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REPORT

on a European strategy for data
(2020/2217(INI))

Committee on Industry, Research and Energy

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MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

on a European strategy for data (2020/2217(INI))

The European Parliament,

- having regard to Article 173 of the Treaty on the Functioning of the European Union (TFEU), which concerns the competitiveness of EU industry and refers, inter alia, to actions aimed at fostering better exploitation of the industrial potential of innovation and technological development,
- having regard to Article 114 of the TFEU,
- having regard to Articles 2 and 16 of the TFEU,
- having regard to the Charter of Fundamental Rights of the European Union,
- having regard to the communication to the Commission of 21 October 2020 on an open source software strategy for 2020-2023 (C(2020)7149),
- having regard to the Commission communication of 19 February 2020 entitled ‘A European strategy for data’ (COM(2020)0066) and the final report from the High-Level Expert Group on Business-to-Government Data Sharing entitled ‘Towards a European strategy on business-to-government data sharing for the public interest’,
- having regard to the Commission’s inception impact assessment of 2 July 2020 entitled ‘Legislative framework of the governance of common European data spaces’,
- having regard to the Commission communication of 17 April 2020 entitled ‘Guidance on Apps supporting the fight against COVID 19 pandemic in relation to data protection’¹,
- having regard to Commission Recommendation (EU) 2020/518 of 8 April 2020 on a common Union toolbox for the use of technology and data to combat and exit from the COVID-19 crisis, in particular concerning mobile applications and the use of anonymised mobility data²,
- having regard to Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information³ (Open Data Directive),
- having regard to the Commission proposal of 6 June 2018 establishing the Digital Europe programme for the period 2021-2027 (COM(2018)0434),
- having regard to the Commission communication of 25 April 2018 entitled ‘Towards a

¹ OJ C 124 I, 17.4.2020, p. 1.

² OJ L 114, 14.4.2020, p. 7.

³ OJ L 172, 26.6.2019, p. 56.

- common European data space’ (COM(2018)0232) and its accompanying staff working document (SWD(2018)0125),
- having regard to Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information⁴,
 - having regard to the Commission communication of 10 May 2017 entitled ‘Mid-Term Review on the implementation of the Digital Single Market Strategy: A Connected Digital Single Market for All’ (COM(2017)0228) and its accompanying staff working document (SWD(2017)0155),
 - having regard to the Commission communication of 10 January 2017 entitled ‘Building a European Data Economy’ (COM(2017)0009) and its accompanying staff working document (SWD(2017)0002),
 - having regard to the Commission communication of 14 September 2016 entitled ‘Connectivity for a Competitive Digital Single Market – towards a European Gigabit Society’ (COM(2016)0587) and its accompanying staff working document (SWD(2016)0300),
 - having regard to the Commission communication of 19 April 2016 entitled ‘Digitising European Industry: Reaping the full benefits of a Digital Single Market’ (COM(2016)0180) and its accompanying staff working document (SWD(2016)0110),
 - having regard to the Commission communication of 19 April 2016 entitled ‘European Cloud Initiative – Building a competitive data and knowledge economy in Europe’ (COM(2016)0178) and its accompanying staff working documents (SWD(2016)0106 and SWD(2016)0107),
 - having regard to Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC⁵ (General Data Protection Regulation – GDPR),
 - having regard to Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union⁶,
 - having regard to Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA⁷ (Law Enforcement Directive – LED),
 - having regard to the Commission communication of 6 May 2015 entitled ‘A Digital

⁴ OJ L 134, 31.5.2018, p. 12.

⁵ OJ L 119, 4.5.2016, p. 1.

⁶ OJ L 303, 28.11.2018, p. 59.

⁷ OJ L 119, 4.5.2016, p. 89.

Single Market Strategy for Europe' (COM(2015)0192) and its accompanying staff working document (SWD(2015)0100),

- having regard to the Commission communication of 2 July 2014 entitled 'Towards a thriving data-driven economy' (COM(2014)0442) and its accompanying staff working document (SWD(2014)0214),
- having regard to Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport⁸ (ITS Directive) and the delegated acts thereof,
- having regard to Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector⁹ (ePrivacy Directive),
- having regard to the Joint European Roadmap towards lifting COVID-19 containment measures of 15 April 2020,
- having regard to the Member States' Joint Declaration on building the next generation cloud for businesses and the public sector in the EU of 15 October 2020,
- having regard to the Council conclusions of 9 June 2020 on shaping Europe's digital future¹⁰,
- having regard to the Council conclusions of 7 June 2019 on the future of a highly digitised Europe beyond 2020: Boosting digital and economic competitiveness across the Union and digital cohesion,
- having regard to the judgment of the Court of Justice of the European Union of 16 July 2020 in case C-311/18 (*Schrems II*),
- having regard to its resolution of 17 April 2020 on EU coordinated action to combat the COVID-19 pandemic and its consequences¹¹,
- having regard to its resolution of 12 February 2019 on a comprehensive European industrial policy on artificial intelligence and robotics¹²,
- having regard to its resolution of 1 June 2017 on digitising European industry¹³,
- having regard to its resolution of 10 March 2016 entitled 'Towards a thriving data-driven economy'¹⁴,
- having regard to its resolution of 13 March 2018 on a European strategy on Cooperative

⁸ OJ L 207, 6.8.2010, p. 1.

⁹ OJ L 201, 31.7.2002, p. 37.

¹⁰ OJ C 202 I, 16.6.2020, p. 1.

¹¹ Texts adopted, P9_TA(2020)0054.

¹² OJ C 449, 23.12.2020, p. 37.

¹³ OJ C 307, 30.8.2018, p. 163.

¹⁴ OJ C 50, 9.2.2018, p. 50.

Intelligent Transport Systems¹⁵,

- having regard to its resolution of 15 January 2019 on autonomous driving in European transport¹⁶,
 - having regard to the opinion of the European Economic and Social Committee on the Commission communication entitled ‘Building a European Data Economy’¹⁷,
 - having regard to the findings of the annual Digital Economy and Society Index of 11 June 2020,
 - having regard to the report of the Organisation for Economic Co-operation and Development (OECD) of 5 June 2020 entitled ‘Building back better: a sustainable, resilient recovery after COVID-19’,
 - having regard to Rule 54 of its Rules of Procedure,
 - having regard to the opinions of the Committee on the Internal Market and Consumer Protection, the Committee on Transport and Tourism, the Committee on Legal Affairs, the Committee on Civil Liberties, Justice and Home Affairs, the Committee on Agriculture and Rural Development and the Committee on Culture and Education,
 - having regard to the report of the Committee on Industry, Research and Energy (A9-0027/2021),
- A. whereas digitalisation continues to transform the economy, society and citizens’ daily lives, and whereas data, which is duplicated every 18 months, is at the heart of this transformation; whereas the volume of data stored worldwide is expected to increase from 33 zettabytes (ZB) in 2018 to 175 ZB in 2025¹⁸; whereas these processes will only accelerate in the future;
- B. whereas digitalisation not only presents an economic opportunity, it is also relevant for the security, geopolitical resilience and strategic autonomy of the Union;
- C. whereas the EU requires the availability of interoperable, flexible, scalable and reliable IT architecture that is capable of supporting the most innovative applications; whereas artificial intelligence (AI) is one of the strategic technologies for the 21st century, both globally and in Europe¹⁹; whereas adequate infrastructure is also required in the EU, notably high-performance hardware to run applications and store data;
- D. whereas data is an essential resource for sustainable economic recovery, growth and quality job creation; whereas data-driven technologies could present an opportunity to reduce human exposure to harmful and hazardous working conditions and promote societal progress, and could play a key role in the transition to green and climate-neutral

¹⁵ OJ C 162, 10.5.2019, p. 2.

¹⁶ OJ C 411, 27.11.2020, p. 2.

¹⁷ OJ C 345, 13.10.2017, p. 130.

¹⁸ Commission communication of 19 February 2020 on a European strategy for data, p. 2.

¹⁹ As stated in its resolution of 12 February 2019 on a comprehensive European industrial policy on artificial intelligence and robotics.

societies and in boosting the global competitiveness of Europe and its companies;

- E. whereas the European strategy for data should be consistent with the SME and Industrial Strategies, as it will be instrumental, inter alia, to achieving industrial policy objectives and will be beneficial to European businesses, including SMEs, helping them to successfully face up to the digital transition; whereas there is still a gap between large businesses and SMEs in advanced digital technologies; whereas incentivising the use of data and increasing data access and availability, combined with more legal certainty, can provide a competitive advantage for micro enterprises, SMEs and start-ups to enable them to reap the benefits of the digital transition;
- F. whereas public sector and government-generated data at national and local level is a resource that can serve as a powerful engine for promoting economic growth and creating new jobs that can be harnessed in the development of AI systems and data analytics, contributing to a stronger, more competitive and more interconnected industry;
- G. whereas there are different initiatives in place to encourage female participation and diversity in ICT; whereas the gender gap continues to persist across all digital technology domains, with AI and cybersecurity among those fields with the largest gaps; whereas this gender gap has a concrete impact on the development of AI, which has predominantly been designed by men, thereby perpetuating and furthering stereotypes and bias;
- H. whereas in its communication on a European strategy for data, the Commission specifies that the environmental footprint of ICT is estimated to account for between 5 % and 9 % of global electricity use and more than 2 % of global greenhouse gas emissions; whereas the digital sector has significant potential to contribute to the reduction of global carbon emissions; whereas according to a 2018 study on AI by the Commission's Joint Research Centre, data centres and data transmission could represent between 3 % and 4% of the Union's total electricity consumption; whereas the Commission expects a 28 % increase in data centre consumption between 2018 and 2030²⁰; whereas 47 % of digital carbon emissions are due to consumer equipment such as computers, smartphones, tablets and other connected objects; whereas it is necessary to minimise the ecological footprint of digital technology, in particular the volume of electrical and electronic waste;
- I. whereas the Union must take urgent action to reap the benefits of data by building a competitive, innovation-friendly, ethically sustainable, human-centric, trustworthy and secure data society and economy that respects human rights, fundamental and labour rights, democracy and the rule of law and aims to build a new, open and inclusive knowledge economy, in cooperation with the education system and the cultural enterprises, which ensures the right to quality education and entrepreneurship, especially among the new generations, and promotes social innovation and new business models; whereas investments in skills in cloud and big data can help companies that have not yet embraced technology to turn their businesses around;

²⁰ Austrian Environment Agency and Borderstep Institute, final study report compiled for the Commission in November 2020 entitled 'Energy-efficient Cloud Computing Technologies and Policies for an Eco-friendly Cloud Market'.

whereas companies considered to be at the forefront of technology must remain constantly updated on recent innovations in order not to lose their competitive advantage;

- J. whereas cloud markets (i.e. Infrastructure, Platform and Software as a Service – IaaS, PaaS and SaaS) are characterised by a high degree of market concentration, which may put start-ups, SMEs and other European actors at a competitive disadvantage in the data economy; whereas the Commission should ensure competitive markets through interoperability, portability and open infrastructures, and remain vigilant about any potential abuses of market power by dominant actors;
- K. whereas the EU earth observation system – Copernicus – should serve as an example of the socio-economic benefits that a large amount of freely and openly available data can deliver for EU citizens and businesses;
- L. whereas all uses of personal and mixed industrial data should be consistent with the GDPR and the e-Privacy Directive; whereas according to Eurobarometer, 46 % of Europeans would like to take a more active role in controlling the use of their personal data, including health, energy consumption and shopping habits;
- M. whereas Article 8(1) of the Charter of Fundamental Rights and Article 16(1) of the TFEU provide that everyone has the right to the protection of personal data concerning them;
- N. whereas the Charter also provides that everyone has the right to freedom of expression, including the freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers;
- O. whereas the processing of workers' data has become increasingly complex; whereas in a growing number of contexts workers interact with technologies, applications, software, tracking devices, social media or in-vehicle devices that monitor their health, biomedical data, communications and interactions with others, as well as their level of engagement and concentration, or behaviours; whereas workers and trade unions should be more involved in the design of such data processing; whereas only Article 88 of the GDPR is devoted to employment;
- P. whereas business-to-business (B2B) and business-to-government (B2G) data sharing initiatives can serve to tackle societal and environmental challenges; whereas incentives for data sharing may include inter alia fair compensation, the exchange of best practices and public recognition programmes;
- Q. whereas proper enforcement should be pursued with particular regard to purpose limitation and data minimisation aspects; whereas the protection of privacy should remain a priority; whereas there is non-personal and public sector data that is consistent with Regulation (EU) 2018/1807 on the free flow of non-personal data and the Open Data Directive respectively;
- R. whereas health is a particularly sensitive sector for the processing of personal data and whereas no personal information concerning a patient's health should be communicated without their full and informed consent; whereas it is particularly important in the field

of health to guarantee a high standard of protection for the rights of individuals and to respect the principles of data limitation and minimisation;

- S. whereas a common European data strategy should provide benefits for the European transport and tourism sector and contribute to the transition towards a safe, sustainable and efficient transport system, while ensuring sufficient interoperability with other sectors;
- T. whereas data sharing in the transport sector is aimed at improving traffic management and thus the safety, sustainability, data minimisation and efficiency of both passenger and freight transport;
- U. whereas the Union has already begun taking steps in regulating how data should be used and stored in transport, through, inter alia, Regulation (EU) 2020/1056 on electronic freight transport information²¹, Directive (EU) 2019/1936 on road infrastructure safety management²², Regulation (EU) 2019/1239 establishing a European Maritime Single Window environment²³, and the proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) 2015/757 in order to take appropriate account of the global data collection system for ship fuel oil consumption data (COM(2019)0038);
- V. whereas the Union should be an active global player in setting rules and standards based on its values;
- W. whereas at least 20 % of funding under the Recovery and Resilience Facility will be made available for digital infrastructure and capacities, which will deliver a boost to the Union's digital transition and thus support the data economy;

General

1. Welcomes the Commission communication on a European strategy for data; believes that the strategy will be a prerequisite for the viability of European businesses and their global competitiveness and for the progress of universities, research centres and nascent AI, and will mark a crucial step towards building a data society rooted in rights and EU values and defining the conditions for and establishing the Union's leading role in the data economy, which will lead to better services, sustainable growth and quality jobs; considers that ensuring trust in digital services and in safe smart products is fundamental for the digital single market to grow and thrive, and should be at the core of both public policy and business models;
2. Notes that the COVID-19 crisis has highlighted the role of and need for high-quality, real-time databases, information and data sharing, as well as shortcomings in the infrastructure and interoperability of solutions across Member States; stresses the impact of the digital transformation and the availability of a wide range of technologies on the Union's economy and society; welcomes the commitment to establish sectoral data spaces; considers it crucial to speed up the creation of a common European health

²¹ OJ L 249, 31.7.2020, p. 33.

²² OJ L 305, 26.11.2019, p. 1.

²³ OJ L 198, 25.7.2019, p. 64.

data space, among other initiatives;

3. Underlines that future data legislation must be designed to facilitate technological development, innovation, data access, interoperability and cross-border data portability; urges the Commission, in this respect, to carry out an evaluation and mapping of the existing legislation in order to assess what adjustments and additional requirements are needed to support the data society and economy and safeguard fair competition and legal clarity for all the relevant actors; calls for the Union to be a leader in establishing an international framework for data, while respecting international rules;
4. Calls for prior impact assessments to be conducted by the Commission on whether the data-driven digital economy requires any changes or adjustments to the current legal framework for intellectual property rights (IPR) in order to promote innovation and the uptake of new digital technologies; welcomes the Commission's intention to revise the Database Directive²⁴ and to further clarify the application of Directive (EU) 2016/943 on the protection of trade secrets²⁵;
5. Believes that the free flow of data in the Union must remain the founding principle and underlines its vital role in harnessing the full potential of the data economy; highlights that the significant increase in the amount of data available, chiefly as a result of smart connected objects and broader data access and use, could entail challenges related to data quality, bias, protection and security or unfair trading conditions that will have to be addressed; believes that achieving the goals of the data strategy should not unduly distort competitive markets in the Union;
6. Recalls that the processing of personal data, including its transfer, must always comply with the Union data protection *acquis*, and that any future sectoral or fit-for-purpose legislation needs to respect them;
7. Recalls that any future proposals that involve the processing of personal data are subject to the supervision of data protection authorities pursuant to the GDPR, in order to ensure that innovation also considers the impact on citizens' rights; calls for the acts to build upon and align with existing legislation, in particular the GDPR;
8. Points out that existing directives, such as the ITS Directive, should not be weakened by an overarching set of rules and that facilitating a data-sharing environment will be crucial for the EU in the coming years; calls on the Commission to include data sharing, particularly in the field of ticketing and booking systems, in the upcoming revision of the ITS Directive;

Values and principles

9. Believes that the Union must strive for EU-wide data governance and a human-centric, data society and economy based on the Union's values of privacy, transparency and respect for fundamental rights and freedoms, empowering its citizens to take meaningful decisions over the data produced by or relating to them;
10. Stresses that individuals should have full control of their data and be further assisted in

²⁴ OJ L 77, 27.3.1996, p. 20.

