data stewards		822
	Total	**1155**	**1092**

[141] European Commission (2018). *Switching of cloud services providers*, study prepared by International Data Corporation (IDC) and Arthur's Legal.

4) Facilitate cloud switching	Obligation to allow switching	7100	p.m.
	Standardization	p.m.	p.m.
	Total	**7100**	**0**
5) Interoperability framework			
	total	0	0
TOTAL		***236455***	***p.m.***
	GDP 2028		
As % of GDP	13800000	1,71%	

6.2.Social and environmental impact

Policy Option 1: Non-binding measures for better sharing

The impact of this option is contingent upon uptake by Member States.

Policy Option 2: Rules on controlled data sharing with predictability on how data will be used

In terms of social impacts, PO2 includes measures that are expected give consumers more control over their digital lives and contribute to greater digital inclusion.

The focus on the top public priorities including public health, can ensure that lessons are learned from the experience of the pandemic and that the quality of preparation for and response to emergencies is improved.

Clearer rules and safeguards for the use of data for public health purposes are expected to improve efficiencies in health policies care and the deployment of technology. PO2 measures should improve the quality of data available to public bodies, standardise data collection, promote interoperability of between European disease registries and help analysis of data using of high performance computing and modelling.

The predictable and proportionate available of necessary data should also promote public trust in public service delivery, while the limited focus also minimises the risk of unforeseen consequences and function creep that could risk fundamental rights or undue burdens on businesses.

As for the environmental impact, PO2 should enable businesses and consumers to make more efficient use of data and should enable innovation that can improve energy efficiency and reduce greenhouse gas emissions[142]. Increased reparability and optimization opportunities, due to better data access in the context of predictive maintenance services carried out by independent repairers, should translate into a longer usage time for smart

[142] IEA (2019), *Energy efficiency and digitalisation*, IEA, Paris; American Council for an Energy Efficient Economy (2020). *Intelligent efficiency*; Ben Youssef, A. (2020). *How can industry 4.0 contribute to combatting climate change?* Revue d'économie industrielle, No. 169; Garetti, M. and Taisch, M. (2012). *Sustainable manufacturing: trends and research challenges*, Production Planning and Control, No. 23.

machines or devices[143]. Each of these devices can be used for the most popular internet tasks, such as browsing the web, watching streaming video or making video calls, but using smaller and less powerful devices can dramatically reduce the energy required. This means that allowing consumers to access data from devices and having it analysed by a service provider of their choice could in the long run inform their decisions about the category of device to purchase for any given task. This can have a significant impact on the internet's environmental impact, when considered at the scale of purchasing by consumers, companies and public bodies.

In agriculture, access to data from smart devices will enable the benefits of precision farming, including improving yields and reducing crop losses through disease or adverse weather, limiting use of costly fertilizers and pesticides, reducing water waste and helping to re-populate rural areas

In transport, access to real-time smart logistics information can support efficient functioning of transport corridors. One private-public data sharing programme was estimated to have saved 280 million barrels of oil and prevented the emission of 134 million tonnes of air pollutants. Providing emissions data for logistics has, in the case of a footwear retailer, enabled more efficient shipments reducing CO2 emissions by 48%[144].

In construction, analytical tools are capable of converting sensor data into actionable information about the source of failures (e.g. related to insulation and vapour barriers). It could reduce the 450 to 500 million tonnes of construction and demolition waste generated per year in Europe.

Mitigating "lock-in" effects can free customers to use more efficient products and services, which can lead to reduced waste and energy consumption.

A coordinating structure that brings together supply and demand for public interest data needs could make private and public authorities better prepared for emergencies[145].

Improved public service delivery and evidence-based policy making and less waste on delayed or lack of targeted responses would increase trust in governments.

Facilitating public sector bodies access to direct economic loss data, including the costs of emergency response and recovery, will improve the accuracy of the risk assessment that inform climate adaptation actions. It will provide the data needed for the standardised recording at EU level through the Commission's Risk Data Hub. It will support the Climate-ADAPT platform[146] which aims to bring together information from all relevant

[143] European Commission (2021, *forthcoming*). *Support study to this impact assessment*, prepared by Deloitte.
[144] SWD(2020) 331 final.
[145] On why climate-related disaster risk and loss data are crucial to understanding the resilience gap and its many aspects see SWD(2021) 123 final. On the type of data required see JPI Climate (2015). *The role of loss data for climate change adaptation and disaster risk reduction in Europe*.
[146] See Climate ADAPT *webpage*.

sources for decision-making and action, and the Commission's intention to pool data to monitor the effect of climate change on health[147,148].

As regards the policy approach to data processing services, PO2 and PO3 would have the largest effect. The introduction of binding rules to facilitate cloud switching, especially when accompanied by interoperability standards, would force companies to improve the interoperability of their systems. With a minimum level of interoperability ensured, migration processes would need less processing power and thus have less of an environmental imprint.

More generally, the increased adoption that is to be expected from policy action that raises trust (both as a result of more fair and more trustworthy cloud services), will lead to more efficient forms of data processing in the European economy. To attain sustainability targets for ICT, it is important that more businesses in Europe adopt next generation cloud and edge services. As PO2 and PO3 would lead to higher levels of trust, only these policy options would be in line with the EU's sustainability goals.

[PM: social benefit of B2G data sharing in the mobility, health and other sectors to be added, including through input from ESTAT].

Policy option 3: Framework for opening up access to data to more innovative businesses and to public sector bodies in case of clear public interest

Social impacts potentially include those in PO2, plus the potential for benefits for a wider range of areas for data sharing. For example, access to real-time data could enable municipal authorities to manage a transition to low pollution, more liveable cities at a time when urbanisation is expected to increase by 30 per cent by 2030, through lowering the use of private cars and promoting shared mobility[149]. However, compared with PO2, PO3 provides for a wider range of potential actors, in the business-to-business context, and a wider range of purposes for sharing data, in the business-to-government context. This is expected to make companies less willing to share data, compared with PO2. Public sector bodies may lack the human talent and technology needed to convert data accessed into valuable insights for improving public policy delivery.

In addition to the environmental benefits indicated under PO2, this option would make environmental impact of products and services clearer for businesses along supply chains in all sectors. Stakeholders estimate that this could reduce the comparative market share of those products that have an environmental impact, and yield a 75% cost reduction of maintenance and repair, a doubling of repair rates and a 20% increase in lifetime of durable goods and hence reduction in the environmental impact of these durable goods by 20%[150]. Moreover, wider availability of data resulting from the implementation of the measures

[147] European Environment Agency (2020). *Healthy environment, healthy lives: how the environment influences health and well-being in Europe*, Report 21/2019, Luxembourg: Publications Office of the European Union.
[148] European Commission (2020). *Adaptation to health effects of climate change in Europe*, Scientific Opinion No. 9, Group of Chief Scientific Advisors; EASAC (2019). *Climate change and health*, Report.
[149] See City of Amsterdam Smart Mobility Policy *website*.
[150] European Commission (2021, *forthcoming*). *Study report supporting Impact Assessment accompanying the Sustainable Product Initiative*.

under this policy option, will result in a more efficient use of available resources (e.g. traffic infrastructure and energy grids) which can reduce contamination and facilitate urban planning (e.g. transport networks or extension of heating systems). In terms of time wasted in traffic jams or waiting in delayed public transport, better data availability could save 629 million hours of waiting time, corresponding to some 27.9 billion EUR a year[151].

6.3. Impact on SMEs

Over 98.8% of data user companies in the EU are SMEs. To innovate, they need to acquire business-critical data from other companies to a much higher extent than larger enterprises[152]. The re-balancing of the distribution of data value across market actors by enhancing access to data should therefore mark a notable improvement for SMEs in comparison to the baseline scenario, reinforcing their ability to compete and continue their business[153].

The significance of this impact becomes apparent in the light of a 2019 Commission survey, which demonstrated that 40% of SMEs struggle to access the data they need to develop data-driven products and services (notably because they do not have the power to negotiate with data holders)[154]. Those findings are confirmed by the most recent consultation, in which [*Integrate OPC results when available*].

The availability of data is likewise a critical factor for micro-companies and start-ups whose failure can often be attributed to the lack of data needed to validate their business ideas and to enhance their competitive edge[155]. The Data Act would bring more data resources within reach of such companies, making their survival much more probable. The business organisation that gave feedback on the Inception Impact Assessment on the Data Act[156] also highlighted the economic benefits associated to better data access and to fair data sharing conditions.

A recent Commission Impact Assessment[157] showed that better availability of (free) government data in just six thematic fields would result in a creation of up to 18000 new companies (mostly SMEs) across the EU by 2028. The measures foreseen in the present initiative should result in a much higher rate of company creation given the sheer size of the private sector in the EU (covering all possible data themes and use scenarios), even if the data in scope are not intended to be free of charge.

[151] SWD(2018) 128 final.
[152] Large companies source most data (54%) from own sensors and smart devices. For SMEs, this source represents only 27% of data. See: Bianchini, M. and V. Michalkova (2019), "Data Analytics in SMEs: Trends and Policies", *OECD SME and Entrepreneurship Papers*, No. 15, OECD Publishing, Paris.
[153] SMEunited's position paper on Access to Data.
[154] European Commission (2019). *SME panel consultation B2B data sharing - Final Report*.
[155] Dubai Chamber of Commerce and Industry (2019). *Validating a Startup Business Idea*, White Paper, 46% of surveyed entrepreneurs noted that the availability of industry and market data remains a key obstacle to their success.
[156] European Commission (2021). Data Act & amended rules on the legal protection of databases, see *Have your say webpage*.
[157] European Commission (2021, *forthcoming*). *Impact Assessment accompanying the proposal for an Implementing Regulation with a list of High Value Datasets*.

In addition, clearer rules on data rights along with fairer data contracts will benefit SMEs proportionally more than large organisations. SMEs suffer disproportionately more from the limited capacities to afford the necessary legal advice draft and to negotiate contracts, and are in a weaker bargaining position[158]. A recent study found that if the power imbalance is challenged, SMEs would find it easier to enter the market with new business models and that fairness in data sharing agreements could contribute to some productivity gains among SMEs to the extent data is available for data-driven innovations or more opportunities to break into the market with new business models.[159]

Wider data access (based on a new access right or as a consequence of easier data portability) would lower data acquisition costs and facilitate market entry for data-savvy SMEs, particularly in aftermarket and maintenance services[160]. Regulatory adaptation costs for SMEs (as re-users) will be low in comparison to the expected high benefits due to wider data reuse, cross-selling and possibility to offer added value services. As regards B2G data sharing, SMEs would be among the beneficiaries of this initiative since they would be exempted from the measures foreseen for larger data holders. They might at the same time benefit from the harmonised conditions for B2G data sharing in case they decide to engage in it voluntarily.