²⁵ OJ L 157, 15.6.2016, p. 1.

enforcing their data protection and privacy rights regarding the data they generate; underlines the right to data portability and the data subject's access, rectification and erasure rights provided for by the GDPR; expects future proposals to support the enjoyment and meaningful exercise of these rights; stresses that in line with the GDPR principle of purpose limitation, the free sharing of data must be limited to non-personal data, such as industrial or commercial data, or securely, effectively and irreversibly anonymised personal data, including in the case of mixed data sets; stresses that any misuse of data, including through mass surveillance, must be ruled out;

11. Notes that a well-built data society and economy should be designed to benefit all consumers, workers, entrepreneurs, start-ups and SMEs, as well as researchers and local communities, should respect labour rights, create quality employment without lowering working conditions and improve EU citizens' quality of life, and should reduce existing digital gaps without creating new ones, especially for vulnerable groups and those who are disadvantaged in terms of abilities and access to digital tools;
12. Urges the Commission to empower consumers, with particular attention for certain groups of consumers considered as vulnerable; believes that industrial data and citizens' data could help in developing innovative digital and sustainable solutions for products and services that would benefit European consumers;
13. Stresses that the increasing volume, development, sharing, storage and processing of industrial and public data in the Union is a source of sustainable growth and innovation that should be tapped into, in compliance with Union and Member States' laws such as data protection, competition law and IPR; notes that data is becoming increasingly valued by the market; believes that economic growth can be secured by ensuring a level playing field and a competitive, multi-player and fair market economy, while ensuring interoperability and access to data for actors of all sizes, in order to counter the market imbalances;
14. Stresses that the data strategy must support and contribute to sustainability, the Green Deal and the Union's climate targets, including climate neutrality by 2050, as well as the resilient recovery of the Union's economy and social cohesion; points out that ICT can have a positive role to play in reducing carbon emissions in many sectors; calls for measures to reduce the carbon footprint of the ICT sector by ensuring energy and resource efficiency, not least given the exponential growth of data processing and its environmental effects, recalling in this respect the Union's objectives for reducing greenhouse gas emissions by 2030;

Data governance and spaces

15. Supports the creation of a data governance framework and common European data spaces, which should be subject to EU rules and cover transparency, interoperability, sharing, access, portability and security of data, with a view to enhancing the flow and reuse of non-personal data or personal data that is fully GDPR-compliant and securely anonymised in both industrial and public environments and across and within specific sectors;
16. Insists that the data governance model, including common European data spaces, must be built on a decentralised data operating environment in order to support the creation

and emergence of interoperable and secure data ecosystems; emphasises that these spaces should reap the potential of existing and future data spaces or data sharing schemes, which may be organised in a distributed or centralised way;

17. Believes that data management services and data architecture designed to store, use, re-use and curate data are critical components of the value chain of the European digital economy; acknowledges that a vast proportion of data processing will be moving towards edge processing, e.g. to smart connected objects; supports the further uptake of decentralised digital technologies, which enable individuals and organisations to manage data flows based on self-determination, e.g. distributed ledger technologies; stresses that the costs and skills relating to the access to and storage of data determine the speed, profundity and scale of the adoption of digital infrastructures and products, especially for SMEs and start-ups;
18. Calls for the creation of a Commission-led expert group that would have the capacity to help and advise the Commission to set common, EU-wide guidelines on data governance in order to turn interoperability and data sharing into a reality in the EU; calls on the Commission to seek the regular involvement of Member States, relevant agencies and other bodies and stakeholders such as citizens, civil society and businesses in an effort to improve the governance framework; stresses the importance of coordinating the regulators involved in the data economy;
19. Stresses that common European data spaces should prioritise crucial economic sectors, the public sector and other areas of public interest; supports the creation of further such data spaces in the future; calls on the Commission to address fragmentation in the single market and unjustified diverging rules in Member States in order to ensure the development of common data spaces in the EU;
20. Notes that common European data spaces need to be accessible to all market participants, both commercial and non-commercial, including start-ups and SMEs, and take advantage of collaboration opportunities with SMEs, research institutions, public administration and civil society, while increasing the legal certainty of data usage procedures for private and public actors of all sizes; considers it crucial to avoid any risk of unauthorised access to common European data spaces and to create tools to counter possible misconduct; stresses the importance of cybersecurity, including cooperation with the EU Agency for Cybersecurity (ENISA) and the EU Cybersecurity Competence Centre;
21. Urges the Commission and Member States to build interoperable, sectoral data spaces that follow common guidelines, legal requirements and data sharing protocols in order to avoid the creation of silos and to enable cross-sectoral innovations; stresses that the management of sectoral data spaces should take account of the requirements and procedures laid down in sectoral legislation; insists that any actor operating in the EU and taking advantage of European data spaces must comply with EU legislation;
22. Encourages the Commission to use common European data spaces to enhance trust, adopt common standards and regulations, and encourage the creation of well-formed application programming interfaces (APIs) along with robust authentication mechanisms, and to consider using pre-agreed, clearly specified and time-bound

sandboxes to test innovations and new business models as well as new data management and processing tools, both in the public and private sector;

23. Believes that well-formed APIs would provide essential access to data and interoperability within data spaces and would enable automatised and real-time interoperability between different services and within the public sector; calls on the Commission and the Member States to further improve individuals' access to effective remedies under the GDPR, to guarantee the interoperability and data portability of digital services and, in particular, to harness APIs to enable users to interconnect between platforms and to increase the range of options for different kinds of systems and services;
24. Notes the need to help private and public sector actors, notably SMEs and start-ups, to identify and capitalise on the data they generate and possess; calls for action to improve the findability of data to fuel data spaces by facilitating, curating, cataloguing and forming generally accepted taxonomies and cleansing routine data; calls on the Commission to provide guidance, tools and funding from existing programmes to improve the findability of metadata within data spaces; highlights initiatives such as the Nordic Smart Government programme, which aims to enable SMEs to voluntarily share data automatically and in real time through a decentralised digital ecosystem;
25. Recalls the key role of data intermediaries as structural enablers for the organisation of data flows; welcomes the Commission's plans for the classification and certification of intermediaries with a view to the creation of interoperable and non-discriminatory data ecosystems; calls on the Commission to ensure interoperability by developing minimum criteria between data intermediaries; urges the Commission to work together with European and international standards organisations to identify and close gaps in data standardisation;
26. Underlines the need to address specific issues that could arise in relation to access to and control of consumers' data, in particular certain groups of consumers considered as vulnerable such as minors, elderly people or persons with disabilities; calls on the Commission, therefore, to ensure that all consumers' rights are respected at all times and that all consumers can benefit equally from the advantages of the creation of the single market for data; underlines that when the processing of data includes mixed data sets, these data sets must be treated in accordance with the applicable legislation, including the Commission's guidance on Regulation (EU) 2018/1807 on the free flow of non-personal data;
27. Highlights the need to create common European data spaces with the aim of ensuring the free flow of non-personal data across borders and sectors to ramp up data flows between businesses, academia, the relevant stakeholders and the public sector; calls on the Member States, in this context, to fully comply with Regulation (EU) 2018/1807 in order to allow for data to be stored and processed across the EU without unjustified barriers and restrictions;
28. Recalls that personal and non-personal data, such as industrial data, is not always separable and can be difficult and costly to separate, with the result being that a large amount of data currently remains unused; recalls, in this context, that data sets in which different types of data are inextricably linked are always treated as personal data,

including in cases where the personal data represents only a small part of the data set; urges the Commission and European data protection authorities to provide further guidance on the lawful processing of data and on practices on the utilisation of mixed data sets in industrial environments, while fully respecting the GDPR and Regulation (EU) 2018/1807; considers that the use of privacy protecting technology should be encouraged in order to increase legal certainty for businesses, including through clear guidelines and a list of criteria for effective anonymisation; stresses that the control of such data always lies with the individual and should be automatically protected; calls on the Commission to consider establishing a legislative framework and a clear definition of horizontal and cross-cutting personal data spaces alongside other data spaces, and to further clarify the challenge of mixed data sets; calls on the Commission to empower citizens and companies through, for example, trustworthy intermediaries such as MyData operators which facilitate data transfers with the owner's consent and provide an adequate level of detail on the permissions; emphasises the need to further develop digital identities, which are the essential foundation of a reliable, multi-player data economy; calls on the Commission, therefore, to revise Regulation (EU) No 910/2014 on electronic identification and trust services for electronic transactions in the internal market²⁶ and to publish a legislative proposal on a trusted and secure European e-ID; calls on the Commission, moreover, to analyse whether organisations and things, such as sensors, should need digital identities to facilitate the cross-border use of trust services, which are essential for the multi-player data economy;

29. Highlights the potential to improve the quality of law enforcement and to counter bias where it may exist, by gathering reliable data and making it available to the public, civil society and independent experts; recalls that any access by law enforcement to public or privately held personal data in data spaces needs to be based on EU and Member State law, be strictly limited to what is necessary and proportionate, and be coupled with adequate safeguards; underlines that the use of personal data by public authorities should be allowed only with strict democratic oversight and with additional safeguards against its misuse;
30. Notes that data exchanges between Member States in the areas of justice and home affairs are important in terms of strengthening the security of EU citizens and that appropriate financial resources should be allocated in this regard; stresses, however, that stronger safeguards are needed in terms of the way justice and home affairs agencies process, use and manage personal information and data in their proposed data spaces;
31. Supports the Commission's intention to promote the development of nine common European data spaces for industry (manufacturing), the Green Deal, mobility, health, finance, energy, agriculture, public administration and skills; calls for their development as a matter of urgency; supports the possibility of extending the concept of common European data spaces to other sectors;
32. Highlights the need to devote particular attention to certain sectors such as health; shares the Commission's view that EU citizens should have secure access to a comprehensive electronic record of data concerning their health and that they should retain control over personal health data and be able to share it securely with authorised third parties, with all unauthorised access prohibited in accordance with data protection

²⁶ OJ L 257, 28.8.2014, p. 73.

legislation; stresses that insurance companies or any other service provider entitled to access information stored in e-health applications should not be allowed to use data obtained from these applications for the purpose of discrimination, including in the setting of prices, as this would run counter to the fundamental right of access to health;

33. Recalls that the processing of special categories of personal data under Article 9 of the GDPR is in principle prohibited, with certain strict exceptions, which involve specific processing rules and always include the obligation to conduct a data protection impact assessment; highlights the potentially disastrous and irreversible consequences of wrongful or unsecure processing of sensitive data for the individuals concerned;
34. Welcomes the Commission's proposal to create a European single market for data, including a common European mobility data space, and recognises its huge economic potential;
35. Highlights that this European data space would be of particular interest to the European transport and logistics sectors, as it has the potential to enhance efficiency in the organisation and management of freight and passenger traffic flows, as well as to make better and more efficient use of infrastructure and resources throughout the Trans-European Transport Network (TEN-T);
36. Underlines, furthermore, that this European data space would also ensure improved visibility in the supply chain, the real-time management of traffic and cargo flows, interoperability and multimodality, as well as the simplification and reduction of administrative burdens across the TEN-T, in particular in cross-border sections;
37. Highlights that data sharing could improve the efficiency of traffic management and road safety for all transport modes; stresses the potential benefits of sharing data, such as real-time traffic avoidance navigation and real-time notifications for delayed public transport, in saving extra working hours, improving efficiency and avoiding bottlenecks;
38. Proposes that, in the process of creating a regulatory framework for interoperable data exchange in rail transport, the Commission should revise Commission Regulation (EU) No 454/2011 on the technical specification for interoperability relating to the subsystem 'telematics applications for passenger services' of the trans-European rail system²⁷ and Commission Regulation (EU) No 1305/2014 on the technical specification for interoperability relating to the telematics applications for freight subsystem of the rail system in the European Union²⁸;
39. Welcomes the Commission's support for the establishment of a common European agriculture data space; recalls the potential of agricultural data and of extensive access to it in order to increase sustainability, competitiveness and the use of resources across the entire agri-food and forestry chains, contribute to the development of innovative and sustainable techniques, improve access to relevant information for consumers, and reduce food waste and the sector's ecological footprint; urges the Member States' relevant authorities to enhance and invest in the development of data collection and processing tools for agricultural sub-sectors, as well as for data on the export and import

²⁷ OJ L 123, 12.5.2011, p. 11.

²⁸ OJ L 356, 12.12.2014, p. 438.

of inter alia agricultural goods and products;

40. Calls on the Commission to explore the potential merits and scope of creating common European data spaces for the cultural and creative sectors and industries and for cultural heritage; points out that the cultural sector has a significant amount of reusable data, which when combined with other sources, including open data sources and data analytics, could help cultural institutions;
41. Calls for the creation of a European data space for tourism with the objective of helping all actors in the sector, especially SMEs, benefit from vast amounts of data when implementing policy and projects at the regional and local levels, facilitating recovery and boosting digitalisation;
42. Supports the Commission's initiative to create a strictly defined, EU-wide approach to data altruism and to establish a clear definition and rules on data altruism in accordance with EU data protection principles, notably purpose limitation, which requires that data be processed for 'specified, explicit and legitimate purposes'; supports the Commission's proposal that data altruism should always be conditional on informed consent and revocable at any time; underlines that data donated under data altruism is meant to be processed for the purposes of general interest and should not be used to pursue solely commercial interests;
43. Urges that the data governance framework should promote the principle of data for the public good, while always protecting the rights of EU citizens;
44. Highlights that individuals should not be pressured to share their data, and that decisions must not be tied to direct benefits or advantages for those who choose to allow the use of their personal data;

Data act, access and interoperability

45. Urges 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;
46. Encourages the Commission to facilitate a data sharing culture and voluntary data sharing schemes, such as the implementation of best practices, fair contractual model agreements and security measures; notes that voluntary data sharing should be enabled by a solid legislative framework that ensures trust and encourages businesses to make data available to others, particularly across borders; urges the Commission to clarify utilisation rights, notably in B2B and B2G market settings; urges the Commission to incentivise businesses to exchange their data, whether original, derived or co-generated, possibly through a reward system and other incentives, while respecting trade secrets, sensitive data and IPR; encourages the Commission to develop collaborative approaches for sharing data and standardised data agreements in order to improve predictability and trustworthiness; stresses the need for contracts to set clear obligations and liability for the accessing, processing, sharing and storing of data in order to limit the misuse of such data;
47. Notes that market imbalances deriving from the concentration of data restrict

competition, increase market entry barriers and diminish wider data access and use; notes that B2B contractual agreements do not necessarily guarantee adequate access to data for SMEs owing to disparities in negotiation power or expertise; notes that there are specific circumstances, such as systematic imbalances in B2B data value chains, in which access to data should be compulsory, for instance by using well-formed APIs that ensure fair access to players of all sizes or by implementing competition rules to counter unfair or illegal B2B practices; highlights that such imbalances are present in different sectors;

48. Calls on the Commission and the Member States to examine actors' rights and obligations to access data they have been involved in generating and to improve their awareness, in particular the right to access data, to port it, to urge another party to stop using it, or to rectify or delete it, while also identifying the holders and delineating the nature of such rights; calls on the Commission to clarify the right of actors to benefit from the economic value created by applications trained using data they have been involved in generating;
49. Considers it important to guarantee that legal and technical support is facilitated for companies, especially micro enterprises, SMEs and start-ups, both at national and EU level, such as in the context of the European Digital Innovation Hubs under the Digital Europe Programme, with a view to enhancing the use and sharing of data and improving compliance with the GDPR; considers that access to co-generated data should be provided in a manner that respects fundamental rights and supports a level playing field and the involvement of social partners, even at company level; stresses that such access rights must be made technically possible and granted through standardised interfaces;
50. Calls on all EU institutions and the Member States as well as local and regional administrations to lead by example and put in place real-time services and a policy based on real-time data; stresses that digitalisation represents an opportunity for public administrations to reduce unnecessary administrative burdens and tackle silos in public bodies and authorities with a view to managing non-personal data more effectively, which will benefit the development and provision of public services;
51. Calls for more and better secondary uses of securely anonymised personal data and use of developed privacy-enhancing and -preserving technologies, especially in G2B/G2G exchanges, in order to boost innovation and research and improve services in the public interest; stresses the need for tools to ensure that such secondary uses are always fully compliant with EU data protection and privacy law; stresses that access to data does not preclude privacy;
52. Underlines also that any use of aggregated personal data from social media sources needs to either comply with the GDPR, or truly be irreversibly anonymised; calls on the Commission to promote best practices for anonymisation techniques, and to further promote research into the process of reversing anonymisation and how to counter it; calls on the European Data Protection Board (EDPB) to update its guidance in this regard; expresses, however, caution against reliance on anonymisation as a technique to protect privacy, given that full anonymisation is practically impossible to achieve in certain cases;

53. Stresses the role of the public sector in fostering an innovative and competitive data economy; stresses the need, in this context, to avoid service provider or technological lock-ins for publicly collected data or for data of general public interest collected by private entities; calls for public procurement processes and funding programmes to secure later data access rights, interoperability and portability requirements based on common technical standards; supports the use of open standards, open source software and hardware, open source platforms and, where appropriate, open, well-formed APIs in an effort to achieve interoperability; highlights the need to protect and promote access for SMEs and in particular start-ups to public procurement processes in the context of the digitalisation of public administrations in order to foster the creation of a dynamic and competitive European digital sector;
54. Highlights that the sharing of data should enhance competition and encourages the Commission to ensure a level playing field in the single market for data;
55. Calls on the Commission to further define for B2G data sharing the circumstances, conditions and incentives under which the private sector should be obliged to share data with the public sector, such as due to its necessity for the organisation of data-driven public services; stresses that compulsory B2G data sharing schemes, for example in situations of force majeure, should have a clearly defined scope and timeline and be based on clear rules and obligations to avoid unfair competition;
56. Calls for improved coordination among the Member States in order to facilitate G2G data sharing and the cross-border flow of data across sectors, through government and stakeholder dialogue, with the objective of establishing a collective approach to data based on the principles of findability, accessibility, interoperability and reusability; calls on the Commission to examine opportunities for data curation at scale;
57. Reminds the Commission and the Member States to fully implement the Open Data Directive, to improve its implementation in terms of the quality and publication of data, and to respect its objectives when negotiating the implementing act on high-value data sets; calls for these data sets to include inter alia a list of company and business registers; underlines the societal benefits of promoting better access to public sector data in ways that strengthen usability across the Union; calls on the Commission to provide a strong link between these high-value data sets and the forthcoming data legislation and deployment of the common European data spaces;
58. Stresses the importance to both the economy and society of extensively reusing public sector data, which should be, to the extent possible, real-time or at least up-to-date and easy to access and process thanks to machine-readable and user-friendly formats; encourages the Commission to coordinate with the Member States to facilitate the sharing of non-sensitive, public-sector-generated data sets in machine readable formats beyond what is required by the Open Data Directive, either for free, whenever possible, or covering the costs, and to issue guidance on a common model for data sharing in accordance with the GDPR requirements; while preserving the flexibility of updates of the high-value data sets, encourages the Commission to extend the scope of the Open Data Directive to additional public data sets and to implement the principle of implicit digital transparency of public sector data so as to encourage Member States to publish existing digital raw data in real-time;

59. Points out that the rapid development of modern digital solutions for transport and tourism, such as autonomous vehicles and intelligent transport systems (ITS), is impossible without the establishment at European level of common, uniform and structured machine-readable data formats, which should be based on open recording standards;
60. Calls on the Commission to identify and establish a voluntary, open and interoperable environmental, social and governance (ESG) data register on corporate sustainability and responsibility performance, which is crucial to ensure sustainable investments and would improve the transparency of companies' sustainability and responsibility to enable them to better demonstrate action taken towards Green Deal objectives; calls on the Commission to assess which data sets are essential for the ecological transition and supports, in particular, the opening up of private data when justified for public research purposes;

Infrastructure

61. Calls on the Commission and the Member States, with a view to strengthening the Union's technological sovereignty, to promote research and innovation and work on technologies that facilitate open collaboration, data sharing and analytics, and to invest in capacity-building, high-impact projects, innovation and the deployment of digital technologies, while respecting the technological neutrality principle;
62. Stresses that the ongoing COVID-19 emergency has exposed shortcomings and vulnerabilities in the digital area, both at Union and Member State level; calls for the Commission and the Member States to continue effectively addressing the digital divide, both across and within the Member States, by improving access to high-speed broadband, very high capacity networks and ICT services, including in most peripheral and rural inhabited areas, thus promoting cohesion and economic and social development; points out the potential role for satellite connectivity in ultimately remote areas;
63. Recalls that the success of the Union's data and AI strategies depends on the wider ICT ecosystem, on closing the digital gap, on accelerating technological developments in inter alia the internet of things (IoT), AI, cybersecurity technology, fibre, 5G, 6G, quantum and edge computing, robotics, distributed ledger technologies including block chain, digital twins, high-performance computing, visual processing technology, and intelligent connectivity at the edge, such as via large-scale, open calls for projects that combine edge and the IoT; underlines that technological advancement based on data processing and the interconnectedness of digital products and services must be backed up by legally-binding ethical standards to mitigate threats to privacy and data protection;
64. Acknowledges the current success of the European High-Performance Computing Joint Undertaking; believes that it is an important instrument to exchange information and data between scientists and researchers and private and public actors more broadly; welcomes the Commission's proposal to maintain and advance Europe's leading role in supercomputing and quantum computing;
65. Highlights that the digital sector has significant potential to contribute to the reduction

of global carbon emissions; notes that the sector is estimated to be responsible for more than 2 % of global greenhouse gas emissions; stresses that the sector's continued expansion must be accompanied by a focus on energy and resource efficiency to counter environmental effects; notes that new technological solutions such as fibre (when compared with copper) and energy-efficient programming produce a much smaller carbon footprint; stresses the need to improve the use and circularity of critical raw materials, while reducing and recycling E-waste;

66. Highlights that data centres account for a growing share of the world's electricity consumption, with the potential for a further increase if no action is taken; notes the Commission's intention of achieving highly energy-efficient, sustainable and climate-neutral data centres by 2030; supports the promotion of innovative and best available solutions, waste minimisation, and green data storage techniques, focusing in particular on the synergies between district heating and cooling and using the waste heat generated when cooling data centre facilities, for the purposes of mitigating the impact of data centres in terms of the environment, resources and energy used; calls for more transparency for consumers over the CO₂ emissions of data storage and sharing;
67. Calls on the Commission and the Member States to promote competitive markets while strengthening European businesses and to support the development of European cloud offerings; welcomes the initiatives of the European Cloud Federation, such as a European Alliance for Industrial Data and Cloud and funding initiatives, as well as the GAIA-X project, which aim to develop a federated data infrastructure and create an ecosystem that allows scalability, interoperability and self-determination of data providers by design to ensure organisations' or individuals' self-determination to have control over their own data; supports competitive EU markets in the areas of IaaS, PaaS, and SaaS and in the development of specialised and niche cloud services and applications; urges the Commission to remain vigilant about any potential abuses of market power by dominant actors operating in oligopolistic markets in the Union that could inhibit competition or consumer choice; stresses that cloud infrastructures should be based on the principles of trust, openness, security, interoperability and portability; stresses that data portability principles should overcome, to the extent necessary, differences in IT providers' infrastructures and practices to ensure that users' data is ported effectively; notes that users may not have the exact same configuration and service when porting their data from one provider to another;
68. Calls on the Commission, in cooperation with the Member States, to fast-track the development of a 'cloud rule book' that will establish principles for the provision of competitive cloud services in the Union, represent a solid framework to enhance clarity and facilitate compliance for cloud services, as well as inter alia oblige service providers to reveal where data is processed and stored, while ensuring users have sovereignty over their data; notes that this rule book should further allow users to seamlessly migrate their data via interoperable interfaces to other service providers; believes that it should aim to prevent technological lock-ins, especially in public procurement; considers the use of CEN Workshop Agreements (CWAs) in specific areas, such as cloud services, as a way to increase efficiency in creating harmonised standards; stresses that while the choice of a cloud operator lies with the businesses and consumers, all cloud operators, when established or acting in the EU, must follow EU rules, norms and standards and their compliance should be monitored; notes that in the

event that an EU operator uses cloud services located in non-EU countries, it is important to ensure the same application of a high level of legal protection in the case of disputes, including over intellectual property;

69. Supports the Commission's work to take advantage of the review of horizontal and vertical competition guidelines to introduce new tools to curb excessive market concentration inherent to data markets, including ongoing monitoring for at-risk markets and, where necessary, *ex ante* regulation;
70. Emphasises the importance of trust and a more robust cybersecurity framework for a stable data economy, in addition to a culture of security for entities that handle large amounts of data; stresses the importance of state-of-the-art underlying digital infrastructure and calls on the Commission and the Member States to invest together to ensure its full deployment; calls for the support of further development of technology for secure data sharing, such as via secure multi-party computing and encryption technology; urges the Commission to present solutions and cybersecurity standards suited to market players of all sizes, including micro enterprises and SMEs; supports the joint and coordinated approach on the EU toolbox on 5G cybersecurity and the secure 5G deployment in the EU;
71. Calls on the Commission to promote audits on the abusability, vulnerability and interoperability of data sharing infrastructure; draws attention to the significant and rapidly increasing costs generated by cyberattacks; recalls that greater connectivity may increase cyber threats and crime, as well as cyberterrorism and the risk of natural and technological accidents, such as those affecting trade secrets; welcomes, in this respect, the Commission's proposal to revise Directive (EU) 2016/1148 on the security of network and information systems²⁹ and a new EU Cybersecurity Competence Centre in order to improve cyber resilience and respond more effectively to cyberattacks;
72. Stresses that the safe uptake of products and services in the data-fuelled, consumer-facing and industrial IoT European ecosystems should include security and privacy by design; encourages the use of tools to enhance transparency; supports the Commission's ambition to develop a digital 'product passport';
73. Emphasises the importance of the competent market surveillance authorities having the necessary power to access relevant data, while fully respecting Regulation (EU) 2019/1020³⁰, when they have reasons to believe that potentially illegal practices exist, in order to strengthen their actions and ensure sufficient control of product safety; stresses the need to safeguard the safety and protection of accessed data by the surveillance authorities;
74. Calls for the implementation of transport legislation to be monitored, notably Regulation (EU) 2020/1056 on electronic freight transport information, Directive (EU) 2019/1936 on road infrastructure safety management and Regulation (EU) 2019/1239 establishing a European Maritime Single Window environment, with a view to ensuring support for businesses, promoting digitisation and improving data exchange in business-

²⁹ OJ L 194, 19.7.2016, p. 1.

³⁰ OJ L 169, 25.6.2019, p. 1.

to-administration (B2A), B2C, B2B, B2G and G2B settings;

Research, skills, competence and AI

75. Recognises the potential of data access to accelerate scientific research and education programmes; welcomes the Commission's work in enabling data sharing for research and education; welcomes the development of the European Open Science Cloud as an open, trusted and federated environment in Europe to store, share and re-use research data across borders; advocates the promotion of publicly funded research data in accordance with the principle of 'as open as possible, as closed as necessary'; highlights the value of strategic partnership agreements between universities to further promote cooperation in the various fields of data science;
76. Underlines the importance of achieving a high level of overall digital literacy and of promoting public awareness activities; stresses that the Union's growth potential depends on the skills of its population and workforce; calls on the Member States, therefore, to devote particular attention to software engineering, attracting talent to ICT and data literacy for all in order to build European know-how focusing on next-generation and cutting-edge technologies; highlights the need for law enforcement and judicial administration staff to have adequate digital skills, as these are crucial to the digitalisation of the justice system throughout the Member States; notes that the Commission has proposed ambitious targets for digital skills in the EU through the Digital Education Action Plan and highlights the need to closely monitor the implementation, development and performance of the latter;
77. Underlines that competitive access to data and facilitating the cross-border use of data are of the utmost importance for the development of AI, which relies on high-quality and increased data availability to create non-personal data sets that are capable of training algorithms and improving their performance;
78. Stresses that the implementation of the European data strategy must strike a balance between promoting the wider use and sharing of data and protecting IPR, trade secrets, but also fundamental rights such as privacy; underlines that data used for the training of AI algorithms sometimes relies on structured data such as databases, copyright-protected works and other creations enjoying intellectual property protection which may not usually be considered as data;
79. Notes that the use of copyright-protected content as data input needs to be assessed in the light of the current rules and the 'text and data mining' exception provided for by the Copyright Directive³¹, as well as related rights in the Digital Single Market; calls on the Commission to issue guidance on how reserving the rights will be made publicly available for all in a centralised way;
80. States that the Commission should further evaluate changes to the current legal frameworks in civil procedure law in order to reduce existing investment obstacles for private investors; calls on the Commission, in this regard, to promptly and adequately follow up on Parliament's resolution on common minimum standards of civil

³¹ OJ L 130, 17.5.2019, p. 92.

procedure³²;

81. Highlights the need to prevent all kinds of biases, especially gender biases, from being inadvertently reflected in algorithm-based applications; encourages to that effect the transparency of algorithms, AI systems and application design;
82. Recalls that pursuant to the GDPR, EU citizens have the right to receive an explanation of and to dispute the decisions taken by algorithms in the interest of reducing uncertainty and opacity, while special attention should be given to well-being and transparency in working life;
83. Believes that although the current liability principles and technology-neutral liability rules are, in general, suitable for the digital economy and most emerging technologies, there are nevertheless some cases, such as those concerning operators of AI systems, where new or additional liability rules are necessary in order to enhance legal certainty and to provide for an adequate compensation scheme for the affected person in case of unlawful use of data;
84. Urges the Commission to conduct a comprehensive assessment of similar potential legal gaps in relation to liability for data, such as for AI- and non-AI-caused damage resulting from deficiencies in or the inaccuracy of data sets, and to evaluate possible adjustments to the current liability systems before coming up with new legislative proposals;
85. Calls on the Commission to promote best practices in science, technology, engineering and mathematics (STEM) education, with a specific focus on gender equality, as well as the involvement and employment of women in tech;
86. Welcomes Digital Europe, Horizon Europe, the Space Programme and the Connecting Europe Facility as well as the European Digital Innovation Hubs, which will help European businesses to keep up with the opportunities of the digital transition; underlines the importance of the funding earmarked for quantum research in Horizon Europe; recalls, in addition, the role that the Recovery and Resilience Facility should play in contributing to the digital agenda;
87. Calls for public and private funding, in particular for micro enterprises and SMEs, in order to support the digital transition and fully capitalise on the potential of the data economy as well as to integrate digital technologies and skills; underlines that securing a level playing field for micro enterprises and SMEs not only includes access to data, but also entails ensuring the necessary skills to carry out analytics and extract insights from such information;
88. Calls on social partners to explore the potential of digitalisation, data and AI for increasing sustainable productivity, while respecting workers' rights, improving the well-being and employability of workforces and investing in upskilling, reskilling, outskilling, lifelong learning and digital literacy schemes; notes that awareness-raising, education and transparency surrounding data-driven technologies are important to enable EU citizens to understand, and be part of the fair implementation of those technologies; underlines that employees should have the right to know where and how

³² OJ C 334, 19.9.2018, p. 39.

their data is collected, used, stored or shared; calls for the prevention of disproportionate and undue surveillance at work; considers that national trade unions should be more involved in providing recommendations and guidelines on data protection and privacy in the workplace;

Global rules

89. Believes that global rules governing the use of data are inadequate; invites the Commission to come forward with a comparative analysis of the regulatory environment for data in third countries; notes that European companies operating in some third countries are increasingly faced with unjustified barriers and digital restrictions; calls on the Commission and the Member States to bolster efforts with like-minded third countries at international and multilateral forums and in bilateral and trade discussions in order to agree on new international ethical and technical standards to govern the use of new technologies, such as AI, the IoT, 5G and 6G, which should promote the Union's values, fundamental rights, principles, rules and standards and ensure that its market remains competitive and open to the rest of the world; highlights the need for international rules and standards to foster global cooperation aimed at strengthening data protection and establishing safe and appropriate data transfers, while fully respecting EU and Member States' laws and standards;
90. Emphasises that transfers of personal data to other jurisdictions must always abide by the provisions of the GDPR, the LED and the Charter of Fundamental Rights and take into account the recommendations and guidelines of the EDPB, prior to any transfer, and can only take place if there is a sufficient level of protection of personal data;
91. Calls for the free flow of data between the Union and third countries on the condition that data protection, privacy, security and other clearly defined, duly justified and non-discriminatory public policy interests are met, such as via adequacy decisions; believes that the free flow of data across borders is needed to reap the full potential of the data economy and stresses that preserving the flow of data must remain a foundation stone of Europe's objectives; supports allowing access to common European data spaces to stakeholders that fully comply with all the relevant Union legislation; calls on the Commission, together with the Member States, to negotiate new rules for the global digital economy, including the prohibition of unjustified data localisation requirements; recalls the importance of making progress with e-commerce negotiations at the World Trade Organization and calls for the inclusion of ambitious and comprehensive digital trade chapters in EU free trade agreements; supports the Union's active role and participation in other international forums for international cooperation on digitalisation, such as the UN, the OECD, the International Labour Organization and UNESCO;
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92. Instructs its President to forward this resolution to the Council and the Commission.

EXPLANATORY STATEMENT

1. Background and general considerations

Our lives and the societies we know today will be fundamentally reshaped by rapidly evolving digital technologies, superfast connections, and the massive amount of data these new capabilities produce. Globally, the total amount of data doubles every 18 months, creating yet unimaginable possibilities. Who will this trend benefit? Will the data create opportunities for companies of all shapes and sizes, or will data be concentrated in the hands of a few technological giants? In the future, will the new pools of data contribute to a human-centric digital society and will citizens be in control of their data? Will the data truly be available to improve public services?

The current COVID-19 crisis has further underlined the importance of digitalisation, digital infrastructure, tools and skills. It is clear that Europe needs to use all the tools possible to aid its recovery. The pandemic has also made it evident that basing policy decisions on traditional statistics can be irretrievably inefficient. The emerging capabilities to collect, analyse and use data in a more sophisticated way can help policymakers transition to making decisions based on real-time data. Developing “real-time services” can also mean less bureaucratic burdens, saving time and money, and new opportunities for citizens and companies, especially SMEs.

The key question is why at the moment data is not moving across Europe. The Rapporteur believes that the answer boils down to the lack of understanding, trust and interoperability.

The Rapporteur stresses that this report should be seen as a starting point in the wide-ranging discussion that will be needed to build a European approach to the data economy. The Rapporteur is looking forward to receiving the sectoral input from other EP committees active on this subject.

The Rapporteur is of the view that Europe needs to forge its own path towards a data economy and society, built upon European values.

2. Main issues and the Rapporteur’s position

2.1. Values and Principles

The Rapporteur considers that the European data strategy must have as its goal making the data economy transparent, trustworthy and human-centric - respecting human rights and democracy as well as creating new opportunities for citizens to use and benefit from their data, not for this data to only serve as raw material.

The Rapporteur also believes that digitalisation must not increase or create new societal inequalities. The data strategy needs to be integrated in a wider industrial strategy that ensures social and environmental sustainability. New models of work in the data economy must result in the empowerment of workers instead of a race to the bottom.

The Rapporteur also emphasizes that the ability to collect and process data will have a significant role in helping the EU reach its climate targets. However, the Rapporteur also

notes that the current environmental footprint of the ICT sector is estimated to be between 5 to 9% of the world's total electricity use and more than 2% of all emissions, a large part of which is due to data centers, cloud services and connectivity. The EU must take measures to ensure transparency of the CO2 emissions, minimal wastage and to promote green data storage techniques.

2.2. Data governance and spaces

The Rapporteur considers that in order to succeed in data-sharing across the economy, Europe needs as a matter of priority a legislative framework for the governance of data sharing. The Rapporteur agrees with the Commission that the sectoral data spaces are a good starting point to create trust, European wide interoperable standards and, well-formed APIs (Application programming interfaces) with machine readable access that enable the flow of data across the EU and various entities, both in public and private sectors.

However, the Rapporteur emphasizes the importance of cross-sectoral data sharing, which is essential for innovation and new value creation. The Rapporteur highly recommends to the Commission to build European data spaces with the end goal of ensuring smooth sharing of data not only within but across sectors.

Fundamentally, there is still a huge need for organisations, businesses and public sector to better identify and understand the data they possess. The Rapporteur puts an emphasis on the need for the findability of metadata - the information about data - in machine readable form.

The Rapporteur supports the EC initiative of the creation of a governance body, led by the Commission, to lead the forming of this European data governance framework and believes that this data governance model should be built on decentralised data operating environment.

The Rapporteur believes that “data intermediators” will play a key role in future data governance in the data ecosystems, moving data between actors via well-formed APIs without processing it themselves. The Rapporteur welcomes the Commission initiative to create a concrete labelling/certification scheme for these intermediators. In this context, the Rapporteur also supports the development of trustworthy multi-stakeholder initiatives, such as MyData operators or other responsible data intermediators.

The Rapporteur believes that we would be mistaken to speak only of industrial “non-personal” data in the data strategy. Aggregated data sets carry a high probability of including within them personal data, or non-personal data which may infer or generate personal data when combined with other data. The Rapporteur argues that personal and non-personal data are not always separable, and that the Commission should further define guidance and practices on how to govern and utilise mixed data sets also in industrial environments. If this issue is not taken seriously, Europe will leave an enormous amount of data unused.

In this context, the Rapporteur suggests to the Commission to create a horizontal and cross-cutting personal data space alongside the already identified sectoral data spaces. Built fully on respecting data protection and privacy, this cross-cutting personal data space could be used to empower citizens and improve usage of personal data. As a possibility, the movement of data within the data space could happen through trustworthy intermediators, such as MyData operators, managing personal data with the full consent of the individuals.

2.3. Data access, interoperability, portability and ownership: B2B, G2B, B2G, G2G

B2B data sharing

The Rapporteur believes that the starting point for B2B data sharing should be supporting and enabling voluntary data sharing. Nonetheless, the Rapporteur is of the view that in today's digital world the level playing field does not exist. The global tech giants, most of them non-European, have significantly better opportunities to use data, being in a position in which they do not really require data sharing between themselves and other companies. The smaller operators and SMEs are not genuinely in a position to negotiate with them. This is why the Rapporteur considers that Europe needs to regulate on compulsory data access, where necessary, applying especially to those value chains and data ecosystems in which smaller operators have been involved in creating data sets, but do not have access to the data that they have taken part in producing.

G2B and B2G data sharing

The Rapporteur emphasizes that the first step is to open public data sets for use, work that the EU has already started e.g. with Open Data Directive. However, further action is needed. Publicly collected data should be used for the common good and, ultimately, real-time services. For example, public procurement contracts must be designed in a way that prevents any public actor from becoming dependent on a single private actor. To make better use of public data sets, the Rapporteur is calling for the Commission to examine ways to improve the secondary use of anonymised personal data.

The Rapporteur also notes that as in B2B, there are also special circumstances where B2G data sharing needs to be compulsory for the common good.

Regarding the upcoming Implementing act on "High value data sets", the Rapporteur urges the Commission and Member states not to undermine the spirit of Open Data Directive and to ensure that high value data sets include company and business registers and that sufficient action is taken to make these sets genuinely available.

G2G

The EU has already started to improve cooperation between Member States' public services, but in the future this will also absolutely depend on enabling sufficient flow of data. The Rapporteur believes that the aim should be building a European internal market in which services are provided real-time and where policy-making is guided by comprehensive, geographically representative, and real-time data.

2.4. Infrastructure and cybersecurity

The Data Strategy is one piece in the puzzle of development of EU's digital future. Its success will also depend on the state of play of the wider ICT ecosystem, such as broadband networks, 5G, 6G, cloud solutions, IoT, quantum, blockchain and high performance computing.

In relation to cloud service providers, the Rapporteur calls on the Commission to oblige in the future “Cloud rulebook” for service providers to show where they store data. Additionally, the Rapporteur believes that cloud service providers should not have access to data stored on their servers, unless there is a separate agreement between parties.

The Rapporteur emphasises strong cybersecurity as a prerequisite for a stable data economy. Network security and reliability is a question of European digital independence and we cannot afford to be naïve. For example, strong cybersecurity should be a requirement for all data intermediators.

2.5. Education, knowledge and competence

The Rapporteur reminds that Europe is one of the global leaders in research and start-ups but has challenges transforming these capabilities into flourishing companies. Therefore, the Rapporteur calls for a European focus on high-level software engineering, which is crucial for the value creation for the data sector and talent attraction.

The Rapporteur also calls on social partners at the level of the enterprise and at other appropriate levels to pro-actively explore the potential digital technology, data and AI to increase the productivity of the enterprise and the well-being of the workforce and calls on them to invest sufficient measures for upskilling, retraining and life-long learning, so that workers can transfer to new jobs or adapt to redesigned jobs also within the enterprise. Commission should also continue the work to endorse women’s participation in the technology industry.

The Rapporteur calls on the Commission to invest in the transformation of the traditional enterprises, especially SMEs, to the data age.

2.6. International considerations

In the global context, the Rapporteur believes that we cannot take it as a given that data protection, respecting human rights and fair competition, among others, will be the guidelines for data-driven economic development. The Rapporteur considers that global rules governing the use of data are inadequate and calls on the EU to agree new basic rules for the global data economy with the member countries of the WTO taking part in the Joint Statement on Electronic Commerce initiative and in bilateral trade negotiations.

It is important for European citizens, consumers and companies to be able to transfer data to and from third countries, with sufficient safeguards. Only in this way can the true potential of the data economy be met.

The EU should lead the work closely with like-minded third countries to agree, in line with EU’s values and interest, on new international standards to govern the use of new technologies such as AI. Otherwise the international digital market, and people’s international interaction, risks becoming more fragmented than necessary.