7. HOW DO THE OPTIONS COMPARE?

[This section is to be updated based on the results of the online consultation]

The non-binding policy option (PO1) scores highest across all data sharing scenarios on the feasibility and coherence criteria, while PO2 scores best on efficiency. PO3 assures a high level of effectiveness at the expense of low political feasibility and a worse cost/benefit ratio. Across all criteria, PO2 is rated the best option overall.

PO1 is not presented in the table below since the economic impacts of the non-binding measures would be negligible in comparison to the autonomous growth of the data economy (baseline). In particular within the B2G setting, both data holders and public authorities confirm[161] that a voluntary data-sharing model would never scale up to bring any substantial benefits. In addition, the voluntary and non-binding nature of this option seriously limits its effectiveness by the inability to tackle obstacles of legislative nature (e.g. sui generis right) or to address the increasing fragmentation of the EU market. Similarly, relying on voluntary schemes for improving the trustworthiness of cloud services has already demonstrated its shortcomings. In essence, PO1 is expected to be conducive to reaching the policy objectives only in sectors which are already digitally very

[158] "SMEs have unequal bargaining power when it comes to data exchange and can hardly prove a market failure because the conditions for data exchange are laid down in private contracts", SMEunited's position paper on Access to Data. The same was explained by SMEs participating in a workshop organised by the European Commission on the Data Act, on 7 July 2021.

[159] European Commission (2021, *forthcoming*), *Study on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights*, study prepared by ICF, [p. 119 TBC], which highlights that a fairness test would incentivise proactive changes in contract terms that would likely not be held up in court in case of disputes and therefore pre-emptively protect SMEs without any further action or knowledge requirement on their side.

[160] E.g. SMEs dominate the markets for vehicle parts, diagnostics, servicing and repair of vehicles.

[161] According to the interviews conducted by the IA support study prepared by Deloitte.

mature and for which the adaptation effort would be minimal (as being close to the current practice – and therefore, to the baseline scenario).

In addition to this quantitative analysis, the 'Cloud Switching' study clearly shows that a legally binding approach is the only intervention with high impacts in terms of the main factors of relevance, effectiveness and efficiency[162].

PO2 - Rules on controlled data sharing with predictability on how data will be used	**PO3 – Framework for opening up access to data to more innovative businesses and to public sector bodies in case of a clear public interest**
Efficiency	
• Benefits in B2B and B2C transactions thanks to higher availability of data for innovative use and stronger competition. • Costs more limited (fairness test narrower than PO3, technical means for data access not mandatory). They may outweigh the benefits in the early stages of implementation but benefit/cost ratio positive in the longer run. • Public sector benefits from wider data access while binding set of rules harmonising the basis for data requests and the compensation approach would significantly reduce the administrative costs for data holders (in particular SMEs which would be exempt).	• This option presents similar benefits to those induced by PO2 in B2B context. • High administrative and compliance burden on data producers/holders (e.g. APIs) and difficulty in adjusting to the specificities and different levels of digitalisation and maturity across sectors. • The option benefits the public sector in B2G context (wider range of data potentially available, lower data acquisition costs) but no extra benefits over the ones produced by PO2 are attributable to the private sector. High costs associated with the data steward function.
Effectiveness	
• Fairness test along with model contractual terms, horizontal access modalities and transparency obligations will be effective in increasing trust among stakeholders, reducing contractual abuse and in boosting data transactions. • Newly defined rights affecting both product manufacturers/service providers and data users will substantially clarify existing legal uncertainties. • PO2 addresses very well the objectives of facilitating public use of privately held data, by opening up new opportunities for the public sector and increasing the predictability for the private sector of B2G requests. • The mechanisms for facilitating and registering data sharing contribute to a coherent, balanced and sustainable B2G data sharing practice in the long run.	• This option is very well aligned with the objectives by considerably limiting the abuse of contractual imbalances, increasing the supply of usable data along the value chains and increasing the legal certainty of market participants. • It also ensures that the data will be fully discoverable and usable in practice (via technical requirements). • The alignment with effectiveness criterion is however limited by the strong focus on a wide data access for all re-users, which reduces data investment incentives for data holders. • PO3 appears best suited to achieve the policy objectives of facilitating public access to privately held data in B2G. It would lead to a higher supply of private sector data than PO1 or PO2 and harmonise the data-sharing practices to a greater extent across the EU.
Coherence	
• Laying down B2B fairness and transparency rules for data holders coupled with new rights for data co-generators would modify the legal framework to the extent that	• The intervention affects a wide range of sectors and B2B exchanges. It would therefore need to explicitly clarify that the allocation of any rights or exceptions granted by the new legislation does

[162] Idem

coherence issues might arise. Accordingly, the role of the new legislation in relation to existing rules (especially GDPR, Database Directive, Trade Secrets Directive, Digital Markets Act, competition law) must be clarified therein. • Coherence of general data access rules with sectoral legislation would be ensured, as general rules on data access would only apply if a data access right is established by sectoral legislation, where justified, and the sectoral legislator will remain free to adapt the general rules to sector-specific needs.	not conflict with other horizontal and sectoral rules.
Legal and political feasibility	
• For B2B and B2C, the largely positive stakeholder feedback and political encouragement by the MS indicate that this option is feasible. • For B2G, PO2 appears to be legally and politically feasible for the main stakeholders, in particular due to the greater influence of national laws and involvement of the private sector, both in identifying eligible data and in agreeing on appropriate conditions for access and use.	• PO3 is largely feasible in the areas of B2C and B2B, but pressure from large data holders in the most affected sectors (e.g. automotive) might lead to some political feasibility issues. • This option is more prescriptive than PO2. Higher costs for the public sector may negatively affect the political readiness of national authorities to engage in B2G partnerships. More resistance from data holders can also be expected, due to less advantageous compensation mechanisms.
Proportionality	
The proposed measures under PO2 would offer a balanced approach both providing for access to and use of data, while also ensuring the maintenance of control by the data generators (manufacturers or service providers) As such, PO2 would provide a proportionate option.	Elements of PO3 which create an undue burden (costs) without a corresponding boost in benefits may not be fully proportionate, in particular for less digitally mature sectors (technical adaptation costs to enable access to a wide range of data) and for B2G data sharing (e.g. the costs associated with the data steward function).

	Efficiency	**Effectiveness**	**Coherence**	**Legal/political feasibility**	**Proportionality**
PO1	+/-	--	+	+	+
PO2	+/-	+	+/-	+	+/-
PO3	-	+	+/-	+/-	-

8. PREFERRED OPTION

Based on the evidence above, PO2 would be the preferred option

[NB, this sections will need to be updated following the online consultation and further political guidance].

The key measures foreseen under PO2 are described in chapter 5.

This package of measures would significantly contribute to increasing the value of the data economy for a broader range of actors, and help ensure data works for society and the volume of data available for reuse, while at the same time providing for control

mechanisms to maintain the incentives in data generation. This would provide for a balanced and feasible approach. In addition, PO2 would introduce a legislative approach to the problems of fairness and trustworthiness of data processing infrastructures, which seems to be the only solution that would significantly raise trust in cloud services and therefore stimulate the data utilisation and data sharing rate in the economy.

8.1. Estimated impact of the preferred option

The overall economic benefit of the preferred option is estimated at EUR 279.3 billion p.a. by 2028 [subject to further input from the IA studies]

It could lead to EUR 96.8 billion supplementary government revenues in the period 2024-2028 and EUR10.9 billion supplementary investment activities.

Costs are estimated at EUR 1.5 billion p.a.

8.2. REFIT (simplification and improved efficiency)

The targeted review of the Database Directive will bring legal clarity to the relationship between the sui generis right and databases of machine-generated data. The exclusion of the latter from the scope of the sui generis right will also ensure that the Database Directive will not become an obstacle for the sharing of data across sectors. The review will have positive impact for the uniform application of rules in EU Single Market and for the Data Economy.

Quantitative estimates could not be established as there is low awareness among industry stakeholders, which may collect and use machine-generated data, of the instrument and its potential use. However, the chosen review is the most effective and coherent compared to the baseline. This is particularly true considering the increasing volume of data creation, sharing and use in the Data Economy, and the multiplication of situations, where the legal unclarity regarding the application of the sui generis right to machine generated data could lead to increased costs for affected stakeholders.

REFIT Cost Savings – Preferred Option(s)		
Description	***Amount***	***Comments***
Legal certainty With the exclusion of the sui generis right from databases containing MGD, database owners and particularly users would gain certainty that databases containing MGD are not protected by the database right. This is expected to facilitate the use of machine-generated data.	Quantitative estimates cannot be established but increase in revenues can be substantial in view of the expansion of data created and shared in the Data Economy	Affected stakeholders: Database users
Exclusion of MGD indirectly contributing to increased revenues in data supply chain due to facilitated data sharing. By clarifying that the sui generis right does not apply to databases with MGD, the legal intervention will ensure that the Database Directive could not pose an obstacle to the data sharing, as stipulated by the Data Act, for example, that it would not, as an additional layer of indirect protection of	Same as above	Same as above

data, interfere with data access and data sharing. Indirectly, it would have a positive impact on the data sharing economy, such as on innovation, research or increased competition. The impact is expected to increase with the increasing volume of data – including MGD – created and shared in the Data Economy.		
Reduced litigation costs The amendment would bring legal clarity by providing a clear and stable definition of MGD and explicitly excluding MGD databases from the scope of the sui generis protection. This clarity would reduce the potential number of cases in courts, as well as the possibility of opportunistic litigations and the corresponding costs.	Quantitative estimates cannot be established	Affected stakeholders: Database makers and users
Reduced information and transaction costs Excluding MGD databases removes the need to establish the database rightholder, i.e. the database maker, which is particularly challenging in cases of joint-ownership, and increases the linked information and transaction costs. Making use of contract networks would also have the potential effect to efficiently assign the database owners	Same as above	Same as above

(1) Estimates are with respect to the baseline of the unchanged legislation; (2) Please indicate which stakeholder group is the recipient of the cost saving in the comment section; (3) For reductions in regulatory costs please describe the measure/action which gives rise to the cost saving (e.g. actions to reduce compliance costs, administrative costs, regulatory charges, etc.) and whether it is a recurrent cost saving.