ANNEX: LIST OF ENTITIES OR PERSONS FROM WHOM THE RAPPOREUR HAS RECEIVED INPUT

The following list is drawn up on a purely voluntary basis under the exclusive responsibility of the rapporteur. The rapporteur has received input from the following entities or persons in the preparation of the draft report:

Entity and/or person
A new governance
Aalto University
ACEA
Amazon
BEUC
Business Finland
CEPS
Digital Europe
EDIMA
ETLA
ETNO
European Commission
EuroCommerce
European Games Developer Federation
FEPS Europe
Finanssiala ry
Finnish Centre for AI
Finnish Confederation of Professionals
Finnish Innovation fund SITRA
Finnish Technology Industries
German Presidency of the Council
GSMA
Huawei
IBM
Italian National Innovation Fund
Ministry of Transportation and communications of Finland
Ministry of Finance of Finland; expert group on Artificial Intelligence and digitalisation
MyData Global
Nokia
Open Science Foundation
Open Data Institute
Permanent representation of Finland to the EU
Reaktor
SMEUnited
Swedish Transport Administration
University of Helsinki
University of Vaasa
Vodafone
Working group on Confederation Syndicate European Trade Union, Business Europe,

11.1.2021

OPINION OF THE COMMITTEE ON THE INTERNAL MARKET AND CONSUMER PROTECTION

for the Committee on Industry, Research and Energy

on a European strategy for data
(2020/2217(INI))

Rapporteur for opinion: Christel Schaldemose

(*) Associated committee – Rule 57 of the Rules of Procedure

SUGGESTIONS

The Committee on the Internal Market and Consumer Protection calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

1. Welcomes the Commission's intention to create a genuine and innovative single market for data as the backbone of the EU's data economy and competitiveness, while promoting and protecting European data processing rules and standards, in full compliance with EU legislation; considers that ensuring trust in digital services and in smart products is fundamental for the digital single market to grow and thrive, and should be at the core of both public policy and business models; underlines that a single market for data should allow European companies and citizens to develop and benefit from innovative and competitive services and products, while contributing to achieving EU objectives;
2. Considers that ensuring access to data, without prejudice to data protection rules, is crucial for citizens' fundamental rights, and for businesses' innovation and growth, especially for start-ups and SMEs; welcomes, therefore, the actions to tackle the current lack of data availability highlighted by the Commission in its communication; calls on the Commission to assess thoroughly how to build the data governance model, taking into account existing models and their respective advantages and risks; stresses that the assessment should take cybersecurity aspects duly into account; notes that a decentralised model can offer more guarantees regarding privacy safeguards and, depending on the context, could be considered for the data governance model;
3. Stresses the importance of developing legislative proposals to ensure a genuine single market for data; underlines that such proposals should be based on in-depth impact assessments, including, inter alia, best practices, cost-benefit analyses, and, where

possible, comparative analyses of the regulatory environment, including in third countries, in order to provide a properly targeted and evidence-based regulatory environment for the internal market, without hampering the timely start of possible projects; suggests further that the Commission could consider basing the programmes on data sharing and the cloud initiatives on the results of pilot projects;

4. Stresses the importance of a coherent approach that can define how provisions on data sharing will interact with existing and future legislation in order to ensure consistency between, for example, the Data Act and the Data Governance Act on the one hand, and the Digital Services Act and the Digital Markets Act on the other;
5. Stresses that it is important to strike the right balance between clearly defined rules, while making room for innovation and rapid responses to new technologies, when establishing genuine common European data spaces; calls on the Commission to address fragmentation in the single market and unjustified diverging rules in Member States in order to ensure the development of common data spaces in the EU;
6. Calls on the Commission to ensure that the single market for data will build a European way for handling data, thereby increasing the availability of data for addressing societal challenges and for use in the economy, while respecting and promoting European common values enshrined in the Treaties, including fundamental rights, as well as fairness in competition; urges the Commission to empower consumers, with particular attention for certain groups of consumers considered as vulnerable, with the objective of keeping them in control of their data, while allowing for effective data usability; calls on the Commission to adopt a cautious approach in order to keep ensuring that consumers are able to decide who gets access to their personal data and under what circumstances they may do so; believes that industrial data and citizens' data could help in developing innovative digital and sustainable solutions for products and services that would benefit European consumers and companies; encourages the Commission to assess possible mechanisms and tools to permit and facilitate the donation of data by companies and individuals, which can be of general interest, in full compliance with European legislation;
7. Highlights the need to provide a common definition of what should be considered as data altruism, and clear criteria to determine when data donation is considered in the general interest; stresses the importance of having clear rules on how such data can be donated and used; underlines that data donated under data altruism is meant to be processed for purposes of general interest and should not be used to pursue solely commercial interests;
8. Underlines the need to address specific issues that could arise in relation to access to and control of consumers' data, in particular certain groups of consumers considered as vulnerable such as minors, elderly people or persons with disabilities; calls, therefore, on the Commission to ensure that all consumers' rights are respected at all times and that all consumers can equally benefit from the advantages of the creation of the single market for data; underlines that when the processing of data includes mixed data sets, these data sets must be treated in accordance with the applicable legislation, including the Commission's Guidance on the Regulation on the free flow of non-personal data;

9. Recognises that the availability of some personal data for research and policy making in domains such as public health, pharmaceuticals, social services, education and others could be useful; calls, therefore, on the Commission to create clear mechanisms for gathering this data in a uniform manner and in accordance with European privacy standards and the relevant applicable legislation, while ensuring respect for the principle of data minimisation and making sure that data cannot be linked to specific persons;
10. Emphasises the importance of the competent market surveillance and cybersecurity authorities having the necessary power to access relevant data, while fully respecting Directive (EU) 2016/943 and Regulation 2019/1020, when they have reasons to believe that potentially illegal practices exist, in order to strengthen their actions and ensure sufficient control of product safety and data security; stresses the need to safeguard the safety and protection of accessed data by the surveillance authorities;
11. Highlights the need to create common European data spaces with the aim of ensuring the free flow of non-personal data across borders and sectors to ramp up data flows between businesses, academia, the relevant stakeholders and the public sector; believes that the framework for the governance of common European data spaces should build on the principles laid down in the Regulation on the free flow of non-personal data; calls, in this context, on the Member States to fully comply with the Regulation in order to allow for data to be stored and processed across the EU without unjustified barriers and restrictions; underlines the need to provide a level playing field for data sharing between stakeholders and to assess what constitutes an adequate and proportionate level of permissions to access data in order to better control who has access to certain data and for what purpose, in particular taking into account the needs of SMEs to allow them to scale up and operate on a cross-border basis in the internal market;
12. Highlights that the Data Act and the Data Governance Act should lay down provisions for the use of high-quality and reliable data sets that are essential for the creation of properly functioning common European data spaces and for helping companies to develop high-quality products and services for the benefit of the internal market; acknowledges that it should be possible for private companies to choose an open data and cooperative model like open technologies, such as open source and open software, without prejudice to applicable legislation, including Directive (EU) 2019/790 on copyright and related rights in the Digital Single Market; encourages the Commission to develop data spaces based on technical and legal frameworks to keep data secure and to ensure control over who can access data and for what purpose;
13. Considers that voluntary business-to-business (B2B) and business-to-government (B2G) data sharing and participation in data spaces should be incentivised, while mandatory access to relevant data could also be envisaged to prevent market failures; highlights that the sharing of data should enhance competition and encourages the Commission to ensure a level playing field in the single market for data; underlines that the Digital Markets Act should introduce new tools and lay down criteria to identify gatekeepers and include provisions to prevent these economic entities from creating market barriers, including with regard to data sharing with the relevant stakeholders; asks the Commission to take the issues of confidentiality and the protection of trade secrets into particular account in the context of the Data Economy;

14. Recalls the importance of security and data protection as key elements for data sharing initiatives and common future European data spaces; highlights that companies must comply with the General Data Protection Regulation (GDPR) in its entirety; welcomes the Commission's intention to address the current limitations of data portability; recalls the importance of ensuring future-proof privacy rules in electronic communications; underlines the relevance of the ongoing negotiation on the e-Privacy Regulation in that regard;
15. Underlines the societal benefits of promoting better access to public sector data in ways that strengthen usability across the Union; asks the Member States to fully implement the Directive on open data and the re-use of public sector information ('Open Data Directive'), and the Commission and the Member States to promote a culture of wide re-use of available data; highlights the need to ensure easy access to data and, where relevant, to public contracts, with exceptions defined by EU or national law, for all relevant institutional and societal actors, and for economic operators, especially for SMEs and start-ups, tackling unjustified barriers and promoting the use of modern web and Application Programming Interface-based services for the convenient and quick retrieval, browsing and processing of available data;
16. Calls on the Commission and the Member States to promote a data sharing culture, lead by example and share their data in a visible, user-friendly, transparent and easily automated process; highlights initiatives such as the Nordic Smart Government which intends to enable SMEs to voluntarily share data automatically and in real time through a decentralised digital ecosystem; asks the Commission to consider how to ensure that publicly funded data benefits consumers, SMEs and businesses which are living up to their responsibilities, in accordance with the current legislation applied in the EU; insists that any actor operating in the EU and taking advantage of European data spaces must comply with EU legislation;
17. Calls on the Commission to act on the recommendations of the Expert Group report¹ to carry out studies on the macroeconomic and social benefits of B2G data sharing for the public interest; calls, in this regard, for clear rules for G2B and B2G data sharing, and suggests that possible fees to be derived from the costs related to the processing of requests for the re-use of data should be proportionate and non-discriminatory; calls, furthermore, on the Commission to ensure the implementation of appropriate levels of security and privacy by the public sector for the storage, access to and processing of data in order to increase trust between businesses or civil society organisations and the public sector;
18. Welcomes the Commission's international approach to minimise the fragmentation of the global digital markets by pushing for joint standards and fostering data sharing between trusted countries; emphasises that European companies should be able to operate worldwide with confidence and legal certainty, and that data transfer to third countries should respect the Charter of Fundamental Rights and relevant Union legislation;
19. Considers that the environmental impact of data sharing and the infrastructure required

¹ *Towards a European strategy on business-to-government data sharing for the public interest, Final report prepared by the High-Level Expert Group on Business-to-Government Data Sharing, 2020.*

should be assessed to ensure that the European strategy on data is in line with the Green Deal; stresses, in this context, that enabling data sharing and access to essential and well-defined data sets will be key; recommends identifying essential data sets for the transition to a more sustainable single market and assessing whether the expected implementing act on high-value data sets within the Open Data Directive could be used to that end;

20. Supports the announcement of a common European data space for smart circular applications and the Commission's ambition to develop a digital 'product passport'; insists on developing artificial intelligence (AI), robotics and automated decision and machine learning tools in close cooperation with all relevant stakeholders, in particular industry, national public authorities, and civil society, as these tools can be critical enablers for attaining a more sustainable single market and reducing the current carbon footprint of the digital sector;
21. Welcomes the establishment of a European Cloud Federation and a European network of cloud infrastructure; underlines, however, the need to invest in the storage capacity of European companies; highlights the imperative to improve access to European cloud services and to address interoperability issues which constitute a significant barrier for effective data sharing, via codes of conduct, certification and standards in a 'cloud rulebook'; encourages the Commission, in this context, to develop a coherent cloud rulebook that takes into account the work of the Working Group on Switching Cloud Providers and Data Porting (SWIPO);
22. Considers proportionality to be the guiding principle for data quality and interoperability requirements; calls on the Commission to consider promoting existing standards to overcome technical challenges, lock-in effects and unnecessary transaction costs, while allowing users to freely choose their cloud services and to seamlessly migrate their data to other service providers via standardised interfaces, where comparable and compatible cloud services exist, and to provide high quality standards for sectors and data spaces of high importance for significant societal challenges; recalls that the freedom to opt for non-European cloud service providers should remain open to European businesses and consumers except on legitimate grounds such as national security risks;
23. Underlines the importance of developing a European cloud ecosystem for delivering safe common European data spaces, based on trustworthy and secure infrastructure with strong cybersecurity principles and tools; recalls that increased connectivity creates increased cyber threats; welcomes, in this context, the expected revision of the Directive on security of network and information systems ('NIS Directive');
24. Calls for a cost-effective cloud infrastructure at Union level focusing on user needs; calls on the Commission to assess the introduction of a new European single market infrastructure project to ensure the same level of access to the single market for data all over the EU;
25. Points out the obstacles faced by businesses, in particular by SMEs and start-ups, in accessing and sharing data; suggests developing a technical and legal framework for secured data sharing practices; considers that the Digital Markets Act is a prerequisite to

enhance data portability under fair conditions; further calls on the Commission to assess how the expected revision of the Database Directive can help in enhancing data access while guaranteeing the full application of intellectual property rights;

26. Encourages the Commission to create effective standards in close collaboration with the European standardisation organisations; considers the use of CEN Workshop Agreements (CWAs) in specific areas, such as cloud services, as a way to increase efficiency in creating harmonised standards; urges the Commission to start work on developing standards as soon as possible;
27. Underlines that when defining standards for sharing data across sectors, the Commission should pay particular attention to the standards applying within the sector in order to ensure coherent cross-sector data sharing standards and avoid one sector being advantaged at the expense of another;
28. Asks the Commission to assess the need for guidelines on Union public procurement processes and funding programmes to include, if relevant and appropriate, requirements on open data access, interoperability and portability within the framework of applicable legislation; calls, in this context, on the Commission to assess the need for a ‘European interoperability pledge’;
29. Stresses that data availability and data of high quality are crucial for the development of effective, properly functioning and unbiased AI systems; recalls that raw data input into AI systems may reproduce societal or economic biases, discrimination and inequalities in providing digital services for consumers and businesses;
30. Underlines that the most efficient way of reducing bias in data-based systems is by ensuring that high-quality data sets are available to train AI systems; notes that public domain or freely licensed data is used by AI and machine learning developers when selecting training data; calls on the Commission to ensure access to high-quality data in order to ensure the efficient development of AI systems in full compliance with applicable legislation;
31. Recognises the rise of the edge computing paradigm, especially given the ongoing roll-out of 5G networks and the subsequent business models, and stresses the need to find technical and legal solutions for providing effective access to data on the edge; emphasises the urgent need to address the emerging cybersecurity and data interoperability challenges that the unprecedented scale and the distributed nature of edge computing brings with it, including challenges in machine authentication, the origin of data, privacy and data reliability;
32. Recognises the potential of an increase in the quantity of data from self-driving vehicles, the potential for innovation they bring to the industry and to the economy, but also the security hazards that come with this; calls on the Commission, in this context, to pay particular attention to situations where data is co-generated, which can pose difficulties in relation to data identification and data protection rights; also asks the Commission to assess whether further legislative action is needed in this context.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	11.1.2021
Result of final vote	+: 39 -: 1 0: 4
Members present for the final vote	Alex Agius Saliba, Andrus Ansip, Pablo Arias Echeverría, Alessandra Basso, Brando Benifei, Adam Bielan, Hynek Blaško, Biljana Borzan, Vlad-Marius Botoș, Markus Buchheit, Anna Cavazzini, Dita Charanzová, Deirdre Clune, David Cormand, Carlo Fidanza, Alexandra Geese, Sandro Gozi, Maria Grapini, Svenja Hahn, Virginie Joron, Eugen Jurzyca, Arba Kokalari, Kateřina Konečná, Andrey Kovatchev, Jean-Lin Lacapelle, Morten Løkkegaard, Adriana Maldonado López, Antonius Manders, Beata Mazurek, Leszek Miller, Dan-Ștefan Motreanu, Anne-Sophie Pelletier, Miroslav Radačovský, Christel Schaldemose, Andreas Schwab, Tomislav Sokol, Ivan Štefanec, Róza Thun und Hohenstein, Kim Van Sparrentak, Marion Walsmann, Marco Zullo
Substitutes present for the final vote	Marc Angel, Krzysztof Hetman, Sándor Rónai

FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

39	+
ECR	Adam Bielan, Carlo Fidanza, Eugen Jurzyca, Beata Mazurek
EPP	Pablo Arias Echeverría, Deirdre Clune, Krzysztof Hetman, Arba Kokalari, Andrey Kovatchev, Antonius Manders, Dan-Ștefan Motreanu, Andreas Schwab, Tomislav Sokol, Ivan Štefanec, Róza Thun und Hohenstein, Marion Walsmann
GREENS/EFA	Anna Cavazzini, David Cormand, Alexandra Geese, Kim Van Sparrentak
ID	Hynek Blaško
NI	Marco Zullo
RENEW	Andrus Ansip, Vlad-Marius Botoș, Dita Charanzová, Sandro Gozi, Svenja Hahn, Morten Løkkegaard
S&D	Alex Agius Saliba, Marc Angel, Brando Benifei, Biljana Borzan, Maria Grapini, Adriana Maldonado López, Leszek Miller, Sándor Rónai, Christel Schaldemose
THE LEFT	Kateřina Konečná, Anne-Sophie Pelletier

1	-
NI	Miroslav Radačovský

4	0
ID	Alessandra Basso, Markus Buchheit, Virginie Joron, Jean-Lin Lacapelle

Key to symbols:

+ : in favour

- : against

0 : abstention

27.1.2021

OPINION OF THE COMMITTEE ON TRANSPORT AND TOURISM

for the Committee on Industry, Research and Energy

on a European strategy for data
(2020/2217(INI))

Rapporteur for opinion: Roman Haider

SUGGESTIONS

The Committee on Transport and Tourism calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

- having regard to the Commission communication of 19 February 2020 entitled ‘A European strategy for data’ (COM (2020)0066),
- having regard to Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport¹ (‘ITS Directive’) and the delegated acts thereof,
- having regard to Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network²,
- having regard to Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community³,
- having regard to Commission Regulation (EU) 2016/919 of 27 May 2016 on the technical specification for interoperability relating to the ‘control-command and signalling’ subsystems of the rail system in the European Union⁴,
- having regard to its resolution of 13 March 2018 on a European strategy on Cooperative

¹ OJ L 207, 6.8.2010, p. 1.

² OJ L 348, 20.12.2013, p. 1.

³ OJ L 191, 18.7.2008, p. 1.

⁴ OJ L 158, 27.5.2016, p. 1.

Intelligent Transport Systems⁵,

- having regard to its resolution of 15 January 2019 on autonomous driving in European transport⁶,
 - having regard to its resolution of 15 January 2020 on the European Green Deal⁷,
 - having regard to the position of the European Parliament adopted on 8 October 2020 on the proposal for a European Climate Law⁸,
- A. whereas a common European data strategy should provide benefits for the European transport and tourism sector and contribute to the transition towards a safe, sustainable and efficient transport system, while ensuring sufficient interoperability with other sectors, particularly by incentivising the development of technologies based on artificial intelligence (AI); whereas fair conditions in the marketplace for the European economy and businesses, especially for micro-, small and medium-sized enterprises (SMEs), should be created and promoted and fair competition between market players and all transport modes ensured;
- B. whereas a European data strategy should contribute to the alignment of the EU transport sector with the European Green Deal and the attainment of the EU's climate targets; whereas it should facilitate the transition to a sustainable, zero-emission and seamless multimodal single European transport area;
- C. whereas SMEs operating in the transport and tourism sectors do not fully benefit from the data they generate; whereas many small and medium-sized enterprises are unaware of the value of their data, lack the tools to process it and are not sufficiently prepared to operate in the digital economy;
- D. whereas the principles of privacy and the guarantee of consumer and passenger rights should be kept at the core of any European transport legislative action, including and especially when digitalisation is involved;
- E. whereas the implementation of a European data strategy should aim to improve European digital competitiveness, achieve transport safety, interoperability, compatibility, continuity, security of data usage, decarbonisation of transport and a reduction of the impact of transport on the environment, multimodality of transport, and the further development of digitisation, particularly electronic documents, in order to reduce unnecessary administrative burdens and costs for companies and citizens, while also creating quality employment;
- F. whereas data sharing in the transport sector is aimed at improving traffic management and thus the safety, sustainability, data minimisation and efficiency of both passenger and freight transport; whereas it is of the utmost importance to focus on sensitive issues such as data protection, privacy, consumer rights and the security of sensitive and

⁵ OJ C 162, 10.5.2019, p. 2.

⁶ Texts adopted, P8_TA(2019)0005.

⁷ Texts adopted, P9_TA(2020)0005.

⁸ Texts adopted, P9_TA(2020)0253.

personal data;

- G. whereas a European data area in the transport sector will only be successful if the EU manages to invest sufficiently in technologies and infrastructure facilities which will in turn strengthen Europe's technological independence in the data economy;
- H. whereas the Union has already begun taking steps in regulating how data should be used and stored in transport, through, inter alia, Regulation (EU) 2020/1056 on electronic freight transport information⁹, Directive (EU) 2019/1936 on road infrastructure safety management¹⁰, Regulation (EU) 2019/1239 establishing a European Maritime Single Window environment¹¹, and the proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2015/757 in order to take appropriate account of the global data collection system for ship fuel oil consumption data (COM(2019)0038);
- I. whereas a European data strategy should enhance the safety, sustainability and efficiency of European transport; whereas data should be made available in accordance with the principle 'as open as possible, as closed as necessary'; whereas data collection, sharing and usage must respect EU fundamental rights and guarantee personal data protection, especially with regard to purpose limitation and the exclusion of its use in sectors such as advertising, as well as ensuring the protection of sensitive data and the highest standards of cyber-security;
1. Welcomes the Commission's proposal to create a European single market for data, including a common European mobility data space; and recognises its huge economic potential; stresses that such a data space should yield benefits for sustainability in European transport, while providing advantages to European citizens, consumers, healthcare professionals, researchers and companies, both those that generate data and those that aggregate and process data, taking into account their competitiveness, business models and trade secrets, while preventing unauthorised access to sensitive data and ensuring cyber-security and full compliance with EU privacy and data protection laws;
 2. Establishes the ambition to make the EU the world leader in digital innovation, business digitalisation and smart data usage in the fields of transport, mobility and tourism;
 3. Underlines that future legislation must facilitate, rather than hinder, technological development, innovation and data portability, as well as empowering consumers and passengers and raising their awareness of their rights and digital responsibilities, so that they become fully-fledged participants in the mobility data space;
 4. Highlights that this European data space would be of particular interest to the European transport and logistics sectors, as it has the potential to enhance efficiency in the

⁹ Regulation (EU) 2020/1056 of the European Parliament and of the Council of 15 July 2020 on electronic freight transport information, OJ L 249, 31.7.2020, p. 33.

¹⁰ Directive (EU) 2019/1936 of the European Parliament and of the Council of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management, OJ L 305, 26.11.2019, p. 1.

¹¹ Regulation (EU) 2019/1239 of the European Parliament and of the Council of 20 June 2019 establishing a European Maritime Single Window environment and repealing Directive 2010/65/EU, OJ L 198, 25.7.2019, p. 64.

organisation and management of freight and passenger traffic flows, as well as to make better and more efficient use of infrastructure and resources throughout the Trans-European Transport Network (TEN-T);

5. Underlines, furthermore, that this European data space will also ensure improved visibility in the supply chain, the real-time management of traffic and cargo flows, interoperability and multimodality, as well as the simplification and reduction of administrative burdens across the TEN-T, in particular in cross-border sections;
6. Encourages the Commission to facilitate voluntary data sharing schemes; urges the Commission to enact measures to incentivise businesses to share their relevant data, possibly through a rewards-based system, with the objective of pooling vast sets of transport data and making it equally available for EU businesses to access, in particular for those businesses that, due to a lack of resources, have struggled to collect, store and make use of their own data and to access the data necessary to reap the benefits of technological advancements; stresses the need for contracts to set clear obligations and liabilities for data aggregators when it comes to accessing, storing, sharing and processing data in order to limit the misuse of such data;
7. Stresses the need to avoid service provider or technological lock-ins for publicly collected data; underlines the need for public funding programmes and public procurement to sufficiently build the capacity of Member States' public authorities for data storage and data processing, further facilitating business-to-government (B2G), government-to-government (G2G) and government-to-business (G2B) data sharing;
8. Notes the fact that a small number of digital platforms from third countries have gained a strong position in the EU market and been able to accumulate large amounts of data while operating with little formal, structured government oversight, in a patchwork of privacy laws and industry self-regulation in their country of origin; affirms, in the light of this situation, that European legislation must be devised to facilitate the emergence and growth of digital platforms within the EU, reducing the dependence on foreign platforms and increasing European competitiveness; deems it paramount in instances where appropriately defined systemic market imbalances are present, and where justified by overriding public interest, for the EU to set mandatory business-to-business (B2B) and B2G data sharing and data access obligations, in full respect of Union intellectual property rights (IPR) and trade secrets legislation, in order to ensure a level playing field with the aim of supporting the rise of EU businesses and SMEs in transport while also protecting citizens' privacy rights; calls for the correct implementation of the Open Space Directive¹², which put forward new rules on the sharing of data by public undertakings in transport;
9. Points out that in respect of data generated by the transport sector, ownership and rights of use must be clarified so as to ensure the freedom of exchange and processing of non-personal and anonymised data by public and private actors; stresses the need for legislative action to remove barriers to the exchange and re-use of data;

¹² Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information, OJ L 172, 26.6.2019, p. 56.

10. Takes note of the European Data Protection Board's¹³ guidelines on processing personal data for connected vehicles, which highlight the need to address the issue of differentiating between personal and non-personal data in such vehicles and to uphold the rule, enshrined in Article 5(3) of the ePrivacy Directive, that prior authorisation is required by the data subject for the accessing, storing and processing of data on terminal equipment; underlines the importance of legally distinguishing between personal and non-personal data to achieve legal certainty; calls on the Commission to issue specific guidelines on how the rules of Regulation 2016/679 should be applied to mixed data sets in the transport sector, guaranteeing full respect for data privacy;
11. Points out that the European transport sector, including its EU logistics value chain, and the tourism sector together generate a large amount of data of strategic and economic importance; stresses that the further digitalisation of these sectors, by creating further business models and new job opportunities, would enhance the growth, competitiveness and prosperity of the European transport and tourism sectors; stresses that the collection, sharing and use of data should aim at increasing transport safety and efficiency and reducing emissions, and that the exchange of data should be promoted while complying with the appropriate privacy and security safeguards;
12. Points out that the public and private sectors and digital platforms generate a vast amount of raw data, i.e. data that has not been processed for use, and non-personal data with the potential to serve the public good both within and outside the transport sector; calls on the Commission to incentivise the release of such data as open data and to develop a model for cooperation between stakeholders;
13. Acknowledges the benefits of data sharing for transport safety and sustainable and efficient transport management; stresses the importance, however, of taking strong and effective personal data protection and cyber-security measures to prevent misuse in the processing and sharing of data;
14. Highlights that the correct application of AI technology in transport can provide great opportunities in achieving interoperable, efficient, safe and zero-emission mobility, especially with regard to passenger safety, traffic management, lowering emissions and reducing sectoral costs;
15. Notes that current developments in AI, such as autonomous driving, connected vehicles and user identification technologies in the travel sector, pose some great risks that must be addressed and effectively managed so as to avoid adverse consequences for European travellers and consumers; underlines in this context the potential risks and the potential for violations of privacy rights in the context of biometric technology use; stresses that the use of public and private vehicles and transport infrastructure, together with tourism services, must continue to be possible for citizens without mandatory biometric recognition, with the exception of instances in which biometric recognition technology use is necessary for overriding reasons of public interest clearly defined in EU or Member State legislation;
16. Stresses that the human factor plays a crucial role and underlines the importance of

¹³ European Data Protection Board - Guidelines 1/2020 on processing personal data in the context of connected vehicles and mobility related applications.

ensuring that AI, robotics and related technologies remains firmly human-centric, enhancing human well-being and safety as well as the well-being of society and the environment, in reducing the risks that may be inherent in automated processes; calls on the Commission to consider the specific needs of the transport and tourism sectors and their various modes in its upcoming initiative on artificial intelligence and its application;

17. Underlines that competitive access to data is of the utmost importance for the development of AI, increasingly so in the transport and tourism sectors, and that the benefits of AI technology can only be enjoyed if vast amounts of high quality data sets are available to EU researchers and businesses, free from excessive regulatory burdens, especially when the AI application for which the data is used does not entail high risks;
18. Stresses that without a sector specific transport data strategy on how to process and store data and enhance its quality, the EU will fall behind in rolling out AI technology across the sector, and thus lose competitiveness;
19. Emphasises that a regulatory separation is needed between high- and low-risk AI based on how the data is used; notes that this separation must not be made on a sectoral basis, potentially hampering technological development in an entire sector, but instead on the means of application, in order to ensure precision in the regulatory scope and avoid unnecessary administrative burdens;
20. Points out the tangible legal uncertainty facing businesses and researchers using personal data and the dampening effect this has on innovation; asks the Commission to present guidance for pre-approved data usage procedures, as well as for pseudonymisation and anonymisation, in order to increase legal certainty for stakeholders dependent on data usage in the transport and tourism sectors; Maintains that national agencies should follow this EU guidance in exercising their authority, as a means of ensuring regulatory coherence and seamless data flows between Member States;
21. Underlines that legal certainty and a fair possibility to oversee the development of and comprehend data rules are key factors to unleashing the innovative potential of European businesses and researchers;
22. Stresses that the lack of interoperability and uniform standards significantly hampers the exchange and combination of transport and mobility data from different sources; points out that the rapid development of modern digital solutions for transport and tourism, such as autonomous vehicles and intelligent transport systems (ITS), is impossible without the establishment at European level of common, uniform and structured machine-readable data formats, which should be based on open recording standards; draws attention to the important role played by the European Multi-Stakeholder Platform on ICT Standardisation in this regard; calls on the Commission to ensure the development of common data standards in the transport sector to optimise interoperability, compatibility and continuity of data in the transport system;
23. Notes that the success of an EU data strategy, in particular for transport, relies on a sound industrial policy, with investments, both public and private, in new data infrastructure and the data economy aimed at building a resilient EU network that

promotes rapid data consumption and sharing, enhancing interoperability to the benefit of all stakeholders while better achieving European digital leadership;

24. Welcomes the European data strategy's proposal for compatible application programming interfaces and data formats, as format interoperability also ensures fair competition and a level playing field;
25. Highlights the central role of transport in ensuring the uninterrupted activities of other sectors such as health, food, and manufacturing; stresses, therefore, the need to build synergies among the different data spaces the Commission intends to devise, to remove bottlenecks, boost productivity and facilitate the free flow of goods and people; calls for improved coordination among Member States to facilitate the cross-border flow of data across sectors, through government and stakeholder dialogue, with the objective of establishing a common way of collecting data based on the principles of findability, accessibility, interoperability, and reusability;
26. Calls on the Commission to promote the Global Navigation Satellite System (GNSS) for heavy goods transport as an effective tool for monitoring lorries and ensuring goods traceability in real time; stresses that this would lead to lower costs in treatment and hospitalisation due to road accidents and provide greater road safety safeguards while ensuring the processing of data in real time (such as data on available parking areas); notes that the GNSS could help law enforcement with the prevention of illegal operations;
27. Notes that European companies operating in some third countries are increasingly faced with unjustified barriers and digital restrictions; welcomes the Commission's commitment to address such unjustified obstacles to international data flows in bilateral discussions and international forums, including the WTO;
28. Asks the Commission to explore the possibilities to facilitate data flows with strategically important third countries, in full compliance with the EU data protection *acquis*; notes, to this end, that data localisation requirements should be avoided where appropriate, that data must be covered by the EU's free trade agreements, and that efforts to conclude adequacy decisions with third countries must be accelerated;
29. Highlights that data sharing could improve the efficiency of traffic management and road safety for all transport modes; stresses the potential benefits of sharing data, such as real-time traffic avoidance navigation and real-time notifications for delayed public transport, in saving extra working hours, improving efficiency and avoiding bottlenecks; stresses the importance, however, of taking strong and effective cybersecurity measures to prevent misuse in the processing and sharing of data, and of finding common ground in addressing the relevant technical and legal issues, particularly in cross-border sections;
30. Points out that private operators in the transport sector generate a significant amount of the data created during the provision of services of general interest or the carrying out of tasks which are co-financed by public funds, such as public transport; stresses that, given its importance and high value for society, such data should be made available for re-use in the general interest, while guaranteeing a high level of personal data protection; asks the Commission to guarantee the proper use and protection of personal

data gathered from transport and tourism-related applications and services that includes the traceability of users, passengers and consumers of these applications;

31. Takes note of the work of the EU Agency for Network and Information Security (ENISA) in securing transport critical infrastructure; underlines the enormous potential of the Internet of Things (IoT) for transport, in guaranteeing better operational performance, increased security and efficient real-time service; highlights that next generation technologies in transport will store data close to where the data is generated (data at the edge), increasing cyber risks; calls for a coordinated EU approach in establishing common protocols for safe access to, and storage and processing of data across the transport sector;
32. Stresses that data sharing in the European transport sector could facilitate cross-border TEN-T infrastructure projects, which often face particular challenges as regards the coordination of permit granting procedures; highlights that a European data area that provides for an increase in data sharing and digitalisation could have a positive impact in the implementation of the SMART TEN-T Directive, and consequently on the implementation of EU streamlining measures in permit granting procedures, cross-border procurement procedures and other administrative procedures; highlights that this simplification of procedures is key to advancing in the realisation of the trans-European transport network in a more efficient way, reducing technical obstacles and administrative burdens, and thus reducing the possibility of delays and increased costs in TEN-T transport infrastructure projects;
33. Highlights that European partnerships could play an important role in advancing innovation and research in the transport sector's performance and safety; stresses that data sharing could be of particular importance for strengthening the role of European partnerships; highlights that European partnerships in the different modes of transport can have a very positive impact on the safe, sustainable and smart deployment of the TEN-T;
34. Stresses the need to regulate the exchange of data between public actors (G2G) in cross-border transactions, particularly in areas such as information on the usage history of second-hand vehicles; notes that the lack of a uniform cross-border system for the exchange of vehicle information has a negative impact on road safety and consumer protection against fraud;
35. Stresses the importance of data exchange for the creation of interoperable multimodal ticketing systems; highlights the particular need for through-ticketing in the railway sector and calls on the Commission to enable data sharing between different railway operators with the aim of facilitating international rail travel;
36. Stresses the importance of data exchange for new market entrants and innovation; highlights the benefits of data sharing in the transport sector, particularly with regard to ticketing systems, both for businesses and consumers;
37. Notes the importance of data exchange from vehicle to vehicle, transport infrastructure to transport infrastructure and vehicle to transport infrastructure, as well as between Member States; calls on the Commission to ensure interoperability between vehicles and transport infrastructure;

38. Calls on the Commission to swiftly finalise the deployment of the European Rail Traffic Management System (ERTMS) in the European railway network in order to reap the benefits of an interoperable signalling system;
39. Calls for a data strategy which aims to achieve sustainability for all transport modes; highlights the importance of railways as the transport mode that overall currently presents the lowest carbon footprint for both passenger and freight;
40. Calls for the implementation of transport legislation to be monitored, notably the Regulation (EU) 2020/1056 on electronic freight transport information, Directive (EU) 2019/1936 on road infrastructure safety management¹⁴ and Regulation (EU) 2019/1239 establishing a European Maritime Single Window environment, with a view to ensuring support for businesses, promoting digitisation and improving data exchange in business-to-administration (B2A), business-to-consumer (B2C), B2B, B2G and G2B settings;
41. Stresses the need for an EU legislative proposal which provides for a governance framework for access to data for public authorities and businesses, accessible also to technology developers; believes that allowing businesses and the public to reuse data could help address major societal challenges and boost economic development in Europe;
42. Proposes that, in the process of creating a regulatory framework for interoperable data exchange in rail transport, the Commission should revise Commission Regulation (EU) No 454/2011 of 5 May 2011 on the technical specification for interoperability relating to the subsystem ‘telematics applications for passenger services’ of the trans-European rail system¹⁵ and Commission Regulation (EU) No 1305/2014 of 11 December 2014 on the technical specification for interoperability relating to the telematics applications for freight subsystem of the rail system in the European Union¹⁶;
43. Stresses the need to devise intelligent, sustainable and affordable solutions for citizens and public authorities in the field of urban and interurban mobility, such as integrated ticketing systems, while bringing about a public transport system that is widely accessible, affordable, inclusive, smart, sustainable, efficient and non-discriminatory on the basis of race, identity or sexual orientation; notes, in this context, the importance of mobility as a service (MaaS) and of logistics as a service (LaaS), and their potential benefits, in line with the Paris Agreement and the climate targets of the European Green Deal; urges the Commission to uphold the principle of ‘data for the public good’, to take full account of data generated by active modes of transport and to facilitate the sharing of data sets with the aim of fuelling research and promoting the uptake of policies to boost mobility for all EU citizens; calls on the Commission, furthermore, to help enable alternative means of transport using digital platforms aimed at increasing the sharing of these means, inter alia, car-sharing, bike-sharing;
44. Highlights that the digitisation of documents in freight and passenger transport should aim to reduce costs and administrative burdens for businesses, public authorities and users, contributing to making these operations more efficient and sustainable, while

¹⁴ OJ L 305, 26.11.2019, p. 1.

¹⁵ OJ L 123, 12.5.2011, p. 11.