9. HOW WILL ACTUAL IMPACTS BE MONITORED AND EVALUATED?

Due to the dynamic nature of the data economy, monitoring the evolution of impacts constitutes a key part of the intervention. To ensure that the selected policy measures actually deliver the intended results and to inform possible future revisions, the Commission will set up the monitoring and evaluation process described below.

Through the Support Centre for Data Spaces, evidence from stakeholders will be gathered on the market efficiency and effectiveness of measures taken under this initiative, notably the degree to which the legal situation around data access and use rights across different sectors (within different data spaces) has improved and the extent of the impact of this initiative on the real-life contractual practices.

Given the central role of the Common European Data Spaces in the implementation of the EU Data Strategy, many of the specific objectives of this intervention will be best monitored on the level of the sectoral data spaces, and the insights collected centrally by the Data Spaces Support Centre foreseen under the Digital Europe Programme. The Support Centre will coordinate all relevant actions on sectorial data spaces and make available to the participating entities the necessary technologies, processes and tools as well as recommended best practices.

On a sectoral and macroeconomic level, the ongoing Data Market Monitoring study will assess and quantify the effects of the legal initiatives undertaken in the implementation of the EU Data Strategy with specific indicators modified to allow for the tracking of the economic impact of the current proposal on the growth of the data market in the EU.

Member States will be asked to report regularly on the efficiency and impact of the different strands of action in their data market and the extent to which the public authorities are engaging in B2G data sharing relationships. This would help the Commission to closely monitor the uptake of the measures in Member States and amongst stakeholders, also in view of compliance.

9.1. Monitoring of the specific objectives

Specific objectives	Operational objectives	Indicators	Sources of information
Facilitate fair commercial data sharing and access; Enable businesses and consumers in practice to use and access data they generate; [Preserve the incentives in data generation]	Lay down a fairness test for B2B data sharing via contracts. Define the parties, the data and the conditions for compulsory data access along with principles for access modalities. Clarify access and usage rights to co-generated data in B2B and consumer-related contexts. Enhance portability of personal data from data generating devices.	The growth of companies taking part in data sharing in the EU (both in numbers and in volume of transactions). The growth of the sectoral data spaces (in terms of the number of stakeholders involved and data transactions recorded). Increase in the number of services related to connected devices offered to consumers in the EU (other than services offered by the Big Tech platforms).	Continuous monitoring by the Support Centre for Data Spaces under DEP, based on feedback from sectoral data spaces. Annual reporting on the evolution of the data market from the EU Data Market Monitoring Tool (datalandscape.eu). Regular reporting from the European Data Flow Monitoring Initiative. Evaluation study to support the review of the instrument 5 years after its date of application.
Allow businesses more easily to switch data processing services	Define the requirements necessary for ensuring data and applications portability in the cloud. Lay down obligations on cloud service providers to minimise the conflict of laws.	Number and size of European cloud and other service providers.	Representative survey among the relevant stakeholders. Study on the European market of cloud and other data processing service providers.
Facilitate use of commercially held data for	Put in place national structures promoting and facilitating B2G data sharing.	Number of requests for B2G data access issued by public	Monitoring by the Support Centre for Data Spaces under DEP. Feedback from the newly created national structures for B2G data sharing.

specific public interest purposes	Define a process for secure and sustainable B2G data sharing.	authorities in the MS.	Auxiliary source of information: Public Sector Information Group (existing Commission Expert Group).

9.2. Monitoring of the preferred option

Area	Operational objectives	Indicators	Sources of information
Provisions on fairness in business-to-business data sharing	Lay down provisions for a fairness test for B2B data sharing applicable to non-negotiated contractual terms and general rules for sectoral data access rights.	Decrease in the share of businesses that have encountered unfairness and obstacles while entering into data sharing agreements.	Survey among businesses using data sharing contracts.
Enabling businesses and consumers in practice to use and access data they generate	Provide access rights to data generated through the use of products or services for co-generating businesses, consumers and a limited number of third party beneficiaries.	Volume of data ported and used through such access provisions. Increase in the number of services related to connected devices offered to consumers in the EU (other than services offered by the Big Tech platforms).	Survey of service providers. Survey of co-generating businesses, consumers, and the limited number of third party beneficiaries.
Preserving interests to invest in data generation	Provide for technical safeguards through standardisation of smart contracts.	Number of interoperability standards adopted.	Reporting of standardisation organisations.
Allowing businesses more easily to switch data processing services	Ensure portability through interoperability for cloud and other data processing services, as a minimum level of functionality. [Put in place a requirement for cloud and other data processing service providers to have technical, legal and organisational measures to prevent unlawful third country access to or transfer of data.]	Number and size of European cloud and other service providers.	Representative survey among the relevant stakeholders. Study on the European market of cloud and other data processing service providers.
Facilitating use of commercially held data for specific public interest purposes	Increase the volume of data shared with the public sector in order to carry out tasks for specific public interest purposes, and the alleviate the burden on private companies regarding the process of data sharing.	Number of data requests from public sector bodies and volume of privately held data shared with the public sector.	Data on the requests from public sector bodies, as recorded by the national structures that coordinate business-to-government (B2G) data sharing. Records of the European Data Innovation Board and the continuous monitoring by the Support Centre for Data Spaces under DEP.

			Auxiliary source of information: Public Sector Information Group (existing Commission Expert Group).

Annex 1: Procedural information

1. Lead DG, Decide Planning/CWP references

The legislative proposal on the Data Act was prepared under the lead of the Directorate-General Communication Networks, Content and Technology. In the DECIDE Planning of the European Commission, the process is referred to under item PLAN/2021/10588. The Commission Work Programme for 2021 includes a legislative action for a) a Data Act and b) the review of the Database Directive, under the header "6. Data package".

2. Organisation and timing

An Inter-Service Steering Group (ISSG) assisted DG Communication Networks, Content and Technology in the preparation of the Impact Assessment and legal proposal. It included Commission services of XX Directorate-Generals, together with the Commission's Legal Service and Secretariat General.

The work on the review of the Database Directive started with its evaluation[163], as part of the Data Package adopted in 2018. The work on the Data Act started with the design of the European Strategy on Data, adopted in February 2020, which announced the Commission would explore the need for legislative action on issues that affect relations between actors in the data economy. It also indicated the possible revision of the Database Directive.

The ISSG contributed to the initiative preparation in December 2020 (discussion on the consultation strategy and the Inception Impact Assessment), and in March 2021 (discussion on the consultation questionnaire). Further ISSGs on draft IA.

An Inception Impact Assessment was published on 28 May 2021 and was open to feedback from all stakeholders on the Better Regulation Portal for a period of 4 weeks. The public online consultation was launched on 3 June and closed on 3 September 2021.

The draft Impact Assessment report and all supporting documents were submitted to the Regulatory Scrutiny Board (RSB) on 29 September, in view of a hearing on 27 October 2021.

An Inter-Service Consultation took place, with all services that are members of the inter-service group on data, and closed on XX.

3. Consultation of the RSB

4. Evidence, sources and quality

Evidence-collection process

Extensive work was carried out during the previous Commission's mandate to identify the problems that are currently preventing Europe from realising the full economic and societal potential of data-driven innovation, in particular by ensuring greater access to and use of

[163] SWD(2018) 146 final.

data. This work resulted in earlier Commission policy documents[164], the consultation of stakeholders and extensive exploratory study work[165].

The study[166] to support an Impact Assessment on enhancing the use of data in Europe.

The study[167] on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights was conducted from 14 December 2020 to … [tbc] 2021. The study aimed to assess possible benefits and the overall economic impact from the use of model contract terms in voluntary data sharing, including co-generated IoT data, as well as in contracts for cloud services and cloud infrastructure. It also assessed the potential economic impact of a fairness test for data sharing contracts that could possibly be included in the Data Act as well as for contracts for cloud services and cloud infrastructure that could be a part of the 'cloud rulebook' and the access conditions for the cloud services marketplace. The study also looked into possible general principles related to remuneration and other contractual conditions for data sharing and potential mechanisms for the settlement of disputes arising in the context of data sharing contracts.

The study[168] supporting the review of the Directive 96/9/EC on the legal protection of databases (Database Directive) was conducted from 2 May to 7 August 2021. It aimed to assist the Commission in the preparation of this Impact Assessment (problem definitiion, identificationand assessment of policy options), to accompany the review of the Database Directive, in the context of the above mentioned Data Act and their interlinked objectives. The study mainly focused on options bringing more clarity on the status of machine-generated data under the sui generis database right in order to facilitate access and trading in such data, so that the Database Directive fits the data economy and meets the upcoming expansion of machine-generated/IoT data.

The study on the legal aspects of smart contracts[169] was conducted from May to August 2021.

The study on the economic detriment from unfair and unbalanced cloud computing contracts[170] was conducted between November 2017 and November 2018. The study's main objective is to deliver the necessary evidence to support the Commission in its

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[164] COM/2017/9; COM/2018/232.

[165] Everis (2018). *Study on data sharing between companies in Europe*, Study prepared for DG CNECT; European Commission (2018c). *Study on emerging issues of data ownership, interoperability, (re-)usability and access to data, and liability*, study prepared by Deloitte; European Commission (2017). *Synopsis report consultation on the 'building a European data economy' initiative*; European Commission (2019). *SME panel consultation B2B data sharing - Final Report*; European Commission (2018). *Study to support the review of Directive 2003/98/EC on the re-use of public sector information*, study prepared by Deloitte. European Commission (2020). *Study supporting the impact assessment on the Regulation on data governance,* SMART 2019/0024, prepared by Deloitte.

[166] European Commission (2021, forthcoming). Study to Support this Impact Assessment, SMART 2019/0024, prepared by Deloitte.

[167] JUST 2020/RCON/FW/CIVI/0098 implementing framework contract No JUST/2020/PR/03/0001-02 Lot 1

[168] European Commission (2021, *forthcoming*). *Study to support an impact assessment for the review of the Database Directive*.

[169] European Commission (2021, forthcoming), *Title*

[170] European Commission (2018). *Study on the economic detriment from unfair and unbalanced cloud computing contracts*, prepared by EY.

assessment of the need for, and extent of, any further EU efforts to increase SMEs' trust in cloud services and allow them to bring in the full potential benefits of these types of services.

The study on the legal protection of trade secrets in the context of the data economy[171] started in February 2021 and will run until April 2022. The objective of the study is to assess how protection of trade secrets applies in the context of the data economy. The study includes 50 interviews and the launch of a survey.

An analysis of third countries' legislation on the protection of commercially sensitive data, in particular IP protected content and trade secrets[172] was conducted between 15 June and 13 August 2021.

The methodological support to impact assessment of using privately held data by official statistics, a DG ESTAT exercise, provides input to the ongoing research and deliberations towards a better understanding of B2G data sharing.

Stakeholders' consultation process

Recent stakeholder consultation processes provided input: the 2017 public consultation on building a European data economy, the 2018 public consultation on the revision of the Directive on the reuse of public sector information, the 2018 SME panel consultation on the B2B data sharing principles and guidance, and the 2020 public consultation on the European Strategy on Data.

In addition to the broader online consultation on the data strategy[173] and on the first legal instrument on European data governance[174], the Commission published an inception impact assessment and an open public consultation on the specific questions pertaining to the Data Act, including the review of the Database Directive. The consultation actions conducted between 3 June – 3 September 2021 covered aspects such as data platforms, B2B data sharing, B2G data sharing for the public interest, Smart Contracts, rights on non-personal Internet of Things data stemming from professional use, portability for business users of cloud services, the portability right under Article 20 GDPR, Intellectual Property Rights – protection of databases and safeguards for non-personal data in international context.

[171] European Commission (2021, *forthcoming*), *Study on the legal protection of trade secrets in the context of the data economy.*
[172] European Commission (2021, forthcoming). *Analysis of third countries' legislation on the protection of commercially sensitive data, in particular IP protected content and trade secrets*
[173] Summary Report on the open public consultation on the European strategy for data
[174] Data governance | Shaping Europe's digital future (europa.eu)

Annex 2: Stakeholder consultation

1. Introduction

Objective of the consultation process

The stakeholders' consultation collected important feedback and insights on measures that would create a fair data economy by ensuring better control over and conditions for data sharing for citizens and businesses. All these stakeholder groups provided important feedback and insights on measures that would create a fair data economy by ensuring better control over and conditions for data sharing for citizens and businesses.

Extensive work has been done during the past mandate, identifying the problems that are currently preventing Europe from realising the full potential of the data-driven innovation in the economy. The proposal builds on past consultation actions, such as the 2017 public consultation supporting the Commission Communication on "Building a European data economy"[175], the 2017 public consultation on the evaluation of the Database Directive, the 2018 public consultation on the revision of the Directive on the reuse of public sector information, the 2018 SME panel consultation on the B2B data sharing principles and guidance and the Commission online open consultation on the Data strategy[176] that ran from 19 February until 31 May 2020.

2. Consultation actions

- *Open public consultation on the Data Act*

As envisaged by the Better Regulation guidelines, a public online consultation was published on 3 June 2021 and closed on 3 September 2021. The consultation was launched in view of preparing the current initiative, and addressed the items covered in the initiative with relevant sections and questions. It targeted all types of stakeholders. It gathered input on B2B data sharing, B2G data sharing for the public interest, Smart Contracts, rights on non-personal Internet of Things data stemming from professional use, portability for business users of cloud services, the portability right under Article 20 GDPR, Intellectual Property Rights – protection of databases and safeguards for non-personal data in international context.

- *Inception Impact Assessment*

An Inception Impact Assessment was published on the Better Regulation portal on 28 May 2021, and was open for feedback for 4 weeks. It also targeted all types of stakeholders. The Commission received 91 contributions on the Better Regulation Portal[177], essentially from businesses.

Other consultation actions

[175] COM(2017) 09 final.

[176] https://ec.europa.eu/digital-single-market/en/news/summary-report-public-consultation-european-strategy-data

[177] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13045-Data-Act-&-amended-rules-on-the-legal-protection-of-databases/feedback_en?p_id=24828813

- *Study to support this Impact Assessment on enhancing the use of data in Europe*[178] including interviews with targeted stakeholders.

This included two cross-sectoral workshops on B2G and B2B data sharing and a final validation workshop organised in spring 2021.

- *Study on model contract terms, fairness control in data sharing and in cloud contracts and on data access rights*[179]

The focus of the study is to provide information on and evaluation on the possible economic benefit of the use of model contract terms and fairness control in B2B data sharing and cloud contracts as well incentives for data sharing. The study also aims to look into possible general principles related to remuneration and other contractual conditions for data sharing and potential mechanisms for the settlement of disputes which arise in the context of contracts on data sharing that could be generalised and applicable across sectors.*Study on the legal aspects of smart contracts*[180]

- *Study on the economic detriment from unfair and unbalanced cloud computing contracts*[181]

It includes an online survey on a representative sample of SMEs and start-ups, which are using cloud computing for the purposes of conducting their business. The study's main objective is to deliver the necessary evidence to support the Commission in its assessment of the need for, and extent of, any further EU efforts to increase SMEs' trust in cloud services and allow them to bring in the full potential benefits of these types of services.

- *Study on the legal protection of trade secrets in the context of the data economy*[182]

The study is an evidence gathering study, including the conduct of a survey and of 50 interviews. It will assess how protection of trade secrets applies in the context of the data economy

- *Study in support of the review of the Database Directive*[183] including interviews with targeted stakeholders.

It has assisted the Commission in the preparation of this Impact Assessment to accompany the review of the Database Directive, in the context of the Data Act and their interlinked objectives.

- *Methodological support to impact assessment of using privately held data by official statistics*[184]

[178] European Commission (2021, *forthcoming*). *Support study to this impact assessment*, prepared by Deloitte.
[179] European Commission (2021, forthcoming), *Study on model contract terms and fairness control in data sharing and in cloud contracts and on data access rights*, study prepared by ICF
[180] European Commission (2021, forthcoming), *Title*
[181] European Commission (2018). *Study on the economic detriment from unfair and unbalanced cloud computing contracts*.
[182] European Commission (2021, forthcoming), *Study on the legal protection of trade secrets in the context of the data economy*.
[183] European Commission (2021, forthcoming). *Study in support of the review of the Database Directive*.
[184] ESTAT (2021, forthcoming). *Methodological support to impact assessment of using privately held data by official statistics*.

This exercise provides input to the ongoing research and deliberations towards a better understanding of B2G data sharing.

- *Study on the international dimension of data* - an analysis of the legislation in third countries on the protection of commercially sensitive data, in particular IP protected content and trade secrets[185].
- *Webinars on personal data platforms and industrial data platforms*

Three webinars[186] were organised on 6, 7 and 8 May 2020. They brought together the relevant data platform projects in the Big Data Value Public-Private Partnership[187] portfolio.

- *Report on Business-to-Government data sharing*

The Report[188] of the High Level Expert Group on B2G data sharing provides an analysis of the problems on B2G data sharing in the EU and offers a set of recommendations in order to ensure scalable, responsible and sustainable B2G data sharing for the public interest. In addition to the recommendation to the Commission to explore a legal framework in this area, it presents several ways to encourage private companies to share their data. These include both monetary and non-monetary incentives, for example tax incentives, investment of public funds to support the development of trusted technical tools and recognition schemes for data sharing.

- *Workshop on labels for / certification of providers of technical solutions for data exchange*

Around one hundred participants from businesses (including SMEs), European institutions and academia attended this webinar on 12 May 2020. Its aim was to examine whether a labelling or certification scheme could boost the business uptake of data intermediaries by enhancing trust in the data ecosystem[189].

- *A series of workshops*

Ten workshops organised between July and November 2019 involved more than 300 stakeholders and covered different sectors. It was discussed how the organisation of the data sharing in certain areas such as environment, agriculture, energy or health could benefit the society as a whole, helping public actors to design better policies and improve public services, as well as private actors to produce services contributing to facing societal challenges.

- *SME Panel consultation*

[185] European Commission (2021, forthcoming). *Analysis of third countries' legislation on the protection of commercially sensitive data, in particular IP protected content and trade secrets*
[186] https://www.big-data-value.eu/bdv-ppp-going-virtual-data-platform-webinars/
[187] https://ec.europa.eu/digital-single-market/en/big-data-value-public-private-partnership
[188] https://ec.europa.eu/digital-single-market/en/news/experts-say-privately-held-data-available-european-union-should-be-used-better-and-more
[189] http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=67768

This panel consultation[190], organised from October 2018 to January 2019, sought the views of SMEs on the Commission's B2B data sharing principles and guidance issued in the April 2018 data package.

- *The latest Eurobarometer on the impact of digitisation*

This general survey on the daily lives of Europeans includes questions on people's control on and sharing of personal information. The report, published on 5 March 2020, provides information on the willingness of European citizens to share their personal information and under which conditions.

- *Informal Expert Group on B2B data sharing and cloud computing contracts*

Pending approval an expert group may assist the Commission by analysing the current "fairness" related to contractual practices in B2B data sharing and the potential boosting effects that the development of a "fairness test" and model contract terms could have on B2B data sharing (in particular with regard to star-ups and SMEs), with the view of making recommendations in this sense. (link)

- *Industry dialogues and networking sessions organised by the BDVA (Big Data PPP) with their stakeholders on a sectoral and horizontal basis.*
- *The Opinion of the European Data Supervisor on the European strategy for data*

On 16 June 2020, the European Data Protection Supervisor adopted Opinion 3/2020 on the European strategy for data. The approach of the EDPS towards the strategy in general is positive, considering that the implementation of the strategy will be an opportunity to set an example for an alternative data economy model.

- *Position of the Member States*

In October 2020 the European Council 'stressed the need to make high-quality data more readily available and to promote and enable better sharing and pooling of data, as well as interoperability.' In March 2021, it recalled 'the importance of better exploiting the potential of data and digital technologies for the benefit of the society and economy.' With regard to cloud services, in October 2020 the EU Member States unanimously adopted a Joint Declaration on building the next generation cloud for businesses and the public sector in the EU, which calls for a next generation EU cloud offering that reaches the highest standards, for example in portability and interoperability.

3. Main conclusions of the consultation process

The stakeholders' consultation process on data-sharing issues started some years ago, especially from 2017 onwards, aiming at collecting important feedback and insights on measures that would create a fair data economy by ensuring better control over and conditions for data sharing for citizens and businesses. These consultation actions provided valuable input for the preparation of the proposal for the Data Act.

[190] SMEs panel consultation.

The 2017 public consultation[191] supporting the Communication on "Building a European data economy" revealed that stakeholders largely agreed that more business-to-business (B2B) data sharing would be beneficial. At the same time, they took the view that the existing regulatory framework on data sharing in B2B relations was fit for purpose. In general, stakeholders also agreed that the crucial question in B2B data sharing is not so much about data 'ownership', but about how access to data is organised.