¹⁶ OJ L 356, 12.12.2014, p. 438.

ensuring that jobs are protected, with regular training, reskilling and upskilling creating a data literate workforce, spurring economic growth and job creation; highlights the importance of digital skills and innovative technologies for enhancing the efficiency and the user-friendliness of the European transport sector; calls for operators from all Member States, especially SMEs, to be enabled to freely provide transport services in the single market by easily verifying their identity and authorisations;

45. Stresses that traditional employment in today's transport sector will greatly diminish or evolve into new roles in which new skills will be required; highlights the need for programmes aimed at upskilling and reskilling workers in the transport sector, creating a data literate workforce while ensuring that worker's rights are protected;
46. Calls on the Commission to devote particular attention to the situation of start-ups and SMEs, and to design future legislation in such a way as to improve conditions for these undertakings;
47. Underlines the need to avoid introducing requirements that hinder start-ups and SMEs in the digital sector, with the aim of preserving a diversity of actors, ensuring satisfactory competition and preventing the emergence of monopolies;
48. Points out that existing directives, such as the ITS Directive, should not be weakened by an overarching set of rules and that facilitating a data-sharing environment will be crucial for the EU in the coming years; calls on the Commission to include data sharing, particularly in the field of ticketing and booking systems, in the upcoming revision of the ITS Directive;
49. Notes the importance for the tourism industry of collecting and analysing economic, environmental and socio-cultural data as a means to support decision-making by public and private agents, and to make it possible through the combination of official statistics and real-time and/or big data to customise products and services throughout the tourism industry ecosystem;
50. Calls for the creation of a European data space for tourism with the objective of helping all actors in the sector, especially SMEs, benefit from vast amounts of data when implementing policy and projects at the regional and local levels, facilitating recovery and boosting digitalisation;
51. Underlines the enormous benefits of data for the tourism sector, which will greatly facilitate the work of national, regional and local governments in devising policies for safeguarding the social, economic and environmental sustainability of tourism; notes the benefits of using data sets with regard to the circular economy, crowd management, customer experience and language service programmes for tourism;
52. Criticises the fact that the Commission has not included the tourism industry in the European data strategy, since this sector today heavily relies on consumers using digital platforms; calls on the Commission to incorporate the tourism sector in the governance framework for common data spaces, enabling the entire tourism industry ecosystem to fully commit to innovation, digitalisation and sustainability;
53. Points out that data can be an efficient element in the fight against gender bias and

encourages the use of unbiased data sets to improve security for women in transport;

54. Urges the Commission to devise policies in cooperation with Member States to promote STEM (science, technology, engineering and mathematics) education with the goal of developing talent in these fields; underlines the need to retain such talent, creating career paths in areas such as software engineering and data science, with a specific focus on gender equality in the sector, while financing research that leads to the creation of European know-how that is necessary to develop next generation technologies.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	26.1.2021
Result of final vote	+: 44 -: 2 0: 2
Members present for the final vote	Magdalena Adamowicz, Andris Ameriks, José Ramón Bauzá Díaz, Izaskun Bilbao Barandica, Marco Campomenosi, Ciarán Cuffe, Jakop G. Dalunde, Johan Danielsson, Andor Deli, Karima Delli, Anna Deparnay-Grunenberg, Ismail Ertug, Gheorghe Falcă, Giuseppe Ferrandino, Mario Furore, Søren Gade, Isabel García Muñoz, Jens Gieseke, Elsi Katainen, Elena Kountoura, Julie Lechanteux, Bogusław Liberadzki, Peter Lundgren, Benoît Lutgen, Elżbieta Katarzyna Łukacijewska, Marian-Jean Marinescu, Tilly Metz, Giuseppe Milazzo, Cláudia Monteiro de Aguiar, Caroline Nagtegaal, Jan-Christoph Oetjen, Philippe Olivier, Tomasz Piotr Poręba, Dominique Riquet, Dorien Rookmaker, Massimiliano Salini, Vera Tax, Barbara Thaler, István Ujhelyi, Petar Vitanov, Elissavet Vozemberg-Vrionidi, Lucia Vuolo, Roberts Zīle, Kosma Złotowski
Substitutes present for the final vote	Josianne Cutajar, Clare Daly, Roman Haider, Anne-Sophie Pelletier, Markus Pieper

FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

44	+
ECR	Tomasz Piotr Poręba, Roberts Zīle, Kosma Złotowski
ID	Marco Campomenosi, Roman Haider, Julie Lechanteux, Philippe Olivier, Lucia Vuolo
NI	Mario Furore
PPE	Magdalena Adamowicz, Cláudia Monteiro de Aguiar, Andor Deli, Gheorghe Falcă, Jens Gieseke, Benoît Lutgen, Marian-Jean Marinescu, Giuseppe Milazzo, Markus Pieper, Massimiliano Salini, Barbara Thaler, Elissavet Vozemberg-Vrionidi, Elżbieta Katarzyna Łukacijewska
Renew	Izaskun Bilbao Barandica, José Ramón Bauzá Díaz, Søren Gade, Elsi Katainen, Caroline Nagtegaal, Jan-Christoph Oetjen
S&D	Andris Ameriks, Josianne Cutajar, Johan Danielsson, Giuseppe Ferrandino, Bogusław Liberadzki, Isabel García Muñoz, Vera Tax, István Ujhelyi, Petar Vitanov
The Left	Clare Daly, Elena Kountoura
Verts/ALE	Ciarán Cuffe, Jakop G. Dalunde, Karima Delli, Anna Deparnay-Grunenberg, Tilly Metz

2	-
NI	Dorien Rookmaker
Renew	Dominique Riquet

2	0
ECR	Peter Lundgren
The Left	Anne-Sophie Pelletier

Key to symbols:

+ : in favour

- : against

0 : abstention

28.1.2021

OPINION OF THE COMMITTEE ON LEGAL AFFAIRS

for the Committee on Industry, Research and Energy

on a European strategy for data
(2020/2217(INI))

Rapporteur for opinion (*): Axel Voss

(*) Associated committee – Rule 57 of the Rules of Procedure

SUGGESTIONS

The Committee on Legal Affairs calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

General

1. Welcomes the Commission communication entitled ‘A European strategy for data’; stresses that the creation of a European data space is key to ensuring the EU’s global competitiveness, strategic digital autonomy and economic prosperity; points out that common regulatory provisions for data will enable the European Union to benefit effectively from access thereto and use thereof in various ways, such as: increasing productivity, developing market competitiveness, improving citizens’ health and well-being, environmental protection, transparent governance and effective public services;
2. Notes that the EU approach to digitalisation should be human-centred, value-oriented and based on the concept of the social market economy that respects human rights and democracy and contributes to addressing environmental and climate challenges; underlines that choosing a European approach to digitalisation should not mean that the EU becomes protectionist; stresses, therefore, that every third country market participant should be able to operate in the European data space as long as they comply with EU law and meet its technological, privacy, security and ethical standards, such as those on transparency, accountability, traceability, sustainability, social responsibility, good governance and on non-bias and non-discrimination, in particular regarding persons belonging to minority ethnic groups or racialised communities; stresses in this respect the necessity to create a level playing field between EU and third country market players and for the EU to work closely with third-country partners in view of establishing safe cooperation spaces at international level;
3. Believes that the data strategy can also help to establish the required legal certainty and technical infrastructures, while also giving an incentive to the European industry to make better use of the large amounts of available but unutilised data; notes that data access, sharing and re-use, as well as data analytics, are already essential today for many data-driven products and services, but will be absolutely crucial for the development and deployment of emerging technologies such as artificial intelligence (AI), the internet of things (IoT), fibre, 5G, 6G, quantum and edge computing, blockchain and high-performance computing; underlines that in particular AI systems would benefit from the increased availability and access to data brought about by tackling existing barriers and by promoting the use of modern technologies and services, such as web and API-based services for convenient and fast retrieval, browsing and processing of data;
4. Stresses that increasing the level of data exchange between private and public entities is an essential factor in creating new products and services, improving the quality of public services in all areas; underlines that the COVID-19 crisis is the most recent event that highlights the importance of access to data, cross-border data exchanges, as well as the quality and traceability of data; points out that the lack of common data bases and of interoperability between national systems are still compromising an effective European

strategy against the virus;

5. Highlights that it would be impossible to fully exploit the potential of the data economy without ensuring adequate levels of knowledge and skills in data management, including among law enforcement and judicial administration staff, as well as among workers from any other relevant areas; notes that digital skills play a crucial role in the process of digitalisation of justice systems in all Member States; stresses that this process faces many unnecessary barriers to the effective and secure collection, processing and exchange of digital data;

Better regulation principles

6. Believes that the new strategy should be implemented by means of a principle-based and innovation-friendly EU legal framework, which should be proportionate and seek to lower unnecessary current administrative burdens for research, civil society, small and medium-sized enterprises (SMEs) and start-ups, while safeguarding the best interests of EU citizens and allowing them to benefit and be involved; believes that this framework should also be combined with concrete measures, private-public guidance, codes of conduct and programmes, robust investments, with making best use of existing exceptions and derogations provided for by the law, and, if necessary, new sector-specific laws; highlights that in order to unlock the potential of digital technologies, it is also important to remove unnecessary existing legal barriers, so as not to hamper the growth of or innovation in the Union's developing data economy;
7. Draws attention to the importance of avoiding regulatory fragmentation, which can pose a major risk to the creation and development of a common European data space; notes that a number of Member States have already started to adopt rules on data use and processing; urges the Commission therefore, prior to any legislative initiative, to perform an in-depth evaluation and mapping of current legislation at both national and Union level in order to assess whether adjustments or additional requirements are needed to support the EU data economy, evaluate and address its ecological footprint, notably its carbon footprint, which is expected to double by 2025, and safeguard fair competition for all affected actors and to avoid legal overlaps with potential upcoming legislation implementing the data strategy;
8. Stresses the need for consultations and impact assessments prior to legislative proposals in order to identify possible negative consequences for market participants, notably SMEs and start-ups; and for civil society; maintains that, since many citizens and entities such as SMEs and start-ups often lack the necessary know-how and human and financial resources, the Commission should continue to develop initiatives such as the European Data Portal and the Support Centre for Data Sharing to help them to act effectively on data access, sharing and use;

Data access, data sharing and rights to data

9. Stresses the key importance of fostering access to data while fully respecting the rules on the protection of personal data for EU businesses, especially for SMEs and start-ups, for their competitiveness on the global stage, and also for research and civil society; considers that increased voluntary data sharing between stakeholders based on fair and transparent contractual arrangements would help to achieve this goal; notes that voluntary data sharing should be enabled by a solid legislative framework that ensures

trust and encourages businesses to make data available to others, particularly across borders; adds that this framework should support investments in data sharing projects, including through balanced public-private partnerships, and may be complemented, where proportionate and in line with State aid rules, by incentives in the form of subsidies and tax breaks; notes, in this regard, that the current biggest digital market participants have all benefited from support from the third countries where they are based, such as the USA and China, through tax incentives or subsidies;

10. Asks the Commission and Member States to ensure that the new data strategy will contribute to a speedy implementation of the Directive on Open Data making public sector and publicly funded data re-usable; considers that to facilitate this Member States should be encouraged to share best practices;
11. Calls on the Commission to evaluate the impact of the prerequisite of requiring open access to publicly funded research data on research institutions;
12. States that mutually beneficial, fair, simple, intelligible, secure, interoperable and affordable voluntary data sharing agreements between companies from the same supply chain and different sectors which comply with existing rules on the protection of personal data, will further accelerate the development of the EU data economy; points out that these agreements may entail different ways to reward data providers, including by setting up ‘give and take schemes’ or by incentivising their participation; calls on the Commission to further reflect on the concept of data value and reward schemes, as well as to better define and lay down the scope of ‘data altruism’; calls for Member State public procurement processes and funding programmes to include data access and interoperability requirements; recalls that data exchange can only take place in accordance with the legal framework applicable to the protection of personal data and the fundamental rights of data providers;
13. Calls on the Commission to assess the possibility of defining fair contractual conditions with the aim of addressing imbalances in market power and between the parties concerned, as well as to monitor any market failures and to take adequate action, if and where necessary, namely to tackle potential cases of abuse of dominant position; underlines that a European data space will require stakeholders to be allowed to cooperate closely with each other; considers therefore that more guidance for businesses on competitiveness and competition law matters from the Commission is needed, and that safe harbours as well as block exemptions could be considered as an option for fostering access and cooperation on data sharing and pooling for private and public purposes;
14. Considers that questions of possible ownership, if and when raised, and control of access to data are often out of reach for SMEs and start-ups while having an high economic impact; calls on the Commission to take into due account these concerns and stresses that, to solve this issue, public and private actors should have access to platform environments where they could pool their data in conditions acceptable for data providers; underlines that these environments would lower the risks and costs related to data sharing and pooling, including by bearing the costs of legal, security, technical and compliance issues within a centralised environment;

15. Welcomes the results of the Commission's cooperation with the Member States on increasing the supply of high value datasets in the common European data space on the basis of Directive 2019/1024 on open data and the re-use of public sector information; encourages the Commission to extend, on the basis of a cost-benefit analysis, the list of data sets made available free of charge for the re-user without or with minimal legal restrictions on use and re-use beyond the possibility to require acknowledgement of authorship, to further areas with the highest potential for use in innovative technologies, such as AI; calls on Member States to ensure access to public information and high quality data held by public authorities;
16. Recommends further strengthening interoperability and the establishment of consensus-based, industry-led common cross-sector standards, particularly for data quality, authenticity and integrity, in order to guarantee that the movement of data between different machines and entities can take place in an innovative manner; notes that economic entities with significant market power that operate across sectors should not be able to fill the gaps in the establishment of standards on their own; highlights the importance of open, non-proprietary standards for ensuring a high degree of interoperability and involvement of other relevant stakeholders, including international non-profit fora;
17. Calls for European guidelines for common and structured data formats, which should be machine-readable and based on open recording standards; notes in this regard, further, the need for a coherent definition of machine-to-machine communication, which is essential for the dissemination, implementation and development of solutions using IoT technology, and for strengthening the potential of edge computing;
18. States that open source technology can also help to promote mutually beneficial collaboration between businesses while guaranteeing transparency and public scrutiny, thereby providing the high level of trust needed to engage in data sharing; encourages the European to take it more into consideration for their plans to establish European data spaces;
19. Stresses that, where a risk assessment so indicates, the implementation and enforcement of the proposed new framework on trustworthy data governance might require access to code and data by competent authorities, when strictly necessary and in full respect of Union legislation on data protection, privacy, intellectual property rights and trade secrets, in the case of certain high-risk technologies such as applications used by government authorities on citizens;
20. Declares that a distinction between the legal regimes concerning personal and non-personal data is essential, as not sharing any commercial datasets is often the only option for businesses due to the complexity of the current rules and the considerable legal uncertainty as to whether personal data is sufficiently depersonalised; notes that this distinction may be difficult to draw in practice given the existence of mixed data, for which the Commission should therefore come up with specific guidelines that explain how to process this type of data lawfully; emphasises at the same time that current Union legislation mandates that, where non-personal data and personal data are inextricably linked, data protection rights and obligations apply in full to the whole mixed dataset, regardless of the comparative amount of personal data in relation to non-

personal data; underlines that the General Data Protection Regulation (GDPR) does not apply to the processing of information that does not relate to an identified or identifiable natural person, or personal data rendered anonymous; believes that the Commission should promote further research into anonymisation techniques, clarify their legal base, define specific criteria for their use, and encourage their uptake; notes that the Commission should thereby also reflect upon the shift from the sharing of data to the sharing of computation, while ensuring that no personal data, or data allowing for the reconstruction of personal information, are shared if they contain the computation results, application programming interfaces APIs as a means to abstract the access to personal data without sharing it, the use of synthetic data that provide the characteristics of a complete data set without containing real personal data, and data sandboxes that work on separate databases without containing real personal data;

21. Calls for an increase in the availability of raw and anonymised data in business-to-government and business-to-business communication, particularly in the case of data which have been generated in connection with the provision of services of general interest, or which are of public interest or connected with the performance of publicly co-financed tasks; stresses that because of their importance and high value for society, this data should be made available and reusable for the general good while respecting the principles of personal data protection;
22. Stresses the need to streamline and regulate the exchange of data between public entities (G2G, government-to-government) in cross-border relations; notes that the gradual expansion of the scope and scale of data exchange between public institutions, for instance in the area of justice, can lead to a more effective fight against crime and more efficient handling of cross-border disputes in accordance with the rules on the protection of personal data, fundamental rights and the rule of law;
23. Emphasises the importance of clarifying the contractual rights of individuals and businesses who contribute to the creation of data using machines or other devices, and in particular the rights to access data, to port them, to urge another party to stop using data, to correct them or to delete them, while also identifying their holders and delineating the nature of such rights; notes that consideration can be given to the possibility of the free software community using data and producing software for the general public without automatically becoming subject to obligations specifically designed for businesses producing and using data in a professional capacity;
24. Stresses the importance of cloud services, which are an essential tool for data collection and processing, in fully exploiting the potential of the digital economy; underlines that the new regulations should ensure the transferability of data between different service providers, as well as taking into account the problem of securing and recovering data from the cloud provider when it ceases these activities;
25. Recalls the current general data protection regime as stipulated in Regulation 2016/679/EU on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (the GDPR); highlights the need to revise the ePrivacy Directive with the aim of creating a level playing field for EU companies with regard to the acquisition and use of data;

Liability for data

26. Believes that although the current liability principles and technology-neutral liability rules are, in general, suitable for the digital economy and most emerging technologies, there are nevertheless some cases, such as those concerning operators of AI systems, where new or additional liability rules are necessary in order to enhance legal certainty and to provide for an adequate compensation scheme for the affected person in case of unlawful use of data;
27. Urges the Commission to conduct a comprehensive assessment of similar potential legal gaps in relation to liability for data, such as for AI- and non-AI-caused damage resulting from deficiencies in or the inaccuracy of data sets, and to evaluate possible adjustments to the current liability systems before coming up with new legislative proposals;
28. Emphasises the need for traceable and, to the extent possible under Union law, publicly available training data for algorithms; considers that in areas such as health, liability must ultimately lie with a natural or legal person;

Intellectual property rights, trade secrets and the Database Directive

29. Stresses that the implementation of the European Data Strategy must strike a balance between promoting the wider use and sharing of data and protecting intellectual property rights (IPR), trade secrets, but also fundamental rights such as privacy; underlines that data used for the training of AI algorithms sometimes relies on structured data such as databases, copyright-protected works and other creations enjoying IP protection which may not usually be considered as data;
30. Calls for prior impact assessments to be conducted by the Commission on whether the data-driven digital economy requires any changes or adjustments to the current legal framework for IPR in order to promote innovation and the uptake of new digital technologies; welcomes the Commission's intention to revise the Database Directive and to further clarify the application of the Directive on the protection of trade secrets;
31. Notes that the use of copyright-protected content as data input needs to be assessed in the light of the current rules and the 'text and data mining' exception provided for by the Copyright Directive, as well as related rights in the Digital Single Market; calls on the Commission to issue guidance on how reserving the rights will be made publicly available for all in a centralised way;

Jurisdiction, applicable law and procedural law

32. Calls on the Commission to take measures to ensure that the application of legislation from foreign jurisdictions, such as the US CLOUD Act or 2017 China's National Intelligence Law, does not undermine the fundamental rights of Union citizens or lead to legal uncertainty and disadvantages for Union businesses; points out recent jurisprudence by the Court of Justice of the European Union in this regard;
33. Stresses that common rules are needed on the lawful use, access to or sharing of data in order to accelerate the development of innovative data spaces within the EU, and to enable our businesses to compete worldwide;

34. States that the Commission should further evaluate changes to the current legal frameworks in civil procedure law in order to reduce existing investment obstacles for private investors; calls on the Commission, in this regard, to promptly and adequately follow up on Parliament's resolution on common minimum standards of civil procedure¹.

¹ OJ C 334, 19.9.2018, p. 39.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	27.1.2021
Result of final vote	+: 22 -: 1 0: 0
Members present for the final vote	Manon Aubry, Geoffroy Didier, Pascal Durand, Ibán García Del Blanco, Jean-Paul Garraud, Esteban González Pons, Mislav Kolakušić, Sergey Lagodinsky, Gilles Lebreton, Karen Melchior, Jiří Pospíšil, Franco Roberti, Marcos Ros Sempere, Ernő Schaller-Baross, Stéphane Séjourné, Raffaele Stancanelli, Marie Toussaint, Adrián Vázquez Lázara, Axel Voss, Marion Walsmann, Tiemo Wölken, Lara Wolters, Javier Zarzalejos
Substitutes present for the final vote	Caterina Chinnici, Heidi Hautala, Bettina Vollath

FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

22	+
PPE	Geoffroy Didier, Esteban González Pons, Jiří Pospíšil, Ernő Schaller-Baross, Axel Voss, Marion Walsmann, Javier Zarzalejos
S&D	Ibán García Del Blanco, Franco Roberti, Marcos Ros Sempere, Lara Wolters, Tiemo Wölken
Renew	Pascal Durand, Karen Melchior, Stéphane Séjourné, Adrián Vázquez Lázara
ID	Jean-Paul Garraud, Gilles Lebreton
Verts/ALE	Heidi Hautala, Marie Toussaint
ECR	Raffaele Stancanelli
NI	Mislav Kolakušić

1	-
The Left	Manon Aubry

0	0

Key to symbols:

+ : in favour

- : against

0 : abstention

17.02.2020

OPINION OF THE COMMITTEE ON CIVIL LIBERTIES, JUSTICE AND HOME AFFAIRS

for the Committee on Industry, Research and Energy

on a European strategy for data
(2020/2217(INI))

Rapporteur for opinion: Marina Kaljurand

(*) Associated committee – Rule 57 of the Rules of Procedure

SUGGESTIONS

The Committee on Civil Liberties, Justice and Home Affairs calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

- having regard to the Charter of Fundamental Rights of the European Union (‘the Charter’),
- having regard to Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (GDPR)¹,
- having regard to Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA (Law Enforcement Directive, LED)²,
- having regard to Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (ePrivacy Directive)³,
- having regard to Regulation (EU) 2018/1807 of the European Parliament and of the

¹ OJ L 119, 4.5.2016, p. 1.