Stakeholders strongly supported non-regulatory measures for B2B data sharing, such as (i) fostering the use of Application Programming Interfaces (APIs) for simpler and more automated access to and use of datasets; (ii) developing recommended standard contract terms; and (iii) the provision of EU-level guidance.

As part of the April 2018 Data package, the Commission put forward the Communication "Towards a common European data space"[192] including 'principles to be respected in contractual practice in order to ensure fair and competitive markets for the IoT objects and for products and services that rely on non-personal machine-generated data created by such objects' and principles that 'could support the supply of private sector data to public sector bodies under preferential conditions for re-use'. Additionally, the Commission started the procurement process for a 'Support Centre for data sharing' to assist companies and public sector bodies in sharing private sector data by providing technical guidance and model terms of contract.

A further consultation process with stakeholders, following the Communication's adoption, was launched by the Commission, including an online consultation seeking the views of SMEs through the SME panel consultation tool[193]. Almost 1 000 replies were received[194].

73% of the companies indicated having had difficulties in acquiring data from another company due to unfair or unreasonable practices regarding access to data (e.g. unreasonably high licensing fees, unforeseeable termination of contract). The analysis of the open question on the nature of difficulties/practices indicates again high fees/costs for accessing such data as the most pressing issue. Specifically, respondents from the agricultural sector highlighted this issue. The length of the process, unfavourable contracts and technical problems in establishing contracts are issues mentioned by some respondents from the automotive and 'other manufacturing' sectors, while others from the logistics sector highlighted legal uncertainty on the matter.

A significant proportion of SMEs actively acquire data from other companies (33%), and are using (or plan to use) connected devices (30%). A large majority (87%) of respondents confirm that IoT objects represent new challenges in terms of fairness in the industrial use context and just over half (54%) consider that they are currently not well addressed by law.

SMEs considered the Commission's principles on IoT objects and data coming from those objects to be useful and complete (83% of respondents). Respondents were moderately

[191] https://ec.europa.eu/digital-single-market/en/news/public-consultation-building-european-data-economy
[192] COM(2018)232
[193] https://een.ec.europa.eu/
[194] https://ec.europa.eu/digital-single-market/en/news/sme-panel-consultation-b2b-data-sharing

optimistic that the principles will influence contractual practice and that this in itself would be sufficient to maintain fair markets for IoT objects and data resulting from such objects. Respondents generally considered the approach based on principles to be taken up in contractual practice to be less effective in comparative terms with respect to the objective of preserving competition and avoid data lock-ins (30% of companies considered this approach 'insufficient' or 'less sufficient').

As regards the future work of the Support Centre, all services were deemed useful, in particular those of providing a reference document on the law applicable to data sharing, guidance on data security and improving the traceability of usage of data, and industry best-practice examples.

In addition to the broader online consultation on the data strategy195 and on the first legal instrument on European data governance196, the Commission published an inception impact assessment and an open public consultation on the specific questions pertaining to the Data Act, including the review of the Database Directive. The consultation actions conducted between 3 June – 3 September 2021 covered aspects such as data platforms, B2B data sharing, B2G data sharing for the public interest, Smart Contracts, rights on non-personal Internet of Things data stemming from professional use, portability for business users of cloud services, the portability right under Article 20 GDPR, Intellectual Property Rights – protection of databases and safeguards for non-personal data in international context.

The consultation process targeted all types of stakeholders: Member States' competent public authorities, academic and research institutions, business associations, industrial clusters, companies/businesses, consumer organisations, NGOs, trade unions and citizens.

In total, … contributions were received, of which … were on behalf of a company, … from a business association, … from EU citizens, … on behalf of academic / research institutions, and … from public authorities. Consumers' voices were represented by … respondents, and .. respondents were non-governmental organisations. Amongst the … companies / business organisations, …% were SMEs. Overall, …% of the replies came from the EU-27. … respondents indicated whether their organisation had a local, regional, national or international scope.

…. position papers were submitted. The papers provided different views on the topics covered by the online questionnaire. They provided opinions on …

[195] Summary Report on the open public consultation on the European strategy for data
[196] Data governance | Shaping Europe's digital future (europa.eu)

In their answers to the published Inception Impact Assessment related to the Data Act, stakeholders call for a coherent framework for EU action in the field of data and for a careful articulation with existing data-related initiatives or pieces of legislation, especially in some sectors (e.g. automotive, or financial sector), as well as more general ones (e.g. GDPR, ePrivacy, Data Market Act, etc.). Many stakeholders also warned against any measure that could have the counter-productive effect to hamper innovation.

A large majority of contributors commented on B2G data sharing proposals. While feedbacks from public sector actors support a strong framework and higher intensity options on B2G data sharing for the benefit of the society and the economy, businesses call for a cautious and flexible approach that would encourage voluntary data-sharing schemes rather than mandate them. Existing schemes in some sectors should be considered. There is a fear that unclear definition of 'public interest' could create uncertainties, so concepts need to be clearly defined and use-cases strongly argued. Stakeholders also underline the importance of incentives and rewarding schemes, not only monetary.

As regards B2B data sharing, most business representatives consider that such data sharing should be rather incentivised. If mandated, this should consider targeted situations or sectors where there is a clearly demonstrated market failure or imbalance of negotiating power between the different parties. While mostly large business representatives highlight the importance to protect the investments made in the data creation and the contractual freedom of companies, SME representatives highlight the economic benefits associated to better data access and to fair data sharing conditions. This is also a position shared by stakeholders in some sectors (construction, agriculture, after-markets in general). The concepts of a fairness test and model contract clauses are supported with variations by contributors across sectors. The concept of horizontal modalities for sectorial data access rights is supported with some variations by stakeholders in some sectors (pharmaceuticals, health, after-market). Some stakeholders, mainly SMEs representatives[197], show support for regulatory measures to insure access to data mainly in the crafts, automotive sectors.

The feedback given on the cloud computing services confirm the problem of concentration on the cloud market, and the importance of cloud switching and data portability for users of such services and of trusted cloud environments, especially in some sectors like insurance or agriculture, while some sectors have already put in place instruments in this respect (e.g. energy). The feedback exercise showed there are very different positions on the question whether existing Codes of Conduct (aiming to make cloud computing service switching and the data portability between providers easier) are sufficient and the process should remain led by industry, or whether a strengthened framework should be established.

As regards safeguards for non-personal data in international contexts, some stakeholders are not in favour of any provision mandating notification of exposure of EU citizens' data to foreign jurisdictions, while some other insist on the importance of transparency and are in favour of notifications and contractual commitments. Several contributors expressed

[197] Position papers: ZDH, Finnish Federation of Enterprises

concerns that any measure in this field would restrict international data flows, while underlying the importance to protect EU citizens' data in international contexts.

Finally, several stakeholders commented on the review process of the Database Directive. Some stakeholders, especially NGOs, welcome the review and are in favour of revisiting the sui generis right more broadly.The publishers are generally negative about the goals of the review of the Directive and consider the sui generis right should be left untouched. Alternatively, some publishing stakeholders advocated for the extension of sui generis protection to databases that contain created data, such as machine-generated data.

The consultation actions foreseen in the Consultation Strategy, discussed in an inter-service group in December 2020, were carried out. However, due to the COVID-19 situation, some actions were modified (i.e. workshops turned into webinars).

Annex 3: Who is affected and how?

Practical implications of the initiative

The planned legislative framework will have a range of practical implications for different groups of stakeholders from the entire data value chain: data holders (public bodies, companies), data reusers (public authorities, businesses and the research community) and data (co-)producers (individuals and other public sector authorities).

Member States' public authorities will be able to make more informed decisions through improved reuse of big data held by the private sector for the public good, for example to improve public transport, make cities greener, tackle epidemics and develop more evidence-based policies. To facilitate such data sharing, the European strategy for data announced that one of the objectives of the Data Act would be to create a framework to bring certainty to business-to-government (B2G) data-sharing in the public interest and help overcome the related barriers. A more flexible framework for on-demand access and use of private sector data by the public sector would make it simpler and less burdensome for public sector entities to acquire private data.

Academic and research institutions – by contributing to the completion of a single market for data, this initiative will benefit the academic and scientific community as it will enable them to access and use data from the public sector, business and citizens in the best possible manner. The public sector will have better access to privately held big data, which could enhance research.

Industry stakeholders/ businesses and **SMEs** from all sectors are concerned by the initiative. Commercial entities engaged or willing to engage in data sharing and use will benefit from an increased legal certainty, better transparency and trust. This could be then associated to several direct and indirect benefits (such as efficiency gains, cost savings, increased business opportunities etc.), leading to stronger incentives to enter the data market or to enhance the use of data in current business operations.

Data holders may on the one hand face costs linked to implementation, administrative burdens and compliance with this policy intervention (e.g. by changing the design of their products to enable data access or by adapting their contractual practices). These costs are further linked into elimination of competitive (but unfair) advantages in aftermarkets as well as to reduced innovation capacity in the primary market. In return, they might benefit from time and cost savings, increased business and growth opportunities due to increased trust among the players in the market and easier access into third parties data. Model B2B contractual clauses and clarification regarding unfair contractual provisions will reduce the resources needed to prepare, execute and monitor compliance with the concluded data sharing agreements.

Private sector data holders may also incur costs linked to compulsory data sharing with the public sector (notably for the datasets whose transfer will be free of charge). Nevertheless, B2G data sharing arrangements also generate benefits, such as providing access to analytical methods and models provided by the public sector or an improved reputation.

Furthermore, companies may in the long term benefit from more coherent and streamlined public sector requests for the data, requiring fewer resources to process.

The position of European companies offering cloud services will be reinforced with respect to their data in cross-border situations involving third countries that may put the data unduly at risk of being transferred to a third country without a legitimate ground. Measures that would clarify obligations of such cloud service providers in situations of conflicts of laws on data access by third countries' authorities would benefit companies in terms of protecting confidential business data assets.

Data (re)users will benefit from an opportunity to enter markets that were previously closed (or dominated by few data holders). An improved uptake of data portability as the market competition increases will enhance further innovation. The new business models and initiatives for data portability will emerge, contributing to the settlement of complementary markets. They should also benefit from a clearer and fairer legislative framework affecting B2B data transactions. The barriers to B2B data sharing will be lowered to a certain extent and data (re-)users will benefit from access to more data at fair conditions to develop their business models, services and products. This is linked to the fact that enhanced clarity and fairness over IoT data access and use rights will increase the volume of B2B data sharing and therefore create business and innovation opportunities for the provision of new data-driven products and services. Opening up of data from data generating devices will particularly benefit start-ups and SMEs, who are active in the repair and maintenance aftermarkets.

Finally, data co-producers (companies using data generating machines, usually in an IoT context) will likely benefit from time and cost savings, increased effectiveness, productivity, growth and innovation capacity associated to increased and enhanced access and use of co-generated data. Additionally, they might benefit from cost savings related to more efficient cost management and lower prices for aftermarket services due to elimination of monopolistic aftermarkets (on a macroeconomic level this amounts to counterbalancing the negative impact on the data holders, described above).

The initiative should generally lead to a reinforcement of the market position of SMEs and start-ups vis-a-vis larger market players, due to various exemptions foreseen for the currently disadvantaged commercial entities (as described in the relevant policy options).

Individuals will benefit from improved public policies and services. Consumers of digital services based on data will benefit from the initiative due to a wider offer of more diverse services and more competitive prices, reducing the "lock-in" effect on specific service providers and device manufacturers. This will be particularly true in case of data-generating devices such as wearables, smart home appliances, voice assistants. For data holders, the planned act should in the long term lead to the improvement of customers' trust due to the implementation of strong management solutions, stimulating the innovation process and lower production costs.

The position of individuals will also be reinforced with respect to their data in cross-border situations involving third countries that may put the data unduly at risk of being transferred to a third country without a legitimate ground.

The **society as a whole** is expected to benefit from better policy implementation and government services, including at the local level, based on better data availability (e.g. as a result of easier access to privately held data by the public sector), as well as in public areas with high societal impact. A faster and more targeted responses to societal challenges due to anticipating risks using more available information, and it will also contribute to better decision-making in the public sector through better analysis of information. This was demonstrated during the Covid-19 pandemic: in the Exscalate4COV initiative[198] (described also in Chapter 3).

Improved legal certainty regarding co-generated data that is within the scope of this initiative would lead to the development of better and new services and products for users, and through this, to a higher level of employment in this field, while the enhanced usability of data generated by individuals would provide data subjects with a broader range of choice and augmented authority and control over the use of such data.

Society should be affected positively due the measures limiting the conflict of laws in the cloud environment, reinforcing data sovereignty of citizens, businesses and administrations. Data will be more effectively and homogeneously protected, irrespective of its qualification as personal and non-personal data. While this comes at a cost, this cost is principally borne by the customers of ICT providers.

The society should also benefit from a positive impact on the environment. An increased data use is on the one hand conditional on the progress made in reducing the energy consumption of data processing facilities and technologies. It is expected that a more competitive cloud market will incorporate the 'green credentials' as one of the key service offerings, thus decreasing the environmental impact of data processing.

In addition, the initiative will seek to stimulate re-use of existing data so as to avoid environmental impacts of additional data collection and redundant processing (environmental impact of additional sensors and data storage costs). This is particularly relevant given that more than 50% percent of data collected by companies globally is not used at all, constituting the so called 'dark data'[199].

Furthermore, environment will benefit from better access to and the analysis of data generated by devices (deployed by businesses and consumers) because insights from such data lead to the optimisation of production processes and the functioning of devices in terms of resource consumption. This in turn enables an improved energy efficiency and reduces greenhouse gas emissions. Additionally, better data access increases reparability and optimisation opportunities (e.g. in the context of predictive maintenance services) carried out by independent repairers, which should translate into a longer usage time for smart machines or devices.

[198] https://www.exscalate4cov.eu/

[199] The results of a global survey demonstrated that dark data constitutes on average 55% of data held by companies, with local variations. E.g. 42% of executives at French companies estimate that more than 75% of the data they collect is unusable: https://priceonomics.com/companies-collect-a-lot-of-data-but-how-much-do/

This initiative is likely to produce positive impacts on the environment also thanks to the public sector's better access to privately held big data that could enhance research as well as policymaking concerning climate change, more efficient use of natural resources, or reducing waste.

<table>
<tr><th colspan="4">Main groups of stakeholders in the data value chain[200] - B2B relationship</th></tr>
<tr><td colspan="2">Stakeholders (co) producing data:
• product/service providers (i.e. Original Equipment Manufacturers, telecommunication companies, sensor providers)
• product/service users (i.e. airline or bus companies or individuals/consumers in case of connected devices)</td><td colspan="2">Stakeholders interested in accessing and re-using data (without necessarily contributing to their production):
• providers' competitors and same sector down-stream providers, data analytics companies and the public sector as a (re-)user of public interest data.</td></tr>
<tr><th colspan="4">Main groups of stakeholders in the data value chain - B2G relationship</th></tr>
<tr><td colspan="2">Data holders:
• Private sector organisations (large companies)</td><td colspan="2">Data reusers:
• Public sector: national executive government (e.g. statistical offices), regional and local government (e.g. municipalities), legislative branch (e.g. parliamentary research services).</td></tr>
<tr><th colspan="4">Main groups of stakeholders in the data value chain - B2C relationship</th></tr>
<tr><td>Data holders:
• Device producer
• Energy company (in case of smart home devices)</td><td>Data (co)producers:
• Owner of device</td><td>Data users:
<u>Of whole datasets:</u>
• Researchers
• Platforms (e.g. Google, Apple, Strava, Amazon, IFTTT)</td><td>Data intermediaries:
• Platforms (e.g. Google, Apple)
• Personal Information Management Spaces (PIMS[201])</td></tr>
</table>

[200] Apart from the interest represented by the stakeholder group, the defining factor can also be the activity performed along the data value chain, e.g. data acquisition, data analysis, data curation, data storage or data usage.

[201] Personal Information Management Systems (or PIMS) are new products and services that help give individuals more control over their personal data, see on the EDPS *website*.

		In case of individual data portability: • Energy companies • App developers, insurance companies, health providers, repair shops, other device producers	• Device producer-led platforms (Siemens, Samsung, etc.)

Summary of costs and benefits

[Tables I and II should be completed as far as possible. The tables present systematically the costs and benefits which will have been identified and assessed during the impact assessment process. If no preferred option is specified, the same tabular presentation should be made for each of the retained policy options in section 6 above.]

I. Overview of Benefits (total for all provisions) – Preferred Option		
Description	***Amount***	***Comments***
Direct benefits		
e.g. Compliance cost reductions		
e.g. Reduced air pollution emissions		
Indirect benefits		

(1) Estimates are relative to the baseline for the preferred option as a whole (i.e. the impact of individual actions/obligations of the preferred option are aggregated together); (2) Please indicate which stakeholder group is the main recipient of the benefit in the comment section;(3) For reductions in regulatory costs, please describe details as to how the saving arises (e.g. reductions in compliance costs, administrative costs, regulatory charges, enforcement costs, etc.; see section 6 of the attached guidance).

II. Overview of costs – Preferred option						
	Citizens/Consumers		Businesses		Administrations	
	One-off	Recurrent	One-off	Recurrent	One-off	Recurrent

Action (a)	Direct costs						
	Indirect costs						
Action (b)	Direct costs						
	Indirect costs						

(1) Estimates to be provided with respect to the baseline; (2) costs are provided for each identifiable action/obligation of the preferred option otherwise for all retained options when no preferred option is specified; (3) If relevant and available, please present information on costs according to the standard typology of costs (compliance costs, regulatory charges, hassle costs, administrative costs, enforcement costs, indirect costs; see section 6 of the attached guidance).

Annex 4: Analytical methods

Annex 5: Subsidiarity Grid

1. Can the Union act? What is the legal basis and competence of the Unions' intended action?
1.1 Which article(s) of the Treaty are used to support the legislative proposal or policy initiative?
[Succinctly provide the legal references with a very short explanation for non-lawyers. Indicate "not applicable" in case of communications, etc.]
1.2 Is the Union competence represented by this Treaty article exclusive, shared or supporting in nature?
In the case of [insert policy area of the proposal], the Union's competence is [exclusive, shared, supporting – select one]. [Add any explanation if necessary.]
*Subsidiarity does not apply for policy areas where the Union has **exclusive** competence as defined in Article 3 TFEU[202]. It is the specific legal basis which determines whether the proposal falls under the subsidiarity control mechanism. Article 4 TFEU[203] sets out the areas where competence is shared between the Union and the Member States. Article 6 TFEU[204] sets out the areas for which the Unions has competence only to support the actions of the Member States.*
2. Subsidiarity Principle: Why should the EU act?
2.1 Does the proposal fulfil the procedural requirements of Protocol No. 2[205]: - Has there been a wide consultation before proposing the act? - Is there a detailed statement with qualitative and, where possible, quantitative indicators allowing an appraisal of whether the action can best be achieved at Union level?
- [Summarise the activities carried out as part of the public and targeted consultations as well as any other relevant consultation activities (e.g. working groups, Eurobarometer). - State that the explanatory memorandum and – if applicable – the impact assessment (chapter 3) contain a section on the principle of subsidiarity and refer to question 2.2 below.]
2.2 Does the explanatory memorandum (and any impact assessment) accompanying the Commission's proposal contain an adequate justification regarding the conformity with the principle of subsidiarity?
[Insert the text on subsidiarity to be included in the explanatory memorandum. If the proposal is accompanied by an impact assessment, this text should summarise the arguments made in chapter 3 of the impact assessment.]
2.3 Based on the answers to the questions below, can the objectives of the proposed action be achieved sufficiently by the Member States acting alone (necessity for EU action)?
[Summarise in a brief paragraph the gist of questions 2.3 a-g below.]
(a) Are there significant/appreciable transnational/cross-border aspects to the problems being tackled? Have these been quantified?