² OJ L 119, 4.5.2016, p. 89.

³ OJ L 201, 31.7.2002, p. 37.

Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union⁴,

- having regard to Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information (Open Data Directive)⁵,
- A. whereas Article 8(1) of the Charter and Article 16(1) of the Treaty on the Functioning of the European Union (TFEU) provide that everyone has the right to the protection of personal data concerning them;
- B. whereas the Charter provides that everyone has the right to freedom of expression, including the freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers;

General principles for data governance

1. Calls on the Commission to base its data strategy on the principles of conferring well-being on citizens, empowering them to take meaningful decisions concerning the data produced by them or relating to them, to place the interests and rights of individuals at the very centre of the policy environment, in particular respect for human dignity and integrity, and the protection of their privacy and personal data; urges the Commission, therefore, to be extremely vigilant in its design of data governance and access structures for Europe; calls for the European Data Innovation Board to consist of equal representation from industry, NGOs, consumer groups and academia;
2. Emphasises, especially in the context of data flows, that transfers of personal data to other jurisdictions must always abide by the provisions of the GDPR or of the LED, the Charter and other relevant Union legislation, and take into account the recommendations and guidelines of the European Data Protection Board (EDPB) prior to any transfer, and that such transfers can only take place if there is a sufficient level of protection of personal data; calls on the Commission to continue its efforts to ensure safe data flows with like-minded global partners, based on shared values and full respect for fundamental rights; expresses its pride in the fact that the EU took a firm stance by adopting the GDPR and strengthening data protection rules that reinforce fundamental rights;
3. Stresses that personal data is being generated at an exponential rate and underlines the economic value of personal data, which is important for growth and development; recalls that the processing of personal data, including its transfer, must always comply with the Union data protection *acquis*, and that any future sectoral or fit-for-purpose legislation needs to respect them; emphasises, in this respect, the need to draw clear boundaries between the treatment of personal and of non-personal data in the data spaces outlined by the Commission, especially in the case of smart connected products and wearables; notes that this distinction may be difficult to draw in practice, given the existence of mixed data sets; recalls, in this context, that data sets in which different types of data are inextricably linked, are always treated as personal data, including in

⁴ OJ L 303, 28.11.2018, p. 59.

⁵ OJ L 172, 26.6.2019, p. 56.

cases where the personal data represents only a small part of the data set; considers that much clearer guidance should be provided for businesses on the utilisation of mixed data sets, and that the use of privacy-protecting technology should be encouraged to increase legal certainty for businesses, inter alia through clear guidelines and a list of criteria for effective anonymisation; stresses that the control of such data always lies with the individual and should be automatically protected; calls on the Commission to expand its data strategy so as to ensure that European citizens are enabled and empowered to benefit from their personal data;

4. Warns of the potential for the misuse of personal data, or of the content and metadata of electronic communications within the scope of the ePrivacy Directive; stresses that, in line with the GDPR's principle of purpose limitation, the free sharing of data must be limited to non-personal data, for example, industrial or commercial data, or securely, effectively and irreversibly anonymised personal data, including in the case of mixed data sets; calls on the Commission to take children into account in its data strategy;
5. Notes how irresponsible, illegal or unethical sharing practices, ecosystems and data processing encourage problematic behaviour; is concerned about the proliferation of such practices and underlines how these types of business models can have very intrusive and negative effects, not only on individuals and their fundamental rights, but also on societies as a whole; stresses that such practices and strategies would undermine citizens' trust in EU data systems; calls, therefore, on the Commission to ensure that the leading role the EU is set to achieve in the data economy is based on the solid legal foundations laid by the Union data protection *acquis*;
6. Calls on the Commission to ensure that the concepts of 're-use' of data and 'data altruism' are compliant with EU data protection principles, in particular purpose limitation, which requires that data is processed for 'specified, explicit and legitimate purposes';
7. Highlights the ever-increasing importance of the supervisory work of the National Data Protection Supervisory Authorities (DPAs) and calls for the Member States to ensure their full independence and their adequate funding and resourcing; recalls that any measures to be developed in the proposed European Data Governance Act and other future proposals that involve processing of personal data are subject to the supervision of data protection authorities pursuant to the GDPR, in order to ensure that innovation also considers the impact on citizen's rights; calls for the acts to build upon and align with existing legislation, in particular the GDPR;
8. Calls on the Commission to make full use of available Union funding for the development of privacy-protection products and services in the EU for the data strategy to deliver benefits to EU citizens and promote innovation that respects and promotes fundamental rights;
9. Highlights, in particular, the relevance of non-personal data held and produced by governments and the public sector; calls on Member States to promote the creation of non-personal data based on the principle of 'open by design and by default' to facilitate access to and re-use of public sector information;

Data spaces

10. Underlines that the trust of individuals can only be gained by safe and secure data spaces that fully respect fundamental rights, thereby ensuring legal certainty and the uptake of services, as well as competitive advantages and stable business models for companies; underlines that such data spaces should be developed, established and used in line with the principles of data protection by design and by default and that they should implement strong security measures;
11. Stresses that Common European Data Spaces for public administrations, specifically concerning data use for improving law enforcement access to data in the EU, must fully respect EU law, including the principles of necessity and proportionality, and the protection of privacy and personal data, the presumption of innocence and procedural rules; highlights the potential to improve the quality of law enforcement and to counter bias where it may exist, by gathering reliable data and making them available to the public, civil society and independent experts; recalls that any access by law enforcement to public or privately held personal data in data spaces needs to be based on EU and Member State law, be strictly limited to what is necessary and proportionate, and be coupled with adequate safeguards; underlines that the use of personal data and artificial intelligence (AI) by public authorities should be allowed only with strict democratic oversight and with additional safeguards against their misuse;
12. Recalls that, regardless of these being considered high-value data sets, the processing of special categories of personal data under Article 9 of the GDPR (such as biometric, genetic and health data), including in the context of the Common European Health Data Space, is in principle prohibited, with certain strict exceptions, which involve specific processing rules and always include the obligation to conduct a data protection impact assessment; highlights the potentially disastrous and irreversible consequences of wrongful or unsecure processing of sensitive data for the individuals concerned; recalls that data sets can recreate and reinforce existing biases in society; warns of the potential for discrimination and misuse;
13. Points out that the most efficient way of reducing bias in data-rich systems is by ensuring that the maximum amount of non-personal data is available to train them, for which it is necessary to limit any unnecessary barriers to text-and-data mining, and to facilitate cross-border use; calls for the best use to be made of the existing exceptions and derogations provided for by the law when using data protected by intellectual property rights in order to make AI and machine learning less biased and more in line with ethical standards, with the ultimate goal of better serving humanity;

Data rights – empowering the individual

14. Underlines the limitations of certain types of AI applications designed for the judiciary, so-called legal tech; highlights, in this context, the potentially grave adverse consequences, specifically in the area of law enforcement and justice, when individuals fail to consider the possibility of AI-based results being incorrect, incomplete, irrelevant or discriminatory; recalls that the final legal decisions need to be made at the sovereign discretion of judges on a case-by-case basis; notes that data exchanges between Member States in the areas of justice and home affairs are important in terms of strengthening

the security of European citizens and that appropriate financial resources should be allocated in this regard; however, stresses that stronger safeguards are needed in terms of the way justice and home affairs agencies process, use and manage personal information and data in their proposed data spaces;

15. Highlights the asymmetry between those who employ AI technologies and those who interact with and are subject to them; is concerned about platforms and services that lock in their users to that specific platform, thereby amplifying their dominant market power and their ability to profile their users, creating extremely invasive profiles of their users; highlights that the technical competence of the vast majority of individuals to understand and navigate the complexity of the data ecosystems in which they are embedded is insufficient, as is their ability to identify what data, including metadata, they actually generate, especially in real time, for example through the use of connected appliances and wearables;
16. Stresses that individuals should have full control of their data and be further assisted in enforcing their data protection and privacy rights regarding the data they generate; underlines the right to data portability and the data subject's access, rectification and erasure rights provided for by the GDPR; calls on the Commission and the Member States to further improve individuals' access to effective remedies under the GDPR and guarantee the interoperability and data portability of digital services and, in particular by application programming interfaces (APIs), enabling a user to interconnect between platforms and increasing their options to choose between different kinds of systems and services; expects future proposals to support the enjoyment and meaningful exercise of these rights;
17. Is of the opinion that there is great potential for data use for research purposes in the public interest; calls for effective anonymisation, and points out that, where a research purpose does not allow for anonymisation, pseudonymisation should be deployed; highlights that individuals should not be pressured to share their data, and that decisions must not be tied to direct benefits or advantages for those who choose to allow the use of their personal data;
18. Underlines also that any use of aggregated personal data from social media sources needs to either comply with the GDPR, or truly be irreversibly anonymised; calls on the Commission to promote best practices for anonymisation techniques, and to further promote research into the process of reversing anonymisation and how to counter it; calls on the EDPB to update its guidance in this regard; expresses, however, caution against reliance on anonymisation as a technique to protect privacy, given that full anonymisation is practically impossible to achieve in certain cases;

Cybersecurity and secure information

19. Emphasises the importance of IT security and the resilience of IT systems to ensure the security of personal data and to prevent the misuse of data; highlights the importance of cybersecurity based on EU and international law and the agreed norms of responsible state behaviour in cyberspace; calls on Member States, together with the recently strengthened European Union Agency for Cybersecurity, to take coordinated action; calls on the Commission to propose adequate precautionary measures such as requiring

the use of state-of-the-art IT security and encryption, the use of a ‘security by design’ approach, and a strong cybersecurity certification scheme through the EU cybersecurity certification framework, to increase trust in and the security and safety of data spaces;

20. Welcomes the Council conclusions of October 2020 on the development of a Union-wide framework for secure public electronic identification (e-ID); strongly believes that a framework of trusted electronic identification is fundamental to ensuring secure access to digital public services, to carrying out electronic transactions in a safer way, and to the reduction of excessive data collection by enterprises; notes that currently only 15 Member States have notified an electronic identity scheme for cross-border recognition in the framework of Regulation (EU) No 910/2014 (‘the eIDAS Regulation’)⁶; calls on the Commission to expand on the framework for secure public e-ID to provide European citizens with the proper tools to be able to access services where unambiguous identification is required; recalls, in this regard, the importance of allowing for anonymity in the use of online services, whenever possible; believes that legislation should not unnecessarily require identification since anonymity effectively prevents unauthorised disclosure, identity theft and other forms of abuse of personal data collected online, in particular where vulnerable groups rely on it for their protection online;²¹. Notes that for some online services, in order to be fully equivalent to offline services, unambiguous identification of their users is required; notes that such online identification can be improved by enforcing the eIDAS Regulation’s cross-border interoperability of electronic identifications across the European Union;
22. Underlines that any e-ID based sign-in or verification option must be developed in accordance with the data minimisation principle of the GDPR, so that the service or platform providing e-ID sign-in or verification does not receive information about the third party the user is signing in to, and that any other data gathered is kept to what is necessary; underlines that sign-in or verification services should not be used to track users cross-site; recalls that Member States and Union institutions have to guarantee that electronic information remain secure.

⁶ Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC, OJ L 257, 28.8.2014, p. 73.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	4.2.2021
Result of final vote	+: 60 -: 3 0: 4
Members present for the final vote	Magdalena Adamowicz, Malik Azmani, Fernando Barrena Arza, Pietro Bartolo, Nicolas Bay, Vladimír Bilčík, Vasile Blaga, Ioan-Rareș Bogdan, Patrick Breyer, Saskia Bricmont, Joachim Stanisław Brudziński, Jorge Buxadé Villalba, Damien Carême, Caterina Chinnici, Clare Daly, Marcel de Graaff, Anna Júlia Donáth, Lena Düpont, Cornelia Ernst, Laura Ferrara, Nicolaus Fest, Jean-Paul Garraud, Maria Grapini, Andrzej Halicki, Balázs Hidvéghi, Evin Incir, Sophia in 't Veld, Patryk Jaki, Lívia Járóka, Marina Kaljurand, Assita Kanko, Peter Kofod, Łukasz Kohut, Moritz Körner, Alice Kuhnke, Jeroen Lenaers, Juan Fernando López Aguilar, Lukas Mandl, Nuno Melo, Roberta Metsola, Nadine Morano, Javier Moreno Sánchez, Maite Pagazaurtundúa, Nicola Procaccini, Emil Radev, Paulo Rangel, Terry Reintke, Diana Riba i Giner, Ralf Seekatz, Michal Šimečka, Birgit Sippel, Martin Sonneborn, Tineke Strik, Ramona Strugariu, Annalisa Tardino, Dragoș Tudorache, Milan Uhrík, Tom Vandendriessche, Bettina Vollath, Jadwiga Wiśniewska, Elena Yoncheva, Javier Zarzalejos
Substitutes present for the final vote	Anne-Sophie Pelletier, Domènec Ruiz Devesa, Isabel Santos, Tomáš Zdechovský

FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

60	+
PPE	Magdalena Adamowicz, Vladimír Bilčík, Vasile Blaga, Ioan-Rareş Bogdan, Andrzej Halicki, Balázs Hidvéghi, Livia Járóka, Jeroen Lenaers, Lukas Mandl, Nuno Melo, Roberta Metsola, Nadine Morano, Emil Radev, Paulo Rangel, Ralf Seekatz, Javier Zarzalejos, Tomáš Zdechovský
S&D	Pietro Bartolo, Delara Burkhardt, Caterina Chinnici, Maria Grapini, Evin Incir, Marina Kaljurand, Łukasz Kohut, Juan Fernando López Aguilar, Javier Moreno Sánchez, Birgit Sippel, Bettina Vollath, Elena Yoncheva
Renew	Malik Azmani, Anna Júlia Donáth, Sophia in 't Veld, Moritz Körner, Maite Pagazaurtundúa, Michal Šimečka, Ramona Strugariu, Dragoş Tudorache
Verts/ALE	Patrick Breyer, Saskia Bricmont, Damien Carême, Alice Kuhnke, Terry Reintke, Diana Riba i Giner, Tineke Strik
ID	Nicolaus Fest, Peter Kofod, Annalisa Tardino
ECR	Joachim Stanisław Brudziński, Jorge Buxadé Villalba, Patryk Jaki, Assita Kanko, Nicola Procaccini, Jadwiga Wiśniewska
The Left	Pernando Barrena Arza, Cornelia Ernst, Anne-Sophie Pelletier
NI	Laura Ferrara, Martin Sonneborn

3	-
ID	Marcel de Graaff
The Left	Clare Daly
NI	Milan Uhrík

4	0
S&D	Domènec Ruiz Devesa
ID	Nicolas Bay, Jean-Paul Garraud, Tom Vandendriessche

Key to symbols:

+ : in favour

- : against

0 : abstention

20.10.2020

OPINION OF THE COMMITTEE ON AGRICULTURE AND RURAL DEVELOPMENT

for the Committee on Industry, Research and Energy

on a European strategy for data
(2020/2217(INI))

Rapporteur for opinion: Juan Ignacio Zoido Álvarez

SUGGESTIONS

The Committee on Agriculture and Rural Development calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

1. Welcomes the fact that the Commission's communication entitled 'A European strategy for data' and its white paper on Artificial Intelligence highlight agriculture as a strategic sector of public interest for the digital era, and stresses the fact that the agri-food sector has been further proven to be a sector of high strategic importance during the ongoing COVID-19 pandemic; recognises the potential of digital technologies for rural areas and proposes the development of a common European agriculture data space; insists, in this regard, on the need for greater financial support to boost the use of digital technologies in the EU agricultural sector and for greater use of these technologies to be made in the control systems; calls for further cooperation between Member States on measures to digitalise agriculture;
2. Commends the 2019 Declaration of cooperation on 'A smart and sustainable digital future for European agriculture and rural areas' which recognises the potential of digital technologies and the use of data to help tackle the important and urgent economic, social, climatic and environmental challenges facing the EU's agri-food sector and rural areas;
3. Recalls the potential of data to increase sustainability and competitiveness across the entire agri-food and forestry chains, reducing risks in agricultural and forestry production and to farmers' and forest owners' income; emphasises that wide access to data contributes to the development of innovative and sustainable techniques, such as precision agriculture and precision livestock farming, which will help use resources more efficiently and achieve the objectives of the farm to fork strategy; supports research and development in the agri-food sector following the guidelines of the horizon

Europe programme, and notes the importance of the accessibility of innovative and sustainable techniques to all levels of the sector;

4. Highlights the role of data in improving the information made available to consumers, through the traceability and use of digital labels for agri-food products, its role in reducing food waste, as well as in enabling the efficient and timely use of resources in farm and forest production, potentially contributing to a more resilient and sustainable agri-food sector with major benefits for consumers, producers and the environment; in this context, highlights the role of data in the successful implementation of the farm to fork strategy;
5. Recalls the importance that digital technologies have had in achieving reductions in greenhouse gas (GHG) emissions in EU agriculture while increasing its overall productivity; considers that innovation, new technologies and big data in particular can make a significant contribution to the ‘Green Deal’ and that they have the potential to bridge the gap between current and future environmental and social development targets while maintaining food security and the agri-food sector’s competitiveness; notes that high quality data can play a role in reducing the agri-food sector’s ecological footprint and achieving several of the Sustainable Development Goals defined by the United Nations General Assembly;
6. Urges national and/or regional authorities to enhance the development of data-processing and data-based tools for sectors such as beekeeping, which are highly dependent on natural and human-driven external factors, and for which precise and up-to-date data is crucial;
7. Recalls that the EU is a world leader in terms of animal welfare standards; urges, in this context, Member States’ authorities to improve data collection and processing with the aim of providing faster and better medical diagnosis and treatment of livestock animals such as, cattle, equidae, small ruminants, poultry and bees among others, also with the aim of decreasing antimicrobial resistance (AMR) among them;
8. Stresses the need for support measures to narrow the gap between urban and rural areas’ access to business opportunities and services, including guaranteeing affordable, secure and widespread access to high-speed broadband for all rural areas; highlights that these broadband services enable the use of data-driven technology including the development of ‘smart farming’ or ‘e-farming’, which have the potential to create quality jobs and further economic opportunities, and will facilitate generational renewal in areas that are struggling with depopulation, while strengthening gender equality; calls for the empowerment of farmers and for farmers’ access to digital services to be supported as a priority by the future digital Europe programme and the Connecting Europe Facility, and supports the setting up of digital innovation hubs at regional level, close to the end users and giving special support to SMEs, in order to speed up the development and uptake of digital innovations, and to create a regional innovation ecosystem; expresses its support for the inclusion of smart villages incentives and/or measures in the next multiannual financial framework (MFF) through programmes such as the rural development programmes (RDPs);
9. Considers it essential that the Commission continues to increase research and

development (R&D) in relation to artificial intelligence tools, digital technologies, infrastructure, business models and short supply chains focused on the agri-food and forest sectors supported by EU tools, including, but not limited to, earth observation tools such as Copernicus and Galileo Data and Information Services and Data and Information Access Services (DIAS);