[202] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12008E003&from=EN
[203] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12008E004&from=EN
[204] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:12008E006:EN:HTML
[205] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12016E/PRO/02&from=EN

(b) Would national action or the absence of the EU level action conflict with core objectives of the Treaty[206] or significantly damage the interests of other Member States?
(c) To what extent do Member States have the ability or possibility to enact appropriate measures?
(d) How does the problem and its causes (e.g. negative externalities, spill-over effects) vary across the national, regional and local levels of the EU?
(e) Is the problem widespread across the EU or limited to a few Member States?
(f) Are Member States overstretched in achieving the objectives of the planned measure?
(g) How do the views/preferred courses of action of national, regional and local authorities differ across the EU?
2.4 Based on the answer to the questions below, can the objectives of the proposed action be better achieved at Union level by reason of scale or effects of that action (EU added value)?
[Summarise in a brief paragraph the gist of questions 2.4 a-e below.]
(a) Are there clear benefits from EU level action?
(b) Are there economies of scale? Can the objectives be met more efficiently at EU level (larger benefits per unit cost)? Will the functioning of the internal market be improved?
(c) What are the benefits in replacing different national policies and rules with a more homogenous policy approach?
(d) Do the benefits of EU-level action outweigh the loss of competence of the Member States and the local and regional authorities (beyond the costs and benefits of acting at national, regional and local levels)?
(e) Will there be improved legal clarity for those having to implement the legislation?
3. Proportionality: How the EU should act
3.1 Does the explanatory memorandum (and any impact assessment) accompanying the Commission's proposal contain an adequate justification regarding the proportionality of the

[206] https://europa.eu/european-union/about-eu/eu-in-brief_en

proposal and a statement allowing appraisal of the compliance of the proposal with the principle of proportionality?
[Insert the text on proportionality to be included in the explanatory memorandum. If the proposal is accompanied by an impact assessment, this text should reflect the findings of the impact assessment.]
3.2 Based on the answers to the questions below and information available from any impact assessment, the explanatory memorandum or other sources, is the proposed action an appropriate way to achieve the intended objectives?
[Summarise in a brief paragraph the gist of questions 3.2 a-e below. Those should reflect what is written in the explanatory memorandum, impact assessment, etc.]
(a) Is the initiative limited to those aspects that Member States cannot achieve satisfactorily on their own, and where the Union can do better?
[The answer to this question should be consistent with the answers to the sub-questions of question 2.3 above.]
(b) Is the form of Union action (choice of instrument) justified, as simple as possible, and coherent with the satisfactory achievement of, and ensuring compliance with the objectives pursued (e.g. choice between regulation, (framework) directive, recommendation, or alternative regulatory methods such as co-legislation, etc.)?
[Please cover in your response whether the choice of instrument contributes to a policy intervention that is as simple as possible, proportional and effective in achieving the policy objectives.]
(c) Does the Union action leave as much scope for national decision as possible while achieving satisfactorily the objectives set? (e.g. is it possible to limit the European action to minimum standards or use a less stringent policy instrument og approach?)
(d) Does the initiative create financial or administrative cost for the Union, national governments, regional or local authorities, economic operators or citizens? Are these costs commensurate with the objective to be achieved?
[If the proposal is accompanied by an impact assessment, please ensure that the response is consistent with the tables on cost and benefits in annex 3.]
(e) While respecting the Union law, have special circumstances applying in individual Member States been taken into account?
[If applicable, please ensure that the response is consistent with the territorial impact assessment.]

Annex 6: Other relevant legal initiatives

The important role of the digital platforms in the data economy is addressed by the proposal for a regulation on contestable and fair markets in the digital sector (Digital Markets Act - DMA[207]) which targets platforms acting as "gatekeepers" in the digital sector. The proposal aims to prevent gatekeepers from imposing unfair conditions on businesses and consumers, and at ensuring the openness of important digital services. The DMA does not, however, affect data-sharing arrangements beyond those involving the gatekeepers – such situations are therefore be examined in this Impact Assessment.

As far as the processing and storage of ever increasing amounts of data are concerned, private and public entities in the EU depend increasingly on constantly evolving cloud computing deployment and service models. In this context, service providers and users have jointly developed codes of conduct to guarantee a sufficient level of portability of data and applications between different cloud computing service providers, as mandated by the Regulation on the Free Flow of Non-personal Data[208].

In addition to the horizontal EU legal frameworks presented above, the rights and obligations on data access and use have also been regulated to various extent on the sectoral level. In the transport sector, the repair and maintenance information from motor vehicles and agricultural machines is subject to specific data access/sharing obligations under **type approval legislation**[209]. The EU **Electricity Regulation**[210] requires transmission system operators to provide data to regulators and for resource adequacy planning, while the EU **Electricity Directive**[211] foresees transparent and non-discriminatory procedures for access to consumption data based on interoperability requirements for data exchange developed by the Commission. The **Payment Services Directive 2**[212] opens up some types of payment transactional and account information under certain conditions, thus acting as an enabler for B2B data sharing in the area of Fintech. In the framework of the **Intelligent Transport Systems Directive (2010/40/EU)**[213], delegated regulations specify the range of data and the related procedures for the provision of road safety-related minimum universal traffic information as well as data for EU-wide real-time traffic information services. In the tourism sector, the relevant provisions concerning **European statistics on tourism**[214], establish a common framework for the systematic development, production and dissemination of European statistics on tourism while an EU Code of Conduct for data sharing in tourism is under preparation.

[207] COM/2020/842 final.
[208] OJ L 303, 28.11.2018, p. 59–68.
[209] OJ L 151, 14.6.2018, p. 1–218; OJ L 60, 2.3.2013, p. 1–51.
[210] OJ L 158, 14.6.2019, p. 54–124.
[211] OJ L 158, 14.6.2019, p. 125–199.
212 OJ L 337, 23.12.2015, p. 35–127.
[213] OJ L 207, 06.08.2010, p. 1-13
[214] OJ L 192, 22.7.2011, p. 17–32.

Annex 7 – On the Targeted Review of the Database Directive 96/9/EC in the context of the Data Act

Aim of the Annex

This Annex serves as a supplement to the Impact Assessment. It aims to provide additional background on the protection granted to databases under the sui generis right enshrined in Chapter III of the Database Directive 96/9/EC[215], and to substantiate further the arguments for the proposed targeted review of the *sui generis* database right in the context of the objectives of the data act, namely the preferred option to "exclude databases containing machine-generated data (MGD) from the scope of protection of the sui generis database right."[216] The Annex presents the preferred way to ensure that the application of the Directive does not pose an obstacle to the access and use of machine generated data and data generated in the context of Internet of Things.

The Annex and the preferred policy option for the targeted review of the Database Directive is based on the evidence collected by the Commission for the preparation of the Data Act impact assessment, in particular the supporting study for the Impact Assessment[217], which assessed possible options of reviewing the Database Directive as part of the Data Act, the previous evaluations of the Database Directive[218] and the supporting study for the 2018 evaluation of the Database Directive. Further supporting information was also provided through the consultation activities of the supporting study and the Data Act, namely the Open Public Consultation[219].

The Background

The Database Directive was adopted in February 1996. This directive provides for a two-tier structure of intellectual property protection: for original databases through copyright and a specific sui generis right for databases (for 'non-original' ones) if the qualitative or quantitative investment in obtaining, verifying and presenting the data was substantial.

The key features of the sui generis right are:

a) Protection of 'substantial investment'

b) Protection against acts of extraction and re-utilization

c) "Insubstantial parts" are excluded from protection

d) Exceptions for certain uses

e) A protection period of 15 years

[215] [to include cross-reference to IA body text]
[216] Ref to page of IA
[217] Ref to Supporting Study
[218] European Commission, DG Internal Market, *First evaluation of the Directive 96/9/EC on the legal protection of databases* (2005); *Evaluation of Directive 96/9/EC on the legal protection of databases* (Commission SWD) Brussels, 25.4.2018 SWD(2018) 146 final
[219] Ref to OPC, dates, link to results

f) Available only to EU nationals or habitual residents; to non-EU nationals only on the basis of reciprocity

The aim of the sui generis protection is to protect the investment of the database maker setting up a database. Its objective is thereby *"to give the maker of a database the option of preventing the unauthorized extraction and/or re-utilization of all or a substantial part of the contents of that database"*[220]. Since the adoption of the Database Directive, the data economy has expanded, database technologies and automatized data production, leading to machine-generated or sensor-gathered data, have evolved, and investments into data have gained prominence.

Because the data itself – the 'currency' of the Data Economy – may be stored in databases for further usage, the *sui generis* right giving database owners control over the access and use to these databases, could indirectly extend to the data held within.

Over time, important questions have arisen as regards the interaction of the *sui generis* right provided by the Directive with the current Data Economy, notably in view of the legal uncertainties about the possible application of the sui generis right to databases with machine-generated data. [221] The rising volume of data created automatically by machines and sensors means that issues linked to these uncertainties are likely to further increase for all stakeholders involved in the data chain.

The European Commission has published two evaluations of the Database Directive since its entry into force in 1996. The report on the second evaluation of the Database Directive was published on 25 April 2018[222]. The Commission's evaluation of the Database Directive in 2018 recognised that the *sui generis* database right's interaction with the broader data economy was "not fully clear at this stage and would need to be further monitored".[223] The legal analysis and the engagement with stakeholders suggested that the current *sui generis* protection under the Database Directive is being challenged by the technical developments of the data economy.[224]

In particular, uncertainties were mapped about the *sui generis* right's application to databases containing machine-generated data. Even though there are no property right on data as such, data contained in databases may be covered indirectly by the sui generis database right and thus limit access and use of such data. This can be especially harmful in case of databases containing machine-generated data for which the protection was not designed at the first place. This can lead to opportunistic and questionable claims by data holders about their data being protected by the *sui generis* right. Lack of access to such data and exclusive control exercised by data holders would be even more problematic if it were to lead to lock-in situations (such as in cases of de facto data monopolies). The early important judgements of the Court of Justice in 2004 have brought some clarification. The

[220] DIRECTIVE 96/9/EC, Recital 41
[221] See chapter 5.2 of the Second Evaluation of the Database Directive [cross-reference to insert]
[222] Ref to report
[223] Evaluation SWD p. 40
[224] Evaluation SWD, page

Court held that the sui generis database right does not protect the investments in the creation or generation of data. In consequence, the CJEU interpreted the scope of the sui generis right in a narrow sense, thus de facto reducing its scope of application. In essence, the narrow interpretation of this right given by the CJEU suggests that, in principle, it may not cover machine-generated data because the investments of "producers" of sensor or machine-generated data would have to be regarded as investment into the automated creation of data.[225] However, with more and more data being created or gathered automatically and used in a highly technical an interconnected environment, the debate continued on the extent to which the CJEU case law effectively ruled out the possibility of manufacturers of sensor-equipped technologies may claim *sui generis* right over databases containing machine-generated data, particularly sensor-generated data. This is particularly important as new and innovative business models developing goods and service evolved surrounding the surge of such data, for example in the aftermarket of car repairs. The Court has never directly resolved the question leaving the scope of protection unclear, while some Member State court rulings suggest the likelihood of diverging national case law.[226]

However, in the most recent ruling (CV Online Latvia vs Melons, C-762/19)[227] the court took another step in limiting the application of the sui generis right. The decision further clarified that the scope of protection offered by the Database Directive requires a fair balance to be struck between 'on the one hand, the legitimate interest of the makers of databases in being able to redeem their substantial investment and, on the other hand, that of users and competitors of those makers in having access to the information contained in those databases and the possibility of creating innovative products based on that information'[228].

Particularly the interpretation of the CJEU in 2004, which excluded investments in creation of data, and the lack of much infringement cases related to MGD, coupled with little use of *sui generis* right by MGD database makers as a mean of protection, might pose a serious obstacle to the sharing and usage of MGD in the future. MGD databases will become more important as input for innovation and competition allowing database makers to exploit the legal uncertainty of the directive to obtain a broader interpretation of the exclusive right resulting in a suboptimal level of overprotection.

The existing legal uncertainty may have then various negative impacts on the growing European data economy[229], more specifically on data sharing and trading across the continent, including on to legal costs to stipulate contractual agreements[230]. This is reflected in the Open Public Consultation for the Data Act and in the result of the study

[225] Evaluation 2018 p 3 or see, e.g. the conclusion of the 2018 Commission's evaluation report on the Database Directive
[226] Evaluation 2018 p valuation 2018 p 6 citing the German Federal case: *Autobahnmaut*, BGH I ZR 47/08 (25 March 2010).
[227] Ref to case C762/19
[228] Ref to case C762/19, para
[229] Evaluation 2018, p. 23
[230] Study 2021 quoting Evaluation 2018 – cannot find the exact spot

supporting the Impact Assessment[231], where the majority of the respondents that expressed an opinion on this question agreed with the need to clarify the *sui generis* right's relation to machine-generated data.[232]

The review of the Database Directive is in line with the aim of the Data Act, namely tackling the uncertainty, as stipulated in Driver 1 of the Data Act Impact Assessment[233]. The legal uncertainty about databases containing machine-generated data could be resolved in a most efficient way by an explicit clarification that such databases are excluded from the *sui generis right*'s scope of protection. This Annex sets out the arguments and explains the supporting evidence for this course of action.

The exclusion of MGD from the scope of application of the sui generis database right

The Impact Assessment preferred option includes an amendment to reduce the scope of the sui generis right to ensure that it does not apply to databases containing machine-generated/IoT data. Several positive arguments back up the preferred policy option to exclude databases containing machine-generated data.

1. This option is coherent with the policy goals of the Data Act

The current targeted review of the Database Directive is part and parcel of the Data Act. Therefore, the amendment proposed for the Database Directive should be aligned with the intervention logic of the Data Act and the general aim that the legislation will bring about to the Data Economy.

The Data Act's relevant part for this targeted review bear on B2B, B2C and B2C2B data sharing. In the current baseline scenario of the Data Act, data holders, such as original equipment manufacturers', have a privileged position to use the data produced in the course of the machines, devices and applications' operation.[234] The Data Act aims to change this by opening up access to data co-generators and, to an extent, to third parties with legitimate interest in data for innovation and competition.[235]

The Data Act purports to stimulate data sharing within EU and across sectors by extending usage and access rights to data co-producers so that they could enjoy such usage rights without interference. Given the current uncertainties as to whether and to what extent the sui generis right may apply to databases containing machine-generated data, the status quo could result in opportunistic use of the sui generis exclusive right for data holders of machine-generated data and go against the main policy goal of the Data Act.

Moreover, the status quo would potentially create problems of overly restricting access to and use of MGD. Their use by third parties would likely infringe on database right as users

[231] Cross reference to part in IA

[232] See question: '*Do you think that it is necessary to clarify the scope of sui generis right provided by the Database Directive in particular in relation to the status of machine generated data?*' Yes: 34.4%, No: 4.9%, No opinion: 34.4%, No answer: 26.2%

[233] "Legal uncertainty in B2B and B2C context.

[234] [cross ref to Problem Description]

[235] [Flagging here: the "access right" part of this argument should be kept in sync with the final proposal.]

would often extract or re-use the whole database containing MGD. The problem might become more prevalent if the database right is more often used in practice, which could happen with the expansion of data creation. This situation would go to the detriment of other database makers, users and the general competitive interest in creating innovative products and services and become an impediment to the Data Economy, if applied more frequently.

The problem of joint ownership accentuated with machine-generated data ("mixed" databases) and possible data lock-ins

Excluding machine-generated data from the sui generis right would also solve one of the identified problems for the application of the right, which would become increasingly prominent in the Data Economy – namely the challenge to identify the database maker and thus the rightowner[236]. This is so because different actors in the database production chain, including situation of original equipment manufacturer and users of IoT machines, could claim the sui generis database right for *the same database,* and sharing and use substantial parts of the data with third parties would require the approval of all joint owners.[237] In an environment of increasing data volume and the need of sharing such data, the exclusion of databases containing machine-generated data from the scope of the sui generis right would greatly decrease the chances of data lock-ins in cases of such joint ownership, and contribute to the goals of the Data Act concerning B2B and B2C data sharing

Exclusion of machine-generated data will reduce the transaction cost of data use

The 2018 evaluation suggests that the legal uncertainty on the application of the *sui generis* right to MGD leads to legal costs to stipulate contractual agreements between makers, user-makers and users[238]. Half of the organisations responding to the survey of the supporting study declared that they have encountered problems when trying to obtain access to databases containing MGD. The exclusion of databases containing machine-generated data from the scope of *sui generis* protection would therefore ensure that the Directive does not become an obstacle in sharing, trading and use of data generated in the IoT environment.[239] As an immediate result, the transaction cost for data sharing, accessing and use will decrease.

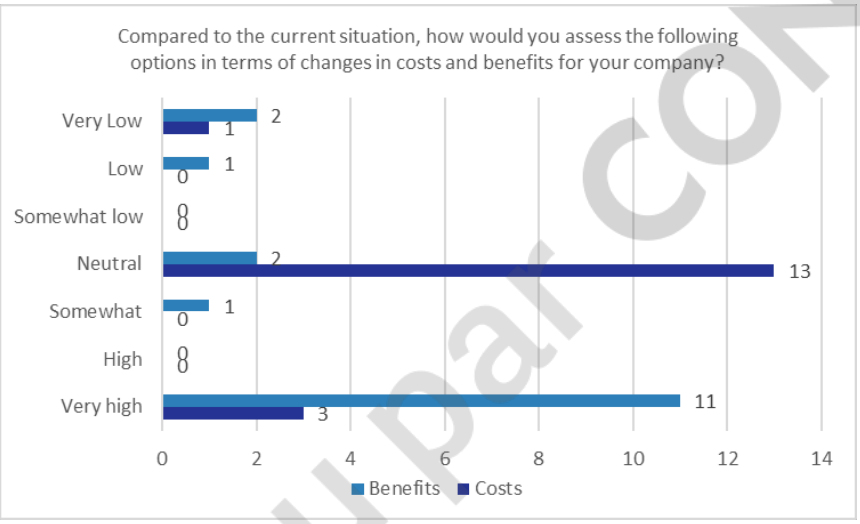
The supporting study also shows that one of the obstacles to achieve legal clarity about usage right in data sharing context is data holders' frequent spurious claims of IP rights, such as sui generis right.[240] Studies also found that data holders often use such legal protections on data or databases as an extra standard safeguard clause when sharing their

[236] 2018 supporting study p. 31-32. "With sensor-produced data, it will be hard to determine who the database maker is, and the possibility arises that the sui generis right will be owned jointly because many persons will take the initiative and risk of investing." *idem*
[237] Recital 41: "whereas the maker of a database is the person who takes the initiative and the risk of investing."
[238] Ref to evaluation, page.
[239] Interim report p. 72
[240] [ref to JUST study on spurious claims of IPR/sg in data sharing context]

data. The validity of such claims is dubious in general and left for litigation to sort out, which increases the transaction costs further and may operate in general as a deterrent to data sharing.[241] In addition, companies may be the only provider of some specific data and create data monopolies in relation to that particular data. Being the sole source of certain data – MGD as well as other data – is an issue for approximatively one third of the IT experts. Again, more than half indicated problems when aiming to obtain access to databases. The prevailing hampering factor encountered by survey participants was the fact that the database was legally protected. The exclusion of machine-generated data would remove any basis in the Database Directive for claiming such a spurious right and reduce the possibility of opportunistic litigation of third-party data use.[242]

Stakeholder's support

In the survey of the study supporting the Impact Assessment, a majority of respondents supported the option of excluding machine-generated data from sui generis protection. They expect this option to bring high benefits and no additional costs compared to the current situation[243] and 73,5% of the respondents (25 out of 34 respondents) think excluding will have positive or very positive effect on obtaining legal certainty



In the open public consultation carried out for the 2018 evaluation of the Directive a very clear majority of respondents was against the proposal to apply the sui generis right to MGD[244].

[PLACEHOLDER ON THE RESULTS OF THE DATA ACT CONSULTATION]

Benefits for Competition

[241] i.R. 39 and reference needed to JUST study [to be included]
[242] I.R. p 67
[243] Interim report p.69 Figure 9: "assessment of costs and benefits of excluding MGD from the sui generis compared to the baseline"
[244] See https://ec.europa.eu/digital-single-market/en/news/synopsis-report-public-consultation-evaluation-directive-969ec-legal-protection-databases

Excluding machine-generated data from the *sui generis* right is expected to have positive effects on competition, as it will facilitate the entry to new markets and the development of new value-added products. This option will ease access to complete datasets for market entrants, who might use these data to develop innovative products. In the survey conducted for the supporting study, several respondents mentioned that access to third party data is often fundamental for the business model of companies, such as for aftermarket sales[245]. The 2018 evaluation of the Directive already highlighted such barriers to entry for potential competitors due to the *sui generis* right, in particular when competitors and interested parties need access to complete data sets to access the primary market or to compete on aftermarkets.

In line with this argument, the majority of survey respondents believe that excluding machine-generated data from the *sui generis* protection will have positive effects in terms of companies entering new markets and developing new/value-added products. [246] As remarked by more than one respondents from the automotive industry participating in the survey of the supporting study: "Excluding machine-generated data from the sui generis right and easy access to such data would foster innovation and competition with regard to data driven business"[247].

The effect on database creation

Finally, both evaluations of the Directive found limited or no proof that the Database Directive has contributed to database production. The supporting study to this evaluation makes it clear that this is true *a fortiori* for machine-generated data: "*[t]he previous evaluation and the evidence presented in the efficiency assessment […], suggest that sui generis right protection of the investment in databases has no or little positive effect on incentivizing databases creation. This is even more true, for MGD which in most cases are generated as a spin-off to other main economic activities, e.g. in vehicle data.*"[248] Therefore, including databases containing MGD in the scope of the sui generis right will not result in increased production of such databases.

[245] Ref to supporting study, page.
[246] I.R. p. 68
[247] Ref tu supporting study, page
[248] Interim Report 63.