10. Underlines the importance of promoting the development of infrastructure and devices capable of processing agricultural data, as well as targeted investments to promote awareness raising, the improvement of digital literacy, and digital skills to support farmers, especially small farmers, SMEs in the agri-food sector and rural communities in the digital transition; emphasises the need for farm advisors to be given regular training to enable a better uptake of digital technologies by farmers; highlights that a strong agricultural education system in smart technologies is key; supports the creation and sharing of best practices to promote innovation;
11. Calls for the reinforcement of cybersecurity and emphasises the need for a robust legal framework that safeguards farmers' and forest owners' right to data sovereignty and that prevents distortion of competition and the deterioration of farmers' and forest owners' autonomy, while supporting the development of a data-agile economy; calls on the Commission to develop a framework for the sharing and analysis of agri data to facilitate risk reduction and the preparedness of farmers and workers in the agri-food sector; stresses the need to put primary producers at the centre of the framework and ensure that everyone, including farmers with small and medium-sized holdings, can access technology and benefit from it, while being protected from unintentional and uninformed sharing of data;
12. Recalls the importance of accurate and up-to-date data on the import of goods and products, including agricultural goods and products, from third countries into the EU; further recalls that in its 2018 Special Report entitled 'A series of delays in Customs IT systems: what went wrong?' the European Court of Auditors found that delays in the implementation of the new IT system for the Customs Union suffered, among other things, from insufficient resources being allocated by the EU and Member States; is concerned that this delay might hinder the complete modernisation of the relevant customs processes, which could challenge the collection and/or use of reliable and accurate data on the export and import of goods and products; calls on all concerned stakeholders to provide the necessary resources for the completion of the new Customs IT system, preferably before, but not later than, the postponed deadline of 2025.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	22.9.2020
Result of final vote	+: 37 -: 5 0: 5
Members present for the final vote	Mazaly Aguilar, Clara Aguilera, Atidzhe Alieva-Veli, Álvaro Amaro, Attila Ara-Kovács, Carmen Avram, Adrian-Dragoş Benea, Benoît Biteau, Mara Bizzotto, Daniel Buda, Isabel Carvalhais, Asger Christensen, Angelo Ciocca, Ivan David, Paolo De Castro, Jérémy Decerle, Salvatore De Meo, Herbert Dorfmann, Luke Ming Flanagan, Cristian Ghinea, Dino Giarrusso, Francisco Guerreiro, Martin Häusling, Martin Hlaváček, Krzysztof Jurgiel, Jarosław Kalinowski, Elsi Katainen, Gilles Lebreton, Norbert Lins, Chris MacManus, Marlene Mortler, Ulrike Müller, Maria Noichl, Juozas Olekas, Pina Picierno, Maxette Pirbakas, Eugenia Rodríguez Palop, Bert-Jan Ruissen, Anne Sander, Petri Sarvamaa, Simone Schmiedtbauer, Annie Schreijer-Pierik, Veronika Vrecionová, Juan Ignacio Zoido Álvarez
Substitutes present for the final vote	Claude Gruffat, Michaela Šojdrová, Marc Tarabella

FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

37	+
EPP	Álvaro Amaro, Daniel Buda, Salvatore De Meo, Herbert Dorfmann, Jarosław Kalinowski, Norbert Lins, Marlene Mortler, Anne Sander, Petri Sarvamaa, Simone Schmiedtbauer, Annie Schreijer-Pierik, Juan Ignacio Zoido Álvarez, Michaela Šojdrová
S&D	Clara Aguilera, Attila Ara-Kovács, Carmen Avram, Adrian-Dragoş Benea, Isabel Carvalhais, Paolo De Castro, Maria Noichl, Juozas Olekas, Pina Picierno, Marc Tarabella
RENEW	Atidzhe Alieva-Veli, Asger Christensen, Jérémy Decerle, Cristian Ghinea, Martin Hlaváček, Elsi Katainen, Ulrike Müller
ECR	Mazaly Aguilar, Krzysztof Jurgiel, Bert-Jan Ruissen, Veronika Vrecionová
EUL/NGL	Luke Ming Flanagan, Chris MacManus, Eugenia Rodríguez Palop

5	-
ID	Mara Bizzotto, Angelo Ciocca, Gilles Lebreton, Maxette Pirbakas
NI	Dino Giarrusso

5	0
ID	Ivan David
GREENS/EFA	Benoît Biteau, Claude Gruffat, Francisco Guerreiro, Martin Häusling

Key to symbols:

+ : in favour

- : against

0 : abstention

27.1.2021

OPINION OF THE COMMITTEE ON CULTURE AND EDUCATION

for the Committee on Industry, Research and Energy

on a European strategy for data
(2020/2217(INI))

Rapporteur for opinion: Radka Maxová

SUGGESTIONS

The Committee on Culture and Education calls on the Committee on Industry, Research and Energy, as the committee responsible, to incorporate the following suggestions into its motion for a resolution:

1. Welcomes the Commission communication on a European strategy for data (COM(2020)0066) and endorses its objective to increase and improve the use of data in the EU and to create a single market for data in order to harness economic growth and social and territorial cohesion by supporting job creation, competitiveness, sustainable development, research, innovation, job creation and societal progress; stresses that in order to ensure public trust and foster the sharing of data, it is important to guarantee the interoperability of data and data processing systems, allowing data flows among cultural operators while abiding by high standards in the protection of personal data in compliance with Regulation (EU) 2016/679¹, Directive (EU) 2019/790², as well as with the Charter of Fundamental Rights of the European Union, in particular Article 8 thereof; underlines that personal data must therefore be processed fairly for specified purposes and on the basis of the consent of the person concerned; calls for the sharing of best practices and support for joint enforcement initiatives, as well as jointly developed codes of conduct, which may be necessary components to enhance data sharing;
2. Recalls that data savvy and well-informed citizens across the Member States are a precondition for creating a free and secure data flow with personal data and the protection of privacy at its core; points out that there are currently significant divergences between and within Member States on the basis of socio-economic status,

¹ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1.

² Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC, OJ L 130, 17.5.2019, p. 92.

age group and other factors with regard to the digital literacy of their citizens; notes that the Commission has proposed ambitious targets for digital skills in the EU through the Digital Education Action Plan; calls on the Commission to provide substantial support to the Member States to help them to achieve these targets and stresses the role of the Recovery and Resilience Facility; requests that special attention be paid to equal access to digital infrastructure, internet coverage, adequate IT equipment and digital tools and resources, without prejudice to the principles of subsidiarity and proportionality; considers that mutual learning and an exchange of best practices between Member States should contribute to strengthening digital literacy; highlights the need for the implementation, developments in and performance of the Digital Education Action Plan to be closely monitored on an ongoing basis, with the involvement of the European Parliament, and urges the Commission to better reflect in its European Semester exercise the extent to which the goals of the Digital Education Action Plan goals are being achieved;

3. Highlights that the digital sector needs to put sustainability at its heart; recalls in this context that both the green and the digital transformations must go hand in hand and that investment in research and development of technologies is needed in order to reduce the carbon footprint;
4. Believes that the EU should include the strengthening of digital literacy and competencies among the priorities in its cohesion policy for 2021 and beyond, with a focus on supporting teachers, education institutions and organisations in implementing digital education throughout curricula and on sharing best practices and know-how, without creating additional administrative or financial burdens; stresses that schools should teach digital versatility, empowering students to use a variety of different types of software and evolving software; considers that education and training should aim to empower citizens by preparing them for an increasingly data-based economy and developing their ability to take part in the digital transformation; in this context, highlights that quality hybrid education models can help ensure the continuity of education in emergencies and unforeseen circumstances; considers that education and training should take long-term trends and shifts in labour market needs into account and also enhance practical skills for the future; welcomes the Commission's proposal to develop a common European skills database;
5. Is deeply concerned about the insufficient number of AI-specific higher education programmes in the EU, as well as the lack of AI researchers pursuing an academic career in European universities; is of the view that in order to remain competitive, the EU needs to foster and retain a large pool of digital talent with advanced digital skills;
6. Highlights the urgent need to close the EU's digital skills gap by implementing and following through clear strategies and dedicated policies both at national and EU level, and a genuine lifelong-learning approach, and considers that the sharing and analysis of anonymised data on skills, competences, qualifications, occupations and employability trends will be invaluable tools to achieve this end and to bridge the digital skills gap; considers that such data can be used by prospective students to make informed choices about their educational, academic and career paths; stresses the importance of fully abiding by EU rules on personal data protection when using these tools;

7. Highlights the value of strategic partnership agreements between universities to further promote cooperation in the various fields of data science; underlines the importance of the automatic mutual recognition of diplomas at all levels of education, and of learning periods abroad, and calls for the promotion of the European Qualification Framework and the development of the European Student Card; points out the need to support research programmes and networks through the use of data and digital innovation; underlines the necessity to train, hire and retain talent in Europe to address and accompany the digital transition and for specialised programmes, modules and short-term training courses in advanced digital technologies to develop digital skills in key professions, especially in those which involve handling data, including sensitive data; stresses the need for targeted policies to close the gender gap by ensuring equal access to the digital labour market and school curricula, by encouraging women and girls to pursue careers in science, technology, engineering, arts and mathematics (STEAM) and by fighting gender stereotypes in education;
8. Underlines the fact that the increased use of data and emerging educational technologies will transform and help enhance our education systems, for example by improving the understanding of students' learning methods and styles, or by identifying learning difficulties; notes that it will nevertheless be essential to maintain a human-centred and personalised approach to students and their needs, and that the transmission of knowledge by teachers and educators to younger generations remains vital to the education process; reiterates that skills such as media literacy and critical thinking will be paramount to successful digital education; considers that open, non-discriminatory and equitable access to education and to scientific data and publications based on the FAIR (findable, accessible, interoperable, reusable) data principles is essential for successful innovation and science;
9. Recalls that data protection in schools is a particularly sensitive issue due to the fact that the persons concerned are minors; reiterates that a high level of protection of individual pupils' data must be ensured and that these should only be used for educational, but under no circumstances for commercial, purposes; calls on the Commission and the Member States to support and contribute to the development and the strengthening of secure, user-friendly and accessible teaching platforms; encourages the Member States to put in place information and awareness-raising campaigns aimed at helping parents to better understand what use can be made of their children's data;
10. Calls on the Commission to consider the use of EU funds and programmes to effectively support lifelong learning and training so as to improve competences in data analysis and its ethical aspects for people of all ages; considers that this would foster their development, creativity and well-being, and ensure their active participation in society by a genuine lifelong learning approach through clear strategies at both national and EU level; considers, furthermore, that this would increase the EU's technological autonomy and resilience; calls for the EU to invest in secure and high-quality data processing and storage, technological capacities and strategic infrastructure;
11. Emphasises that digital skills are crucial for a person to fully participate in the digital economy and society, and in shaping democratic processes; requests that the implementation of the European data strategy should take account of the specific needs of different groups, especially vulnerable groups and those who are disadvantaged in

terms of abilities and access to digital tools; notes that people belonging to vulnerable groups are exposed to a greater risk of exclusion from participation in traditional forms of education and culture; recalls that almost 100 million persons with disabilities in the EU are facing particular challenges in accessing digital tools and quality education; calls on the Member States to make every effort to ensure that persons with disabilities and other vulnerable groups have full access to digital education and the relevant tools, resources and infrastructure in order to harness the full potential of digitalisation and prevent a widening of gaps between different parts of society in terms of access to digital education; highlights that special attention should be given to solutions that are environmentally friendly by design, as both the digital and the green transformations have to go hand in hand;

12. Calls on the Commission to explore the potential merits and scope of creating a common European data space for the cultural and creative sectors and industries at large; believes that the digitalisation of cultural heritage is necessary to both promote and protect cultural heritage, and could be useful and beneficial in a wide variety of ways, for instance by facilitating physical protection and preservation or enabling three-dimensional virtual applications, which could be suitable for tourism; notes that the digitalisation of cultural heritage could contribute to bringing it to wider audiences previously unable to access it, while acknowledging that digital access cannot fully substitute physical access to cultural heritage; notes that the digitalisation of cultural heritage could serve additional purposes in a variety of other sectors such as research, education and cultural knowledge development; calls for the development of a common European data space on cultural heritage, which could be built on the basis of the Europeana Digital Service Infrastructure; requests that the protection and promotion of cultural heritage through digital means be strengthened, for example through cooperation and a common database of stolen treasures and cultural objects;
13. Points out that the cultural sector has a significant amount of reusable data, which when combined with other sources, including open data sources, and data analytics could help cultural institutions to increase knowledge sharing, to better understand their audience and to connect to a new one, to identify gaps that could be addressed through initiatives, and to support their strategic and operational decisions; calls on the Commission and the Member States to explore the potential of trans-border virtual data warehouses for the cultural sector; calls on the Commission to remain explicitly attuned to the diversity of cultural and creative sectors and industries while elaborating future legislation on data flows;
14. Calls for the EU to lead the way in the field of AI, both in the public and the private sectors; highlights the opportunities given by the use of AI in education; stresses that any new legislation in this field must observe fundamental rights, including the right to protection of privacy and personal data, and contribute to setting high ethical standards;
15. Emphasises that providing access for media companies to relevant data, such as audience reach and advertising data, from market-dominant platforms is crucial to help prevent unfair competition and in striving to level the playing field;
16. Calls on the Member States to further improve partnerships between tech companies and cultural institutions that could give the latter access to digital talents, space, data,

equipment, funding and peer-to-peer learning opportunities; calls on the Commission to take cultural and creative sectors and industries and their particular needs into account in the forthcoming European SME strategy; highlights that future legislation in the field of data must remain simple and include clear guidance to avoid over-regulation; recalls that micro-businesses and small and medium-sized enterprises (SMEs), including cultural and creative sectors and industries, will need additional support in order to comply with future standards in the field of data sharing and data protection regulation; emphasises that the use of data is increasingly important for European cultural and creative sectors and industries; recalls that secure data sharing is essential to enable open access to cultural content, where required, and contributes to guaranteeing freedom of creation, as well as to preventing data market distortion and the concentration of data in the hands of a few, for example, platforms; stresses the necessity of developing common, unified and structured data formats based on open standards and the mutual recognition of interoperability rules, which could be suited to machine learning.

INFORMATION ON ADOPTION IN COMMITTEE ASKED FOR OPINION

Date adopted	26.1.2021
Result of final vote	+: 27 -: 1 0: 1
Members present for the final vote	Asim Ademov, Isabella Adinolfi, Andrea Bocskor, Ilana Cicurel, Gilbert Collard, Gianantonio Da Re, Laurence Farreng, Tomasz Frankowski, Alexis Georgoulis, Hannes Heide, Irena Joveva, Petra Kammerevert, Niyazi Kizilyürek, Dace Melbārde, Victor Negrescu, Marcos Ros Sempere, Domènec Ruiz Devesa, Andrey Slabakov, Massimiliano Smeriglio, Michaela Šojdrová, Sabine Verheyen, Salima Yenbou, Theodoros Zagorakis, Milan Zver
Substitutes present for the final vote	Ibán García Del Blanco, Marcel Kolaja, Elżbieta Kruk, Radka Maxová, Diana Riba i Giner

FINAL VOTE BY ROLL CALL IN COMMITTEE ASKED FOR OPINION

27	+
ECR	Elzbieta Kruk, Dace Melbārde, Andrey Slabakov
NI	Isabella Adinolfi
PPE	Asim Ademov, Andrea Bocskor, Tomasz Frankowski, Michaela Šojdrová, Sabine Verheyen, Theodoros Zagorakis, Milan Zver
Renew	Ilana Cicurel, Laurence Farreng, Irena Joveva, Radka Maxová
S&D	Ibán García Del Blanco, Hannes Heide, Petra Kammerevert, Victor Negrescu, Marcos Ros Sempere, Domènec Ruiz Devesa, Massimiliano Smeriglio
The Left	Alexis Georgoulis, Niyazi Kizilyürek
Verts/ALE	Marcel Kolaja, Diana Riba i Giner, Salima Yenbou

1	-
ID	Gilbert Collard

1	0
ID	Gianantonio Da Re

Key to symbols:

+ : in favour

- : against

0 : abstention

INFORMATION ON ADOPTION IN COMMITTEE RESPONSIBLE

Date adopted	24.2.2021
Result of final vote	+: 68 -: 0 0: 10
Members present for the final vote	François Alfonsi, Nicola Beer, François-Xavier Bellamy, Hildegard Bentele, Tom Berendsen, Vasile Blaga, Michael Bloss, Manuel Bompard, Paolo Borchia, Marc Botenga, Markus Buchheit, Martin Buschmann, Cristian-Silviu Buşoi, Jerzy Buzek, Carlo Calenda, Andrea Caroppo, Maria da Graça Carvalho, Ignazio Corrao, Ciarán Cuffe, Josianne Cutajar, Nicola Danti, Pilar del Castillo Vera, Martina Dlabajová, Christian Ehler, Valter Flego, Niels Fuglsang, Lina Gálvez Muñoz, Claudia Gamon, Jens Geier, Nicolás González Casares, Bart Groothuis, Christophe Grudler, András Gyürk, Henrike Hahn, Robert Hajšel, Ivo Hristov, Ivars Ijabs, Romana Jerković, Eva Kaili, Seán Kelly, Izabela-Helena Kloc, Łukasz Kohut, Zdzisław Krasnodębski, Andrius Kubilius, Miapetra Kumpula-Natri, Thierry Mariani, Marisa Matias, Eva Maydell, Georg Mayer, Joëlle Mélin, Dan Nica, Angelika Niebler, Ville Niinistö, Aldo Patriciello, Mauri Pekkarinen, Mikuláš Peksa, Tsvetelina Penkova, Morten Petersen, Markus Pieper, Clara Ponsatí Obiols, Sira Rego, Manuela Ripa, Jérôme Rivière, Robert Roos, Maria Spyraکی, Jessica Stegrud, Beata Szydło, Grzegorz Tobiszowski, Patrizia Toia, Evžen Tošenovský, Isabella Tovaglieri, Henna Virkkunen, Pernille Weiss, Carlos Zorrinho
Substitutes present for the final vote	Jakop G. Dalunde, Marian-Jean Marinescu, Susana Solís Pérez, Tomas Tobé

FINAL VOTE BY ROLL CALL IN COMMITTEE RESPONSIBLE

68	+
PPE	François-Xavier Bellamy, Hildegard Bentele, Tom Berendsen, Vasile Blaga, Cristian-Silviu Buşoi, Jerzy Buzek, Maria Da Graça Carvalho, Pilar Del Castillo, Christian Ehler, András Gyürk, Seán Kelly, Andrius Kubilius, Marian-Jean Marinescu, Eva Maydell, Angelika Niebler, Aldo Patriciello, Markus Pieper, Maria Spyraiki, Tomas Tobe, Henna Virkkunen, Pernille Weiss
S&D	Carlo Calenda, Josianne Cutajar, Niels Fuglsang, Lina Gálvez Muñoz, Jens Geier, Nicolás González Casares, Robert Hajšel, Ivo Hristov, Romana Jerković, Eva Kaili, Łukasz Kohut, Miapetra Kumpula-Natri, Dan Nica, Tsvetelina Penkova, Patrizia Toia, Carlos Zorrinho
RENEW	Nicola Beer, Nicola Danti, Martina Dlabajova, Valter Flego, Claudia Gamon, Bart Groothuis, Christophe Grudler, Ivars Ijabs, Mauri Pekkarinen, Morten Petersen, Susana Solís Pérez
Verts/ALE	François Alfonsi, Michael Bloss, Ignazio Corrao, Ciarán Cuffe, Jakop Dalunde, Henrike Hahn, Ville Niinistö, Mikuláš Peksa, Manuela Ripa
ECR	Izabela-Helena Kloc, Zdzisław Krasnodębski, Rob Roos, Beata Szydło, Tobiszowski Grzegorz, Evžen Tošenovský
The Left	Manuel Bompard, Marisa Matias, Sira Rego
NI	Martin Buschmann, Clara Ponsatí Obiols

0	-

10	0
ID	Paolo Borchia, Markus Buchheit, Thierry Mariani, Georg Mayer, Joëlle Mélin, Jérôme Rivière, Isabella Tovaglieri
ECR	Jessica Stegrud
The Left	Marc Botenga
NI	Andrea Caroppo

Key to symbols:

+ : in favour

- : against

0 : abstention